INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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100 North Senate Avenue
Indianapolis, Indiana 46204-2251
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

Mr. Steven Aldridge
Knauf Insulation GmbH
One Knauf Drive
Shelbyville, IN 46176

September 1, 2006

Re: 145-23127-00001
Significant Source Modification to
Part 70 No.: T 145-6038-00001

Dear Mr. Aldridge:

Knauf Insulation GmbH was issued a Part 70 Operating Permit on September 14, 1999 for a stationary wool fiberglass insulation manufacturer. An application to modify the source was received on May 24, 2006.

(a) Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

(1) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
- installed in 2007,
- operating at a nominal processing capacity of 300 tons of glass per day,
- operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),
- utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and
- exhausting through one (1) stack ID # 6-30.
- 602B FURNACE is common to MFG 602 and 602 LF MFG.
- 602B FURNACE is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(2) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),
- utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and
- exhausting through one (1) stack ID # 6-22.
- 602 LF MFG is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).
- 602 LF MFG produces an unbonded wool fiberglass insulation product.

(3) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,

– utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
– exhausting internally through two (2) vents ID# 6-31 & 6-32.

(4) 602 LF PACKAGING
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4,
– installed in 2007,
– operating at a nominal processing capacity of 170 tons of glass per day,
– utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
– exhausting to 602 LF SEPARATOR.

(5) Raw Material and Handling Systems
The nominal capacities of these units have been classified as confidential information.

Table 1: Batch House: Raw Material and Handling Systems

Emission Unit	Emission Unit ID	Internal Vent ID	Control Device *
602 Furnace Day Bins	DB602	6-8 a & b	Baghouse
Gallery Conveyor Systems	GLCONVEY / BUCKETELV	6-15 a, b, c, & d	Baghouse

* Controlled emissions exhaust inside the building.

(b) Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for modification at the source:

(1) Raw Material and Handling Systems
The nominal capacities of these units have been classified as confidential information.

Table 2: Batch House: Raw Material and Handling Systems

Emission Unit	Emission Unit ID	Internal Vent ID	Control Device *
Silica Sand Storage Silos	Silo61	6-1 a & b	Baghouse
Nepheline Syenite Storage Silos	Silo62	6-2	Baghouse
Soda Ash Storage Silos	Silo63	6-3 a & b	Baghouse
Limestone Storage Silo	Silo64	6-4	Baghouse
Dolomite Storage Silo	Silo65	6-5	Baghouse
Minor Ingredient Storage Silo	Silo66	6-6	Baghouse
Spare Storage Silo	Silo67	6-7	Baghouse
Borax Storage Silo	Silo69	6-9 a & b	Baghouse
CNSMR Cullet Storage Silo	Silo612	6-12 a & b	Baghouse
Knauf Cullet Storage Silo	Silo613	6-13 a & b	Baghouse
Raw Material Unloader	RMUNLDR616	6-16 a & b	Baghouse
Gathering Belt/Weigh Scales	GTHRNGBLT617	6-17	Baghouse
Batch Mixer/Check Scale	BMXR618	6-18 a & b	Baghouse
Knauf Cullet Handling	KCHNDLNG620	6-20 a & b	Baghouse

* Controlled emissions exhaust inside the building.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13 17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit
   Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the new electric glass melting furnace and loose fill manufacturing line and modifications to the existing raw material and handling systems. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

All other conditions of the permit shall remain unchanged and in effect. For your convenience the entire Part 70 Operating Permit as modified will be provided at issuance.

This decision is subject to the Indiana Administrative Orders and Procedures Act – IC 4-21.5-3-5. If you have any questions on this matter, please contact Kimberly Cottrell, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204-2251, or call at (800) 451-6027, and ask for Kimberly Cottrell or extension (3-0870), or dial (317) 233-0870.

Sincerely,

Original Signed by:
Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

KLC

cc: File – Shelby County
Shelby County Health Department
U.S. EPA, Region V
Air Compliance Inspector – D.J. Knotts
Compliance Data Section
Technical Support and Modeling – Mark Neyman
Enviroplan Consulting – Alic Bent
Intergovernmental Relations – Eric Levenhagen
Administrative and Development – Permit Tracking

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PART 70 OPERATING PERMIT
OFFICE OF AIR QUALITY

Knauf Insulation GmbH
One Knauf Drive
Shelbyville, Indiana 46176

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 and 326 IAC 2-1-3.2 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit Renewal No.: T 145-6038-00001	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: September 14, 1999 Expiration Date: September 14, 2004

First Significant Permit Modification No.: 145-11969-00001, issued on July 6, 2000
Second Significant Permit Modification No.: 145-14586-00001, issued on November 20, 2001
First Reopening No.: 145-13486-00001, issued on January 7, 2002
First Administrative Amendment: 145-15521-00001, issued on July 15, 2002
Second Administrative Amendment: No.: 145-18469-00001, issued on December 17, 2003
First Significant Source Modification No. 145-20887-00001, issued on November 9, 2005
Third Significant Permit Modification No. 145-21234-00001, issued on December 27, 2005

Second Significant Source Modification No.: 145-23127-00001	
Issued by: Original Signed By: Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date: September 1, 2006

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary wool fiberglass insulation manufacturer.

Responsible Official:	Vice President of Operations
Source Address:	One Knauf Drive, Shelbyville, IN 46176
Mailing Address:	One Knauf Drive, Shelbyville, IN 46176
SIC Code:	3296
County Location:	Shelby
County Status:	Nonattainment for the 8-hour ozone standard Attainment for all other criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rules Major Source, under Emission Offset Rules Major Source under Section 112 of the CAA 1 of 28 Listed Source Categories Clean Unit Source

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

SECTION D.1

(a) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
– installed in 2007,
– operating at a nominal processing capacity of 300 tons of glass per day,
– operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),
– utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and
– exhausting through one (1) stack ID # 6-30.
– 602B FURNACE is common to MFG 602 and 602 LF MFG.
– 602B FURNACE is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(b) MFG 602 – Stack 2-2
One (1) rotary spin wool fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602,
– installed in 1983,
– operating at a nominal processing capacity of 130 tons of glass per day,
– utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, and
– exhausting through one (1) stack ID #2-2.

– MFG 602 produces a bonded wool fiberglass insulation building product. MFG 602 is an existing affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(c) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),
- utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and
- exhausting through one (1) stack ID # 6-22.
- 602 LF MFG is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).
- 602 LF MFG produces an unbonded wool fiberglass insulation product.

(d) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting internally through two (2) vents ID# 6-31 & 6-32.

(e) 602 LF PACKAGING
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting to 602 LF SEPARATOR.

SECTION D.2

(f) Nine (9) rotary spin wool fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively,
- each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively,
- each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively,
- LINE 3001 – 3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.
- LINE 3001 – 3009 are affected facilities subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

SECTION D.3

(g) Raw Material and Handling Systems

(1) The nominal capacities of these units have been classified as confidential information.

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Silica Sand Storage Silos	Silo61	2006	6-1 a & b	Baghouse SILO061BIN16, SILO061BIN2
Nepheline Syenite Storage Silos	Silo62	2006	6-2	Baghouse SILO062BIN15
Soda Ash Storage Silos	Silo63	2006	6-3 a & b	Baghouse SILO063BIN4, SILO063BIN5
Limestone Storage Silo	Silo64	2006	6-4	Baghouse SILO064BIN9
Dolomite Storage Silo	Silo65	2006	6-5	Baghouse SILO065BIN3
Minor Ingredient Storage Silo	Silo66	2006	6-6	Baghouse SILO066BIN11
Spare Storage Silo	Silo67	2006	6-7	Baghouse SILO067BIN14
602 Furnace Day Bins	DB602	2006	6-8 a & b	Baghouse DB602A, DB602B
Borax Storage Silo	Silo69	2006	6-9 a & b	Baghouse SILO069BIN8, SILO069BIN10
CNSMR Cullet Storage Silo	Silo612	2006	6-12 a & b	Baghouse SILO612BIN1
Knauf Cullet Storage Silo	Silo613	2006	6-13 a & b	Baghouse SILO613BIN13, SILO613BIN7
Gallery Conveyor Systems	GLCONVEY / BUCKETELV	2006	6-15 a, b, c, & d	Baghouse GLCONVEY / BUCKETELV A, GLCONVEY / BUCKETELV B, GLCONVEY 611A, GLCONVEY611B, GLCONVEY602A, GLCONVEY602B

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Raw Material Unloader	RMUNLDR616	2006	6-16 a & b	Baghouse RMUNLDR616A, RMUNLDR616B
Gathering Belt/Weigh Scales	GTHRNGBLT617	2006	6-17	Baghouse GTHRNGBL617
Batch Mixer/Check Scale	BMXR618	2006	6-18 a & b	Baghouse BMXR618
611 Furnace Day Bins	DB619	2006	6-19	Baghouse DB611A, DB611B
Knauf Cullet Handling	KCHNDLNG620	2006	6-20 a & b	Baghouse KCHNDLNG620A, KCHNDLNG620B
Resin Unloading	RUNLDNG626	2006	6-26	–
Binder Storage	BSTG627	2006	6-27	–
Binder Mixing	BMXG	2006	6-28	–

* Controlled emissions exhaust inside the building.

(2) Thirty eight (38) binder mixing and miscellaneous storage tanks, ranging from 50 gallons to 15,000 gallons.

Volatile organic compound (VOC) emissions from these storage tanks vent inside the binder building and are then ducted to the inlet of the wet electrostatic precipitator (ESP) (Stack 6-22).

SECTION D.4

(h) FURNACE 611 – Stack 6-21
One (1) electrically heated glass melting furnace, identified as FURN 611, installed in 2007.
– The nominal capacity of FURN 611 is 300 tons of molten glass per day.
– The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.
– Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.
– FURNACE 611 is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

This furnace is common to:
(1) 611 FORMING,
(2) 612 FORMING,
(3) 613 FORMING,

(4) 613 CURING/COOLING,
(5) 614 FORMING, and
(6) 614 CURING/COOLING.

SECTION D.5

(i) Stack 6-22

(1) 611 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 611 FORMING, utilizing natural gas for fiberization. Products formed in 611 FORMING are ready for packaging.
– The nominal capacity of 611 FORMING has been classified as confidential information.
– The particulate emissions from 611 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
– Controlled emissions from 611 FORMING exhaust through a stack identified as Stack 6-22.
– 611 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(2) 612 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 612 FORMING, utilizing natural gas for fiberization. Products formed in 612 FORMING are ready for packaging.
– The nominal capacity of 612 FORMING has been classified as confidential information.
– The particulate emissions from 612 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
– Controlled emissions from 612 FORMING exhaust through a stack identified as Stack 6-22.
– 612 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(3) 613 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.
– The nominal capacity of 613 FORMING has been classified as confidential information.
– The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP) This wet ESP is common to all the forming sections.
– Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.
– 613 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).
– 613 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(4) 614 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.
- The nominal capacity of 614 FORMING has been classified as confidential information.
- The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.
- 614 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).
- 614 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(j) Stack 6-29

(1) 613 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.
- The nominal capacity of 613 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.
- The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.
- 613 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).
- 613 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(2) 614 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.
- The nominal capacity of 614 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.

- The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.
- 614 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).
- 614 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(a) Other categories with emissions below insignificant thresholds:

(1) Fiberglass trimming with dust collector with PM emission less than twenty-five (25) pounds per day

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 – Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5] [326 IAC 2-7-4(a)(1)(D)] [IC 13-15-3-6(a)]

(a) This permit, T 145-6038-00001, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by the "responsible official" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) The "responsible official" is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch – Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of the Part 70 Operating Permit, 145-6038-00001, for existing emission units that are not being modified or upon startup for the new and modified emission units, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(h) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

(i) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5] [326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source’s existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B – Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(c), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3] [326 IAC 2-7-4] [326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12] [40 CFR 72]

(a) Permit amendments and modification are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.20 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b),(c), or (e) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch – Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emission trades that are subject to 326 IAC 2-7-20(b),(c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1), (c)(1), and (e)(2).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(c)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-30-3-1] [IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee’s right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)] [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ, the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR Part 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days after issuance of the Part 70 Operating Permit, 145-6038-00001, for existing emission units that are not being modified or upon startup for the new and modified emission units. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission units, compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.11 Maintenance of Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.

(b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on March 19, 1999.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.15 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.16 Response to Excursions or Exceedances [326 IAC 1-6] [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records;

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.18 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

(a) Pursuant to 326 IAC 2-6-3(b)(2), starting in 2008 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

C.19 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

(c) If there is a reasonable possibility that a "project" (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, other than projects at a Clean Unit, which is not part of a "major modification" (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

(1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii) and/or 326 IAC 2-3-1(mm)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(2) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(3) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.20 General Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

(f) If the Permittee is required to comply with the recordkeeping provisions of (c) in Section C – General Record Keeping Requirements for any “project” (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C – General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C – General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1(xx) and/or 326 IAC 2-3-1(qq), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C – General Record Keeping Requirements (c)(1)(C)(ii).

(g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (c)(2) and (3) in Section C – General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee deems fit to include in this report,

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management
Air Compliance Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C – General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

C.21 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

Retirement of Existing Operations

C.22 Retirement of Existing Operations [326 IAC 2-3]

Pursuant to 326 IAC 2-3, the Permittee shall permanently discontinue the operation of the following operations within ninety (90) days of startup of the new emission units:

(a) MFG 601 – Stack 1-1 and Stack 1-2

(1) One (1) electrically heated glass melting furnace, identified as Unit ID # FURN 601, installed in 1978, exhausting through ID # 1-1.

(2) One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 601, installed in 1978, operating at a rated heat input capacity of 30 million (MM) British thermal units (Btu) per hour, combusting natural gas, utilizing one (1) wet electrostatic precipitator for particulate control, and two (2) natural gas fired thermal oxidizers with a rated combined heat input capacity of 36 MMBtu per hour, exhausting through one (1) stack ID #1-2.

(b) MFG 603 – Stack 3-1 and Stack 3-2

(1) One (1) electrically heated glass melting furnace, identified as Unit ID # FURN 603, installed in 1978, exhausting through one (1) stack ID #3-1.

(2) One (1) fiberglass manufacturing line consisting of forming section, identified as Unit ID # MFG 603, installed in 1978, operating at a rated heat input capacity of 15 million (MM) British thermal units (Btu) per hour, combusting natural gas, utilizing two (2) wet scrubbers for particulate control, exhausting through one (1) stack ID #-3-2.

(c) MFG 605 – Stack 5-1, Stack 5-2, Stack 5-3, Stack 5-4, and Stack 5-5

(1) One (1) natural gas-fired glass melting furnace, identified as Unit ID # FURN 605, installed in 1983, operating at a rated heat input capacity of 10 MMBtu per hour, utilizing a baghouse for particulate control and exhausting through one (1) stack ID #5-1.

(2) One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 605, installed in 1983, operating at a rated heat input capacity of 20 MMBtu per hour, combusting natural gas, exhausting through four (4) stacks ID #5-2, 5-3, 5-4, and 5-5.

(d) Eight (8) storage silos, identified as Unit ID # SILO 01, SILO 02, SILO 03, SILO 04, SILO 05, SILO 06, SILO 07, and SILO 08, used to store limestone, dolomite, feldspar, borax, sand, soda ash, post consumer cullet, and a spare, respectively, each utilizing a baghouse for particulate control, each exhausting through stacks S/V ID #0-1 through 0-8, respectively.

(e) One (1) batch raw material receiving bin, identified as Unit ID # RMH 02, three (3) day bins, identified as Unit ID # DB 01, DB 03, and DB 05, used to store raw materials for FURN 601, FURN 603, and FURN 605, respectively, and one (1) intermediate batch bin, identified as Unit ID #DB 02A, each utilizing a baghouse for particulate control, exhausting through stacks S/V ID # 0-10 through 0-15.

(f) FURN 602A – Stack 2-1
One (1) gas-fired (with electric boost) glass melting furnace, identified as Unit ID # FURN 602A, installed in 1983, operating at a rated heat input capacity of 30 MMBtu per hour, combusting natural gas, utilizing one (1) dry electrostatic precipitator for particulate control, exhausting through one (1) stack ID #2-1.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

(a) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
- installed in 2007,
- operating at a nominal processing capacity of 300 tons of glass per day,
- operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),
- utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and
- exhausting through one (1) stack ID # 6-30.
- 602B FURNACE is common to MFG 602 and 602 LF MFG.

(b) MFG 602 – Stack 2-2
One (1) rotary spin wool fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602,
- installed in 1983,
- operating at a nominal processing capacity of 130 tons of glass per day,
- utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, and
- exhausting through one (1) stack ID #2-2.
- MFG 602 produces a bonded wool fiberglass insulation building product.

(c) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),
- utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and
- exhausting through one (1) stack ID # 6-22.
- 602 LF MFG produces an unbonded wool fiberglass insulation product.

(d) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting internally through two (2) vents ID# 6-31 & 6-32.

(e) 602 LF PACKAGING
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting to 602 LF SEPARATOR.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 PSD Minor Limits [326 IAC 2-2]

(a) In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply to the loose fill manufacturing line (602 LF MFG):

(1) The NO_X emissions shall not exceed 9.13 pounds per hour.

(2) The SO_2 emissions shall not exceed 0.04 pounds per hour.

(3) The VOC emissions shall not exceed 0.33 pounds per hour.

(4) The molten glass to be formed by 602 LF MFG shall not exceed 62,050 tons of molten glass per 12-consecutive month period, with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 2-2 shall not apply to 602 LF MFG for NO_X, SO_2, and VOC.

(b) In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply to the electric glass melting furnace (602B FURNACE):

(1) The NO_X emissions shall not exceed 1.50 pounds per hour.

(2) The SO_2 emissions shall not exceed 0.02 pounds per hour.

(3) The VOC emissions shall not exceed 0.17 pounds per hour.

Therefore, the requirements of 326 IAC 2-2 shall not apply to 602B FURNACE for NO_X, SO_2, and VOC.

D.1.2 Emission Offset Minor Limits [326 IAC 2-3]

(a) In order to render the 326 IAC 2-3 (Emission Offset) requirements not applicable, the following conditions shall apply to the loose fill manufacturing line (602 LF MFG):

(1) The NO_X emissions shall not exceed 9.13 pounds per hour.

(2) The VOC emissions shall not exceed 0.33 pounds per hour.

(3) The molten glass to be formed by 602 LF MFG shall not exceed 62,050 tons of molten glass per 12-consecutive month period, with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 2-3 shall not apply to 602 LF MFG for NO_X and VOC.

(b) In order to render the 326 IAC 2-3 (Emission Offset) requirements not applicable, the following conditions shall apply to the electric glass melting furnace (602B FURNACE):

(1) The NO_X emissions shall not exceed 1.50 pounds per hour.

(2) The VOC emissions shall not exceed 0.17 pounds per hour.

Therefore, the requirements of 326 IAC 2-3 shall not apply to 602B FURNACE for NO_X and VOC.

D.1.3 Particulate Matter (PM / PM_{10}) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for particulate matter (PM / PM_{10}):

(a) 602B FURNACE – Stack 6-30:

(1) A baghouse shall be installed to control the PM/PM_{10} emissions from the glass melting furnace, 602B FURNACE, and shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouse from the 602B FURNACE shall not exceed:

(A) 0.45 pound per ton of glass pulled;

(B) 5.63 pounds per hour based on a 3-hour rolling average.

(b) 602 LF MFG – Stack 6-22:

(1) A wet electrostatic precipitator (WESP) shall be installed to control the PM/PM_{10} emissions from the loose fill manufacturing process, 602 LF MFG, and shall operate at a minimum control efficiency of sixty percent (60%).

(2) The PM/PM_{10} emissions after the WESP from the 602 LF MFG shall not exceed:

(A) 2.8 pounds per ton of glass pulled;

(B) 19.94 pounds per hour based on a 3-hour rolling average.

(c) 602 LF SEPARATOR and 602 LF PACKAGING:

(1) Two (2) baghouses shall be installed to control the PM/PM_{10} emissions from the 602 LF SEPARATOR, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouses from the 602 LF SEPARATOR shall not exceed 1.20 pounds per hour based on a 3-hour rolling average.

602 LF PACKAGING exhausts to the 602 LF SEPARATOR.

These emission rates include filterable and condensible particulate matter.

D.1.4 Carbon Monoxide (CO) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for carbon monoxide (CO):

(a) 602B FURNACE – Stack 6-30:
The CO emissions from the 602B FURNACE shall not exceed:

(1) 0.02 pound per ton of glass pulled;

(2) 0.25 pounds per hour based on a 3-hour rolling average.

(b) 602 LF MFG – Stack 6-22:
The CO emissions from the 602 LF MFG shall not exceed:

(1) 8 pounds per ton of glass pulled;

(2) 61.91 pounds per hour based on a 3-hour rolling average.

D.1.5 Particulate Matter Emission Limitation [326 IAC 11-4]

(a) Pursuant to 326 IAC 11-4-4 (Fiberglass Insulation Manufacturing – Emission Limitation), emission limitations for particulate matter have been set forth in Indiana's State Implementation Plan (SIP) as follows:

Process / Facility	**Max. Hourly Emissions** (lbs/hour)	**Max. Yearly Emissions** (tons/yr)
MFG 602 (forming) 602B FURNACE (oven)	33.27	145.7

(b) Pursuant to 326 IAC 11-4-2 (Fiberglass Insulation Manufacturing – Emission Limitation), particulate matter emissions from the loose fill manufacturing line, 602 LF MFG, shall not exceed 0.025 grains per dry standard cubic foot (gr/dscf).

D.1.6 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B – Preventive Maintenance Plan, of this permit, is required for the control devices described in Section D.1.

Compliance Determination Requirements

D.1.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]

(a) Within sixty (60) days after achieving maximum capacity of the proposed modification, but no later than one hundred and eighty (180) days after initial startup of the proposed expansion, the Permittee shall perform compliance testing on the following:

(1) 602B FURNACE – Stack 6-30:

(A) PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(a)(2) – PM / PM_{10} PSD BACT Requirements;

(B) CO – to verify compliance with the limitations in Condition D.1.4(a) – CO PSD BACT Requirements;

(2) 602 LF MFG – Stack 6-22:

(A) PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(b)(2) – PM / PM_{10} PSD BACT Requirements;

(B) CO – to verify compliance with the limitations in Condition D.1.4(b) – CO PSD BACT Requirements;

(3) 602 LF SEPARATOR and 602 LF PACKAGING:
PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(c)(2) – PM / PM_{10} PSD BACT Requirements; and

utilizing methods as approved by the Commissioner.

(b) The PM/PM_{10} testing on 602B FURNACE, MFG 602, 602 LF MFG, and 602 LF SEPARATOR shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration, utilizing test methods as approved by the Commissioner. PM_{10} includes filterable and condensible PM_{10}.

(c) The CO testing on 602B FURNACE and 602 LF MFG shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

(d) Testing shall be conducted in accordance with Section C – Performance Testing.

D.1.8 Particulate Matter (PM) Control

(a) The three (3) baghouses (for 602B FURNACE and 602 LF SEPARATOR) for PM control shall be in operation at all times when any of the following: 602B FURNACE, 602 LF SEPARATOR, and 602 LF PACKAGING are in operation and exhausting to the outside atmosphere.

(b) The two (2) wet electrostatic precipitators (for MFG 602 and 602 LF MFG) for PM control shall be in operation at all times when either of the manufacturing lines, MFG 602 and 602 LF MFG, are in operation and exhausting to the outside atmosphere.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.9 Visible Emissions Notations

(a) Visible emission notations of stack exhaust from

(1) 602B FURNACE (Stack 6-30),

(2) MFG 602 (Stack 2-2), and

(3) 602 LF MFG (Stack 6-22),

shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.10 Bag Leak Detection Systems (BLDS) [326 IAC 2-2]

Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements:

(a) Compliance with §63.1383(b) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN) shall satisfy all bag leak detection system (BLDS) requirements for the 602B FURNACE.

(b) The Permittee shall install and operate continuous bag leak detection systems (BLDS) for the 602 LF SEPARATOR baghouses. The bag leak detection systems shall meet the following requirements:

(i) The bag leak detection systems must be certified by the manufacturer to be capable of detecting particulate matter emissions.

(ii) The bag leak detection system sensor must provide output of relative particulate matter loading.

(iii) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.

(iv) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.

(vii) The bag detector must be installed downstream of the baghouses.

(c) In the event of a bag leak detection system alarm:

(i) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

(ii) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

(d) If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced.

The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.11 Record Keeping Requirements

(a) To document compliance with Condition D.1.1 – PSD Minor Limits and Condition D.1.2 – Emission Offset Minor Limits, the Permittee shall maintain records of the actual amount of glass produced.

(b) To document compliance with Condition D.1.9 – Visible Emissions Notations, the Permittee shall maintain records of visible emission notations of the manufacturing lines (602B FURNACE, MFG 602, and 602 LF MFG) stack exhausts.

(c) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

D.1.12 Reporting Requirements

To document compliance with Condition D.1.1 – PSD Minor Limits and Condition D.1.2 – Emission Offset Minor Limits, the Permittee shall submit a quarterly summary of the actual amount of glass produced, using the Annual Molten Glass Production Report or its equivalent, located at the end of this permit. These reports shall be submitted not later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Condition C – General Reporting Requirements of this permit.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

(f) Nine (9) rotary spin wool fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively,
- each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively,
- each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively;
- LINE 3001-3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B – Preventive Maintenance Plan, of this permit, is required for these control devices.

Compliance Determination Requirements

D.2.2 Testing Requirements [326 IAC 2-7-6(1),(6)]

The PM test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration, utilizing 40 CFR Part 60 Appendix A, Method 5E (Determination of Particulate Emissions from the Wool Fiberglass Insulation Manufacturing Industry) or other test methods as approved by the Commissioner.

D.2.3 Particulate Matter (PM) Control

Each dust collector for PM control on the fiberglass trimming process shall be in operation at all times when the fiberglass pipe insulation production line is in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.4 Visible Emissions Notations

(a) Visible emission notations of the nine (9) fiberglass pipe insulation production lines stack exhausts shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.5 Parametric Monitoring

The Permittee shall record the leak detector picoampere (pA) display reading for each dust collector on the fiberglass trimming operation used in conjunction with the nine (9) fiberglass pipe insulation production lines, at least once daily when the nine (9) fiberglass production lines are in operation. When any one display reading exceeds the maximum set point of 11 pA or is outside the range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. A display reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.6 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

(b) For a single compartment baghouses controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.7 Record Keeping Requirements

(a) To document compliance with Condition D.2.4 – Visible Emissions Notations, the Permittee shall maintain records of visible emission notations of the nine (9) fiberglass pipe insulation production lines.

(b) To document compliance with Condition D.2.5 – Parametric Monitoring, the Permittee shall maintain the following:

(1) Daily records of picoampere (pA) display readings.

(2) Documentation of all response steps implemented, per event.

(c) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

SECTION D.3 **FACILITY OPERATION CONDITIONS**

Facility Description [326 IAC 2-7-5(15)]

Raw Material and Handling Systems

(1) The nominal capacities of these units have been classified as confidential information.

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Silica Sand Storage Silos	Silo61	2006	6-1 a & b	Baghouse SILO061BIN16, SILO061BIN2
Nepheline Syenite Storage Silos	Silo62	2006	6-2	Baghouse SILO062BIN15
Soda Ash Storage Silos	Silo63	2006	6-3 a & b	Baghouse SILO063BIN4, SILO063BIN5
Limestone Storage Silo	Silo64	2006	6-4	Baghouse SILO064BIN9
Dolomite Storage Silo	Silo65	2006	6-5	Baghouse SILO065BIN3
Minor Ingredient Storage Silo	Silo66	2006	6-6	Baghouse SILO066BIN11
Spare Storage Silo	Silo67	2006	6-7	Baghouse SILO067BIN14
602 Furnace Day Bins	DB602	2006	6-8 a & b	Baghouse DB602A, DB602B
Borax Storage Silo	Silo69	2006	6-9 a & b	Baghouse SILO069BIN8, SILO069BIN10
CNSMR Cullet Storage Silo	Silo612	2006	6-12 a & b	Baghouse SILO612BIN1
Knauf Cullet Storage Silo	Silo613	2006	6-13 a & b	Baghouse SILO613BIN13, SILO613BIN7

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Gallery Conveyor Systems	GLCONVEY / BUCKETELV	2006	6-15 a, b, c, & d	Baghouse GLCONVEY / BUCKETELV A, GLCONVEY / BUCKETELV B, GLCONVEY 611A, GLCONVEY611B, GLCONVEY602A, GLCONVEY602B
Raw Material Unloader	RMUNLDR616	2006	6-16 a & b	Baghouse RMUNLDR616A, RMUNLDR616B
Gathering Belt/Weigh Scales	GTHRNGBLT617	2006	6-17	Baghouse GTHRNGBL617
Batch Mixer/Check Scale	BMXR618	2006	6-18 a & b	Baghouse BMXR618
611 Furnace Day Bins	DB619	2006	6-19	Baghouse DB611A, DB611B
Knauf Cullet Handling	KCHNDLNG620	2006	6-20 a & b	Baghouse KCHNDLNG620A, KCHNDLNG620B
Resin Unloading	RUNLDNG626	2006	6-26	–
Binder Storage	BSTG627	2006	6-27	–
Binder Mixing	BMXG	2006	6-28	–

* Controlled emissions exhaust inside the building.

(2) Thirty eight (38) binder mixing and miscellaneous storage tanks, ranging from 50 gallons to 15,000 gallons.

Volatile organic compound (VOC) emissions from these storage tanks vent inside the binder building and are then ducted to the inlet of the wet electrostatic precipitator (ESP) (Stack 6-22).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Particulate Matter (PM) PSD Minor Limits [326 IAC 2-2]

In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the Permittee shall not exceed the following emission rates:

Emission Unit ID	**Internal Vent ID**	**Emission Limit** (lb/hr)
DB619	6-19	0.031

Therefore, the requirements of 326 IAC 2-2 shall not apply to DB619.

Compliance with these PM and PM_{10} limits satisfies the allowable particulate emission rates specified in 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).

D.3.2 Particulate Matter (PM / PM_{10}) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD),

(a) Baghouses shall be installed to control the PM/PM_{10} emissions from the raw material handling operations, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(b) The Permittee shall comply with the following grain loading and emission rate requirements for particulate matter (PM / PM_{10}):

Emission Unit ID	**Internal Vent ID**	**Grain Loading** (gr/dscf)	**Emission Limit** (lb/hr)
Silo61	6-1 a & b	0.003	0.0154
Silo62	6-2	0.001	0.0031
Silo63	6-3 a & b	0.001	0.0051
Silo64	6-4	0.0003	0.0015
Silo65	6-5	0.001	0.0031
Silo66	6-6	0.0009	0.0046
DB602	6-8 a & b	0.01	0.0513
Silo69	6-9 a & b	0.002	0.0062
Silo612	6-12 a & b	0.006	0.0185
Silo613	6-13 a & b	0.0009	0.0024
GLCONVEY / BUCKETELV	6-15 a, b, c, & d	0.036	0.0948
RMUNLDR616	6-16 a & b	0.021	0.0553
GTHRNGBLT617	6-17	0.021	0.0553
BMXR618	6-18 a & b	0.021	0.0553
KCHNDLNG620	6-20 a & b	0.0009	0.0024

All pounds per hour limits specified in the table above are based on a 3-hour rolling average, and these emission rates include filterable and condensible particulate matter.

(c) Opacity shall not exceed an average of ten percent (10%) in any one (1) six (6) minute averaging period.

Compliance with these PM and PM_{10} limits satisfies the allowable particulate emission rates specified in 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B – Preventive Maintenance Plan, of this permit, is required for each baghouse, used to control the particulate emissions from the following emission units:

(a) Silo61;
(b) Silo62;
(c) Silo63;
(d) Silo64;
(e) Silo65;
(f) Silo66;
(g) Silo67;
(h) DB602;
(i) Silo69;
(j) Silo612;
(k) Silo613;
(l) GLCONVEY / BUCKETELV;
(m) RMUNLDR616;
(n) GTHRNGBLT617;
(o) BMXR618;
(p) DB619; and
(q) KCHNDLNG620.

Compliance Determination Requirements

D.3.4 Baghouse Operation

The baghouses for PM control shall be in operation at all times when the following emission units are in operation:

(a) Silo61;
(b) Silo62;
(c) Silo63;
(d) Silo64;
(e) Silo65;
(f) Silo66;
(g) Silo67;
(h) DB602;
(i) Silo69;
(j) Silo612;
(k) Silo613;
(l) GLCONVEY / BUCKETELV;
(m) RMUNLDR616;
(n) GTHRNGBLT617;
(o) BMXR618;
(p) DB619; and
(q) KCHNDLNG620.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.5 Bag Leak Detection System (BLDS) [326 IAC 2-2]

Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements:

(a) The Permittee shall install and operate continuous bag leak detection systems (BLDS) for the following:

Emission Unit ID	Internal Vent ID	Control Device *
Silo61	6-1 a & b	Baghouse SILO061BIN16, SILO061BIN2
Silo62	6-2	Baghouse SILO062BIN15
Silo63	6-3 a & b	Baghouse SILO063BIN4, SILO063BIN5
Silo64	6-4	Baghouse SILO064BIN9
Silo65	6-5	Baghouse SILO065BIN3
Silo66	6-6	Baghouse SILO066BIN11
Silo67	6-7	Baghouse SILO067BIN14
DB602	6-8 a & b	Baghouse DB602A, DB602B
Silo69	6-9 a & b	Baghouse SILO069BIN8, SILO069BIN10
Silo612	6-12 a & b	Baghouse SILO612BIN1
Silo613	6-13 a & b	Baghouse SILO613BIN13, SILO613BIN7
GLCONVEY / BUCKETELV	6-15 a, b, c, & d	Baghouse GLCONVEY / BUCKETELV A, GLCONVEY / BUCKETELV B, GLCONVEY 611A, GLCONVEY611B, GLCONVEY602A, GLCONVEY602B
RMUNLDR616	6-16 a & b	Baghouse RMUNLDR616A, RMUNLDR616B
GTHRNGBLT617	6-17	Baghouse GTHRNGBL617
BMXR618	6-18 a & b	Baghouse BMXR618
DB619	6-19	Baghouse DB611A, DB611B
KCHNDLNG620	6-20 a & b	Baghouse KCHNDLNG620A, KCHNDLNG620B

The bag leak detection systems shall meet the following requirements:

(i) The bag leak detection systems must be certified by the manufacturer to be capable of detecting particulate matter emissions.

(ii) The bag leak detection system sensor must provide output of relative particulate matter loading.

(iii) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.

(iv) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.

(vii) The bag detector must be installed downstream of the baghouses.

(b) In the event of a bag leak detection system alarm:

(i) For a single compartment baghouse~~-~~controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

(ii) For a single compartment baghouse~~s~~ controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

(c) If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced.

The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.6 Record Keeping Requirements

(a) To document compliance with Condition D.3.5 – Bag Leak Detection System (BLDS), the Permittee shall maintain records of explanation of the corrective actions taken, when the cause of the exceedance was corrected, and make such records available upon request to IDEM, OAQ, and the US EPA.

(b) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(c) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

FURNACE 611 – Stack 6-21

One (1) electrically heated glass melting furnace, identified as FURN 611, installed in 2007.
– The nominal capacity of FURN 611 is 300 tons of molten glass per day.
– The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.
– Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.

This furnace is common to:
(1) 611 FORMING,
(2) 612 FORMING,
(3) 613 FORMING,
(4) 613 CURING/COOLING,
(5) 614 FORMING, and
(6) 614 CURING/COOLING.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 PSD Minor Limits [326 IAC 2-2]

In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply to the FURN 611 (Stack 6-21):

(a) The PM and PM_{10} emissions shall not exceed 2.02 pounds per hour. PM_{10} includes filterable and condensible PM_{10}.

(b) The CO emissions shall not exceed 0.75 pounds per hour.

Therefore, the requirements of 326 IAC 2-2 shall not apply to FURN 611 (Stack 6-21).

D.4.2 NO_x LAER and NO_2 PSD BACT Requirements [326 IAC 2-3] [326 IAC 2-2]

Pursuant to 326 IAC 2-3 (Emission Offset) and 326 IAC 2-2 (Prevention of Significant Deterioration), the Permittee shall comply with the following requirements:

(a) FURN 611 shall be powered by electricity only.

(b) FURN 611 shall not produce greater than 300 tons per day of molten glass.

D.4.3 NO_X Emission Offset [326 IAC 2-3]

Pursuant to 326 IAC 2-3 (Emission Offset), the Permittee shall permanently acquire and offset 90.97 tons of NO_X emissions from PSI Energy, Noblesville Generating Station.

These NO_X emissions credits fulfilled the requirements of Emission Offset under 326 IAC 2-3.

D.4.4 Particulate Matter Emission Limitations [326 IAC 11-4-2]

Pursuant to 326 IAC 11-4-2(a)(2), the particulate matter content from FURN 611 (Stack 6-21) shall not exceed 0.25 grain per dry standard cubic feet.

D.4.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B – Preventive Maintenance Plan, of this permit, is required for the FURN 611 Baghouse.

Compliance Determination Requirements

D.4.6 Baghouse Operation [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule or in this permit, the FURN 611 Baghouse for particulate control shall be in operation and control emissions at all times when FURN 611 is in operation and exhausting to the outside atmosphere.

D.4.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)] [326 IAC 2-1.1-11] [40 CFR Part 63, Subpart NNN]

(a) Within sixty (60) day from achieving maximum capacity of the proposed expansion, but no later than one hundred and eighty (180) days after initial startup of the FURN 611, the Permittee shall conduct performance tests on Stack 6-21 for the following:

(1) PM/PM_{10} – to verify compliance with the PM /PM_{10} limitations in Condition D.4.1 – PSD Minor Limits, Condition D.4.4 – Particulate Matter Emission Limitations, Condition D.4.8 – Bag Leak Detection System (BLDS), and 40 CFR Part 63, Subpart NNN;

(2) CO – to verify compliance with the CO PSD Minor Limits in Condition D.4.1 – PSD Minor Limits;

utilizing methods as approved by the Commissioner.

(b) The PM/PM_{10} test shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration. PM_{10} includes filterable and condensible PM_{10}.

(c) The CO test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

(d) Testing shall be conducted in accordance with Section C – Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.4.8 Bag Leak Detection System (BLDS)

Compliance with §63.1383(b) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN) shall satisfy all bag leak detection system (BLDS) requirements for FURN 611.

D.4.9 Visible Emissions Notations

(a) Visible emission notations of FURN 611 (Stack 6-21) shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.10 Record Keeping Requirements

(a) To document compliance with Condition D.4.3 – NOx LAER Requirements, the Permittee shall maintain records of the actual molten glass produced and make such records available upon request to IDEM, OAQ, and the US EPA.

(b) To document compliance with Condition D.4.9 – Visible Emissions Notations, the Permittee shall maintain records of visible emission notations of the baghouse exhaust and make such records available upon request to IDEM, OAQ, and the US EPA.

(c) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(d) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

FORMING – Stack 6-22

(1) 611 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 611 FORMING, utilizing natural gas for fiberization. Products formed in 611 FORMING are ready for packaging.
- The nominal capacity of 611 FORMING has been classified as confidential information.
- The particulate emissions from 611 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 611 FORMING exhaust through a stack identified as Stack 6-22.

(2) 612 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 612 FORMING, utilizing natural gas for fiberization. Products formed in 612 FORMING are ready for packaging.
- The nominal capacity of 612 FORMING has been classified as confidential information.
- The particulate emissions from 612 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 612 FORMING exhaust through a stack identified as Stack 6-22.

(3) 613 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.
- The nominal capacity of 613 FORMING has been classified as confidential information.
- The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP) This wet ESP is common to all the forming sections.
- Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.

(4) 614 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.
- The nominal capacity of 614 FORMING has been classified as confidential information.
- The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.

CURING/COOLING – Stack 6-29

(5) 613 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.
- The nominal capacity of 613 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.
- The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.

- Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.

(6) 614 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.
- The nominal capacity of 614 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.
- The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.5.1 PSD Minor Limits [326 IAC 2-2]

In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply to the forming sections (Stack 6-22) and curing/cooling sections (Stack 6-29) combined:

(a) The PM and PM_{10} emissions after control shall not exceed 4.4 pounds per ton of glass pulled and 55.0 pounds per hour.

PM_{10} includes filterable and condensible PM_{10}.

Compliance with these PM and PM_{10} limits satisfies the allowable particulate emission rates specified in 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).

(b) The CO emissions shall not exceed 52.5 pounds per hour.

(c) The SO_2 emissions shall not exceed 2.5 pounds per hour.

(d) The molten glass to be formed, cured and cooled by MFG 611 shall not exceed 107,310 tons of molten glass per 12-consecutive month period, with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 2-2 shall not apply to the expansion.

D.5.2 VOC Emission Offset Minor Limits [326 IAC 2-3]

In order to render the 326 IAC 2-3 (Emission Offset) requirements not applicable, the VOC emissions after control from the forming sections (Stack 6-22) and curing/cooling sections (Stack 6-29) combined shall not exceed 28.13 pounds per hour.

Therefore, the requirements of 326 IAC 2-3 shall not apply to the expansion.

D.5.3 NO_x LAER and NO_2 PSD BACT Requirements [326 IAC 2-3] [326 IAC 2-2]

Pursuant to 326 IAC 2-3 (Emission Offset) and 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements:

(a) Low NOx burners shall be installed and utilized to reduce the NOx emissions from the following operations:

– 613 CURING/COOLING; and

– 614 CURING/COOLING.

(b) The NO_x emissions after control from the forming sections (Stack 6-22) and curing/cooling sections (Stack 6-29) combined shall not exceed 2.66 pounds of NO_x per ton of glass pulled and 33.25 pounds per hour.

(c) The loss on ignition (LOI) of the binders used by the 611 FORMING, 612 FORMING, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING combined shall not exceed 18%.

D.5.4 Clean Units [326 IAC 2-3.2] [326 IAC 2-2.2]

(a) 613 CURING/COOLING

(1) Pursuant to 326 IAC 2-3.2 (Clean Unit) and 326 IAC 2-2.2 (Clean Unit), the 613 CURING/COOLING is classified as Clean Unit for NOx.

(2) The Clean Unit designation for 613 CURING/COOLING is in effect for ten (10) years from its initial start up.

(3) In order to maintain the clean unit designation for 613 CURING/COOLING, the Permittee shall comply with the NOx limits specified in Conditions D.5.3 and D.4.2 of this permit.

(b) 614 CURING/COOLING

(1) Pursuant to 326 IAC 2-3.2 (Clean Unit) and 326 IAC 2-2.2 (Clean Unit), the 614 CURING/COOLING is classified as Clean Unit for NOx.

(2) The Clean Unit designation for 614 CURING/COOLING is in effect for ten (10) years from its initial start up.

(3) In order to maintain the clean unit designation for 614 CURING/COOLING, the Permittee shall comply with the NOx limits specified in Conditions D.5.3 and D.4.2 of this permit.

D.5.5 Volatile Organic Compound (VOC) BACT Requirements [326 IAC 8-1-6]

(a) 611 FORMING
The VOC emissions before control from 611 FORMING shall not exceed 4.7 pounds per hour. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

(b) 612 FORMING
Pursuant to 326 IAC 8-1-6, the following BACT requirements apply:

(1) The VOC emissions before control from 612 FORMING shall not exceed 6.1 pounds per hour of VOC emissions.

(2) The loss on ignition (LOI) of the binders used by 612 FORMING shall not exceed 18%.

(c) 613 FORMING and 613 CURING/COOLING
Pursuant to 326 IAC 8-1-6, the following BACT requirements apply:

(1) A Regenerative Thermal Oxidizer (RTO) shall be installed and utilized to control the VOC and HAPs emissions from the 613 CURING/COOLING.

(2) The overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 613 CURING/COOLING.

(3) The combined VOC emissions after control from 613 FORMING and 613 CURING/COOLING shall not exceed 9.0 pounds per hour of VOC emissions.

(4) The loss on ignition (LOI) of the binders used by 613 FORMING and 613 CURING/COOLING combined shall not exceed 18%.

(d) 614 FORMING and 614 CURING/COOLING
Pursuant to 326 IAC 8-1-6, the following BACT requirements apply:

(1) A Regenerative Thermal Oxidizer (RTO) shall be installed and utilized to control the VOC and HAPs emissions from the 614 CURING/COOLING.

(2) The overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 614 CURING/COOLING.

(3) The combined VOC emissions after control from the 614 FORMING and 614 CURING/COOLING shall not exceed 8.4 pounds per hour of VOC emissions.

(4) The loss on ignition (LOI) of the binders used by 614 FORMING and 614 CURING/COOLING combined shall not exceed 18%.

(e) Stack 6-22 and Stack 6-29
Pursuant to 326 IAC 8-1-6, the combined VOC emissions from Stack 6-22 and Stack 6-29 shall not exceed 2.25 pounds per ton of molten glass and 28.13 pounds per hour.

D.5.6 Particulate Matter Emission Limitations [326 IAC 11-4-2]

Pursuant to 326 IAC 11-4-2(a), the particulate matter content from Stack 6-22 shall not exceed 0.025 grain per dry standard cubic feet.

Stack 6-22 is the stack exhaust of the following forming sections:

– 611 FORMING,
– 612 FORMING,
– 613 FORMING, and
– 614 FORMING.

D.5.7 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B – Preventive Maintenance Plan, of this permit, is required for the wet electrostatic precipitator (ESP), and RTOs.

Compliance Determination Requirements

D.5.8 Low NO_x Burners Operation [326 IAC 2-3] [326 IAC 2-7-6(6)] [326 IAC 2-2]

Except as otherwise provided by statute or rule or in this permit, the low NOx burners for NOx control shall be in operation and control emissions from the:

– 613 CURING/COOLING and

– 614 CURING/COOLING

at all times when any of these forming and curing/cooling sections are in operation.

D.5.9 Wet Electrostatic Precipitator (ESP) Operation [326 IAC 2-7-6(6)] [326 IAC 2-3] [326 IAC 11-4-2]

Except as otherwise provided by statute or rule or in this permit, the wet electrostatic precipitator (ESP) for particulate control shall be in operation and control emissions from the:

– 611 FORMING,

– 612 FORMING,

– 613 FORMING, and

– 614 FORMING

at all times when any of these forming sections are in operation.

D.5.10 Regenerative Thermal Oxidizers (RTOs) Operation [326 IAC 2-7-6(6)] [326 IAC 2-2] [326 IAC 2-3] [326 IAC 8-1-6]

Except as otherwise provided by statute or rule or in this permit, the RTOs for volatile organic compound (VOC), hazardous air pollutants and condensible particulates control shall be in operation and control emissions from the:

– 613 CURING/COOLING and/or

– 614 CURING/COOLING

at all times when any of these curing/cooling sections are in operation.

D.5.11 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]

(a) Within sixty (60) days after achieving maximum capacity of the proposed modification, but no later than one hundred and eighty (180) days after initial startup of the proposed expansion, the Permittee shall perform compliance testing on Stack 6-22 and Stack 6-29 for the following:

(1) NO_x – to verify compliance with the NO_x limitations in Condition D.5.3 – NO_x LAER and NO_2 PSD BACT Requirements;

(2) VOC – to verify compliance with the VOC limitations in Condition D.5.2 – VOC Emission Offset Minor Limits, and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements;

(3) RTO’s overall control efficiency – to verify compliance with the overall control efficiency requirement in Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements;

(4) PM/ PM_{10} – to verify compliance with the PM/PM_{10} limitations in Condition D.5.1 – PSD Minor Limits, and Condition D.5.6 – Particulate Matter Emission Limitations;

(5) CO – to verify compliance with the CO limitation in Condition D.5.1 – PSD Minor Limits;

utilizing methods as approved by the Commissioner.

Stack 6-22 is the stack exhaust of the following forming sections:

– 611 FORMING,

– 612 FORMING,

– 613 FORMING, and

– 614 FORMING.

Stack 6-29 is the stack exhaust of the following:

– 613 CURING/COOLING,

– 614 CURING/COOLING, and

– two (2) RTOs.

(b) The NO_x tests shall be repeated at least once every year from the date of the last valid compliance demonstrations.

(c) The VOC tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstrations.

(d) The PM/PM_{10} tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

PM_{10} includes filterable and condensible PM_{10}.

(e) The CO test shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

(f) In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(g) Testing shall be conducted in accordance with Section C – Performance Testing.

D.5.12 Thermal Oxidizer Operating Temperature [326 IAC 8-1-6] [326 IAC 2-3]

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature. For the purposes of this condition, continuous shall mean no less than once per minute.

The output of this system shall be recorded as a 3-hour average. From the initial operation of the thermal oxidizer until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,475^{o}F.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with VOC limits in Condition D.5.2 – VOC Emission Offset Minor Limits and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements, as approved by IDEM.

(c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.

D.5.13 Thermal Oxidizer Parametric Monitoring [326 IAC 8-1-6] [326 IAC 2-3]

(a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with VOC limits in Condition D.5.2 VOC Emission Offset Minor Limits and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements, as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.5.14 Visible Emissions Notations [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) Visible emission notations of Stack 6-22 exhaust and Stack 6-29 exhaust shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

Stack 6-22 is the stack exhaust of the following forming sections:

– 611 FORMING,
– 612 FORMING,
– 613 FORMING, and
– 614 FORMING.

Stack 6-29 is the stack exhaust of the following:

– 613 CURING/COOLING,
– 614 CURING/COOLING, and
– two (2) RTOs.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.5.15 Wet Electrostatic Precipitator (ESP) Parametric Monitoring

(a) The Permittee shall determine the appropriate primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate of the wet electrostatic precipitator (ESP) from the most recent valid stack test that demonstrates compliance with particulate limits in Conditions D.5.1 – PSD Minor limits, and Condition D.5.6 – Particulate Matter Emission Limitations, as approved by IDEM.

(b) The primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate of the wet electrostatic precipitator (ESP) shall be observed at least once per day when the wet electrostatic precipitator (ESP) is in operation. On and after the date the approved stack test results are available, the appropriate primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate shall be maintained within the normal range as established in most recent compliant stack test.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.16 Record Keeping Requirements

(a) To document compliance with Condition D.5.1 – PSD Minor Limits, Condition D.5.2 – VOC Emission Offset Minor Limits, and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements, the Permittee shall maintain records that are complete and sufficient to establish compliance. Records maintained shall be taken monthly and make such records available upon request to IDEM, OAQ, and the US EPA.

Examples of such records include but are not limited to:

(1) Records shall include purchase orders, invoices, and material safety data sheets (MSDS), manufacturer's certified product data sheets, and calculations necessary to verify the type and amount of binder used; and

(2) A log of the dates of use.

(b) To document compliance with Condition D.5.12 – Thermal Oxidizer Operating Temperature, the Permittee shall maintain the records of the 3-hour average operating temperature of the thermal oxidizer and make such records available upon request to IDEM, OAQ, and the US EPA.

(c) To document compliance with Condition D.5.13 – Thermal Oxidizer Parametric Monitoring, the Permittee shall maintain the records of the once per day readings of the duct pressure or fan amperage of the thermal oxidizer and make such records available upon request to IDEM, OAQ, and the US EPA.

(d) To document compliance with Condition D.5.14 – Visible Emissions Notations, the Permittee shall maintain the records of visible emission notations of Stack 6-22 exhaust and Stack 6-29 exhaust and make such records available upon request to IDEM, OAQ, and the US EPA.

(e) To document compliance with Condition D.5.15 – Wet Electrostatic Precipitator (ESP) Parametric Monitoring, the Permittee shall maintain the records of the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate of the wet electrostatic precipitator (ESP) and make such records available upon request to IDEM, OAQ, and the US EPA.

(f) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(g) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit and make such records available upon request to IDEM, OAQ, and the US EPA.

D.5.17 Reporting Requirements

To document compliance with Condition D.5.1 – PSD Minor Limits, the Permittee shall submit a quarterly summary of the actual amount of glass produced, using the Annual Molten Glass Production Report or its equivalent, located at the end of this permit. These reports shall be submitted not later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Condition C – General Reporting Requirements of this permit.

SECTION E.1 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) REQUIREMENTS [326 IAC 2-7-5(1)]

Facility Description [326 IAC 2-7-5(15)]

(a) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
- installed in 2007,
- operating at a nominal processing capacity of 300 tons of glass per day,
- operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),
- utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and
- exhausting through one (1) stack ID # 6-30.
- 602B FURNACE is common to MFG 602 and 602 LF MFG.
- 602B FURNACE is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(b) MFG 602 – Stack 2-2
One (1) rotary spin wool fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602,
- installed in 1983,
- operating at a nominal processing capacity of 130 tons of glass per day,
- utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, and
- exhausting through one (1) stack ID #2-2.
- MFG 602 produces a bonded wool fiberglass insulation building product. MFG 602 is an existing affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(h) FURNACE 611 – Stack 6-21
One (1) electrically heated glass melting furnace, identified as FURN 611, installed in 2007.
- The nominal capacity of FURN 611 is 300 tons of molten glass per day.
- The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.
- Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.
- FURNACE 611 is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

This furnace is common to:
(1) 611 FORMING,
(2) 612 FORMING,
(3) 613 FORMING,
(4) 613 CURING/COOLING,
(5) 614 FORMING, and
(6) 614 CURING/COOLING.

(i) Stack 6-22

(3) 613 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613

CURING/COOLING.
- The nominal capacity of 613 FORMING has been classified as confidential information.
- The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP) This wet ESP is common to all the forming sections.
- Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.
- 613 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(4) 614 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.
- The nominal capacity of 614 FORMING has been classified as confidential information.
- The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.
- 614 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(j) Stack 6-29

(1) 613 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.
- The nominal capacity of 613 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.
- The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.
- 613 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(2) 614 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.
- The nominal capacity of 614 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and

condensible particulate emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.

- The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.
- 614 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.1.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.3901, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING, as specified in Table 1 of 40 CFR 63, Subpart NNN in accordance with schedule in 40 CFR 63 Subpart NNN.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch – Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.1.2 Applicability of Wool Fiberglass Manufacturing NESHAP Requirements [40 CFR Part 63, Subpart NNN]

The provisions of 40 CFR Part 63, Subpart NNN (National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing) apply to the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING. A copy of this rule is available on the US EPA Air Toxics Website at www.epa.gov/ttn/atw/woolfib/woolfipg.html.

E.1.3 Wool Fiberglass Manufacturing Requirements [40 CFR Part 63, Subpart NNN]

Pursuant to CFR Part 63, Subpart NNN, the Permittee shall comply with the provisions of National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing for the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING, as specified as follows upon startup.

§63.1380 Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section, the requirements of this subpart apply to the owner or operator of each wool fiberglass manufacturing facility that is a major source or is located at a facility that is a major source.

(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAPs), as measured according to the methods and procedures in this subpart, emitted from the following new and existing sources at a wool fiberglass manufacturing facility subject to this subpart:

(1) Each new and existing glass-melting furnace located at a wool fiberglass manufacturing facility;

(2) Each new and existing rotary spin wool fiberglass manufacturing line producing a bonded wool fiberglass building insulation product; and

(d) The provisions of this part 63, subpart A that apply and those that do not apply to this subpart are specified in Table 1 of this subpart.

§63.1381 Definitions.

Terms used in this subpart are defined in the Clean Air Act, in §63.2, or in this section as follows:

Bag leak detection system means systems that include, but are not limited to, devices using triboelectric, light scattering, and other effects to monitor relative or absolute particulate matter (PM) emissions.

Bonded means wool fiberglass to which a phenol-formaldehyde binder has been applied.

Building insulation means bonded wool fiberglass insulation, having a loss on ignition of less than 8 percent and a density of less than 32 kilograms per cubic meter (kg/m^3) (2 pounds per cubic foot [lb/ft^3]).

Cold top electric furnace means an all-electric glass-melting furnace that operates with a temperature of 120 °C (250 °F) or less as measured at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface.

Flame attenuation means a process used to produce wool fiberglass where molten glass flows by gravity from melting furnaces, or pots, to form filaments that are drawn down and attenuated by passing in front of a high-velocity gas burner flame.

Glass-melting furnace means a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming processes. The forming apparatus, including flow channels, is not considered part of the glass-melting furnace.

Glass pull rate means the mass of molten glass that is produced by a single glass-melting furnace or that is used in the manufacture of wool fiberglass at a single manufacturing line in a specified time period.

Hazardous Air Pollutant (HAP) means any air pollutant listed in or pursuant to section 112(b) of the Clean Air Act.

Heavy-density product means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 11 to 25 percent and a density of 8 to 48 kg/m^3 (0.5 to 3 lb/ft^3).

Incinerator means an enclosed air pollution control device that uses controlled flame combustion to convert combustible materials to noncombustible gases.

Loss on ignition (LOI) means the percent decrease in weight of wool fiberglass after it has been ignited. The LOI is used to monitor the weight percent of binder in wool fiberglass.

Manufacturing line means the manufacturing equipment for the production of wool fiberglass that consists of a forming section where molten glass is fiberized and a fiberglass mat is formed and which may include a curing section where binder resin in the mat is thermally set and a cooling section where the mat is cooled.

New source means any affected source the construction or reconstruction of which is commenced after March 31, 1997.

Pipe product means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 8 to 14 percent and a density of 48 to 96 kg/m^3 (3 to 6 lb/ft^3).

Rotary spin means a process used to produce wool fiberglass building insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high-velocity air flow. Any process used to produce bonded wool fiberglass building insulation by a process other than flame attenuation is considered rotary spin.

Wool fiberglass means insulation materials composed of glass fibers made from glass produced or melted at the same facility where the manufacturing line is located.

Wool fiberglass manufacturing facility means any facility manufacturing wool fiberglass on a rotary spin manufacturing line or on a flame attenuation manufacturing line.

§63.1382 Emission standards

(a) *Emission limits* – (1) *Glass-melting furnaces*. On and after the date the initial performance test is completed or required to be completed under §63.7 of this part, whichever date is earlier, the owner or operator shall not discharge or cause to be discharged into the atmosphere in excess of 0.25 kilogram (kg) of particulate matter (PM) per megagram (Mg) (0.5 pound [lb] of PM per ton) of glass pulled for each new or existing glass-melting furnace.

(2) *Rotary spin manufacturing lines*. On and after the date the initial performance test is completed or required to be completed under §63.7 of this part, whichever date is earlier, the owner or operator shall not discharge or cause to be discharged into the atmosphere in excess of:

(i) 0.6 kg of formaldehyde per megagram (1.2 lb of formaldehyde per ton) of glass pulled for each existing rotary spin manufacturing line; and

(ii) 0.4 kg of formaldehyde per megagram (0.8 lb of formaldehyde per ton) of glass pulled for each new rotary spin manufacturing line.

(b) *Operating limits*. On and after the date on which the performance test required to be conducted by §§63.7 and 63.1384 is completed, the owner or operator must operate all affected control equipment and processes according to the following requirements.

(1)(i) The owner or operator must initiate corrective action within 1 hour of an alarm from a bag leak detection system and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the bag leak detection system alarm is sounded for more than 5 percent of the total operating time in a 6-month block reporting period.

(2)(i) The owner or operator must initiate corrective action within 1 hour when any 3-hour block average of the monitored electrostatic precipitator (ESP) parameter is outside the limit(s) established during the performance test as specified in §63.1384 and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64 subpart D when the monitored ESP parameter is outside the limit(s) established during the performance test as specified in §63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.

(iii) The owner or operator must operate the ESP such that the monitored ESP parameter is not outside the limit(s) established during the performance test as specified in §63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.

(5)(i) The owner or operator must initiate corrective action within 1 hour when the average glass pull rate of any 4-hour block period for glass melting furnaces equipped with continuous glass pull rate monitors, or daily glass pull rate for glass melting furnaces not so equipped, exceeds the average glass pull rate established during the performance test as specified in §63.1384, by greater than 20 percent and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the glass pull rate exceeds, by more than 20 percent, the average glass pull rate established during the performance test as specified in §63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.

(iii) The owner or operator must operate each glass-melting furnace such that the glass pull rate does not exceed, by more than 20 percent, the average glass pull rate established during the performance test as specified in §63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.

(8)(i) The owner or operator must initiate corrective action within 1 hour when the monitored process parameter level(s) is outside the limit(s) established during the performance test as specified in §63.1384 for the process modification(s) used to control formaldehyde emissions and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the process parameter(s) is outside the limit(s) established during the performance test as specified in §63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.

(iii) The owner or operator must operate the process modifications such that the monitored process parameter(s) is not outside the limit(s) established during the performance test as specified in §63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.

(9) The owner or operator must use a resin in the formulation of binder such that the free-formaldehyde content of the resin used does not exceed the free-formaldehyde range contained in the specification for the resin used during the performance test as specified in §63.1384.

(10) The owner or operator must use a binder formulation that does not vary from the specification and operating range established and used during the performance test as specified in §63.1384. For the purposes of this standard, adding or increasing the quantity of urea and/or lignin in the binder formulation does not constitute a change in the binder formulation.

§63.1383 Monitoring requirements.

On and after the date on which the performance test required to be conducted by §§63.7 and 63.1384 is completed, the owner or operator must monitor all affected control equipment and processes according to the following requirements.

(a) The owner or operator of each wool fiberglass manufacturing facility must prepare for each glass-melting furnace, rotary spin manufacturing line, and flame attenuation manufacturing line subject to the provisions of this subpart, a written operations, maintenance, and monitoring plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit. The plan must include the following information:

(1) Procedures for the proper operation and maintenance of process modifications and add-on control devices used to meet the emission limits in §63.1382;

(2) Procedures for the proper operation and maintenance of monitoring devices used to determine compliance, including quarterly calibration and certification of accuracy of each monitoring device according to the manufacturer's instructions; and

(3) Corrective actions to be taken when process parameters or add-on control device parameters deviate from the limit(s) established during initial performance tests.

(b)(1) Where a baghouse is used to control PM emissions from a glass-melting furnace, the owner or operator shall install, calibrate, maintain, and continuously operate a bag leak detection system.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(ii) The bag leak detection system sensor must produce output of relative PM emissions.

(iii) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. If a negative pressure or induced air baghouse is used, the bag leak detection system must be installed downstream of the baghouse. Where multiple bag leak detection systems are required (for either type of baghouse), the system instrumentation and alarm may be shared among the monitors.

(v) A triboelectric bag leak detection system shall be installed, operated, adjusted, and maintained in a manner consistent with the U.S. Environmental Protection Agency guidance, "Fabric Filter Bag Leak Detection Guidance" (EPA–454/R–98–015, September 1997). Other bag leak detection systems shall be installed, operated, adjusted, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(vi) Initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.

(vii) Following the initial adjustment, the owner or operator shall not adjust the range, averaging period, alarm setpoints, or alarm delay time except as detailed in the approved operations, maintenance, and monitoring plan required under paragraph (a) of this section. In no event shall the range be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless a responsible official as defined in §63.2 of the general provisions in subpart A of this part certifies that the baghouse has been inspected and found to be in good operating condition.

(2) The operations, maintenance, and monitoring plan required by paragraph (a) of this section must specify corrective actions to be followed in the event of a bag leak detection system alarm. Example corrective actions that may be included in the plan include the following:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media, or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions.

(f)(1) The owner or operator of an existing glass-melting furnace equipped with continuous glass pull rate monitors must monitor and record the glass pull rate on an hourly basis. For glass-melting furnaces that are not equipped with continuous glass pull rate monitors, the glass pull rate must be monitored and recorded once per day.

(2) On any new glass-melting furnace, the owner or operator must install, calibrate, and maintain a continuous glass pull rate monitor that monitors and records on an hourly basis the glass pull rate.

(j) The owner or operator must monitor and record the free-formaldehyde content of each resin shipment received and used in the formulation of binder.

(k) The owner or operator must monitor and record the formulation of each batch of binder used.

(l) The owner or operator must monitor and record at least once every 8 hours, the product LOI and product density of each bonded wool fiberglass product manufactured.

(m) For all control device and process operating parameters measured during the initial performance tests, the owners or operators of glass-melting furnaces, rotary spin manufacturing lines or flame attenuation manufacturing lines subject to this subpart may change the limits established during the initial performance tests if additional performance testing is conducted to verify that, at the new control device or process parameter levels, they comply with the applicable emission limits in §63.1382. The owner or operator shall conduct all additional performance tests according to the procedures in this part 63, subpart A and in §63.1384.

§63.1384 Performance test requirements.

(a) The owner or operator subject to the provisions of this subpart shall conduct a performance test to demonstrate compliance with the applicable emission limits in §63.1382. Compliance is demonstrated when the emission rate of the pollutant is equal to or less than each of the applicable emission limits in §63.1382. The owner or operator shall conduct the performance test according to the procedures in 40 CFR part 63, subpart A and in this section.

(1) All monitoring systems and equipment must be installed, operational, and calibrated prior to the performance test.

(2) Unless a different frequency is specified in this section, the owner or operator must monitor and record process and/or add-on control device parameters at least every 15 minutes during the performance tests. The arithmetic average for each parameter must be calculated using all of the recorded measurements for the parameter.

(3) During each performance test, the owner or operator must monitor and record the glass pull rate for each glass-melting furnace and, if different, the glass pull rate for each rotary spin manufacturing line and flame attenuation manufacturing line. Record the glass pull rate every 15 minutes during any performance test required by this subpart and determine the arithmetic average of the recorded measurements for each test run and calculate the average of the three test runs.

(4) The owner or operator shall conduct a performance test for each existing and new glass-melting furnace.

(8) The owner or operator must conduct a performance test for each rotary spin manufacturing line, subject to this subpart, while producing the building insulation with the highest LOI expected to be produced on that line; and for each flame attenuation manufacturing line, subject to this subpart, while producing the heavy-density product or pipe product with the highest LOI expected to be produced on the affected line.

(9) The owner or operator of each rotary spin manufacturing line and flame attenuation manufacturing line regulated by this subpart must conduct performance tests using the resin with the highest free-formaldehyde content. During the performance test of each rotary spin manufacturing line and flame attenuation manufacturing line regulated by this subpart, the owner or operator shall monitor and record the free-formaldehyde content of the resin, the binder formulation used, and the product LOI and density.

(12) During the performance test, the owner or operator of a rotary spin manufacturing line or affected flame attenuation manufacturing line shall continuously record the operating temperature of each incinerator and record the average during each 1-hour test; the average operating temperature of the three 1-hour tests shall be used to monitor compliance.

(13) Unless disapproved by the Administrator, an owner or operator of a rotary spin or flame attenuation manufacturing line regulated by this subpart may conduct short-term experimental production runs using binder formulations or other process modifications where the process parameter values would be outside those established during performance tests without first conducting performance tests. Such runs must not exceed 1 week in duration unless the Administrator approves a longer period. The owner or operator must notify the Administrator and postmark or deliver the notification at least 15 days prior to commencement of the short-term experimental production runs. The Administrator must inform the owner or operator of a decision to disapprove or must request additional information prior to the date of the short-term experimental production runs. Notification of intent to perform an experimental short-term production run shall include the following information:

(i) The purpose of the experimental production run;

(ii) The affected line;

(iii) How the established process parameters will deviate from previously approved levels;

(iv) The duration of the experimental production run;

(v) The date and time of the experimental production run; and

(vi) A description of any emission testing to be performed during the experimental production run.

(b) To determine compliance with the PM emission limit for glass-melting furnaces, use the following equation:

$$E = \frac{C \times Q \times K_1}{P} \qquad \text{(Eq. 1)}$$

[View or download PDF: http://a257.g.akamaitech.net/7/257/2422/04mar20050800/www.access.gpo.gov/ecfr/graphics/pdfs/er14jn99.040.pdf]

Where:

E = Emission rate of PM, kg/Mg (lb/ton) of glass pulled;

C = Concentration of PM, g/dscm (gr/dscf);

Q = Volumetric flow rate of exhaust gases, dscm/h (dscf/h);

K_1 = Conversion factor, 1 kg/1,000 g (1 lb/7,000 gr); and

P = Average glass pull rate, Mg/h (tons/h).

(c) To determine compliance with the emission limit for formaldehyde for rotary spin manufacturing lines and flame attenuation forming processes, use the following equation:

$$E = \frac{C \times MW \times Q \times K_1 \times K_2}{K_3 \times P \times 10^6} \qquad \text{(Eq. 2)}$$

[View or download PDF: http://a257.g.akamaitech.net/7/257/2422/04mar20050800/www.access.gpo.gov/ecfr/graphics/pdfs/er14jn99.041.pdf]

Where:

E = Emission rate of formaldehyde, kg/Mg (lb/ton) of glass pulled;

C = Measured volume fraction of formaldehyde, ppm;

MW = Molecular weight of formaldehyde, 30.03 g/g-mol;

Q = Volumetric flow rate of exhaust gases, dscm/h (dscf/h);

K1 = Conversion factor, 1 kg/1,000 g (1 lb/453.6 g);

K2 = Conversion factor, 1,000 L/m^3 (28.3 L/ft^3);

K3 = Conversion factor, 24.45 L/g-mol; and

P = Average glass pull rate, Mg/h (tons/h).

§63.1385 Test methods and procedures.

(a) The owner or operator shall use the following methods to determine compliance with the applicable emission limits:

(1) Method 1 (40 CFR part 60, appendix A) for the selection of the sampling port location and number of sampling ports;

(2) Method 2 (40 CFR part 60, appendix A) for volumetric flow rate;

(3) Method 3 or 3A (40 CFR part 60, appendix A) for O2 and CO2 for diluent measurements needed to correct the concentration measurements to a standard basis;

(4) Method 4 (40 CFR part 60, appendix A) for moisture content of the stack gas;

(5) Method 5 (40 CFR part 60, appendix A) for the concentration of PM. Each run shall consist of a minimum run time of 2 hours and a minimum sample volume of 60 dry standard cubic feet (dscf). The probe and filter holder heating system may be set to provide a gas temperature no greater than 177 ±14 °C (350 ±25 °F);

(6) Method 316 or Method 318 (appendix A of this part) for the concentration of formaldehyde. Each run shall consist of a minimum run time of 1 hour;

(7) Method contained in appendix A of this subpart for the determination of product LOI;

(8) Method contained in appendix B of this subpart for the determination of the free-formaldehyde content of resin;

(9) Method contained in appendix C of this subpart for the determination of product density;

(10) An alternative method, subject to approval by the Administrator.

(b) Each performance test shall consist of 3 runs. The owner or operator shall use the average of the three runs in the applicable equation for determining compliance.

§63.1386 Notification, recordkeeping, and reporting requirements.

(a) *Notifications*. As required by §63.9(b) through (h) of this part, the owner or operator shall submit the following written initial notifications to the Administrator:

(2) Notification that a source is subject to the standard, where the initial startup is before June 14, 2002.

(3) Notification that a source is subject to the standard, where the source is new or has been reconstructed, the initial startup is after June 14, 2002, and for which an application for approval of construction or reconstruction is not required;

(5) Notification of special compliance obligations;

(6) Notification of performance test; and

(7) Notification of compliance status.

(b) *Performance test report*. As required by §63.10(d)(2) of the general provisions, the owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in paragraph (a)(7) of this section.

(c) *Startup, shutdown, and malfunction plan and reports*. (1) The owner or operator shall develop a written plan as described in §63.6(e)(3) that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process modifications and control systems used to comply with the standards. In addition to the information required in §63.6(e)(3), the plan shall include:

(i) Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended;

(ii) Corrective actions to be taken in the event of a malfunction of a control device or process modification, including procedures for recording the actions taken to correct the malfunction or minimize emissions; and

(iii) A maintenance schedule for each control device and process modification that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

(2) The owner or operator shall also keep records of each event as required by §63.10(b) of this part and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in §63.10(e)(3)(iv) of this part.

(d) *Recordkeeping*. (1) As required by §63.10(b) of this part, the owner or operator shall maintain files of all information (including all reports and notifications) required by the general provisions and this subpart:

(i) The owner or operator must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site;

(ii) The owner or operator may retain records on microfilm, on a computer, on computer disks, on magnetic tape, or on microfiche; and

(iii) The owner or operator may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.

(2) In addition to the general records required by §63.10(b)(2) of this part, the owner or operator shall maintain records of the following information:

(i) Any bag leak detection system alarms, including the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected;

(ii) ESP parameter value(s) used to monitor ESP performance, including any period when the value(s) deviated from the established limit(s), the date and time of the deviation, when corrective actions were initiated, the cause of the deviation, an explanation of the corrective actions taken, and when the cause of the deviation was corrected;

(v) The formulation of each binder batch and the LOI and density for each product manufactured on a rotary spin manufacturing line or flame attenuation manufacturing line subject to the provisions of this subpart, and the free formaldehyde content of each resin shipment received and used in the binder formulation;

(ix) Glass pull rate, including any period when the pull rate exceeded the average pull rate established during the performance test by more than 20 percent, the date and time of the exceedance, when corrective actions were initiated, the cause of the exceedance, an explanation of the corrective actions taken, and when the cause of the exceedance was corrected.

(e) *Excess emissions report*. As required by §63.10(e)(3)(v) of this part, the owner or operator shall report semiannually if measured emissions are in excess of the applicable standard or a monitored parameter deviates from the levels established during the performance test. The report shall contain the information specified in §63.10(c) of this part as well as the additional records required by the recordkeeping requirements of paragraph (d) of this section. When no deviations have occurred, the owner or operator shall submit a report stating that no excess emissions occurred during the reporting period.

§63.1387 Compliance dates.

(a) *Compliance dates*. The owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of this subpart by no later than:

(1) June 14, 2002, for an existing glass-melting furnace, rotary spin manufacturing line, or flame attenuation manufacturing line; or

(2) Upon startup for a new glass-melting furnace, rotary spin manufacturing line, or flame attenuation manufacturing line.

(b) *Compliance extension*. The owner or operator of an existing source subject to this subpart may request from the Administrator an extension of the compliance date for the emission standards for one additional year if such additional period is necessary for the installation of controls. The owner or operator shall submit a request for an extension according to the procedures in §63.6(i)(3) of this part.

§63.1388 Implementation and enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in §§63.1380, 63., and 63.1387.

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f), as defined in §63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under §63.8(f), as defined in §63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f), as defined in §63.90, and as required in this subpart.

§§63.1389-63.1399 [Reserved]

Table 1 to Subpart NNN of Part 63 – Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart NNN

General Provisions Citation	Requirement	Applies to Subpart NNN	Explanation
63.1(a)(1)-(a)(4)	Applicability	Yes	
63.1(a)(5)		No	[Reserved].
63.1(a)(6)-(a)(8)		Yes	
63.1(a)(9)		No	[Reserved].
63.1(a)(10)-(a)(14)		Yes	
63.1(b)(1)-(b)(3)	Initial Applicability Determination.	Yes	
63.1(c)(1)-(c)(2)	Applicability After Standard Established.	Yes	
63.1(c)(3)		No	[Reserved].
63.1(c)(4)-(c)(5)		Yes	
63.1(d)		No	[Reserved].
63.1(e)	Applicability of Permit Program.	Yes	
63.2	Definitions	Yes	Additional definitions in §63.1381.
63.3(a)-(c)	Units and Abbreviations	Yes	
63.4(a)(1)-(a)(3)	Prohibited Activities.	Yes	
63.4(a)(4)		No	[Reserved].
63.4(a)(5)		Yes	
63.4(b)-(c)		Yes	
63.5(a)(1)-(a)(2)	Construction/ Reconstruction.	Yes	
63.5(b)(1)	Existing, New, Reconstructed.	Yes	
63.5(b)(2)		No	[Reserved]
63.5(b)(3)-(b)(6)		Yes	
63.5(c)		No	[Reserved]
63.5(d)	Approval of Construction/ Reconstruction.	Yes	
63.5(e)		Yes	
63.5(f)		Yes	
63.6(a)	Compliance with Standards and Maintenance Requirements.	Yes	
63.6(b)(1)-(b)(5)		Yes	
63.6(b)(6)		No	[Reserved]
63.6(b)(7)		Yes	
63.6(c)(1)	Compliance Date for Existing Sources.	Yes	§63.1387 specifies compliance dates.
63.6(c)(2)		Yes	
63.6(c)(3)-(c)(4)		No	[Reserved]
63.6(c)(5)		Yes	
63.6(d)		No	[Reserved]
63.6(e)(1)-(e)(2)	Operation & Maintenance.	Yes	§63.1383 specifies operations/ maintenance plan.
63.6(e)(3)	Startup, Shutdown Malfunction Plan.	Yes	

Table 1 to Subpart NNN of Part 63 – Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart NNN

General Provisions Citation	Requirement	Applies to Subpart NNN	Explanation
63.6(f)(1)-(f)(3)	Compliance with Nonopacity Emission Standards.	Yes	
63.6(g)(1)-(g)(3)	Alternative Nonopacity Standard.	Yes	
63.6(h)	Opacity/VE Standards.	No	Subpart NNN-no COMS, VE or opacity standards.
63.6(i)(1)-(i)(14)	Extension of Compliance	Yes	
63.6(i)(15)		No	[Reserved]
63.6(i)(16)		Yes	
63.6(j)	Exemption from Compliance.	Yes	
63.7(a)	Performance Testing Requirements.	Yes	§63.1384 has specific requirements.
63.7(b)	Notification.	Yes	
63.7(c)	Quality Assurance Program/Test Plan.	Yes	
63.7(d)	Performance Testing Facilities.	Yes	
63.7(e)(1)-(e)(4)	Conduct of Performance Tests.	Yes	
63.7(f)	Alternative Test Method	Yes	
63.7(g)	Data Analysis	Yes	
63.7(h)	Waiver of Performance Tests.	Yes	
63.8(a)(1)-(a)(2)	Monitoring Requirements	Yes	
63.8(a)(3)		No	[Reserved]
63.8(a)(4)		Yes	
63.8(b)	Conduct of Monitoring	Yes	
63.8(c)	CMS Operation/ Maintenance.	Yes	
63.8(d)	Quality Control Program	Yes	
63.8(e)	Performance Evaluation for CMS.	Yes	
63.8(f)	Alternative Monitoring Method.	Yes	
63.8(g)	Reduction of Monitoring Data.	Yes	
63.9(a)	Notification Requirements.	Yes	
63.9(b)	Initial Notifications.	Yes	
63.9(c)	Request for Compliance Extension.	Yes	
63.9(d)	New Source Notification for Special Compliance Requirements.	Yes	
63.9(e)	Notification of Performance Test.	Yes	
63.9(f)	Notification of VE/ Opacity Test.	No	Opacity/VE tests not required.
63.9(g)	Additional CMS Notifications.	Yes	
63.9(h)(1)-(h)(3)	Notification of Compliance Status.	Yes	
63.9(h)(4)		No	[Reserved]
63.9(h)(5)-(h)(6)		Yes	
63.9(i)	Adjustment of Deadlines	Yes	

Table 1 to Subpart NNN of Part 63 – Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart NNN

General Provisions Citation	Requirement	Applies to Subpart NNN	Explanation
63.9(j)	Change in Previous Information.	Yes	
63.10(a)	Recordkeeping/Reporting	Yes	
63.10(b)	General Requirements	Yes	
63.10(c)(1)	Additional CMS Recordkeeping.	Yes	
63.10(c)(2)-(c)(4)..		No	[Reserved]
63.10(c)(5)-(c)(8)..		Yes	
63.10(c)(9)		No	[Reserved]
63.10(c)(10)-(15)		Yes	
63.10(d)(1)	General Reporting Requirements.	Yes	
63.10(d)(2)	Performance Test Results.	Yes	
63.10(d)(3)	Opacity or VE Observations.	No	No limits for VE/ opacity.
63.10(d)(4)	Progress Reports	Yes	
63.10(d)(5)	Startup, Shutdown, Malfunction Reports.	Yes	
63.10(e)(1)-(e)(3)	Additional CMS Reports.	Yes	
63.10(e)(4)	Reporting COM Data	No	COM not required.
63.10(f)	Waiver of Recordkeeping/ Reporting.	Yes	
63.11(a)	Control Device Requirements.	Yes	
63.11(b)	Flares	No	Flares not applicable.
63.12	State Authority and Delegations.	Yes	
63.13	State/Regional Addresses.	Yes	
63.14	Incorporation by Reference.	No	
63.15	Availability of Information.	Yes	

Appendix A to Subpart NNN of Part 63 – Method for the Determination of LOI

1. Purpose

The purpose of this test is to determine the LOI of cured blanket insulation. The method is applicable to all cured board and blanket products.

2. Equipment

2.1 Scale sensitive to 0.1 gram.

2.2 Furnace designed to heat to at least 540 °C (1,000 °F) and controllable to ±10 °C (50 °F).

2.3 Wire tray for holding specimen while in furnace.

3. Procedure

3.1 Cut a strip along the entire width of the product that will weigh at least 10.0 grams. Sample should be free of dirt or foreign matter.

Note: Remove all facing from sample.

3.2 Cut the sample into pieces approximately 12 inches long, weigh to the nearest 0.1 gram and record. Place in wire tray. Sample should not be compressed or overhang on tray edges.

Note: On air duct products, remove shiplaps and overspray.

3.3 Place specimen in furnace at 540 °C (1,000 °F), ±10 °C (50 °F) for 15 to 20 minutes to insure complete oxidation. After ignition, fibers should be white and should not be fused together.

3.4 Remove specimen from the furnace and cool to room temperature.

3.5 Weigh cooled specimen and wire tray to the nearest 0.1 gram. Deduct the weight of the wire tray and then calculate the loss in weight as a percent of the original specimen weight.

Appendix B to Subpart NNN of Part 63 – Free Formaldehyde Analysis of Insulation Resins by Hydroxylamine Hydrochloride

1. Scope

This method was specifically developed for water-soluble phenolic resins that have a relatively high free-formaldehyde (FF) content such as insulation resins. It may also be suitable for other phenolic resins, especially those with a high FF content.

2. Principle

2.1 a. The basis for this method is the titration of the hydrochloric acid that is liberated when hydroxylamine hydrochloride reacts with formaldehyde to form formaldoxine:

$HCHO + NH_2OH{:}HCl \rightarrow CH_2{:}NOH + H_2O + HCl$

b. Free formaldehyde in phenolic resins is present as monomeric formaldehyde, hemiformals, polyoxymethylene hemiformals, and polyoxymethylene glycols. Monomeric formaldehyde and hemiformals react rapidly with hydroxylamine hydrochloride, but the polymeric forms of formaldehyde must hydrolyze to the monomeric state before they can react. The greater the concentration of free formaldehyde in a resin, the more of that formaldehyde will be in the polymeric form. The hydrolysis of these polymers is catalyzed by hydrogen ions.

2.2 The resin sample being analyzed must contain enough free formaldehyde so that the initial reaction with hydroxylamine hydrochloride will produce sufficient hydrogen ions to catalyze the depolymerization of the polymeric formaldehyde within the time limits of the test method. The sample should contain approximately 0.3 grams free formaldehyde to ensure complete reaction within 5 minutes.

3. Apparatus

3.1 Balance, readable to 0.01 g or better.

3.2 pH meter, standardized to pH 4.0 with pH 4.0 buffer and pH 7 with pH 7.0 buffer.

3.3 50-mL burette for 1.0 N sodium hydroxide.

3.4 Magnetic stirrer and stir bars.

3.5 250-mL beaker.

3.6 50-mL graduated cylinder.

3.7 100-mL graduated cylinder.

3.8 Timer.

4. Reagents

4.1 Standardized 1.0 N sodium hydroxide solution.

4.2 Hydroxylamine hydrochloride solution, 100 grams per liter, pH adjusted to 4.00.

4.3 Hydrochloric acid solution, 1.0 N and 0.1 N.

4.4 Sodium hydroxide solution, 0.1 N.

4.5 50/50 v/v mixture of distilled water and methyl alcohol.

5. Procedure

5.1 Determine the sample size as follows:

a. If the expected FF is greater than 2 percent, go to Part A to determine sample size.

b. If the expected FF is less than 2 percent, go to Part B to determine sample size.

c. Part A: Expected FF ≥ 2 percent.

Grams resin = 60/expected percent FF

i. The following table shows example levels:

Expected % free formaldehyde	Sample size, grams
2	30.0
5	12.0
8	7.5
10	6.0
12	5.0
15	4.0

ii. It is very important to the accuracy of the results that the sample size be chosen correctly. If the milliliters of titrant are less than 15 mL or greater than 30 mL, reestimate the needed sample size and repeat the tests.

d. Part B: Expected FF < 2 percent

Grams resin = 30/expected percent FF

i. The following table shows example levels:

Expected % free formaldehyde	Sample size, grams
2	15
1	30
0.5	60

ii. If the milliliters of titrant are less than 5 mL or greater than 30 mL, reestimate the needed sample size and repeat the tests.

5.2 Weigh the resin sample to the nearest 0.01 grams into a 250-mL beaker. Record sample weight.

5.3 Add 100 mL of the methanol/water mixture and stir on a magnetic stirrer. Confirm that the resin has dissolved.

5.4 Adjust the resin/solvent solution to pH 4.0, using the prestandardized pH meter, 1.0 N hydrochloric acid, 0.1 N hydrochloric acid, and 0.1 N sodium hydroxide.

5.5 Add 50 mL of the hydroxylamine hydrochloride solution, measured with a graduated cylinder. Start the timer.

5.6 Stir for 5 minutes. Titrate to pH 4.0 with standardized 1.0 N sodium hydroxide. Record the milliliters of titrant and the normality.

6. Calculations

$$\% FF = \frac{\text{mL sodium hydroxide} \times 3.003}{\text{grams of sample}}$$

[View or download PDF: http://a257.g.akamaitech.net/7/257/2422/04mar20050800/www.access.gpo.gov/ecfr/graphics/pdfs/er14jn99.042.pdf]

7. Method Precision and Accuracy

Test values should conform to the following statistical precision:

Variance = 0.005

Standard deviation = 0.07

95% Confidence Interval, for a single determination = 0.2

8. Author

This method was prepared by K. K. Tutin and M. L. Foster, Tacoma R&D Laboratory, Georgia-Pacific Resins, Inc. (Principle written by R. R. Conner.)

9. References

9.1 GPAM 2221.2.

9.2 PR&C TM 2.035.

9.3 Project Report, Comparison of Free Formaldehyde Procedures, January 1990, K. K. Tutin.

Appendix C to Subpart NNN of Part 63 – Method for the Determination of Product Density

1. Purpose

The purpose of this test is to determine the product density of cured blanket insulation. The method is applicable to all cured board and blanket products.

2. Equipment

One square foot (12 in. by 12 in.) template, or templates that are multiples of one square foot, for use in cutting insulation samples.

3. Procedure

3.1 Obtain a sample at least 30 in. long across the machine width. Sample should be free of dirt or foreign matter.

3.2 Lay out the cutting pattern according to the plant's written procedure for the designated product.

3.2 Cut samples using one square foot (or multiples of one square foot) template.

3.3 Weigh product and obtain area weight (lb/ft^2).

3.4 Measure sample thickness.

3.5 Calculate the product density:

Density (lb/ft^3) = area weight (lb/ft^2)/thickness (ft)

E.1.4 State Only Wool Fiberglass Manufacturing NESHAP Requirements [326 IAC 20-47]

Pursuant to 326 IAC 20-47, the Permittee shall comply with the provisions of the June 14, 1999 version of 40 CFR Part 63, Subpart NNN, which are incorporated by reference as 326 IAC 20-47, for the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING. The Permittee shall comply with the provisions of 40 CFR Part 63, Subpart NNN, as listed in condition E.1.3, except the Permittee shall follow the requirements of the June 14, 1999 version of 40 CFR Part 63, Subpart NNN, as incorporated into 326 IAC 20-47, as follows.

§63.1386 Notification, recordkeeping, and reporting requirements.

(c) *Startup, shutdown, and malfunction plan and reports*. (1) The owner or operator shall develop and implement a written plan as described in § 63.6(e)(3) of this part that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process modifications and control systems used to comply with the standard. In addition to the information required in § 63.6(e)(3), the plan shall include:

(i) Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended;

(ii) Corrective actions to be taken in the event of a malfunction of a control device or process modification, including procedures for recording the actions taken to correct the malfunction or minimize emissions; and

(iii) A maintenance schedule for each control device and process modification that is consistent with the manufacturer's instructions and recommendations for routine and longterm maintenance.

(2) The owner or operator shall also keep records of each event as required by § 63.10(b) of this part and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in § 63.10(e)(3)(iv) of this part.

The requirements of 326 IAC 20-47 listed in this condition are not federally enforceable.

E.1.5 One-Time Deadlines Relating to Wool Fiberglass Manufacturing Notifications [40 CFR Part 63, Subpart NNN]

The Permittee shall comply with the following notification requirements by the dates listed:

Requirement	Rule Cite	Affected Facility	Deadline
General Notifications: • Notification of Performance Test • Notification: source is subject to special compliance requirements	40 CFR 63.1386(a); 40 CFR 63.7(b) and 40 CFR 63.9(e); 40 CFR 63.1386(a)(5); 40 CFR 63.9(d)	602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING	60 days before test same date as Initial Notification
Initial Notification *	40 CFR 63.1386(a) and 40 CFR 63.9(b)	MFG 602	October 12, 1999
Initial Notification *	40 CFR 63.1386(a) and 40 CFR 63.9(b)	602B FURNACE	within 120 calendar days after startup
Initial Notification *	40 CFR 63.1386(a) and 40 CFR 63.9(b)	FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING	within 120 calendar days after startup
Initial Compliance Date	40 CFR 63.1387(a)	MFG 602	June 14, 2002
Initial Compliance Date	40 CFR 63.1387(a)	602B FURNACE	Startup
Initial Compliance Date	40 CFR 63.1387(a)	FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING	Startup
Conduct Initial Compliance Demonstration (Initial Performance Test)	40 CFR 63.1384(a)	MFG 602	180 days after June 14, 2002
Conduct Initial Compliance Demonstration (Initial Performance Test)	40 CFR 63.1384(a)	602B FURNACE	180 days after startup
Conduct Initial Compliance Demonstration (Initial Performance Test)	40 CFR 63.1384(a)	FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING	180 days after startup

Requirement	Rule Cite	Affected Facility	Deadline
Notification of Compliance Status	40 CFR 63.1386(a)(7); 40 CFR 63.9(h)	602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING	within 60 days after compliance demonstration
Excess Emissions Report	40 CFR 63.1386(e); 40 CFR 63.10(e)(3)	602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING	semi-annually

The Permittee submitted the Initial Notification for FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING with the permit application for the expansion on February 28, 2005.

The Permittee submitted the Initial Notification for 602B FURNACE with the permit application for the expansion on May 24, 2006.

SECTION E.2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) REQUIREMENTS [326 IAC 2-7-5(1)]

Facility Description [326 IAC 2-7-5(15)]

(c) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),
- utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and
- exhausting through one (1) stack ID # 6-22.
- 602 LF MFG is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(f) Nine (9) rotary spin wool fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively,
- each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively,
- each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively,
- LINE 3001 – 3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.
- LINE 3001 – 3009 are affected facilities subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(i) Stack 6-22

(1) 611 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 611 FORMING, utilizing natural gas for fiberization. Products formed in 611 FORMING are ready for packaging.
- The nominal capacity of 611 FORMING has been classified as confidential information.
- The particulate emissions from 611 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 611 FORMING exhaust through a stack identified as Stack 6-22.
- 611 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(2) 612 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 612 FORMING, utilizing natural gas for fiberization. Products formed in 612 FORMING are ready for packaging.
- The nominal capacity of 612 FORMING has been classified as confidential information.
- The particulate emissions from 612 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.

- Controlled emissions from 612 FORMING exhaust through a stack identified as Stack 6-22.
- 612 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(3) 613 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.
- The nominal capacity of 613 FORMING has been classified as confidential information.
- The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP) This wet ESP is common to all the forming sections.
- Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.
- 613 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(4) 614 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.
- The nominal capacity of 614 FORMING has been classified as confidential information.
- The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.
- 614 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(j) Stack 6-29

(1) 613 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.
- The nominal capacity of 613 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.
- The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.
- 613 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(2) 614 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 614

CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.
- The nominal capacity of 614 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.
- The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.
- 614 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.2.1 General Provisions Relating to National Source Performance Standards under 40 CFR Part 60 [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) The Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1-1 for:

(1) 602 LF MFG;

(2) LINE 3001 – 3009

(3) 613 FORMING and 613 CURING/COOLING; and

(4) 614 FORMING and 614 CURING/COOLING.

(b) The Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch – Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.2.2 Applicability of Wool Fiberglass Manufacturing NSPS Requirements [40 CFR Part 60, Subpart PPP]

The provisions of 40 CFR Part 60, Subpart PPP (Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants) apply to:

(1) 602 LF MFG;

(2) LINE 3001 – 3009

(3) 613 FORMING and 613 CURING/COOLING; and

(4) 614 FORMING and 614 CURING/COOLING.

A copy of this rule is available on the US EPA Website.

E.2.3 Wool Fiberglass Manufacturing Requirements [40 CFR Part 60, Subpart PPP]

(a) Pursuant to CFR Part 60, Subpart PPP, the Permittee shall comply with the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants for LINE 3001 – 3009.

(b) Pursuant to CFR Part 60, Subpart PPP, the Permittee shall comply upon startup with the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants for:

(1) 602 LF MFG;

(2) 613 FORMING and 613 CURING/COOLING; and

(3) 614 FORMING and 614 CURING/COOLING.

§60.680 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each rotary spin wool fiberglass insulation manufacturing line.

(b) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after February 7, 1984, is subject to the requirements of this subpart.

§60.681 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Glass pull rate means the mass of molten glass utilized in the manufacture of wool fiberglass insulation at a single manufacturing line in a specified time period.

Manufacturing line means the manufacturing equipment comprising the forming section, where molten glass is fiberized and a fiberglass mat is formed; the curing section, where the binder resin in the mat is thermally "set;" and the cooling section, where the mat is cooled.

Rotary spin means a process used to produce wool fiberglass insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high velocity air flow.

Wool fiberglass insulation means a thermal insulation material composed of glass fibers and made from glass produced or melted at the same facility where the manufacturing line is located.

§60.682 Standard for particulate matter.

On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 5.5 kg/Mg (11.0 1b/ton) of glass pulled.

§60.683 Monitoring of operations.

(b) An owner or operator subject to the provisions of this subpart who uses a wet electrostatic precipitator control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate. In addition, the owner or operator shall determine the total residue (total solids) content of the water entering the control device once per day using Method 209A, "Total Residue Dried at 103 – 105 °C," in *Standard Methods for the Examination of Water and Wastewater,* 15th Edition, 1980 (incorporated by reference – see §60.17). Total residue shall be reported as percent by weight. All monitoring devices required under this paragraph are to be certified by their manufacturers to be accurate within ±5 percent over their operating range.

(c) All monitoring devices required under this section are to be recalibrated quarterly in accordance with procedures under §60.13(b).

§60.684 Recordkeeping and reporting requirements.

(b) At 30-minute intervals during each 2-hour test run of each performance test of a wet electrostatic precipitator control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by §60.683(b), except that the concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.

(c) Records of the measurements required in paragraphs (a) and (b) of this section must be retained for at least 2 years.

(d) Each owner or operator shall submit written semiannual reports of exceedances of control device operating parameters required to be monitored by paragraphs (a) and (b) of this section and written documentation of, and a report of corrective maintenance required as a result of, quarterly calibrations of the monitoring devices required in §60.683(c). For the purpose of these reports, exceedances are defined as any monitoring data that are less than 70 percent of the lowest value or greater than 130 percent of the highest value of each operating parameter recorded during the most recent performance test.

(e) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

§60.685 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in §60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (C_t\ Q_{sd}) / (P_{avg}\ K)$$

where:

E = emission rate of particulate matter, kg/Mg (lb/ton).

C_t = concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P_{avg} = average glass pull rate, Mg/hr (ton/hr).

K = 1,000 g/kg (7,000 gr/lb).

(2) Method 5E shall be used to determine the particulate matter concentration (C_t) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90.1 dscf).

Pursuant to the letter from U.S. EPA dated May 15, 2006, the Permittee shall use continuous glass pull rate monitoring through the use of continuous glass flow cameras in lieu of the monitoring requirements specified in 40 CFR 63.685(c)(3).

(d) To comply with §60.684(d), the owner or operator shall record measurements as required in §60.684 (a) and (b) using the monitoring devices in §60.683 (a) and (b) during the particulate matter runs.

E.2.4 Notification Dates Relating to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants [40 CFR Part 60, Subpart PPP]

The Permittee shall comply with the notification requirements by the dates listed in the following table:

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Date Construction (or Reconstruction) is Commenced	40 CFR 60.7(a)(1)	602 LF MFG; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.	30 days after construction commences
Notification of the Actual Date of Initial Startup	40 CFR 60.7(a)(3)	602 LF MFG; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.	15 days after date of initial startup
Notification of any Physical or Operational Change	40 CFR 60.7(a)(4)	602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.	60 days before change commences
Notification of Demonstration of the Continuous Monitoring System Performance	40 CFR 60.7(a)(5)	602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.	30 days prior to demonstration

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Anticipated Date for Conducting the Opacity Observations	40 CFR 60.7(a)(6)	602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.	30 days prior to opacity observations
Conduct Performance Test	40 CFR 60.8(a)	602 LF MFG; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.	60-180 after initial startup
Notification of Performance Test	40 CFR 60.8(d)	602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.	30 days before test

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT CERTIFICATION

Source Name: Knauf Insulation GmbH
Source Address: One Knauf Drive, Shelbyville, Indiana 46176
Mailing Address: One Knauf Drive, Shelbyville, Indiana 46176
Part 70 Permit No.: T 145-6038-00001

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify): ____________________

☐ Report (specify): ____________________

☐ Notification (specify): ____________________

☐ Affidavit (specify): ____________________

☐ Other (specify): ____________________

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Signature:
Printed Name:
Title/Position:
Phone:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

100 North Senate Avenue
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name:	Knauf Insulation GmbH
Source Address:	One Knauf Drive, Shelbyville, Indiana 46176
Mailing Address:	One Knauf Drive, Shelbyville, Indiana 46176
Part 70 Permit No.:	T 145-6038-00001

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency
Describe the cause of the Emergency

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? ☐ Y ☐ N Describe: Type of Pollutants Emitted: ☐ TSP ☐ PM-10 ☐ SO_2 ☐ VOC ☐ NO_X ☐ CO ☐ Pb ☐ other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed By: ______________________________

Title/Position: ______________________________

Date: ______________________________

Phone: ______________________________

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Branch
100 North Senate Avenue, Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

ANNUAL MOLTEN GLASS PRODUCTION REPORT

Source Name: Knauf Insulation GmbH
Source Address: One Knauf Drive, Shelbyville, Indiana 46176
Mailing Address: One Knauf Drive, Shelbyville, Indiana 46176
Part 70 Permit No.: T 145-6038-00001
Facility: 602 LF MFG
Parameter: Molten Glass
Limit: 60,050 tons of molten glass per 12-consecutive month period, with compliance determined at the end of each month.

REPORTING YEAR: _____

Month	Glass Production		
	Column 1	Column 2	Column 1 + Column 2
	This Month (tons/month)	**Previous 11 Months** (tons)	**12 Month Total** (tons/year)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: ____________________

Submitted By: ______________________________

Title/Position: ______________________________

Signature: ______________________________

Date: ______________________________

Phone: ______________________________

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Branch

100 North Senate Avenue, Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

ANNUAL MOLTEN GLASS PRODUCTION REPORT

Source Name: Knauf Insulation GmbH
Source Address: One Knauf Drive, Shelbyville, Indiana 46176
Mailing Address: One Knauf Drive, Shelbyville, Indiana 46176
Part 70 Permit No.: T 145-6038-00001
Facility: MFG 611
Parameter: Molten Glass
Limit: 107,310 tons of molten glass per 12-consecutive month period, with compliance determined at the end of each month.

REPORTING YEAR: _____

Month	**Glass Production**		
	Column 1	Column 2	Column 1 + Column 2
	This Month (tons/month)	**Previous 11 Months** (tons)	**12 Month Total** (tons/year)

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: ____________________

Submitted By: ______________________________

Title/Position: ______________________________

Signature: ______________________________

Date: ______________________________

Phone: ______________________________

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Knauf Insulation GmbH
Source Address: One Knauf Drive, Shelbyville, Indiana 46176
Mailing Address: One Knauf Drive, Shelbyville, Indiana 46176
Part 70 Permit No.: T 145-6038-00001

Months: __________ to __________ Year: ________

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD
Permit Requirement (specify permit condition #)
Date of Deviation: **Duration of Deviation:**
Number of Deviations:
Probable Cause of Deviation:
Response Steps Taken:
Permit Requirement (specify permit condition #)
Date of Deviation: **Duration of Deviation:**
Number of Deviations:
Probable Cause of Deviation:
Response Steps Taken:

Page 2 of 2

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: ______________________________

Title/Position: ______________________________

Date: ______________________________

Phone: ______________________________

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (TSD) for a Prevention of Significant Deterioration (PSD) Significant Source Modification (SSM) of a Part 70 Source Significant Permit Modification (SPM) of Part 70 Operating Permit

Source Description and Location

Source Name:	Knauf Insulation GmbH
Source Location:	One Knauf Drive, Shelbyville, IN 46176
County:	Shelby
SIC Code:	3296
Operation Permit No.:	T 145-6038-00001
Operation Permit Issuance Date:	September 14, 1999
Significant Source Modification No.:	SSM 145-23127-00001
Significant Permit Modification No.:	SPM 145-23151-00001
Permit Writer:	Kimberly Cottrell

Public Notice Information

On July 29, 2006, the Office of Air Quality (OAQ) had a notice published in the Shelbyville News in Shelbyville, Indiana, stating that Knauf Insulation GmbH had applied for a significant modification to expand their Shelbyville plant with the replacement of a glass melting furnace and the addition of a new manufacturing line and related equipment. This modification has been reviewed pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration) for particulate matter (PM), particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}), and carbon monoxide (CO) and an air quality impact analysis was completed to ensure that the expansion will not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS). The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments Received

On August 24, 2006, Sam Portanova of the US EPA Region 5 submitted comments on the above referenced draft permit. On August 22, 2006, OAQ received comments from Barnes and Thornburg LLP, on behalf of Knauf Insulation GmbH. The comments are summarized in the subsequent pages, with IDEM's corresponding responses.

The IDEM does not amend the Technical Support Document (TSD). The TSD is maintained to document the original review. This addendum to the TSD is used to document responses to comments and changes made from the time the permit was drafted until a final decision is made.

The summary of the comments and IDEM, OAQ responses, including changes to the permit (language deleted is shown in ~~strikeout~~ and language added is shown in **bold**) are as follows:

US EPA Region 5 Comments and IDEM's Responses

EPA Comment 1:

Page 4 of the TSD states that this project is a separate modification from the expansion permitted on 11/9/05 because the previous project involved manufactured bonded building insulation products and this project involves manufactured unbonded insulation products. It was not clear from this statement that the two projects are indeed separate. U.S. EPA is requesting a further clarification on this determination that the projects are separate.

IDEM Response 1:

Knauf Insulation provided supporting documents, consisting of planning documentation and financial records, demonstrating that the two projects were planned and funded separately. Some of the supporting documents were submitted as confidential business information for proprietary reasons.

In addition, the project approved on November 9, 2005 involved the manufacture of bonded wool fiberglass building insulation product. The current project involves the manufacture of an unbonded wool fiberglass insulation product. These different products are manufactured and marketed separately. There are no changes to the permit due to this comment.

EPA Comment 2:

Page 10 of the TSD lists baseline actual emissions used for netting out of PSD and nonattainment NSR for NO_X. However, the TSD also says "these actual emissions are not consistent with the information in the OAQ Emission Inventory Database, because Knauf Insulation GmbH submitted revised actual emissions as part of this application. How have the inconsistency between the Knauf numbers and the emission inventory numbers been reconciled. Has there been a determination that one set of numbers is more accurate than the other set?

IDEM Response 2:

The paragraph referenced in the comment should not have been included in the Technical Support Document (TSD). The original application provided only the two-year average of the past emissions from 2004 and 2005, and these emission rates did not match to the 2004 OAQ Emission Inventory Database. In order to verify the average emissions that were reported in the application, OAQ requested a copy of the 2005 emissions inventory report for Knauf Insulation. After review of this information, it was determined that their 2005 emission report matched the data that was filed for 2004; therefore, these emission rates were used for the baseline actual emissions rather than the original information that was submitted with the application. These emission rates did not change the status of the application. There are no changes to the permit due to this comment.

Knauf Insulation GmbH Comments and IDEM's Responses

Knauf Comment 1:

Condition A.2 — Emission Units and Pollution Control Equipment Summary and Section D.1 — Facility Description.

The descriptions under Section D.1 should be modified (1) to change the reference under subsection (a) from “332 tons of glass per day” to “300 tons of glass per day”; (2) the references to “maximum” capacity should be changed to “nominal” capacity; and (3) the baghouse references under subsection (e) should be changed from “utilizing two (2) baghouses for particulate control (Unit ID # 602 LF PACKAGING 1&2 & 3&4)” to “utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B),” because the exhaust from the 602 LF Packaging line will vent through the 602 LF Separator baghouses per the revised application forms and information submitted to IDEM dated June 23, 2006.

IDEM Response 1:

The facility descriptions in Condition A.2 and Section D.1 are revised as follows:

(a) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
- installed in 2007,
- operating at a ~~maximum~~ **nominal** processing capacity of ~~332~~ **300** tons of glass per day,
- operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),
- utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and
- exhausting through one (1) stack ID # 6-30.
- 602B FURNACE is common to MFG 602 and 602 LF MFG.
- 602B FURNACE is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(b) MFG 602 – Stack 2-2
One (1) rotary spin wool fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602,
- installed in 1983,
- operating at a ~~maximum~~ **nominal** processing capacity of 130 tons of glass per day,
- utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, and
- exhausting through one (1) stack ID #2-2.
- MFG 602 produces a bonded wool fiberglass insulation building product. MFG 602 is an existing affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(c) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- installed in 2007,
- operating at a ~~maximum~~ **nominal** processing capacity of 170 tons of glass per day,
- operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),
- utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and
- exhausting through one (1) stack ID # 6-22.
- 602 LF MFG is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).
- 602 LF MFG produces an unbonded wool fiberglass insulation product.

(d) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2,
- installed in 2007,
- operating at a ~~maximum~~ **nominal** processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting internally through two (2) vents ID# 6-31 & 6-32.

(e) 602 LF PACKAGING
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4,
- installed in 2007,
- operating at a ~~maximum~~ **nominal** processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (~~Unit ID # 602 LF PACKAGING 1&2 & 3&4~~ **Unit ID # 602 LF SEPARATOR A & B**), and
- exhausting to 602 LF SEPARATOR.

Knauf Comment 2:

Condition B.10 — Preventive Maintenance Plan.

This condition should be modified to remove the requirement for the plans to be developed within 90 days after the issuance of the permit, since the equipment will not be constructed as of that time and the plans cannot be completed until the equipment is constructed and the design is finalized.

IDEM Response 2:

Paragraph (a) of Condition B.10 is revised as follows:

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of ~~this permit~~ **the Part 70 Operating Permit, 145-6038-00001, for existing emission units that are not being modified or upon startup for the new and modified emission units**, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

Knauf Comment 3:

Condition C.10 — Compliance Monitoring.

The requirement for the compliance monitoring procedures to be in place within 90 days of permit issuance should be removed since the facility will not be operational within 90 days of permit issuance, and will not be constructed by then.

IDEM Response 3:

Condition C.10 is revised as follows:

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days after issuance of ~~this permit~~ **the Part 70 Operating Permit, 145-6038-00001, for existing emission units that are not being modified or upon startup for the new and modified emission units**. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission units, compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

Knauf Comment 4:

Condition C.22 — Retirement of Existing Operations.

Condition C.22 should be modified to indicate that the retirement of the existing units will not occur until approximately 90 days after the initial start-up of the new equipment. Some overlap will be necessary to maintain production of marketable products while debugging the new equipment, and because the same employees responsible for starting up the new equipment will be the ones who are shutting down the old equipment. Thus, retirement of the old equipment will not occur until up to 90 days after initial operation of the new equipment.

It is well accepted that some period, up to 180 days, should be allowed to shakedown the new equipment before shutting down the old equipment. For example, the nonattainment NSR rules provide:

(E) An increase that results from the physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed one hundred and eighty (180) days.

326 IAC 2-3-1(w)(1)(E); See also, 40 CFR 51, Appendix S(II)(A)(6)(vi).

IDEM Response 4:

Condition C.22 is revised as follows:

C.22 Retirement of Existing Operations [326 IAC 2-3]

Pursuant to 326 IAC 2-3, the Permittee shall permanently discontinue the operation of the following operations ~~upon~~ **within ninety (90) days of** startup of the new emission units:

Knauf Comment 5:

Condition D.1.1 — PSD Minor Limits.

Subsection (b) should be deleted since there will be some small level of emissions of NO_X, SO_2, and VOC from the 602B Furnace, as identified in Table 9 of the Technical Support Document.

IDEM Response 5:

Paragraph (b) of Condition D.1.1 is revised as follows:

D.1.1 PSD Minor Limits [326 IAC 2-2]

~~(b) There shall be no emissions of~~ ~~NO_X, SO_2, or VOC from 602B FURNACE; therefore, the requirements of 326 IAC 2-2 shall not apply for NO_X, SO_2, and VOC.~~

(b) In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply to the electric glass melting furnace (602B FURNACE):

(1) The NO_X emissions shall not exceed 1.50 pounds per hour.

(2) The SO_2 emissions shall not exceed 0.02 pounds per hour.

(3) The VOC emissions shall not exceed 0.17 pounds per hour.

Therefore, the requirements of 326 IAC 2-2 shall not apply to 602B FURNACE for NO_X, SO_2, and VOC.

Knauf Comment 6:

Condition D.1.2 — Emission Offset Minor Limits.

Subsection (b) should be removed since there will be small levels of NO_X and VOC emissions from the 602B Furnace, as identified in Table 9 of the Technical Support Document.

IDEM Response 6:

Paragraph (b) of Condition D.1.2 is revised as follows:

D.1.2 Emission Offset Minor Limits [326 IAC 2-3]

~~(b) There shall be no emissions of NO~~$\cancel{_X}$ ~~or VOC from 602B FURNACE; therefore, the requirements of 326 IAC 2-3 shall not apply for NO~~$\cancel{_X}$ ~~and VOC.~~

(b) In order to render the 326 IAC 2-3 (Emission Offset) requirements not applicable, the following conditions shall apply to the electric glass melting furnace (602B FURNACE):

(1) The NO_X emissions shall not exceed 1.50 pounds per hour.

(2) The VOC emissions shall not exceed 0.17 pounds per hour.

Therefore, the requirements of 326 IAC 2-3 shall not apply to 602B FURNACE for NO_X and VOC.

Knauf Comment 7:

Condition D.1.3 — Particulate Matter (PM/PM10) PSD BACT Requirements.

a. Subsection (b)(2)-(4) — 602 LF MFG – Stack 6-22. These conditions should be combined into a single emission limit. Knauf cannot test independently the PM/PM10 emissions from natural gas combustion as opposed to the PM/PM10 emissions from the general operation of the loose fill manufacturing process. A combined limit should be specified and constitute the basis for testing.

b. Subsection (c) — 602 LF SEPARATOR. 602 LF Separator baghouses exhaust internally and therefore establishing a PM limit or opacity limit is inappropriate.

c. Subsection (d) — 602 LF PACKAGING. This process exhausts inside through the 602 LF Separator baghouses. Establishing a PM limit or an opacity limit is inappropriate.

IDEM Response 7:

In order to combine paragraphs (b)(2)-(4) into a single emission limit, only the PM emissions rate was used. Since the baghouses for the 602 LF SEPARATOR exhaust internally, the opacity limits for 602 LF SEPARATOR and 602 LF PACKAGING have been removed; however, the PM/PM_{10} limits for 602 LF SEPARATOR and 602 LF PACKAGING are maintained, as one combined limit for both emission units, because these emission units are subject to PSD. Condition D.1.3 is revised as follows:

D.1.3 Particulate Matter (PM / PM_{10}) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for particulate matter (PM / PM_{10}):

(b) 602 LF MFG – Stack 6-22:

(1) A wet electrostatic precipitator (WESP) shall be installed to control the PM/PM_{10} emissions **from the loose fill manufacturing process, 602 LF MFG**, and shall operate at a minimum control efficiency of sixty percent (60%).

(2) The PM/PM_{10} emissions after the WESP from ~~general~~ operation of the ~~loose fill manufacturing process~~ **602 LF MFG** shall not exceed:

(A) 2.8 pounds per ton of glass pulled;

(B) ~~19.79~~ **19.94** pounds per hour based on a 3-hour rolling average.

~~(3) The PM emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 0.11 pounds per hour based on a 3-hour rolling average.~~

~~(4) The PM_{10} emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 0.46 pounds per hour based on a 3-hour rolling average.~~

(c) 602 LF SEPARATOR **and 602 LF PACKAGING**:

(1) Two (2) baghouses shall be installed to control the PM/PM_{10} emissions from the 602 LF SEPARATOR, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouses from the 602 LF SEPARATOR shall not exceed ~~1.05~~ **1.20** pounds per hour based on a 3-hour rolling average.

602 LF PACKAGING exhausts to the 602 LF SEPARATOR.

~~(3) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period.~~

~~(d) 602 LF PACKAGING:~~

~~(1) Two (2) baghouses shall be installed to control the PM/PM_{10} emissions from the 602 LF PACKAGING, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).~~

~~(2) The PM/PM_{10} emissions after the baghouses from the 602 LF PACKAGING shall not exceed 0.15 pounds per hour based on a 3-hour rolling average.~~

~~(3) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period.~~

Knauf Comment 8:

Condition D.1.4 — Carbon Monoxide (CO) PSD BACT Requirements.

Subsection (b) should establish a single combined limit. Knauf cannot differentiate between CO emissions from the manufacturing process versus CO emissions from natural gas combustion, and therefore a combined limit should be established.

IDEM Response 8:

Condition D.1.4 is revised as follows:

D.1.4 Carbon Monoxide (CO) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for carbon monoxide (CO):

~~(b) 602 LF MFG – Stack 6-22:~~

~~(1) The CO emissions from general operation of the loose fill manufacturing process shall not exceed 8 pounds per ton of glass pulled or 56.87 pounds per hour based on a 3-hour rolling average.~~

~~(2) The CO emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 5.04 pounds per hour based on a 3-hour rolling average.~~

(b) 602 LF MFG – Stack 6-22:
The CO emissions from the 602 LF MFG shall not exceed:

(1) 8 pounds per ton of glass pulled;

(2) 61.91 pounds per hour based on a 3-hour rolling average.

Knauf Comment 9:

Condition D.1.5 — Particulate Matter Emission Limitation.

This section should only apply to the existing 602 MFG line (forming and curing) because that is the only relevant process that is listed in the rule. It does not apply to the new 602 LF line or the new 602B Furnace because they are not specifically listed in 326 IAC 11-4-5.

IDEM Response 9:

326 IAC 11-4-4 specifies the particulate emission limitation for forming operations plus the oven; therefore, the 602B FURNACE in addition to the MFG 602 is subject to the SIP limit in 326 IAC 11-4-4. The 602 LF MFG is subject to the emission limit in 326 IAC 11-4-2(a)(1). Condition D.1.5 is revised as follows:

D.1.5 Particulate Matter Emission Limitation [326 IAC 11-4-4]

(a) Pursuant to 326 IAC 11-4-4 (Fiberglass Insulation Manufacturing – Emission Limitation), emission limitations for particulate matter have been set forth in Indiana's State Implementation Plan (SIP) as follows:

Process / Facility	Max. Hourly Emissions (lbs/hour)	Max. Yearly Emissions (tons/yr)
MFG 602 (forming) ~~602 LF MFG (forming)~~ 602B FURNACE (oven)	33.27	145.7

(b) Pursuant to 326 IAC 11-4-2 (Fiberglass Insulation Manufacturing – Emission Limitation), particulate matter emissions from the loose fill manufacturing line, 602 LF MFG, shall not exceed 0.025 grains per dry standard cubic foot (gr/dscf).

Knauf Comment 10:

Condition D.1.7 — Testing Requirements.

Testing of CO should not be required for the 602B Furnace since the potential emission rate is so small and no specific control equipment is utilized to reduce CO. In addition, testing should not be required for the 602 LF Separator or 602 LF Packaging since the PM emission rate is so low and they will exhaust indoors and there will be no stack. In addition, sub-condition (a) should be modified to remove references to 40 CFR Part 51, Appendix M. That appendix does not identify procedures that would be used for testing these units. Also, sub-condition (b) should be modified to remove the reference to Method 5E relative to the 602B Furnace. The MACT standard modified the test method for these operations such that the proper test methods should be Method 5 modified by 40 CFR 63.1385. Also, Method 5, not Method 5E, should be the test method used for MFG 602 since MFG 602 is not subject to Subpart PPP since it was installed in 1983. If this condition is retained it should refer specifically to the emission limits in D.1.3(c)(2) and D.1.3(d)(2).

Paragraph (a)(1)(A) should refer specifically to the emission limits in D.1.3(a)(2) since those are the applicable limits. Paragraph (a)(2)(A) should refer specifically to the emission limits in D.1.3(b)(2) since those are the applicable limits.

All "testing" permit conditions should specify the following EPA test methods:
- PM furnace – Method 5 modified per 63.1385
- PM forming and curing (oven) – Method 5E
- NO_X - Method 7E
- CO – Method 10
- VOC – Method 25A (Non-Methane)

IDEM Response 10:

The testing requirements in Condition D.1.7 are maintained to verify compliance with the PSD emission limits. Specific test methods will be decided when the testing protocols are submitted to IDEM; therefore, references to specific test methods have been deleted from Condition D.1.7. Condition D.1.7 is revised as follows:

D.1.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]

(a) Within sixty (60) days after achieving maximum capacity of the proposed modification, but no later than one hundred and eighty (180) days after initial startup of the proposed expansion, the Permittee shall perform compliance testing on the following:

(1) 602B FURNACE – Stack 6-30:

(A) PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(a)**(2)** – PM / PM_{10} PSD BACT Requirements;

(B) CO – to verify compliance with the limitations in Condition D.1.4(a) – CO PSD BACT Requirements;

(2) 602 LF MFG – Stack 6-22:

(A) PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(b)**(2)** – PM / PM_{10} PSD BACT Requirements;

(B) CO – to verify compliance with the limitations in Condition D.1.4(b) – CO PSD BACT Requirements;

(3) 602 LF SEPARATOR **and 602 LF PACKAGING**:
PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(c)**(2)** – PM / PM_{10} PSD BACT Requirements; and

~~(4) 602 LF PACKAGING:~~
~~PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(d) – PM / PM_{10} PSD BACT Requirements~~

utilizing ~~the procedures set forth in 40 CFR 60, Appendix A; 40 CFR Part 51, Appendix M; or other~~ methods as approved by the Commissioner.

(b) The PM/PM_{10} testing on 602B FURNACE, MFG 602, 602 LF MFG, **and** 602 LF SEPARATOR~~, and 602 LF PACKAGING~~ shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration, utilizing ~~40 CFR Part 60 Appendix A, Method 5E (Determination of Particulate Emissions from the Wool Fiberglass Insulation Manufacturing Industry) or other~~ test methods as approved by the Commissioner. PM_{10} includes filterable and condensible PM_{10}.

(c) The CO testing on 602B FURNACE and 602 LF MFG shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

(d) Testing shall be conducted in accordance with Section C – Performance Testing.

Knauf Comment 11:

Condition D.1.8 — Particulate Matter (PM) Control.

The references to 602 LF SEPARATOR and 602 LF PACKAGING should be removed because (1) there will be no 602 LF Packaging baghouses (the exhaust from the 602 LF Packaging will vent through the 602 LF Separator baghouses per the revised application forms and information submitted to IDEM dated June 23, 2006); and (2) the 602 LF Separator baghouses will vent indoors and therefore there should be no requirement for this condition to apply to those baghouses since they will not be exhausting to the outside atmosphere.

IDEM Response 11:

The references to 602 LF PACKAGING baghouses are removed because the 602 LF PACKAGING process exhaust to the 602 LF SEPARATOR, which then exhausts to two baghouses. The requirement to control particulate emissions at all times during operation remains applicable while all three emission units (602B FURNACE, 602 LF SEPARATOR and 602 LF PACKAGING) are in operation. Condition D.1.8 is revised as follows.

D.1.8 Particulate Matter (PM) Control

(a) The ~~five (5)~~ **three (3)** baghouses (for 602B FURNACE~~,~~ **and** 602 LF SEPARATOR~~, and 602 LF PACKAGING~~) for PM control shall be in operation at all times when any of the following: 602B FURNACE, 602 LF SEPARATOR, and 602 LF PACKAGING are in operation and exhausting to the outside atmosphere.

(b) The two (2) wet electrostatic precipitators (for MFG 602 and 602 LF MFG) for PM control shall be in operation at all times when either of the manufacturing lines, MFG 602 and 602 LF MFG, are in operation and exhausting to the outside atmosphere.

Knauf Comment 12:

Condition D.1.10 — Bag Leak Detection Systems (BLDS).

Subsections (b)(ii) through (b)(vii) should be removed since these BLDS criteria are triggered by the Subpart NNN MACT standard and the MACT standard does not apply to the 602 LF Separator or 602 LF Packaging, and therefore should not be imposed on the 602 LF Separator baghouses.

IDEM Response 12:

The Bag Leak Detection Systems (BLDS) requirements for the 602B FURNACE and the 602 LF SEPARATOR (and 602 LF PACKAGING) are required to comply with 326 IAC 2-2 (Prevention of Significant Deterioration (PSD). Additional language has been added to Condition D.1.10 to clarify the underlying requirements.

The 602B FURNACE is subject to the Wool Fiberglass Manufacturing NESHAP (40 CFR Part 63, Subpart NNN); therefore, compliance with the BLDS requirements specified in the NESHAP will satisfy the PSD requirements.

602 LF SEPARATOR and 602 LF PACKAGING are not subject to the Wool Fiberglass Manufacturing NESHAP; therefore, the additional operating parameters contained in subsections (b)(ii) through (b)(vii) were included to specify all the BLDS requirements.

Paragraph (b) of Condition D.1.10 is revised to remove the reference to 602 LF PACKAGING since 602 LF PACKAGING exhaust directly to the 602 LF SEPARATOR.

The revised condition is as follows:

D.1.10 Bag Leak Detection Systems (BLDS) **[326 IAC 2-2]**

Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements:

(a) Compliance with §63.1383(b) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN) shall satisfy all bag leak detection system (BLDS) requirements for the 602B FURNACE.

(b) The Permittee shall install and operate continuous bag leak detection systems (BLDS) for the 602 LF SEPARATOR **baghouses** ~~and 602 LF PACKAGING~~. The bag leak detection systems shall meet the following requirements:

(i) The bag leak detection systems must be certified by the manufacturer to be capable of detecting particulate matter emissions.

(ii) The bag leak detection system sensor must provide output of relative particulate matter loading.

(iii) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.

(iv) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.

(vii) The bag detector must be installed downstream of the baghouses.

Knauf Comment 13:

Condition D.3.5 — Bag Leak Detection System (BLDS).

Subsections (a)(ii) through (a)(vii) should be removed because the MACT standard does not apply to these operations, and the only requirement should be to have an alarm which detects bag leaks.

IDEM Response 13:

The Bag Leak Detection Systems (BLDS) requirements in this condition are required to comply with 326 IAC 2-2 (Prevention of Significant Deterioration (PSD). Additionally, these requirements are specified in the previous Significant Source Modification, 145-20887-00001, that was issued on November 9, 2005, and these requirements have not been changed since issuance of the modification. Additional language has been added to Condition D.3.5 to clarify the underlying requirements, and the revised condition is as follows:

D.3.5 Bag Leak Detection System (BLDS) **[326 IAC 2-2]**

Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements:

(a) The Permittee shall install and operate continuous bag leak detection systems (BLDS) for the following:

Emission Unit ID	Internal Vent ID	Control Device *
Silo61	6-1 a & b	Baghouse SILO061BIN16, SILO061BIN2
Silo62	6-2	Baghouse SILO062BIN15
Silo63	6-3 a & b	Baghouse SILO063BIN4, SILO063BIN5
Silo64	6-4	Baghouse SILO064BIN9
Silo65	6-5	Baghouse SILO065BIN3
Silo66	6-6	Baghouse SILO066BIN11
Silo67	6-7	Baghouse SILO067BIN14
DB602	6-8 a & b	Baghouse DB602A, DB602B
Silo69	6-9 a & b	Baghouse SILO069BIN8, SILO069BIN10
Silo612	6-12 a & b	Baghouse SILO612BIN1
Silo613	6-13 a & b	Baghouse SILO613BIN13, SILO613BIN7
GLCONVEY / BUCKETELV	6-15 a, b, c, & d	Baghouse GLCONVEY / BUCKETELV A, GLCONVEY / BUCKETELV B, GLCONVEY 611A, GLCONVEY611B, GLCONVEY602A, GLCONVEY602B
RMUNLDR616	6-16 a & b	Baghouse RMUNLDR616A, RMUNLDR616B
GTHRNGBLT617	6-17	Baghouse GTHRNGBL617
BMXR618	6-18 a & b	Baghouse BMXR618
DB619	6-19	Baghouse DB611A, DB611B
KCHNDLNG620	6-20 a & b	Baghouse KCHNDLNG620A, KCHNDLNG620B

The bag leak detection systems shall meet the following requirements:

(i) The bag leak detection systems must be certified by the manufacturer to be capable of detecting particulate matter emissions.

(ii) The bag leak detection system sensor must provide output of relative particulate matter loading.

(iii) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.

(iv) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.

(vii) The bag detector must be installed downstream of the baghouses.

Knauf Comment 14:

Condition D.4.1(a) — Emission Limitations and Standards.

The sentence "PM10 includes filterable and condensable PM10" should be stricken. The applicable test method in 40 CFR 63.1385 does not include condensables.

Condition D.4.7 — Testing Requirements.

Testing for CO emissions from the furnace should be removed since the potential emission rate is small and there is no specific control equipment for which testing would be useful. Also, sub-condition (a) should be modified to remove references to 40 CFR Part 51, Appendix M. That appendix does not identify procedures that would be used for testing these units. Paragraph (a)(1) should include the following additional section: "Test method to be used will be Method 5, modified by 40 CFR 63.1385."

Condition D.5.11 — Testing Requirements.

This condition should be clarified to indicate that the testing requirements will be performed at the stack, and that the emission limits to be tested against will be the combined limits of the processes venting to that stack. Also, sub-condition (a) should be modified to remove references to 40 CFR Part 51, Appendix M. That appendix does not identify procedures that would be used for testing these units. Paragraph (a)(2) should specifically refer to D.5.2 and D.5.5.(e).

Condition D.5.16(a) — Recordkeeping Requirements.

This section should be deleted. The types of records described in subsections (1) and (2) (e.g., MSDS, logs of use, etc.) are not relevant to this operation.

IDEM Response 14:

Specific test methods will be decided when the testing protocols are submitted to IDEM; therefore, references to specific test methods have been deleted from Condition D.4.7 and D.5.11.

The remainder of this request is not granted because these requirements are required as part of the PSD determination from the previous Significant Source Modification, 145-20887-00001, that was issued on November 9, 2005. The proposed modification does not impact the emission units listed in Section D.4 or Section D.5; therefore, no changes will be made to Section D.4 or Section D.5.

Condition D.4.7 and D.5.11 are revised as follows:

D.4.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)] [326 IAC 2-1.1-11] [40 CFR Part 63, Subpart NNN]

(a) Within sixty (60) day from achieving maximum capacity of the proposed expansion, but no later than one hundred and eighty (180) days after initial startup of the FURN 611, the Permittee shall conduct performance tests on Stack 6-21 for the following:

(1) PM/PM_{10} – to verify compliance with the PM /PM_{10} limitations in Condition D.4.1 – PSD Minor Limits, Condition D.4.4 – Particulate Matter Emission Limitations, Condition D.4.8 – Bag Leak Detection System (BLDS), and 40 CFR Part 63, Subpart NNN;

(2) CO – to verify compliance with the CO PSD Minor Limits in Condition D.4.1 – PSD Minor Limits;

~~using the procedures set forth in 40 CFR 60, Appendix A; 40 CFR Part 51, Appendix M; or other~~ **utilizing** methods as approved by the Commissioner.

(b) The PM/PM_{10} test shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration. PM_{10} includes filterable and condensible PM_{10}.

(c) The CO test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

(d) Testing shall be conducted in accordance with Section C – Performance Testing.

D.5.11 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]

(a) Within sixty (60) days after achieving maximum capacity of the proposed modification, but no later than one hundred and eighty (180) days after initial startup of the proposed expansion, the Permittee shall perform compliance testing on Stack 6-22 and Stack 6-29 for the following:

(1) NO_x – to verify compliance with the NO_x limitations in Condition D.5.3 – NO_x LAER and NO_2 PSD BACT Requirements;

(2) VOC – to verify compliance with the VOC limitations in Condition D.5.2 – VOC Emission Offset Minor Limits, and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements;

(3) RTO's overall control efficiency – to verify compliance with the overall control efficiency requirement in Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements;

(4) PM/ PM_{10} – to verify compliance with the PM/PM_{10} limitations in Condition D.5.1 – PSD Minor Limits, and Condition D.5.6 – Particulate Matter Emission Limitations;

(5) CO – to verify compliance with the CO limitation in Condition D.5.1 – PSD Minor Limits;

utilizing ~~the procedures set forth in 40 CFR 60, Appendix A; 40 CFR Part 51, Appendix M; or other~~ methods as approved by the Commissioner.

Stack 6-22 is the stack exhaust of the following forming sections:

– 611 FORMING,

– 612 FORMING,

– 613 FORMING, and

– 614 FORMING.

Stack 6-29 is the stack exhaust of the following:

– 613 CURING/COOLING,

– 614 CURING/COOLING, and

– two (2) RTOs.

(b) The NO_x tests shall be repeated at least once every year from the date of the last valid compliance demonstrations.

(c) The VOC tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstrations.

(d) The PM/PM_{10} tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

PM_{10} includes filterable and condensible PM_{10}.

(e) The CO test shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

(f) In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(g) Testing shall be conducted in accordance with Section C – Performance Testing.

Knauf Comment 15:

Section E.1 — Facility Description.

a. Subsection (a) — 602B FURNACE - Stack 6-30. The reference to “332 tons of glass per day” should be changed to “300 tons of glass per day” for Furnace 602B.

b. Subsection (h) — FURNACE 611 - Stack 6-21. The reference that Furnace 611 was “installed in 2006” is in error. Construction will likely commence on Furnace 611 in 2007 with initial operation to likely begin in 2008.

IDEM Response 15:

The capacity of the 602B FURNACE was updated throughout the permit as specified above in Knauf Comment and IDEM Response 1. The facility description for FURNACE 611 was updated throughout the permit as follows:

FURNACE 611 – Stack 6-21

One (1) electrically heated glass melting furnace, identified as FURN 611, installed in ~~2006~~ **2007**.
– The nominal capacity of FURN 611 is 300 tons of molten glass per day.
– The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.
– Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.

This furnace is common to:
(1) 611 FORMING,
(2) 612 FORMING,
(3) 613 FORMING,
(4) 613 CURING/COOLING,
(5) 614 FORMING, and
(6) 614 CURING/COOLING.

Knauf Comment 16:

Condition E.2.3(2) — Wool Fiberglass Manufacturing Requirements.

The reference that Line 3001 - 3009 shall comply upon startup with Subpart PPP is misleading. These units are already in operation (since the 1990s).

IDEM Response 16:

Condition E.2.3 is revised as follows:

E.2.3 Wool Fiberglass Manufacturing Requirements [40 CFR Part 60, Subpart PPP]

(a) **Pursuant to CFR Part 60, Subpart PPP, the Permittee shall comply with the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants for LINE 3001 – 3009.**

(b) Pursuant to CFR Part 60, Subpart PPP, the Permittee shall comply upon startup with the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants for:

(1) 602 LF MFG;

(2) ~~LINE 3001 – 3009~~

~~(3)~~ 613 FORMING and 613 CURING/COOLING; and

(4**3**) 614 FORMING and 614 CURING/COOLING.

Knauf Comment 17:

Condition E.2.3 §60.685 — Test methods and procedures.

The permit should reference that the camera method is used for determining pull rate as approved by EPA on May 15, 2006.

IDEM Response 17:

Condition E.2.3 §60.685, Test methods and procedures is revised as follows:

§60.685 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in §60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E = (C_t Q_{sd}) / (P_{avg} K)$

where:

E = emission rate of particulate matter, kg/Mg (lb/ton).

C_t = concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P_{avg} = average glass pull rate, Mg/hr (ton/hr).

K = 1,000 g/kg (7,000 gr/lb).

(2) Method 5E shall be used to determine the particulate matter concentration (C_t) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90.1 dscf).

~~(3) The average glass pull rate (P_{avg}) for the manufacturing line shall be the arithmetic average of three glass pull rate (P_i) determinations taken at intervals of at least 30 minutes during each run.~~

~~The individual glass pull rates (P_i) shall be computed using the following equation:~~

$\cancel{P_i = K' L_s W_m M [1.0 - (LOI/100)]}$

~~where:~~

~~P_i = lass pull rate at interval “i”, Mg/hr (ton/hr).~~

~~L_s = line speed, m/min (ft/min).~~

~~W_m = trimmed mat width, m (ft).~~

~~M = mat gram weight, g/m ^{2} (lb/ft ^{2}).~~

~~LOI = loss on ignition, weight percent.~~

~~K′ = conversion factor, 6×10^{-5} (min-Mg)/(hr-g) [3×10^{-2} (min-ton)/(hr-lb)].~~

~~(i) ASTM D2584 – 68 (Reapproved 1985) or 94 (incorporated by reference – see §60.17), shall be used to determine the LOI for each run.~~

~~(ii) Line speed (L_s), trimmed mat width (W_m), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.~~

Pursuant to the letter from U.S. EPA dated May 15, 2006, the Permittee shall use continuous glass pull rate monitoring through the use of continuous glass flow cameras in lieu of the monitoring requirements specified in 40 CFR 63.685(c)(3).

(d) To comply with §60.684(d), the owner or operator shall record measurements as required in §60.684 (a) and (b) using the monitoring devices in §60.683 (a) and (b) during the particulate matter runs.

Knauf Comment 18:

Condition E.2.4 — Notification Dates Relating to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants.

The reference to Lines 3001 - 3009 should be removed since those units are already in operation.

IDEM Response 18:

In order to clarify that certain notifications will not be applicable to exiting Lines 3001-3009, Condition E.2.4 is revised as follows:

E.2.4 Notification Dates Relating to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants [40 CFR Part 60, Subpart PPP]

The Permittee shall comply with the notification requirements by the dates listed in the following table~~ for the following affected facilities~~:

~~(1) 602 LF MFG;~~

~~(2) LINE 3001 – 3009~~

~~(3) 613 FORMING and 613 CURING/COOLING; and~~

~~(4) 614 FORMING and 614 CURING/COOLING.~~

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Date Construction (or Reconstruction) is Commenced	40 CFR 60.7(a)(1)	**602 LF MFG; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.**	30 days after construction commences
Notification of the Actual Date of Initial Startup	40 CFR 60.7(a)(3)	**602 LF MFG; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.**	15 days after date of initial startup

Requirement	Rule Cite	Affected Facility	Deadline
Notification of any Physical or Operational Change	40 CFR 60.7(a)(4)	**602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.**	60 days before change commences
Notification of Demonstration of the Continuous Monitoring System Performance	40 CFR 60.7(a)(5)	**602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.**	30 days prior to demonstration
Notification of the Anticipated Date for Conducting the Opacity Observations	40 CFR 60.7(a)(6)	**602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.**	30 days prior to opacity observations
Conduct Performance Test	40 CFR 60.8(a)	**602 LF MFG; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.**	60-180 after initial startup
Notification of Performance Test	40 CFR 60.8(d)	**602 LF MFG; LINE 3001–3009; 613 FORMING and 613 CURING/COOLING; and; 614 FORMING and 614 CURING/COOLING.**	30 days before test

Knauf Comment 19:

Technical Support Document, page 5 of 22.

The baghouse references for 602 LF Packaging should be changed from “Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4” to “Unit ID # 602 LF Separator A & B” since the Packaging exhaust will be vented through the Separator baghouses.

IDEM Response 19:

The baghouse references for 602 LF Packaging have been updated throughout the permit. The Technical Support Document reflects the permit that was on Public Notice. Changes to the permit or technical support material that occur after Public Notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Other Changes

Upon further review, the OAQ has decided to make the revisions to the permit. The summary of the changes to the permit (where language deleted is shown with ~~strikeout~~ and that added is shown in **bold**) is as follows:

Change No. 1:

On August 7, 2006, a temporary emergency rule took effect redesignating Delaware, Greene, Jackson, Vanderburgh, Vigo and Warrick Counties to attainment for the eight-hour ozone standard, redesignating Lake County to attainment for the sulfur dioxide standard, and **revoking the one-hour ozone standard in Indiana**. The Indiana Air Pollution Control Board has approved a permanent rule revision to incorporate these changes into 326 IAC 1-4-1. The permanent revision to 326 IAC 1-4-1 will take effect prior to the expiration of the emergency rule. There are no applicable changes to this permit; however, the corrections to the attainment status from the Technical Support Document (TSD) are as follows:

Pollutant	Status
PM_{10}	Attainment
$PM_{2.5}$	Attainment
SO_2	Attainment
NO_2	Attainment
~~1-hour Ozone~~	~~Attainment~~
8-hour Ozone	Nonattainment
CO	Attainment
Lead	Attainment

(c) Shelby County has been classified as attainment or unclassifiable for PM_{10}, SO_2, NO_2~~, 1-hour ozone~~, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

The Technical Support Document reflects the permit that was on Public Notice. Changes to the permit or technical support material that occur after Public Notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

IDEM Contact

Questions regarding this proposed permit can be directed to Kimberly Cottrell at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-0870 or toll free at 1-800-451-6027 extension 3-0870.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD)
Prevention of Significant Deterioration (PSD)
Significant Source Modification (SSM) of a Part 70 Source
Significant Permit Modification (SPM) of Part 70 Operating Permit

Source Description and Location

Source Name:	Knauf Insulation GmbH
Source Location:	One Knauf Drive, Shelbyville, IN 46176
County:	Shelby
SIC Code:	3296
Operation Permit No.:	T 145-6038-00001
Operation Permit Issuance Date:	September 14, 1999
Significant Source Modification No.:	SSM 145-23127-00001
Significant Permit Modification No.:	SPM 145-23151-00001
Permit Writer:	Kimberly Cottrell

Existing Approvals

The following table summarizes the approvals issued to Knauf Insulation GmbH since the issuance of their Part 70 Operating Permit. Approvals are arranged in ascending order based on their issuance dates.

Table 1: Issued Approvals

Permit Type	Permit Number	Issuance Date
Part 70 Operating Permit	145-6038-00001	September 14, 1999
First Significant Permit Modification	145-11969-00001	July 6, 2000
Second Significant Permit Modification	145-14586-00001	November 20, 2001
First Reopening	145-13486-00001	January 7, 2002
First Administrative Amendment	145-15521-00001	July 15, 2002
Second Administrative Amendment	145-18469-00001	December 17, 2003
First Significant Source Modification	145-20887-00001	November 9, 2005
Third Significant Permit Modification	145-21234-00001	December 27, 2005

County Attainment Status

The source is located in Shelby County.

Table 2: County Attainment Status	
Pollutant	**Status**
PM_{10}	Attainment
$PM_{2.5}$	Attainment
SO_2	Attainment
NO_2	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Nonattainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Shelby County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) Shelby County has been classified as attainment for $PM_{2.5}$. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for $PM_{2.5}$ emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for $PM_{2.5}$ emissions, it has directed states to regulate PM_{10} emissions as a surrogate for $PM_{2.5}$ emissions.

(c) Shelby County has been classified as attainment or unclassifiable for PM_{10}, SO_2, NO_2, 1-hour ozone, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(d) Fugitive Emissions
Since this type of operation is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are counted toward the determination of PSD and Emission Offset applicability.

Source Status – Potential to Emit Prior to Modification

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Table 3: Source Status PTE	
Pollutant	**Emissions** (tons/year)
CO	408.04
NO_x	255.60
PM	501.17

Table 3: Source Status PTE	
Pollutant	**Emissions** (tons/year)
PM_{10}	501.17
SO_2	13.45
VOC	176.83
Single HAP	> 10
Total HAP	> 25

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).

(b) This existing source is a major stationary source, under Emission Offset (326 IAC 2-3), because VOC and NO_x, a nonattainment regulated pollutant, are emitted at a rate of 100 tons per year or more.

(c) These emissions are based upon the Part 70 operating permit, 145-6038-00001, issued on September 14, 1999, and the latest significant source modification, 145-20887-00001, issued on November 9, 2005.

(d) This existing source is a major source of HAPs, as defined in 40 CFR 63.41, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2004 OAQ emission data.

Table 4: Actual Emission – 2004 Emissions Statement	
Pollutant	**Actual Emissions** (tons/year)
CO	291.26
Pb	0.00
NH_3	304.35
NO_X	156.9
PM	423.12
$PM_{2.5}$	345.41
PM_{10}	419.98
SO_2	11.59
VOC	241.58
Total HAP	Not Reported

Background and Description of Proposed Modification

On May 24, 2006, the Office of Air Quality (OAQ) received an application from Knauf Insulation GmbH to expand their Shelbyville plant, located at One Knauf, Shelbyville, Indiana, in Shelby County. The fiberglass insulation products manufactured in this expansion will manufacture unbonded commercial/industrial products.

The proposed fiberglass insulation expansion will consist of adding the following emission units:

(1) 602B FURNACE:
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE. This furnace is common to the existing bonded manufacturing line, MFG 602, and the proposed unbonded manufacturing line, 602 LF MFG. There are no changes to the existing bonded manufacturing line, MFG 602, as part of this proposed modification.

(2) 602 LF MFG:
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG;

(3) 602 LF SEPARATOR:
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2;

(4) 602 LF PACKAGING:
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4; and

(5) Various Raw Material Handling and Storage Units:
Changes will be made that will increase the throughput capacity of the Raw Material and Handling Systems by eight and two tenths percent (8.2%).

In addition, the proposed fiberglass insulation expansion will consist of retiring the following emission units:

(1) One (1) existing permitted furnace identified as FURN 602A.

Complete emission unit descriptions are detailed below in the Emission Units Descriptions section of this document.

This proposed modification is a separate project from the expansion that was approved on November 9, 2005 because the previous modification involved modifying processes for manufacturing bonded building insulation products and this proposed expansion involves adding a new process for manufacturing unbonded, loose fill insulation products.

Enforcement Issues

There are no pending enforcement actions related to this modification.

Confidential Information

The following information regarding the proposed expansion has been submitted by Knauf Insulation GmbH as confidential information:

(1) Basic Plant Layout and Dimensions;

(2) Process Flow Diagrams; and

(3) Throughput Capacities of the Raw Material and Handling emission units.

Emission Units Descriptions

The proposed fiberglass insulation expansion will consist of the following emission units:

(1) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
- installed in 2007,
- operating at a maximum processing capacity of 300 tons of glass per day,
- operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),
- utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and
- exhausting through one (1) stack ID # 6-30.
- 602B FURNACE is common to MFG 602 and 602 LF MFG.
- 602B FURNACE is a new affected source under the National Emission Standards for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).

(2) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- installed in 2007,
- operating at a maximum processing capacity of 170 tons of glass per day,
- operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),
- utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and
- exhausting through one (1) stack ID # 6-22.
- 602 LF MFG is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

(3) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2,
- installed in 2007,
- operating at a maximum processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting internally through two (2) vents ID# 6-31 & 6-32.

(4) 602 LF PACKAGING
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4,
- installed in 2007,
- operating at a maximum processing capacity of 170 tons of glass per day,
- utilizing two (2) baghouses for particulate control (Unit ID # 602 LF PACKAGING 1&2 & 3&4), and
- exhausting to 602 LF SEPARATOR.

(5) Raw Material and Handling Systems

(a) The nominal capacities of these units have been classified as confidential information.

Table 5: Batch House: Raw Material and Handling Systems			
Emission Unit	**Emission Unit ID**	**Internal Vent ID**	**Control Device ***
Silica Sand Storage Silos	Silo61	6-1 a & b	Baghouse
Nepheline Syenite Storage Silos	Silo62	6-2	Baghouse
Soda Ash Storage Silos	Silo63	6-3 a & b	Baghouse
Limestone Storage Silo	Silo64	6-4	Baghouse
Dolomite Storage Silo	Silo65	6-5	Baghouse
Minor Ingredient Storage Silo	Silo66	6-6	Baghouse
Spare Storage Silo	Silo67	6-7	Baghouse
602 Furnace Day Bins	DB602	6-8 a & b	Baghouse
Borax Storage Silo	Silo69	6-9 a & b	Baghouse
CNSMR Cullet Storage Silo	Silo612	6-12 a & b	Baghouse
Knauf Cullet Storage Silo	Silo613	6-13 a & b	Baghouse
Gallery Conveyor Systems	GLCONVEY / BUCKETELV	6-15 a, b, c, & d	Baghouse
Raw Material Unloader	RMUNLDR616	6-16 a & b	Baghouse
Gathering Belt/Weigh Scales	GTHRNGBLT617	6-17	Baghouse
Batch Mixer/Check Scale	BMXR618	6-18 a & b	Baghouse
Knauf Cullet Handling	KCHNDLNG620	6-20 a & b	Baghouse

* Controlled emissions exhaust inside the building.

Existing Manufacturing Lines to Retire

The following existing emission unit will be retired upon operation of the proposed expansion:

FURN 602A – Stack 2-1
One (1) gas-fired (with electric boost) glass melting furnace, identified as Unit ID # FURN 602A, installed in 1983, operating at a rated heat input capacity of 30 MMBtu per hour, combusting natural gas, utilizing one (1) dry electrostatic precipitator for particulate control, exhausting through one (1) stack ID #2-1.

Control Devices Specifications

The following control device specifications will be implemented upon operation of the proposed expansion:

Table 6: Control Devices Specifications					
Stack or Internal Vent ID	**Emission Unit ID**	**Control Device**	**Flow Rate** (CFM)	**Grain Loading** (gr/dscf)	**Control Efficiency** (%)
6-1 a & b	Silo61	Baghouse	684	0.003	99%
6-2	Silo62	Baghouse	412	0.001	99%

Table 6: Control Devices Specifications

Stack or Internal Vent ID	**Emission Unit ID**	**Control Device**	**Flow Rate** (CFM)	**Grain Loading** (gr/dscf)	**Control Efficiency** (%)
6-3 a & b	Silo63	Baghouse	684	0.001	99%
6-4	Silo64	Baghouse	684	0.0003	99%
6-5	Silo65	Baghouse	412	0.001	99%
6-6	Silo66	Baghouse	675	*negligible*	99%
6-7	Silo67	Baghouse	412	*negligible*	99%
6-8 a & b	DB602	Baghouse	684	0.010	99%
6-9 a & b	Silo69	Baghouse	412	0.002	99%
6-12 a & b	Silo612	Baghouse	412	0.006	99%
6-13 a & b	Silo613	Baghouse	351	*negligible*	99%
6-15 a, b, c, & d	GLCONVEY / BUCKETELV	Baghouse	351	0.036	99%
6-16 a & b	RMUNLDR616	Baghouse	351	0.021	99%
6-17	GTHRNGBLT617	Baghouse	351	0.021	99%
6-18 a & b	BMXR618	Baghouse	351	0.021	99%
6-20 a & b	KCHNDLNG620	Baghouse	351	*negligible*	99%
6-30	602B FURNACE	Baghouse	31,000	–	99%
6-22	602 LF MFG	Wet ESP	153,000*	–	60%
6-31 & 6-32	602 LF SEPARATOR	Baghouse	10,000 per vent	–	99%
602 LF SEPARATOR	602 LF PACKAGING	Baghouse	10,000 per vent	–	99%

* The Maximum Outlet Flowrate for stack 6-22 is 786,000 and represents the combined outlet flowrate from all units vented to this stack. 135,000 ACFM is the estimated outlet flowrate from this modification based on the following calculation:

Proposed Max. Flowrate – Permitted Max. Flowrate = Estimated Max. Flowrate

786,000 – 633,000 = 153,000 ACFM

Stack Summary

The following stacks will be affected by implementation of the proposed expansion:

Table 7: Stack Summary

Stack ID	**Operation**	**Height** (feet)	**Diameter** (feet)	**Flow Rate** (acfm)	**Temperature** (°F)
6-22 (existing)	602 LF MFG (new) MFG 602 (existing)	200	26	786,000	110
6-30 (new)	602B FURNACE (new)	125	3.3	31,000	210

Emission Calculations

See Appendix A – Emission Calculations – of this TSD for detailed Potential to Emit (PTE) calculations.

Permit Level Determination – Part 70

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, IDEM, or the appropriate local air pollution control agency."

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Table 8: Total PTE of the Proposed Expansion Before Control

Pollutant	**Total PTE** (lb/hr)	**Total PTE** (tons/year)
CO	64.68	283.31
NO_x	11.93	52.24
PM	775.47	3396.58
PM_{10}	793.43	3475.22
SO_2	0.05	0.24
VOC	0.50	2.17
HAP – Chromium	0.000126	0.0006
Total HAPs	0.000126	0.0006

This source modification, SSM 145-23127-00001, is subject to 326 IAC 2-7-10.5(f), paragraphs (1), (4) and (7) because the modification is subject to 326 IAC 2-2, the potential to emit particulate matter (both PM and PM_{10}) and nitrogen oxides (NO_X) is greater than twenty-five (25) tons per year, and the potential to emit carbon monoxide (CO) is greater than one hundred (100) tons per year. Additionally, the modification will be incorporated into the Part 70 Operating Permit through a significant permit modification, SPM 145-23151-00001, issued pursuant to 326 IAC 2-7-12(d), because the modification requires significant changes in existing monitoring Part 70 permit terms and conditions.

Permit Level Determination – PSD and Emission Offset

To determine if this proposed modification/project will be a major modification, the emissions increases occurring at all new or modified units, and any other increases at existing emissions units not being modified, which could experience emissions increases that will result from the change have to be determined. Since this type of operation is one of the 28 listed source categories under 326 IAC 2-2-1(gg), the fugitive particulate matter emissions are counted toward determination of PSD applicability.

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 source modification/ permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Table 9: Total PTE of the Proposed Expansion After Control (tons/year)

Process / Emission Unit	PM	PM_{10}	NO_X	CO	VOC	SO_2	Single HAP
Batch House – RM&H	1.64	1.64	0.00	0.00	0.00	0.00	0.00
602 LF MFG	87.35	88.85	45.67	271.17	1.45	0.16	0.0004
602B FURNACE	24.89	25.64	6.57	12.13	0.72	0.08	0.0002
602 LF SEPARATOR	4.60	4.60	0.00	0.00	0.00	0.00	0.00
602 LF PACKAGING	0.66	0.66	0.00	0.00	0.00	0.00	0.00
Total for Modification	**119.13**	**121.38**	**52.24**	**283.31**	**2.17**	**0.24**	**0.0006**
Decrease due to retirement of FURN 602A	(0.50)	(0.50)	(44.10)	(5.00)	(0.96)	(0.18)	(0.01)
Total for Modification after Netting	**118.63**	**120.88**	**8.14**	**278.319**	**1.21**	**0.06**	**(0.0094)**
PSD Significant Level	**25**	**15**	40	**100**		40	
EO Significant Level			40		40		

Prevention of Significant Deterioration:
Pursuant to 326 IAC 2-2-1(qq), "project" means a physical change in, or change in the method of operation of an existing major source. In this specific case, the project is the installation of a new furnace, manufacturing line, separator process, and packaging process, and the removal of an existing furnace. The following equation illustrates how net emissions are calculated:

Net Emissions = (PTE New Emission Units) + (Net Emissions of the Retiring Units)
= (PTE New Emission Units) + (Future Actual – Past Actual of Retiring Units)
= (PTE New Emission Units) + (0 – Past Actual of Retiring Units)
= PTE New Emission Units – Past Actual of Retiring Units

If PTE is less than the significant levels, major source new source review requirements do not apply. If PTE is greater than the significant levels, major source new source review requirements apply.

(a) The proposed project is minor for NO_x, SO_2, and VOC, because the net emissions are less than the PSD significant levels.

(b) The proposed project is major for PM/PM_{10} and CO, because the net emissions are greater than the PSD significant level.

Emission Offset:
This modification to an existing major stationary source is not major because the emissions increase is less than the Emission Offset significant levels for NO_x and VOC, precursors to ozone formation. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Past Actual Emissions of FURN 602A

The following table summarizes the baseline actual emissions of the glass melting furnace, FURN 602A. Since this furnace will be retired upon the start up of the proposed expansion, the future actual emissions will be zero.

Table 10: Average Baseline Actual Emissions (tons/year)
Baseline Period of January 2004 through December 2005

Operations	PM/ PM_{10}	NO_x	CO	VOC	SO_2
2005	0.5	44.1	5	0.96	0.18
2004	0.5	44.1	5	0.96	0.18
Average	**0.5**	**44.1**	**5**	**0.96**	**0.18**

Baseline Actual Emissions for Prevention of Significant Deterioration (PSD) are determined using the methodology specified in 326 IAC 2-2-1(e) and 326 IAC 2-2-1(jj)(1)(B). Baseline Actual Emissions for Emission Offset are determined using the methodology specified in 326 IAC 2-3-1(d) and 326 IAC 2-3-1(dd)(1)(B).

These actual emissions are not consistent with the information in the OAQ Emission Inventory Database, because Knauf Insulation GmbH submitted revised actual emissions as part of this application (see Appendix A – Emissions Calculations – for the itemized actual emissions).

Average = [(2005 actual emissions) + (2004 actual emissions)] / 2 = tons/year

Total = FURN 602A average actual emissions = tons/year

Federal Rule Applicability Determination

(1) New Source Performance Standards (NSPS) 40 CFR Part 60

(a) The following new equipment is subject to the New Source Performance Standard for Wool Fiberglass Manufacturing (40 CFR Part 60, Subpart PPP).

602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of A forming section, identified as Unit ID # 602 LF MFG,
– installed in 2007,
– operating at a maximum processing capacity of 170 tons of glass per day,
– operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),
– utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and

– exhausting through one (1) stack ID # 6-22.
– 602 LF MFG produces an unbonded wool fiberglass insulation product.

Non applicable portions of the NSPS will not be included in the permit. This emission unit is subject to the following portions of 40 CFR Part 60, Subpart PPP.

(1) 40 CFR 60.680,
(2) 40 CFR 60.681,
(3) 40 CFR 60.682,
(4) 40 CFR 60.683(b-c),
(5) 40 CFR 60.684(b-e), and
(6) 40 CFR 60.685.

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12, apply to the facility described in this section except when otherwise specified in 40 CFR 60 Subpart PPP.

(b) The requirements of the New Source Performance Standard for Glass Manufacturing Plants (40 CFR 60, Subpart CC) are not included in this modification because this subpart does not apply to electric melters. [40 CFR 60.290(c)]

(c) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (40 CFR 60, Subpart Kb) are not included in this modification because each storage tank has less than 75 cubic meters capacity. The largest tank has a capacity of 15,000 gallons (56.78 cubic meters).

(2) National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63

(a) The following new equipment is subject to the National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN), which is incorporated by reference as 326 IAC 20-47.

602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
– installed in 2007,
– operating at a maximum processing capacity of 300 tons of glass per day,
– operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),
– utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and
– exhausting through one (1) stack ID # 6-30.
– 602B FURNACE is common to MFG 602 and 602 LF MFG.

Non applicable portions of the NESHAP will not be included in the permit. This emission unit is subject to the following portions of 40 CFR Part 63, Subpart NNN.

(1) 40 CFR 63.1380(a), (b)(1), and (d),
(2) 40 CFR 63.1381
(3) 40 CFR 63.1382(a)(1), (b), (b)(1), (b)(5), and (b)(8),
(4) 40 CFR 63.1383, (a-b), (f), (i), and (m),
(5) 40 CFR 63.1384(a)(1-5) and (b),
(6) 40 CFR 63.1385,
(7) 40 CFR 63.1386(a-c), (d)(1), (d)(2)(i), (d)(2)(ix), and (e),
(8) 40 CFR 63.1387(a)(2) and (b),
(9) 40 CFR 63.1388,

(10) 40 CFR 63.1389-63.1399, and
(11) Table 1 to Subpart NNN.

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart NNN.

(3) 40 CFR 64 (Compliance Assurance Monitoring)
Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:

(a) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;

(b) is subject to an emission limitation or standard for that pollutant; and

(c) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The following tables are used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each new or modified emission unit involved:

Table 11: Compliance Assurance Monitoring – CO

Emission Unit	**Control Device Used**	**Emission Limitation (Y/N)**	**Uncontrolled PTE** (tons/year)	**Controlled PTE** (tons/year)	**Major Source Threshold** (tons/year)	**CAM Applicable (Y/N)**	**Large Unit (Y/N)**
602 LF MFG	NONE	Y	271.17	271.17	100	N	Y

Table 12: Compliance Assurance Monitoring – PM

Emission Unit	**Control Device Used**	**Emission Limitation (Y/N)**	**Uncontrolled PTE** (tons/year)	**Controlled PTE** (tons/year)	**Major Source Threshold** (tons/year)	**CAM Applicable (Y/N)**	**Large Unit (Y/N)**
Raw Material Handling & Storage Units	BH	Y	163.89	1.64	40	Y	N
602B FURNACE	BH	Y	2488.72	24.89	40	Y	N
602 LF MFG	WESP	Y	218.37	87.35	40	Y	Y

Table 12: Compliance Assurance Monitoring – PM

Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
602 SEPAR-ATOR	BH	Y	459.90	4.60	40	Y	N
602 PACK-AGING	BH	N	65.70	0.66	40	N	N

Table 13: Compliance Assurance Monitoring – PM_{10}

Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
Raw Material Handling & Storage Units	BH	Y	163.89	1.64	40	Y	N
602B FURNACE	BH	Y	2563.61	25.64	40	Y	N
602 LF MFG	WESP	Y	222.12	88.85	40	Y	Y
602 SEPAR-ATOR	BH	Y	459.90	4.60	40	Y	N
602 PACK-AGING	BH	N	65.70	0.66	40	N	N

Table 14: Compliance Assurance Monitoring – NO_X

Emission Unit	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
602 LF MFG	NONE	N	45.67	45.67	40	N	Y

(a) Large Units
Based on this evaluation, the requirements of 40 CFR Part 64, CAM are applicable upon start-up for PM/PM_{10} to 602 LF MFG. A CAM plan has been submitted and the Compliance Determination and Monitoring Requirements section includes a detailed description of the CAM requirements.

(b) Other Units
Based on this evaluation, the requirements of 40 CFR Part 64, CAM are applicable upon issuance of the Title V Renewal for PM/PM_{10} to the following emission units:

(1) Raw Material Handling & Storage Units;

(2) 602B FURNACE; and

(3) 602 SEPARATOR.

A CAM plan must be submitted as part of the Renewal application.

See Appendix A – Emission Calculations – of this TSD for detailed Potential to Emit calculations.

Emission Offset Evaluation

IDEM did not conduct an Emission Offset Evaluation because NOx and VOC emissions from this modification do not exceed major source thresholds.

State Rules Applicability Determination

(1) Pursuant to 326 IAC 2-1.1-4 (Federal Provisions), in case of a conflict between the state rules and a provision of federal law or regulation, the more stringent requirement applies.

(2) 326 IAC 1-6-3 and 326 IAC 2-7-5(13) (Preventive Maintenance Plan (PMP))
Knauf Insulation GmbH is subject to the PMP requirements. Development, implementation, and maintenance of PMPs will be required for the following control devices:

(a) Wet Electrostatic Precipitator; and

(b) Baghouses.

This determination is based on previous evaluations made for the Part 70 Operating Permit.

(3) 326 IAC 1-7-1 (Stack Height Requirements)
Stacks 6-22 and 6-30 are subject to this requirement because the particulate matter emissions are greater than 25 tons per year.

Table 15: Stack Dimensions

Stack ID	Outlet Diameter (feet)	Height (feet)	Maximum Outlet Flow Rate (acfm)	Outlet Gas Temperature (°F)
6-22	26	200	786,000	110
6-30	3.3	125	31,000	210

(4) 326 IAC 2-1.1-6 (Public Notice)

(a) Unless otherwise stated, information used in this review was derived from the application submitted by the applicant on May 24, 2006.

Additional information was received on June 28, 2006 and July 3, 2006.

(b) The applicant has provided a copy of the application in the Shelbyville-Shelby County Public Library, 57 West Broadway, Shelbyville, IN 46176.

(c) A notice of the preliminary findings will be published in the most circulated newspaper in the area. There will be a 30-day comment period.

(5) 326 IAC 2-1.1-8 (Time periods for determination on permit applications)
Pursuant to 326 IAC 2-1.1-8(a)(1), a final action needs to be issued no later than 270 calendar days from the receipt of the application, taking into account actions that can suspend the time period.

The application was received on May 24, 2006.

(6) 326 IAC 2-2-2 (Prevention of Significant Deterioration (PSD) Applicability)

(a) 1 of 28 Listed Source Categories
Knauf Insulation GmbH is one of the 28 listed source categories under 326 IAC 2-2-1(gg).

(b) PSD Major Source
Knauf Insulation GmbH is classified as an existing major stationary source because one or more regulated pollutants will be emitted at a rate of 100 tons per year or more.

(c) Proposed Expansion

(1) The proposed project is minor for NO_2, VOC, and SO_2; because the net emissions are less than the PSD significant levels (see the PSD and Emission Offset Applicability Determination section of this TSD).

(2) The proposed project is major for PM/PM_{10} and CO, because the net emissions are greater than the PSD significant level (see Appendix B for the PSD BACT Analyses).

(7) 326 IAC 2-4.1 (Major Sourced of Hazardous Air Pollutants (HAPs))
Knauf Insulation GmbH is considered a major source in terms of hazardous air pollutant (HAP) emissions because hazardous air pollutants (HAPs) are emitted at greater than 10 tons per year for single HAP or 25 tons per year for any combination. This modification will not increase HAP emissions.

Applicability determinations under 40 CFR Part 63 have been addressed under the Federal Rules Applicability of this TSD.

(8) 326 IAC 2-6-1 (Emission Reporting)
Knauf Insulation GmbH is subject to this requirement because at least one regulated pollutant has the potential to emit of 100 tons per year or more.

(9) 326 IAC 2-7 (Part 70 Program)
Knauf Insulation GmbH is an existing Part 70 source because at least one regulated pollutant has the potential to emit of 100 tons per year or more.

The Part 70 Operating Permit 145-6038-00001 for Knauf Insulation GmbH was issued on September 14, 1999.

(10) 326 IAC 2-8 (FESOP)
This program does not apply because Knauf Insulation GmbH is a Part 70 source.

(11) 326 IAC 3-5-1 (Continuous Monitoring of Emissions)
There are no existing continuous emissions monitor systems (CEMS) in the plant.

(12) 326 IAC 4-1 (Open Burning)
Knauf Insulation GmbH LLC shall not open burn material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4, or 326 IAC 4-1-6.

(13) 326 IAC 5-1 (Opacity limitations)
The opacity standard specified 326 IAC 5-1 applies, except otherwise specified under 326 IAC 2-2 (PSD), 326 IAC 2-3 (EO) or 40 CFR Part 60.

(14) 326 IAC 6-1 (PM Nonattainment limitation)
This rule does not apply to Knauf Insulation GmbH because it is not located in any of the counties or areas specified in 326 IAC 6-1-7.

(15) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
This rule does not apply because there are no boilers involved in this proposed expansion.

(16) 326 IAC 6-3 (Particulate Emission For Manufacturing Process)

(a) The following operations involved in this expansion are subject to 326 IAC 6-3. Compliance with the particulate limits specified such that the requirements under 326 IAC 2-2 (PSD) satisfies the requirements in 326 IAC 6-3.

Table 16: Particulate Limits			
Emission Unit ID	**Internal Vent ID**	**PM/PM_{10} PTE After Control**	
		(tons/year)	(lbs/hour)
Silo61	6-1 a & b	0.07	0.0154
Silo62	6-2	0.01	0.0031
Silo63	6-3 a & b	0.02	0.0051
Silo64	6-4	0.01	0.0015
Silo65	6-5	0.01	0.0031
Silo66	6-6	0.02	0.0046
DB602	6-8 a & b	0.22	0.0513
Silo69	6-9 a & b	0.03	0.0062
Silo612	6-12 a & b	0.08	0.0185
Silo613	6-13 a & b	0.01	0.0024
GLCONVEY / BUCKETELV	6-15 a, b, c, & d	0.42	0.0948
RMUNLDR616	6-16 a & b	0.24	0.0553
GTHRNGBLT617	6-17	0.24	0.0553
BMXR618	6-18 a & b	0.24	0.0553
KCHNDLNG620	6-20 a & b	0.01	0.0024

Table 16: Particulate Limits			
Emission Unit ID	**Internal Vent ID**	**PM/PM_{10} PTE After Control**	
		(tons/year)	(lbs/hour)
602 LF SEPARATOR	6-31 & 6-32	4.60	1.05
602 LF PACKAGING	602 LF SEPARATOR	0.66	0.15

See Appendix A – Emission Calculations – of this TSD for detailed Potential to Emit calculations.

(b) These facilities are not subject to 326 IAC 6-3 because they are subject to 326 IAC 11-4-1.

(1) 602B FURNACE, and

(2) 602 LF MFG.

(17) 326 IAC 7-1 (Sulfuric Dioxide (SO_2) Limitation)
Knauf Insulation GmbH is subject to this rule, however, there are no specific SO_2 limitations that apply to natural gas fueled emission units.

(18) 326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
The new emission units will NOT emit VOC emissions greater than 25 tons per year; therefore the provisions of 326 IAC 8-1-6 do not apply.

See Appendix A – Emission Calculations – of this TSD for detailed Potential to Emit calculations.

(19) 326 IAC 9 (Carbon Monoxide (CO) Emission Rules)
This rule does not apply because there are no applicable requirements specified for fiberglass insulation manufacturing lines.

(20) 326 IAC 10 (Nitrogen Oxides (NOx) Rules)
This rule does not apply to Knauf Insulation GmbH C because it is not located in Clark County or Floyd County.

(21) 326 IAC 11-4-1 (Fiberglass Insulation Manufacturing)
Knauf Insulation GmbH is subject to 326 IAC 11-4-1 because it produces fiberglass insulation products, an existing plant after June 19, 1979 and it is located in Shelby County.

Table 17: Particulate Allowable Limits			
Operations	**326 IAC 11-4-2 PM Limit** (gr/dscf)	**Proposed Add-On Control**	**Proposed PM Specifications** (gr/dscf)
Forming	0.025	Wet ESP	0.01
Furnace	0.25	Baghouse	0.03

Table 18: Particulate Allowable and Proposed PTE				
Operations	**326 IAC 11-4-2 Allowable**		**Proposed**	
	Loading (gr/dscf)	**PM/PM_{10}** (tons/year)	**Loading** (gr/dscf)	**PM / PM_{10}** (tons/year)
Forming	0.025	594.11	0.01	86.85
Furnace	0.25	361.35	0.03	24.64

(a) Methodology and Assumptions:

Forming Flow Rate – 786,000 dscf/min

Furnace Flow Rate – 31,000 dscf/min

PM/PM_{10} PTE after control
= (flow rate dscf/min)*(grain/dscf)*(1 lb/7,000 grains)*(60 min/hr)*(8760 hr/yr) *(1 ton/2000 lb) = tons/year

(b) The use Wet ESP (for the Forming sections) and the Baghouse (for the furnace) comply with the applicable requirements.

(22) 326 IAC 12 (New Source Performance Standards (NSPS))
This rule incorporates by reference the 40 CFR Part 60. Applicability determinations with this rule have been addressed under the Federal Rules Applicability of this TSD.

(23) 326 IAC 13 (Motor Vehicles Emissions)
Not applicable.

(24) 326 IAC 14 (Hazardous Air Pollutants (HAPs) Emission)
This rule incorporates by reference 40 CFR Part 61. The requirements for asbestos abatement projects under 40 CFR Part 61, Subpart M have been included in the permit for this source.

(25) 326 IAC 15 (Lead Rules)
Knauf Insulation GmbH is not one of the listed sources subject to this rule.

(26) 326 IAC 16 (Environmental Assessment, Activities of State Agencies)
Environmental assessments and environmental impact studies for recommendations or reports on proposals for legislation and other major state actions significantly affecting the quality of the human environment have to be performed. However, 326 IAC 16 and the Indiana Code 13-12-4-8 specifically state that an environmental impact statement is not required under state law for the issuance of a license or permit by any state agency. Therefore, no environmental impact statement under 326 IAC 16 has been performed for this permit. Similar provisions exempt PSD permit actions from the National Environmental Policy Act [15 USC 793(c)(1)].

(27) 326 IAC 17 (Public Records)
Knauf Insulation GmbH requested additional information to be treated as confidential information. The information has been processed as confidential materials.

(28) 326 IAC 19 (Mobile Source Rules)
These particular rules are applicable to employees in Lake and Porter Counties only. These rules are not applicable because Knauf Insulation GmbH is located in Shelby County.

(29) 326 IAC 20 (Hazardous Air Pollutants HAPs)
This rule incorporates by reference 40 CFR Part 63. Applicability determinations with this rule have been addressed under the Federal Rules Applicability of this TSD.

(30) 326 IAC 21 (Acid Deposition Control)
This rule incorporates by reference the federal Acid Rain Program. There are no acid rain applicable requirements included in the permit for this source.

(31) 326 IAC 22 (Stratospheric Ozone Protection)
This rule incorporates by reference the 40 CFR part 82. The standards for recycling and emissions reduction under 40 CFR Part 82 have been included in the permit for this source.

(32) 326 IAC 23 (Lead Based Paint Program)
This rule does not apply because this source will not perform operations using lead-based paints.

Endangered Species

The Clean Air Act (CAA) does not contain or express requirement for the applicant or the permitting agency to analyze or consider the impact of hazardous air pollutants on endangered species when applying for or making a decision on a PSD permit. The CAA only requires impacts to endangered species be considered when the US EPA modifies the HAPs list or promulgates a NESHAP. (42 USC 7412).

In addition, Indiana's state rules do not require the performance of studies or analyses to determine the effect of toxic emissions from a source on federal or state-listed endangered species in the PSD permitting process.

Endangered species are protected under state and federal laws, which prohibit the unlawful taking of an endangered species. IC 14-22-34 and 16 USC 701 et. seq. Below is a listing of endangered, threatened or rare species in Indiana.

Table 19: Endangered, Threatened or Rare Species – Shelby County, Indiana

Common Name	Type	Federal Classification	State Classification
Northern Riffleshell	Mollusk	Endangered	State Endangered
Snuffbox	Mollusk		State Endangered
Wavyrayed Lampmussel	Mollusk		State Species of Special Concern
Clubshell	Mollusk	Endangered	State Endangered
Kidneyshell	Mollusk		State Species of Special Concern
Rabitsfoot	Mollusk		State Endangered
Salamander Mussel	Mollusk		State Species of Special Concern
Purple Lilliput	Mollusk		State Species of Special Concern
Little Spectaclecase	Mollusk		State Species of Special Concern
Central Till Plain Flatwoods	High Quality Natural Community		State Significant
Indiana Bat	Mammal	Endangered	Unknown
Bald Eagle	Bird	Threatened	Unknown

The OAQ is not aware of any federally-listed endangered species within the vicinity of this source or within the city of Shelbyville, Indiana. Based on the location of the plant and the air quality analysis done, the impact of the modification to this industrial area would not affect habitats of endangered species; therefore; emissions from this source will not adversely affect any federally-listed endangered species or any state-listed endangered species.

Compliance Determination and Monitoring

The OAQ has evaluated the compliance monitoring requirements and recommends the following:

(1) Baghouses – Raw Material and Handling Operations
Bag leak detection systems (BLDS) will be used to monitor the operation of the baghouses.

(2) Baghouse – 602B FURNACE – Stack 6-30
The 602B FURNACE baghouse will be monitored according to the applicable compliance monitoring requirements specified in 40 CFR Part 63, Subpart NNN. According to this subpart, a bag leak detection system will be required.

(3) Wet ESP – 602 LF MFG – Stack 6-22
The 602 LF MFG wet electrostatic precipitator (ESP) will be monitored according to the applicable compliance monitoring requirements specified in 40 CFR Part 60, Subpart PPP (Wool Fiberglass Insulation Manufacturing Plants).

(4) Baghouses – 602 LF SEPARATOR
Bag leak detection systems (BLDS) will be used to monitor the operation of the 602 LF SEPARATOR baghouses.

(5) Baghouses – 602 LF PACKAGING
Bag leak detection systems (BLDS) will be used to monitor the operation of the 602 LF PACKAGING baghouses.

Compliance Testing Requirements

(1) PM and PM_{10}, and CO will be required to be tested for the following emission units:

(a) 602B FURNACE; and

(b) 602 LF MFG.

The testing frequencies are the same as the frequencies specified for the recent expansion approved on November 9, 2005.

The existing bonded wool insulation manufacturing line, MFG 602, is already required to test for PM and PM10; therefore, this testing will be included as part of the routine testing for the new electric glass melting furnace, 602B FURNACE, and the new unonded wool insulation manufacturing line, 602 LF MFG.

(2) Testing requirements are subject to the provisions of 326 IAC 3-6.

Public Health and Safety

The Office of Air Quality (OAQ) issues technically sound permits that are protective of public health. Within the boundaries of the law, the OAQ has conducted appropriate analysis of the impacts of this proposed facility on human health. State Implementation Plan (SIP) requirements are examples of health-based standards, because the SIP requirements were proposed by the state and approved by the U.S. EPA for the purposes of maintaining the National Ambient Air Quality Standards (NAAQS). These standards are health-based standards and based on the assessment of public health risks associated with certain levels of pollution in the ambient environment. The Clean Air Act (CAA) requires each state to develop air quality plans and outlines how the standards will be met.

U.S. EPA has established ambient levels that are protective of human health. Anticipated emissions can be modeled and the resulting ambient levels compared to the federal standard. If levels are not expected to increase above U.S. EPA's ambient standard, it is appropriate to conclude that the proposed facility will not pose an increased threat to public health.

Noise, Odor and Zoning

The Office of Air Quality (OAQ) does not have jurisdiction over noise pollution, odor and zoning.

Environmental Justice (EJ)

Based on the 2000 US Census, there are 12.5% of Indiana residents who identified themselves as racial minority. An area is classified as High Racial Minority if it falls between 18.75% to 24.99 %. Shelby County, IN, where Knauf Insulation GmbH is located does not fall under this classification.

Based on the 1990 US Census, 28% of Indiana residents lived in households that received an income less than or equal to twice the poverty level. This is classified a Low Income Household. Shelby County, IN does not fall under this classification.

If the source being reviewed is going to be located in an area considered to be either a High Racial Minority or Low Income Household, the OAQ attempts to publish the notice for the public review in a non-English newspaper, and holds a public meeting prior to the issuing a final action. Since Shelby County is neither of these classifications, the OAQ will only publish the notice in a most circulated newspaper in the area.

For more information on Environmental Justice (EJ), please refer to www.in.gov/idem/your_environment/community_involvement/ej/.

Proposed Part 70 Operating Permit Changes

Appendix D – Part 70 Operating Permit Proposed Changes – of this TSD shows the proposed revisions to the Part 70 Operating Permit 145-6038-00001, issued on September 14, 1999.

Recommendation and Conclusion

(1) Based on the facts, conditions and evaluations made, OAQ recommends to the IDEM Commissioner that the SSM 145-23127-00001 and SPM 145-23151-00001 be approved.

(2) A copy of the preliminary findings is also available on the Internet at: www.in.gov/idem/permits/air/pending.html.

(3) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem/permits/guide/.

TSD Appendices

The following are the appendices of this TSD:

(1) Appendix A – Emissions Calculations

(2) Appendix B – PSD BACT Analyses

(3) Appendix C – Air Quality Impact Analysis

(4) Appendix D – Part 70 Operating Permit Proposed Changes

IDEM Contact

Questions regarding this proposed permit can be directed to Kimberly Cottrell at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-0870 or toll free at 1-800-451-6027 extension 3-0870.

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 145-23127-00001 and Significant Permit Modification No. 145-23151-00001. The staff recommend to the Commissioner that this Part 70 Significant Source Modification No. 145-23127-00001 and Significant Permit Modification No. 145-23151-00001 be approved.

Indiana Department of Environmental Management
Office of Air Quality

Appendix B – BACT Analyses
Technical Support Document (TSD)
Prevention of Significant Deterioration (PSD)
Significant Source Modification (SSM) of a Part 70 Source
Significant Permit Modification (SPM) of Part 70 Operating Permit

Source Background and Description

Source Name:	Knauf Insulation GmbH
Source Location:	One Knauf Drive, Shelbyville, IN 46176
County:	Shelby
SIC Code:	3296
Operation Permit No.:	T 145-6038-00001
Operation Permit Issuance Date:	September 14, 1999
Significant Source Modification No.:	SSM 145-23127-00001
Significant Permit Modification No.:	SPM 145-23151-00001
Permit Writer:	Kimberly Cottrell

Proposed Expansion

On May 24, 2006, the Office of Air Quality (OAQ) received an application from Knauf Insulation GmbH to expand their Shelbyville plant, located at One Knauf, Shelbyville, Indiana, in Shelby County. The fiberglass insulation products manufactured in this expansion will manufacture unbonded commercial/industrial products.

The proposed fiberglass insulation expansion will consist of adding the following emission units:

(1) 602B FURNACE:
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE. This furnace is common to the existing bonded manufacturing line, MFG 602, and the proposed unbonded manufacturing line, 602 LF MFG. There are no changes to the existing bonded manufacturing line, MFG 602, as part of this proposed modification.

(2) 602 LF MFG:
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG;

(3) 602 LF SEPARATOR:
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2;

(4) 602 LF PACKAGING:
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4; and

(5) Various Raw Material Handling and Storage Units:
Changes will be made that will increase the throughput capacity of the Raw Material and Handling Systems by eight and two tenths percent (8.2%).

In addition, the proposed fiberglass insulation expansion will consist of retiring the following emission units:

(1) One (1) existing permitted furnace, identified as FURN 602A.

This proposed modification is a separate project from the expansion that was approved on November 9, 2005 because the previous modification involved modifying processes for manufacturing bonded building insulation products and this proposed expansion involves adding a new process for manufacturing unbonded, loose fill insulation products.

Summary of the Best Available Control Technology (BACT) Process

BACT is a mass emission limitation based on the maximum degree of pollution reduction of emissions, which is achievable on a case-by-case basis. BACT analysis takes into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, work practices, and operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution, thereby protecting public health and the environment.

Federal guidance on BACT requires an evaluation that follows a “top down” process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by regulation or permit, or controls achieved in practice. The highest level of control is then evaluated for technical feasibility.

The five (5) basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially “available” control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies, innovative technologies, and controls applied to similar source categories. There is no requirement in the State or Federal regulations to require innovative control to be used as BACT.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering, and source-specific factors related to safe and successful use of the controls. Innovative control means a control that has not been demonstrated in a commercial application on similar units. Innovative controls are normally given a waiver from the BACT requirements due to the uncertainty of actual control efficiency. Based on this, the OAQ will not evaluate or require any innovative controls for this BACT analysis. Only available and proven control technologies are evaluated. A control technology is considered available when there are sufficient data indicating that the technology results in a reduction in emissions of regulated pollutants.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. The ranked alternatives are reviewed in terms of environmental, energy, and economic impacts specific to the proposed modification. If the analysis determines that the evaluated alternative is not appropriate as BACT due to any of the impacts, then the next most effective is evaluated. This process is repeated until a control alternative is chosen as BACT. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate the Most Effective Controls and Document the Results

The fourth step entails an evaluation of energy, environmental, and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. For the technologies determined to be feasible, there may be several different limits that have been set as BACT for the same control technology. The permitting agency has to choose the most stringent limit as BACT unless the applicant demonstrates in a convincing manner why that limit is not feasible. The final BACT determination would be the technology with the most stringent corresponding limit that is economically feasible. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

The Office of Air Quality (OAQ) makes BACT determinations by following the five steps identified above.

Requirement for Best Available Control Technology (BACT)

326 IAC 2-2 requires a best available control technology (BACT) review to be performed on the proposed modification for the following emission units:

(1) 602B FURNACE:
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE. This furnace is common to the existing bonded manufacturing line, MFG 602, and the proposed unbonded manufacturing line, 602 LF MFG. There are no changes to the existing bonded manufacturing line, MFG 602, as part of this proposed modification.

(2) 602 LF MFG:
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG;

(3) 602 LF SEPARATOR:
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2;

(4) 602 LF PACKAGING:
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4; and

(5) Various Raw Material Handling and Storage Units:
Changes will be made that will increase the throughput capacity of the Raw Material and Handling Systems by eight and two tenths percent (8.2%).

Because the proposed expansion has

(1) Particulate matter (PM) potential to emit greater than 25 tons per year;

(2) Particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}) potential to emit greater than 15 tons per year; and

(3) Carbon monoxide (CO) potential to emit greater than 100 tons per year.

Emission Units Subject to BACT Analysis for CO:

The following new and modified emission units have the potential to emit carbon monoxide (CO); therefore, Best Available Control Technology analyses for CO were performed for these units:

(1) 602B FURNACE:
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE. This furnace is common to the existing bonded manufacturing line, MFG 602, and the proposed unbonded manufacturing line, 602 LF MFG. There are no changes to the existing bonded manufacturing line, MFG 602, as part of this proposed modification.

(2) 602 LF MFG:
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG;

Emission Units Subject to BACT Analysis for PM / PM_{10}:

The following new and modified emission units have the potential to emit particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}); therefore, a Best Available Control Technology analyses for PM / PM_{10} were performed for these units:

(1) 602B FURNACE:
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE. This furnace is common to the existing bonded manufacturing line, MFG 602, and the proposed unbonded manufacturing line, 602 LF MFG. There are no changes to the existing bonded manufacturing line, MFG 602, as part of this proposed modification.

(2) 602 LF MFG:
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG;

(3) 602 LF SEPARATOR:
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2;

(4) 602 LF PACKAGING:
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4; and

(5) Various Raw Material Handling and Storage Units:
Changes will be made that will increase the throughput capacity of the Raw Material and Handling Systems by eight and two tenths percent (8.2%).

See Appendix A – Emission Calculations – of this TSD for detailed Potential to Emit (PTE) calculations.

Summary of Similar Sources (SIC Code 3296)

The table below summarizes existing sources with similar operations (SIC Code 3296) that are listed in the U.S. EPA RACT/BACT/LAER (RBLC) Clearinghouse database and other resources, such as other permitting agencies websites. Sources are listed in alphabetical order.

Table 1: Sources with SIC Code 3296

Company Name and Location	Products
American Rockwood, Inc., TX www.amerrock.com	Bonded Mineral Wool Products / Insulation
Armstrong World Industries, OR www.armstron.com	Not Fiberglass Insulation
Certainteed Corp, KS www.certainteed.com	Bonded and Unbonded Residential / Light Density Fiberglass Insulation
Guardian Fiberglass, MI www.guardianfiberglass.com	Bonded and Unbonded Residential / Light Density Fiberglass Insulation
Guardian Fiberglass, WV www.guardianfiberglass.com	Bonded Residential / Light Density Fiberglass Insulation
Johns Manville, GA www.jm.com	Bonded Residential/ Light Density Fiberglass Insulation
Johns Manville, IN www.jm.com	Bonded and Unbonded Residential / Light Density Insulation
Johns Manville, Waterville, OH www.jm.com	Bonded Commercial / Industrial Fiberglass Insulation
Johns Manville, Defiance, OH www.jm.com	Bonded Commercial / Industrial Fiberglass Insulation
Owens Corning, Cordele, GA www.owenscorning.com	Bonded and Unbonded Residential / Light Density Fiberglass Insulation

Sources that manufacture bonded fiberglass products or polystyrene foam insulation were eliminated from comparison in this review because this expansion will manufacture unbonded, loose fill fiberglass insulation products. A difference in products significantly affects the potential to emit of the manufacturing line.

Particulate Matter (PM/PM_{10}) BACT – 602B FURNACE

Step 1: Identify Potential Control Technologies

Emissions of particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}) are generally controlled with add-on control equipment designed to capture the emissions prior to the time they are exhausted to the atmosphere. In cases where the material being emitted is organic, particulate matter may be controlled through a combustion process. Generally, PM and PM_{10} emissions are controlled through one of the following mechanisms:

(1) Mechanical Collectors (such as Cyclones or Multiclones);

(2) Wet Scrubbers;

(3) Electrostatic Precipitators (ESP); and

(4) Fabric Filter Dust Collectors (Baghouses).

The choice of which technology is most appropriate for a specific application depends upon several factors, including particle size to be collected, particle loading, stack gas flow rate, stack gas physical characteristics (e.g., temperature, moisture content, presence of reactive materials), and desired collection efficiency.

If add-on control technology is not feasible, an alternate method of control may be implemented. For the wool fiberglass insulation industry, a viable alternate method of control is the batch wetting system.

Step 2: Eliminate Technically Infeasible Options

The RACT/BACT/LAER (RBLC) Clearinghouse and review of other New Source Review (NSR) permits reveal that similar fiberglass sources use fabric filtration baghouses, electrostatic precipitators (ESPs), wet scrubbers, and batch water spray systems for controlling particulate matter emissions from glass melting furnaces. Cyclones can also be used for particulate control at glass melting furnaces. These control alternatives are further described as follows.

(a) **Cyclones – Technically Infeasible**
Cyclones are simple mechanical devices commonly used to remove relatively large particles from gas streams. In industrial applications, cyclones are often used as precleaners for the more sophisticated air pollution control equipment such as ESPs or baghouses. Cyclones are less efficient than wet scrubbers, baghouses, or ESPs. Cyclones used as pre-cleaners are often designed to remove more than 80% of the particles that are greater than 20 microns in diameter. Smaller particles that escape the cyclone can then be collected by more efficient control equipment. This control technology may be more commonly used in industrial sites that generate a considerable amount of particulate matter, such as lumber companies, feed mills, cement plants, and smelters.

Based on availability and applicability, this technology was eliminated from consideration due to technical infeasibility for practical use within emission units for this industry.

(b) **Wet scrubbers – Technically Infeasible**

A wet scrubber is an air pollution control device that removes PM from waste gas streams primarily through the impaction, diffusion, interception and/or absorption of the pollutant onto droplets of liquid. The liquid containing the pollutant is then collected for disposal. There are numerous types of wet scrubbers that remove PM. Collection efficiencies for wet scrubbers vary with the particle size distribution of the waste gas stream. In general, collection efficiency decreases as the PM size decreases. Collection efficiencies also vary with scrubber type. Collection efficiencies range from greater than 99% for venturi scrubbers to 40-60% (or lower) for simple spray towers. Wet scrubbers are smaller and more compact than baghouses or ESPs. They have lower capital costs and comparable operation and maintenance (O&M) costs. Wet scrubbers are particularly useful in the removal of PM with the following characteristics:

(1) Sticky and/or hygroscopic materials (materials that readily absorb water);

(2) Combustible, corrosive and explosive materials;

(3) Particles that are difficult to remove in their dry form;

(4) PM in the presence of soluble gases; and

(5) PM in waste gas streams with high moisture content.

The primary disadvantage of wet scrubbers is that increased collection efficiency comes at the cost of increased pressure drop across the control system. Another disadvantage is that they are limited to lower waste gas flow rates and temperatures than ESPs or baghouses. Current wet scrubber designs accommodate air flow rates over 100,000 actual cubic feet per minute and temperatures of up to 750°F. Another disadvantage is that they generate waste in the form of a sludge which requires treatment and/or disposal. Lastly, downstream corrosion or plume visibility problems can result unless the added moisture is removed from the gas stream.

Based on availability and applicability, this technology was eliminated from consideration due to technical infeasibility for practical use within emission units for this industry.

(c) **Electrostatic Precipitators – Technically Feasible**

An electrostatic precipitator (ESP) is a particle control device that uses electrical forces to move the particles out of the flowing gas stream and onto collector plates. The particles are given an electrical charge by forcing them to pass through a corona, a region in which gaseous ions flow. The electrical field that forces the charged particles to the walls comes from electrodes maintained at high voltage in the center of the flow lane.

Once the particles are collected on the plates, they must be removed from the plates without re-entraining them into the gas stream. This is usually accomplished by knocking them loose from the plates, allowing the collected layer of particles to slide down into a hopper from which they are evacuated. Some precipitators remove the particles by intermittent or continuous washing with water. ESP control efficiencies can range from 95% to 99.9%.

This technology is technically feasible and will be ranked for evaluation as BACT for controlling PM / PM_{10} emitted from the electric glass melting furnace, 602B FURNACE.

(d) **Fabric Filtration – Technically Feasible**
A fabric filter unit consists of one or more isolated compartments containing rows of fabric bags in the form of round, flat, or shaped tubes, or pleated cartridges. Particle laden gas passes up (usually) along the surface of the bags then radially through the fabric. Particles are retained on the upstream face of the bags, and the cleaned gas stream is vented to the atmosphere. The filter is operated cyclically, alternating between relatively long periods of filtering and short periods of cleaning. During cleaning, dust that has accumulated on the bags is removed from the fabric surface and deposited in a hopper for subsequent disposal.

Fabric filters collect particles with sizes ranging from submicron to several hundred microns in diameter at efficiencies generally in excess of 99 or 99.9%. The layer of dust, or dust cake, collected on the fabric is primarily responsible for such high efficiency. The cake is a barrier with tortuous pores that trap particles as they travel through the cake. Gas temperatures up to about 500°F, with surges to about 550°F, can be accommodated routinely in some configurations. Most of the energy used to operate the system appears as pressure drop across the bags and associated hardware and ducting. Typical values of system pressure drop range from about 5 to 20 inches of water.

Fabric filters are used where high efficiency particle collection is required. Limitations are imposed by gas characteristics (temperature and corrosivity) and particle characteristics (primarily stickiness) that affect the fabric or its operation and that cannot be economically accommodated. Important process variables include particle characteristics, gas characteristics, and fabric properties. The most important design parameter is the air- or gas-to-cloth ratio (the amount of gas in ft^3/min that penetrates one ft^2 of fabric) and the usual operating parameter of interest is pressure drop across the filter system. The major operating feature of fabric filters that distinguishes them from other gas filters is the ability to renew the filtering surface periodically by cleaning. Common furnace filters, high efficiency particulate air (HEPA) filters, high efficiency air filters (HEAFs), and automotive induction air filters are examples of filters that must be discarded after a significant layer of dust accumulates on the surface. These filters are typically made of matted fibers, mounted in supporting frames, and used where dust concentrations are relatively low. Fabric filters are usually made of woven or (more commonly) needle-punched felts sewn to the desired shape, mounted in a plenum with special hardware, and used across a wide range of dust concentrations.

This technology is technically feasible and will be ranked for evaluation as BACT for controlling PM / PM_{10} emitted from the electric glass melting furnace, 602B FURNACE.

(e) **Batch Water Spray Systems – Technically Feasible**
In this system, also called a batch wetting system, water is used to add moisture to the mixed batch ingredients charged into the glass melting furnace to minimize particulate matter emissions and the amount of fugitive emissions. The control efficiency is variable and is dependent on the moisture content of the batch materials.

This technology is technically feasible and will be ranked for evaluation as BACT for controlling PM / PM_{10} emitted from the electric glass melting furnace, 602B FURNACE.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), the following control technologies have been identified for control of PM and PM_{10} resulting from operation of an electric glass melting furnace at a facility manufacturing loose fill (unbonded) wool fiberglass insulation products:

(1) Baghouse: *(95% to 99% control efficiency for wool fiberglass manufacturing)*
The highest ranked control technology is fabric filter dust collectors or baghouses. Control efficiencies can easily exceed 99.9%. For the operation of an electric glass melting furnace at a facility manufacturing loose fill (unbonded) wool fiberglass insulation products, the actual control efficiency of the device ranges from 95% to 99%.

(2) Dry Electrostatic Precipitator: *(92.5% to 95% control efficiency for wool fiberglass manufacturing)*
The second ranked control technology is electrostatic precipitators. Control efficiencies are in the range of 95% to 99%. For the operation of an electric glass melting furnace at a facility manufacturing loose fill (unbonded) wool fiberglass insulation products, the actual control efficiency of the device is 92.5% for PM_{10} and 95% for PM).

(3) Batch Wetting System: *(Variable control efficiency for wool fiberglass manufacturing)*
The third ranked control technology is the batch wetting system. Control efficiencies are variable and dependent on the moisture content of the batch materials. For the operation of an electric glass melting furnace at a facility manufacturing loose fill (unbonded) wool fiberglass insulation products, actual control efficiencies of these devices are not specified.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed PM/PM_{10} BACT determination along with the existing PM/PM_{10} BACT determinations for electric glass melting furnaces. All data in the table is based on the information obtained from the permit application submitted by Knauf Insulation GmbH, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Table 2: Existing PM/PM_{10} BACT Limits – Electric Glass Melting Furnaces

Company Name / Operation	PM / PM_{10} Limit	Control Technology
PROPOSAL		
Knauf Insulation – Shelbyville, IN (Proposed permit 23127) Electric Furnace (602B FURNACE) Capacity 300 tons glass/day	PM/PM_{10} 0.45 lb/ton glass pulled 5.63 lb/hr 99% control efficiency	Baghouse
COMPARABLE BACT DETERMINATIONS (List in Top-Down Order by control efficiency)		
Johns Manville – Richmond, IN (permit 16463, issued 4/22/1999) Electric Melter, Line 6 Capacity 4000 pounds glass/hour	PM/PM_{10} 0.45 lb/ton glass pulled No efficiency specified	Baghouse
Certainteed Corporation – Kansas City, KS (permit 209-0001, issued 1/30/2004) Electric Furnace Capacity 72 tons glass/day	PM 0.5 lb/ton glass pulled PM_{10} 0.36 lb/ton glass pulled No efficiency specified	Electrostatic Precipitator
Certainteed Corporation – Kansas City, KS (permit 209-0001, issued 5/23/1997) 2 Electric Furnaces Capacity 300 tons glass/day	PM 0.5 lb/ton glass pulled PM_{10} 0.36 lb/ton glass pulled PM 95% control efficiency PM_{10} 92.5% control efficiency	Dry Electrostatic Precipitator

Table 2: Existing PM/PM_{10} BACT Limits – Electric Glass Melting Furnaces

Company Name / Operation	PM / PM_{10} Limit	Control Technology
Guardian Fiberglass – Albion, MI (permit 282-02, issued 6/8/2004) Electric Furnace, Line 8 Capacity 119 tons glass/day	PM 0.50 lb/ton glass pulled PM_{10} 0.92 lb/hr PM_{10} 0.017 lb/ 1000 lb exhaust 95% control efficiency	Baghouse
Guardian Fiberglass – Albion, MI (permit 282-02, issued 6/8/2004) Electric Furnace, Lines 1-7 Capacity 227 tons glass/day	PM 0.50 lb/ton glass pulled PM_{10} 2.08 lb/hr PM_{10} 0.01 lb/ 1000 lb exhaust 95% control efficiency	Baghouse
Owens Corning – Cordele, GA (permit 3296081-0063-P-01-0, issued 10/31/2005) Electric Furnace	PM 0.58 lb/ton glass pulled $PM_{filterable}$ 0.50 lb/ton glass pulled No efficiency specified	Batch Wetting System

One or more furnaces at the following facilities were not used for comparison because the furnaces are fueled by natural gas:
(1) Certainteed Corporation – Kansas City, KS
(2) Johns Manville – Richmond, IN
(3) Johns Manville – OH

(a) **Proposal**: Knauf Insulation – Shelbyville, IN
The following has been proposed as BACT for PM and PM_{10} from the proposed electric glass melting furnace, 602B FURNACE:

(1) Installation of one (1) baghouse operating with a minimum control efficiency of ninety-nine percent (99%) for control of PM and PM_{10}.

(2) Emission limitation of 0.45 pounds of combined PM and PM_{10} per ton of glass pulled.

(3) Emission limitation of 5.63 pounds of combined PM and PM_{10} per hour of operation (lb/hr).

The proposed emission limitations include filterable and condensible particulate matter.

The proposed BACT for control of PM and PM_{10} from the proposed electric glass melting furnace, 602B FURNACE, is more stringent than the emission limitation of 0.5 lb/ton glass pulled required by §63.63.1382(a)(1) of the National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN).

The proposed BACT requirements for Knauf are comparable with the most stringent PM and PM_{10} limits specified for similar emission units at facilities that produce similar wool fiberglass insulation products.

(b) Johns Manville – Richmond, IN
The following is BACT for PM and PM_{10} from the electric glass melting furnace (Line 6) at the Johns Manville facility in Richmond, Indiana:

(1) Filterable and condensible fractions of PM/PM_{10} shall not exceed 0.45 lb/ton glass pulled.

(2) Emissions of PM and PM_{10} are controlled by a baghouse.

The proposed BACT for control of PM and PM_{10} from the proposed electric glass melting furnace, 602B FURNACE, is equivalent to the BACT level of control achieved by the Johns Manville facility in Richmond, Indiana.

(c) CertainTeed – Kansas City, KS
The following is BACT for PM and PM_{10} from the electric glass melting furnaces at the CertainTeed facility in Kansas City, Kansas:

(1) Total PM shall not exceed 0.5 lb/ton glass pulled.

(2) Filterable and condensible PM_{10} shall not exceed 0.36 lb/ton glass pulled.

(3) No control device or other requirements are specified in the permit as part of the BACT determination; however, the RBLC indicates that emissions of PM and PM_{10} are controlled by electrostatic precipitators that achieve a minimum control efficiency of 95% for PM and 92.5% for PM_{10}.

The proposed BACT for control of PM and PM_{10} from the proposed electric glass melting furnace, 602B FURNACE, is more stringent than the BACT level of control achieved by the CertainTeed facility in Kansas City, Kansas. Therefore, the PM and PM_{10} limits for the CertainTeed facility in Kansas City, Kansas will not be considered as BACT for this proposed electric glass melting furnace.

(d) Guardian Fiberglass – Albion, MI
The following is BACT for PM and PM_{10} from the electric melt units at the Guardian Fiberglas facility in Albion, Michigan:

Electric Melt Units 1 through 7:

(1) Total PM shall not exceed 0.5 lb/ton glass as required by §63.63.1382(a)(1) of the National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN).

(2) Filterable and condensible PM_{10} shall not exceed 0.01 lb/1000 lb exhaust gas or 2.08 lb/hr.

(2) Emissions of PM and PM_{10} are controlled by a baghouse operating with ninety-five percent (95%) control efficiency.

Electric Melt Unit 8:

(1) Total PM shall not exceed 0.5 lb/ton glass pulled as required by §63.63.1382(a)(1) of the National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN).

(2) Filterable and condensible PM_{10} shall not exceed 0.017 lb/1000 lb exhaust gas or 0.92 lb/hr.

(3) Emissions of PM and PM_{10} are controlled by a baghouse operating with ninety-five percent (95%) control efficiency.

The proposed BACT for control of PM and PM_{10} from the proposed electric glass melting furnace, 602B FURNACE, is more stringent than the BACT level of control achieved by the Guardian Fiberglas facility in Albion, Michigan. Therefore, the PM and PM_{10} limits for the Guardian Fiberglas facility in Albion, Michigan will not be considered as BACT for this proposed electric glass melting furnace.

(e) Owens Corning – Cordele, GA
The following is BACT for PM and PM_{10} from the electric glass melting furnace, CG101, at the Owens Corning facility in Cordele, Georgia:

(1) Total PM in excess of 0.58 pounds per ton of molten glass pulled from the line.

(2) Filterable PM in excess of 0.5 pounds per ton of molten glass pulled from the line.

(3) No control device or other requirements are specified in the permit as part of the BACT determination; however, the RBLC indicates that PM emissions are controlled by an electrostatic precipitator that achieves 95% and 99% control of PM.

The proposed BACT for control of PM and PM_{10} from the proposed electric glass melting furnace, 602B FURNACE, is more stringent than the BACT level of control achieved by the Owens Corning facility in Cordele, Georgia. Therefore, the PM and PM_{10} limits for the Owens Corning facility in Cordele, Georgia will not be considered as BACT for this proposed electric glass melting furnace.

Step 5: Select BACT

Based on the information submitted by Knauf Insulation GmbH and the BACT Analysis documented above pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for particulate matter (PM / PM_{10}) for the proposed electric glass melting furnace, 602B FURNACE:

(1) A baghouse shall be installed to control the PM/PM_{10} emissions from the glass melting furnace, 602B FURNACE, and shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouse from the 602B FURNACE shall not exceed:

(A) 0.45 pound per ton of glass pulled;

(B) 5.63 pounds per hour based on a 3-hour rolling average.

These emission rates include filterable and condensible particulate matter.

Carbon Monoxide (CO) BACT – 602B FURNACE

Step 1: Identify Potential Control Technologies

Emissions of carbon monoxide (CO) are generally controlled by oxidation. Combustion control technologies include recuperative thermal oxidation, regenerative thermal oxidation, recuperative catalytic oxidation, regenerative catalytic oxidation, and flares.

Step 2: Eliminate Technically Infeasible Options

The RACT/BACT/LAER (RBLC) Clearinghouse and review of other New Source Review (NSR) permits reveal that similar fiberglass sources use oxidation and good combustion practices for controlling particulate matter emissions from glass melting furnaces.

The destruction of organic compounds usually requires temperatures ranging from 1200°F to 2200°F for direct thermal oxidizers or 600°F to 1200°F for catalytic systems. Combustion temperature depends on the chemical composition and the desired destruction efficiency. Carbon dioxide and water vapor are the typical products of complete combustion. Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 seconds are needed to obtain high destruction efficiencies.

The exhaust gas from the electric glass melting furnace is at ambient temperature upon entering and leaving the baghouse that is used to control PM emissions. The thermal oxidation options are not technically feasible due to plugging of the thermal bed and the excessive fuel consumption that would be required to raise the temperature of this exhaust gas to the necessary oxidation temperature.

Based on availability and applicability, this technology was eliminated from consideration due to technical infeasibility for practical use within emission units for this industry.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), no control technologies have been identified for control of carbon monoxide (CO) resulting from operation of an electric glass melting furnace.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed CO BACT determination along with the existing CO BACT determinations for electric glass melting furnaces. All data in the table is based on the information obtained from the permit application submitted by Knauf Insulation GmbH, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Table 3: Existing CO BACT Limits – Electric Glass Melting Furnaces		
Company Name / Operation	**CO Limit**	**Control Technology**
PROPOSAL		
Knauf Insulation – Shelbyville, IN (Proposed permit 23127) Electric Furnace (602B FURNACE) Capacity 300 tons glass/day	0.02 lb/ton glass pulled 0.25 lb/hr	No Control
COMPARABLE BACT DETERMINATIONS (List in Top-Down Order by control efficiency)		
Owens Corning – Cordele, GA (permit 3296081-0063-P-01-0, issued 10/31/2005) Electric Furnace	0.5 lb/ton glass pulled	No Control

Table 3: Existing CO BACT Limits – Electric Glass Melting Furnaces

Company Name / Operation	CO Limit	Control Technology
Johns Manville – Richmond, IN (permit 16463, issued 4/22/1999) Electric Furnace Capacity 4000 lb glass/hr	0.85 lb/ton glass pulled	No Control

One or more furnaces at the following facilities were not used for comparison because the furnaces are fueled by natural gas:
(1) Johns Manville – Richmond, IN
(2) Johns Manville – OH

(a) **Proposal**: Knauf Insulation – Shelbyville, IN
The following has been proposed as BACT for CO from the proposed electric glass melting furnace, 602B FURNACE:

(1) No control device is proposed to comply with the BACT limitation.

(2) Emission limitation of 0.02 pounds of CO per ton of glass pulled.

(3) Emission limitation of 0.25 pounds of CO per hour of operation.

The proposed BACT requirements for Knauf are more stringent than the CO limits specified for similar emission units at facilities that produce similar wool fiberglass insulation products.

(b) Owens Corning – Cordele, GA
The following is BACT for CO from the electric glass melting furnace, CG101, at the Owens Corning facility in Cordele, Georgia:

(1) CO emissions shall not exceed 0.5 pounds per ton of molten glass pulled from the line.

(2) No control device is identified in the permit to comply with the BACT limitation.

The proposed BACT for control of CO from the proposed electric glass melting furnace, 602B FURNACE, is more stringent than the BACT level of control achieved by the Owens Corning facility in Cordele, Georgia. Therefore, the CO limit for the Owens Corning facility in Cordele, Georgia will not be considered as BACT for this proposed electric glass melting furnace.

(c) Johns Manville – Richmond, Indiana
The following is BACT for CO from the electric glass melting furnace, CG101, at the Johns Manville facility in Richmond, Indiana:

(1) CO emissions shall not exceed 0.85 pounds per ton of molten glass pulled from the line.

(2) No control device is identified in the permit to comply with the BACT limitation.

The proposed BACT for control of CO from the proposed electric glass melting furnace, 602B FURNACE, is more stringent than the BACT level of control achieved by the Johns Manville facility in Richmond, Indiana. Therefore, the CO limit for the Johns Manville facility in Richmond, Indiana will not be considered as BACT for this proposed electric glass melting furnace.

Step 5: Select BACT

Based on the information submitted by Knauf Insulation GmbH and the BACT Analysis documented above pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for carbon monoxide (CO) for the proposed electric glass melting furnace, 602B FURNACE:

The CO emissions from the 602B FURNACE shall not exceed:

(1) 0.02 pound per ton of glass pulled;

(2) 0.25 pounds per hour based on a 3-hour rolling average.

Particulate Matter (PM/PM_{10}) BACT – 602 LF MFG

Step 1: Identify Potential Control Technologies

Emissions of particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}) are generally controlled with add-on control equipment designed to capture the emissions prior to the time they are exhausted to the atmosphere. In cases where the material being emitted is organic, particulate matter may be controlled through a combustion process. Generally, PM and PM_{10} emissions are controlled through one of the following mechanisms:

(1) Mechanical Collectors (such as Cyclones or Multiclones);

(2) Wet Scrubbers;

(3) Electrostatic Precipitators (ESP); and

(4) Fabric Filter Dust Collectors (Baghouses).

The choice of which technology is most appropriate for a specific application depends upon several factors, including particle size to be collected, particle loading, stack gas flow rate, stack gas physical characteristics (e.g., temperature, moisture content, presence of reactive materials), and desired collection efficiency.

If add-on control technology is not feasible, an alternate method of control may be implemented. For the wool fiberglass insulation industry, a viable alternate method of control is water spray, which may include enclosure of the manufacturing line.

Step 2: Eliminate Technically Infeasible Options

The RACT/BACT/LAER (RBLC) Clearinghouse and review of other New Source Review (NSR) permits reveal that similar fiberglass sources use fabric filtration baghouses, electrostatic precipitators (ESPs), wet scrubbers, and batch water spray systems for controlling particulate matter emissions from glass melting furnaces. Cyclones can also be used for particulate control at glass melting furnaces. These control alternatives are further described as follows.

(a) **Cyclones – Technically Feasible**

Cyclones are simple mechanical devices commonly used to remove relatively large particles from gas streams. In industrial applications, cyclones are often used as precleaners for the more sophisticated air pollution control equipment such as ESPs or baghouses. Cyclones are less efficient than wet scrubbers, baghouses, or ESPs. Cyclones used as pre-cleaners are often designed to remove more than 80% of the particles that are greater than 20 microns in diameter. Smaller particles that escape the cyclone can then be collected by more efficient control equipment. This control technology may be more commonly used in industrial sites that generate a considerable amount of particulate matter, such as lumber companies, feed mills, cement plants, and smelters.

This technology is technically feasible and will be ranked for evaluation as BACT for controlling PM / PM_{10} emitted from the loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG.

(b) **Wet scrubbers – Technically Feasible**

A wet scrubber is an air pollution control device that removes PM from waste gas streams primarily through the impaction, diffusion, interception and/or absorption of the pollutant onto droplets of liquid. The liquid containing the pollutant is then collected for disposal. There are numerous types of wet scrubbers that remove PM. Collection efficiencies for wet scrubbers vary with the particle size distribution of the waste gas stream. In general, collection efficiency decreases as the PM size decreases. Collection efficiencies also vary with scrubber type. Collection efficiencies range from greater than 99% for venturi scrubbers to 40-60% (or lower) for simple spray towers. Wet scrubbers are smaller and more compact than baghouses or ESPs. They have lower capital costs and comparable operation and maintenance (O&M) costs. Wet scrubbers are particularly useful in the removal of PM with the following characteristics:

(1) Sticky and/or hygroscopic materials (materials that readily absorb water);

(2) Combustible, corrosive and explosive materials;

(3) Particles that are difficult to remove in their dry form;

(4) PM in the presence of soluble gases; and

(5) PM in waste gas streams with high moisture content.

The primary disadvantage of wet scrubbers is that increased collection efficiency comes at the cost of increased pressure drop across the control system. Another disadvantage is that they are limited to lower waste gas flow rates and temperatures than ESPs or baghouses. Current wet scrubber designs accommodate air flow rates over 100,000 actual cubic feet per minute and temperatures of up to 750°F. Another disadvantage is that they generate waste in the form of a sludge which requires treatment and/or disposal. Lastly, downstream corrosion or plume visibility problems can result unless the added moisture is removed from the gas stream.

This technology is technically feasible and will be ranked for evaluation as BACT for controlling PM / PM_{10} emitted from the loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG.

(c) **Electrostatic Precipitators – Technically Feasible**

An electrostatic precipitator (ESP) is a particle control device that uses electrical forces to move the particles out of the flowing gas stream and onto collector plates. The particles are given an electrical charge by forcing them to pass through a corona, a region in which gaseous ions flow. The electrical field that forces the charged particles to the walls comes from electrodes maintained at high voltage in the center of the flow lane.

Once the particles are collected on the plates, they must be removed from the plates without re-entraining them into the gas stream. This is usually accomplished by knocking them loose from the plates, allowing the collected layer of particles to slide down into a hopper from which they are evacuated. Some precipitators remove the particles by intermittent or continuous washing with water. ESP control efficiencies can range from 95% to 99.9%.

This technology is technically feasible and will be ranked for evaluation as BACT for controlling PM / PM_{10} emitted from the loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG.

(d) **Fabric Filtration – Technically Infeasible**

A fabric filter unit consists of one or more isolated compartments containing rows of fabric bags in the form of round, flat, or shaped tubes, or pleated cartridges. Particle laden gas passes up (usually) along the surface of the bags then radially through the fabric. Particles are retained on the upstream face of the bags, and the cleaned gas stream is vented to the atmosphere. The filter is operated cyclically, alternating between relatively long periods of filtering and short periods of cleaning. During cleaning, dust that has accumulated on the bags is removed from the fabric surface and deposited in a hopper for subsequent disposal.

Fabric filters collect particles with sizes ranging from submicron to several hundred microns in diameter at efficiencies generally in excess of 99 or 99.9%. The layer of dust, or dust cake, collected on the fabric is primarily responsible for such high efficiency. The cake is a barrier with tortuous pores that trap particles as they travel through the cake. Gas temperatures up to about 500°F, with surges to about 550°F, can be accommodated routinely in some configurations. Most of the energy used to operate the system appears as pressure drop across the bags and associated hardware and ducting. Typical values of system pressure drop range from about 5 to 20 inches of water.

Fabric filters are used where high efficiency particle collection is required. Limitations are imposed by gas characteristics (temperature and corrosivity) and particle characteristics (primarily stickiness) that affect the fabric or its operation and that cannot be economically accommodated. Important process variables include particle characteristics, gas characteristics, and fabric properties. The most important design parameter is the air- or gas-to-cloth ratio (the amount of gas in ft^3/min that penetrates one ft^2 of fabric) and the usual operating parameter of interest is pressure drop across the filter system. The major operating feature of fabric filters that distinguishes them from other gas filters is the ability to renew the filtering surface periodically by cleaning. Common furnace filters, high efficiency particulate air (HEPA) filters, high efficiency air filters (HEAFs), and automotive induction air filters are examples of filters that must be discarded after a significant layer of dust accumulates on the surface. These filters are typically made of matted fibers, mounted in supporting frames, and used where dust concentrations are relatively low. Fabric filters are usually made of woven or (more commonly) needle-punched felts sewn to the desired shape, mounted in a plenum with special hardware, and used across a wide range of dust concentrations.

Based on availability and applicability, this technology was eliminated from consideration due to technical infeasibility for practical use within emission units for this industry.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), the following control technologies have been identified for control of PM and PM_{10} resulting from operation of loose fill (unbonded) wool fiberglass insulation manufacturing lines:

(1) Wet Scrubber: *(90% control efficiency for wool fiberglass manufacturing)*
The first ranked control technology is the wet scrubber. Control efficiencies are in the range of 40% to 99%. For the operation of loose fill (unbonded) wool fiberglass insulation manufacturing lines, the actual control efficiency of the device is 90% for PM_{10} and 95% for PM).

(2) Water Spray: *(Variable control efficiency for wool fiberglass manufacturing)*
The second (and fourth) ranked control technology is water spray. Control efficiencies are variable and dependent on the moisture content of the batch materials. For the operation of loose fill (unbonded) wool fiberglass insulation manufacturing lines, actual control efficiencies of these devices are not specified.

(3) Electrostatic Precipitator: *(92.5% to 95% control efficiency for wool fiberglass manufacturing)*
The third ranked control technology is electrostatic precipitators. Control efficiencies are in the range of 95% to 99%. For the operation of loose fill (unbonded) wool fiberglass insulation manufacturing lines, the actual control efficiency of the device is 92.5% for PM_{10} and 95% for PM).

(4) Scrubber / Cyclone: *(Variable control efficiency for wool fiberglass manufacturing)*
The fifth ranked control technology is use of a scrubber and cyclone separator in series. Control efficiencies for control devices in series are variable and dependent on the operating parameters of each control device. For the operation of loose fill (unbonded) wool fiberglass insulation manufacturing lines, the actual control efficiency of this control device system is not specified.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed PM/PM_{10} BACT determination along with the existing PM/PM_{10} BACT determinations for loose fill (unbonded) wool fiberglass insulation manufacturing lines. All data in the table is based on the information obtained from the permit application submitted by Knauf Insulation GmbH, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Table 4: Existing PM/PM_{10} BACT Limits – Loose Fill Manufacturing

Company Name / Operation	PM / PM_{10} Limit	Control Technology
PROPOSAL		
Knauf Insulation – Shelbyville, IN (Proposed permit 23127) Loose Fill Manufacturing Capacity 170 tons glass/day	PM/PM_{10} 2.8 lb/ton glass pulled 19.83 lb/hr 60% control efficiency	Wet Electrostatic Precipitator

Table 4: Existing PM/PM_{10} BACT Limits – Loose Fill Manufacturing

Company Name / Operation	PM / PM_{10} Limit	Control Technology
COMPARABLE BACT DETERMINATIONS (List in Top-Down Order by control efficiency)		
Guardian Fiberglass – Albion, MI (permit 282-02, issued 6/8/2004) Loose Fill Manufacturing, Lines 9211 & 9212 Capacity 119 tons glass/day	PM 0.5 lb/ton glass pulled PM_{10} 0.2 lb/ton glass pulled PM 2.2 ton/yr 9211 – PM_{10} 7.0 ton/yr 9212 – PM_{10} 7.3 ton/yr PM_{10} 0.03 lb/ 1000 lb exhaust PM_{10} 8.92 lb/hr 90% control efficiency	Wet Scrubber
Certainteed Corporation – Kansas City, KS (permit 209-0001, issued 1/30/2004) Loose Fill Manufacturing, K-2 Capacity 72 tons glass/day	PM 2.77 lb/ton glass pulled PM_{10} 2.4 lb/ton glass pulled No efficiency specified	Water Spray
Certainteed Corporation – Kansas City, KS (permit 209-0001, issued 5/23/1997) Loose Fill Manufacturing, K-21 Capacity 300 tons glass/day	PM 3.63 lb/ton glass pulled PM_{10} 2.02 lb/ton glass pulled PM 95% control efficiency PM_{10} 92.5% control efficiency	3 Wet Electrostatic Precipitators
Johns Manville – Richmond, IN (permit 5873, issued 4/22/1999) Loose Fill Manufacturing Lines 2 3 6 Capacity 7200 lb glass/hr; 4000 lb glass/hr	PM/PM_{10} 3.7 lb/ton glass pulled No efficiency specified	Enclosure and Water Spray
Owens Corning – Cordele, GA (permit 3296081-0063-P-01-0, issued 10/31/2005) Bonded and Unbonded Manufacturing	PM 4 lb/ton glass pulled No efficiency specified	Low Pressure Drop Scrubber and Cyclone Separator

Emission rates at the following facilities were not used for comparison because the manufacturing lines produce a bonded product, and the products that will be produced on the proposed manufacturing line will be unbonded:
(1) Johns Manville – GA
(2) Guardian Fiberglass – Inwood, WV

(a) **Proposal**: Knauf Insulation – Shelbyville, IN
The following has been proposed as BACT for PM and PM_{10} from the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG:

(1) Installation of one (1) wet electrostatic precipitator operating with a minimum control efficiency of sixty percent (60%) for control of PM and PM_{10}.

(2) Emission limitation of 2.8 pounds of combined PM and PM_{10} per ton of glass pulled.

(3) Emission limitation of 19.83 pounds of combined PM and PM_{10} per hour of operation.

The proposed emission limitations include filterable and condensible particulate matter.

The PM/PM_{10} emission factors used for this proposed expansion are the results of testing data from a similar Knauf facility in Lanett, Alabama. These emission factors and limits did not include natural gas combustion from the fiberizing section; therefore, IDEM completed an additional BACT analysis to determine the PM and PM_{10} emission limits for natural gas combustion from the fiberizing section.

The proposed BACT for control of PM and PM_{10} from the proposed loose fill (unbonded) wool fiberglass manufacturing line, 602 LF MFG, is more stringent than the emission limitation of 11.0 pounds PM per ton of glass pulled (11.0 lb/ton glass pulled) required by §60.682 of the Standards of Performance for New Stationary Sources for Wool Fiberglass Insulation Manufacturing (40 CFR Part 60, Subpart PPP).

The proposed BACT requirements for Knauf are comparable with the most stringent PM and PM_{10} limits specified for similar emission units at facilities that produce similar wool fiberglass insulation products.

(b) Guardian Fiberglass – Albion, MI
The following is BACT for PM and PM_{10} from the non-resinated forming and collection at the Guardian Fiberglas facility in Albion, Michigan:

(1) Total PM shall not exceed 0.5 pounds of PM per ton of molten glass pulled from the line or 2.2 tons of PM per year of operation.

(2) Filterable and condensible PM_{10} shall not exceed 0.2 pounds of PM per ton of molten glass pulled from the line or 7.0 tons of PM per year of operation for forming area 9211 and 7.3 tons of PM per year of operation for forming area 9212.

(3) No control device or other requirements are specified in the permit as part of the BACT determination; however, the RBLC indicates that emissions of PM and PM_{10} are controlled by a wet scrubber that achieve a minimum control efficiency of 90% for PM and PM_{10}.

The proposed BACT for control of PM and PM_{10} from the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG, is more stringent than the BACT level of control achieved by the Guardian Fiberglas facility in Albion, Michigan because the calculated particulate emission rate for the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG, is less than the 0.03 lb/1000 lb exhaust emission limitation regulated by the State of Michigan.

(c) CertainTeed – Kansas City, KS
The following is BACT for PM and PM_{10} from the unbonded wool fiberglass manufacturing lines at the CertainTeed facility in Kansas City, Kansas:

Line K-2:

(1) Total PM shall not exceed 2.77 lb/ton glass pulled.

(2) Filterable and condensible PM_{10} shall not exceed 2.4 lb/ton glass pulled.

(3) No control device or other requirements are specified in the permit as part of the BACT determination; however, the RBLC indicates that emissions of PM and PM_{10} are controlled by water spray.

The proposed BACT for control of PM and PM_{10} from the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG, is equivalent to the BACT level of control achieved by Line K-2 at the CertainTeed facility in Kansas City, Kansas because proposed emission rate of 2.8 lb/ton glass pulled for the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG, includes both PM and PM_{10}.

Line K-21:

(1) Total PM shall not exceed 3.63 lb/ton glass pulled.

(2) Filterable and condensible PM_{10} shall not exceed 2.02 lb/ton glass pulled.

(3) No control device or other requirements are specified in the permit as part of the BACT determination; however, the RBLC indicates that emissions of PM and PM_{10} are controlled by three (3) wet electrostatic precipitators that achieve a minimum control efficiency of 95% for PM and 92.5% for PM_{10}.

The proposed BACT for control of PM and PM_{10} from the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG, is more stringent than the BACT level of control achieved by Line K-21 at the CertainTeed facility in Kansas City, Kansas. Therefore, the PM and PM_{10} limits for Line K-21 at the CertainTeed facility in Kansas City, Kansas will not be considered as BACT for this proposed loose fill (unbonded) wool fiberglass insulation manufacturing line.

(d) Johns Manville – Richmond, IN
The following is BACT for PM and PM_{10} from the unbonded fiberglass forming chambers, Lines 2, 3, and 6, at the Johns Manville facility in Richmond, Indiana:

(1) Filterable and condensible fractions of PM and PM_{10} shall not exceed 3.7 lb/ton glass pulled.

(2) No control device or other requirements are specified in the permit as part of the BACT determination; however, the RBLC indicates that emissions of PM and PM_{10} are controlled by enclosure and water spray.

The proposed BACT for control of PM and PM_{10} from the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG, is more stringent than the BACT level of control achieved by the Johns Manville facility in Richmond, Indiana. Therefore, the PM and PM_{10} limits for Line K-21 at the CertainTeed facility in Kansas City, Kansas will not be considered as BACT for this proposed loose fill (unbonded) wool fiberglass insulation manufacturing line.

(e) Owens Corning – Cordele, GA
The following is BACT for PM and PM_{10} from the rotary spin fiberglass line, CG2, at the Owens Corning facility in Cordele, Georgia:

(1) Total PM in excess of 4.0 pounds per ton of molten glass pulled from the line.

(2) The rotary spin fiberglass line, CG2, is controlled by a low pressure drop scrubber and a cyclone separator.

(3) No control device or other requirements are specified in the permit as part of the BACT determination; however, the RBLC indicates that emissions of PM and PM_{10} are controlled by a low pressure drop scrubber and a cyclone separator.

The proposed BACT for control of PM and PM_{10} from the proposed loose fill (unbonded) wool fiberglass insulation manufacturing line, 602 LF MFG E, is more stringent than the BACT level of control achieved by the Owens Corning facility in Cordele, Georgia. Therefore, the PM and PM_{10} limits for the Owens Corning facility in Cordele, Georgia will not be considered as BACT for this proposed loose fill (unbonded) wool fiberglass insulation manufacturing line.

Step 5: Select BACT

Based on the information submitted by Knauf Insulation GmbH and the BACT Analysis documented above pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for particulate matter (PM / PM_{10}) for the proposed loose fill (unbonded) wool fiberglass manufacturing line, 602 LF MFG:

(1) A wet electrostatic precipitator (WESP) shall be installed to control the PM / PM_{10} emissions, and shall operate at a minimum control efficiency of sixty percent (60%).

(2) The PM / PM_{10} emissions after the WESP from general operation of the loose fill manufacturing process shall not exceed:

(A) 2.8 pounds per ton of glass pulled;

(B) 19.79 pounds per hour based on a 3-hour rolling average.

These emission rates include filterable and condensible particulate matter.

(3) The PM emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 0.11 pounds per hour based on a 3-hour rolling average.

(4) The PM_{10} emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 0.46 pounds per hour based on a 3-hour rolling average.

Carbon Monoxide (CO) BACT – 602 LF MFG

Step 1: Identify Potential Control Technologies

Emissions of carbon monoxide (CO) are generally controlled by oxidation. Combustion control technologies include recuperative thermal oxidation, regenerative thermal oxidation, recuperative catalytic oxidation, regenerative catalytic oxidation, and flares.

Step 2: Eliminate Technically Infeasible Options

The RACT/BACT/LAER (RBLC) Clearinghouse and review of other New Source Review (NSR) permits reveal that similar fiberglass sources use oxidation and good combustion practices for controlling particulate matter emissions from operation of a wool fiberglass insulation manufacturing line.

The destruction of organic compounds usually requires temperatures ranging from 1200°F to 2200°F for direct thermal oxidizers or 600°F to 1200°F for catalytic systems. Combustion temperature depends on the chemical composition and the desired destruction efficiency. Carbon dioxide and water vapor are the typical products of complete combustion. Turbulent mixing and combustion chamber retention times of 0.5 to 1.0 seconds are needed to obtain high destruction efficiencies.

The process operational controls to prevent buildup of particulate in the forming line duct system mandates the introduction of spray water within the duct system. This exhaust gas is further treated in a wet electrostatic precipitator to reduce PM emissions. The resulting exhaust gas is at saturation point with a temperature of 110°F. The thermal oxidation options are not technically feasible due to plugging of the thermal bed and the excessive fuel consumption that would be required to raise the temperature of this exhaust gas to the necessary oxidation temperature.

Based on availability and applicability, this technology was eliminated from consideration due to technical infeasibility for practical use within emission units for this industry.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), no control technologies have been identified for control of carbon monoxide (CO) resulting from operation of a loose fill (unbonded) wool fiberglass insulation manufacturing line.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed CO BACT determination along with the existing CO BACT determinations for loose fill (unbonded) wool fiberglass insulation manufacturing lines. All data in the table is based on the information obtained from the permit application submitted by Knauf Insulation GmbH, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Table 5: Existing CO BACT Limits – Loose Fill Manufacturing

Company Name / Operation	**CO Limit**	**Control Technology**
PROPOSAL		
Knauf Insulation – Shelbyville, IN (Proposed permit 23127) Loose Fill Manufacturing (602 LF MFG) Capacity 170 tons glass/day	8 lb/ton glass pulled 56.87 lb/hr	No Control
COMPARABLE BACT DETERMINATIONS (List in Top-Down Order by control efficiency)		
Owens Corning – Cordele, GA (permit 3296081-0063-P-01-0, issued 10/31/2005) Bonded and Unbonded Manufacturing	2.4 lb/ton glass pulled	No Control
Johns Manville – Richmond, IN (permit 16463, issued 4/22/1999) Loose Fill Manufacturing, Line 2 Capacity 4000 lb glass/hr	5.82 lb/ton glass pulled 21.0 lb/hr	No Control
Johns Manville – Richmond, IN (permit 16463, issued 4/22/1999) Loose Fill Manufacturing, Line 3 Capacity 4000 lb glass/hr	6.62 lb/ton glass pulled 21.0 lb/hr	No Control
Johns Manville – Richmond, IN (permit 16463, issued 4/22/1999) Loose Fill Manufacturing, Line 6 Capacity 7200 lb glass/hr	13.3 lb/ton glass pulled 25.3 lb/hr	No Control

(a) **Proposal**: Knauf Insulation – Shelbyville, IN
The following has been proposed as BACT for CO from the proposed loose fill (unbonded) wool fiberglass manufacturing line, 602 LF MFG:

(1) No control device is proposed to comply with the BACT limitation.

(2) Emission limitation of 8.0 pounds of CO per ton of glass pulled.

(3) Emission limitation of 56.87 pounds of CO per hour of operation.

The CO emission factor used for this proposed expansion is the result of testing data from a similar Knauf facility in Lanett, Alabama. The emission factor and limits did not include natural gas combustion from the fiberizing section; therefore, IDEM completed an additional BACT analysis to determine the CO emission limits for natural gas combustion from the fiberizing section.

The proposed BACT requirements for Knauf are not comparable to the CO limits specified for similar emission units at facilities that produce similar wool fiberglass insulation products; therefore, a direct comparison could not be made for any of the existing BACT limitations.

(b) Owens Corning – Cordele, GA
The following is BACT for CO from the rotary spin fiberglass line, CG2, at the Owens Corning facility in Cordele, Georgia:

(1) CO emissions shall not exceed 2.4 pounds per ton of molten glass pulled from the line.

(2) No control device is identified in the permit to comply with the BACT limitation.

The proposed BACT for control of CO from the proposed loose fill (unbonded) wool fiberglass manufacturing line, 602 LF MFG, is less stringent than the BACT level of control proposed by the Owens Corning facility in Cordele, Georgia; however, the Owens Corning facility in Cordele, Georgia has not been built so compliance with this limit cannot be verified. Therefore, the CO limit for the Owens Corning facility in Cordele, Georgia will not be considered as BACT for this proposed loose fill (unbonded) wool fiberglass insulation manufacturing line.

(c) Johns Manville – Richmond, IN
The following is BACT for CO from the rotary spin fiberglass line, CG2, at the Johns Manville facility in Richmond, Indiana:

Lines 2: CO emissions shall not exceed 5.82 lb/ton glass pulled or 21.0 lb/hr.

Lines 3: CO emissions shall not exceed 6.62 lb/ton glass pulled or 21.0 lb/hr.

Line 6: CO emissions shall not exceed 13.3 lb/ton glass pulled or 25.3 lb/hr.

All three manufacturing lines (Lines 2, 3 and 6) at the Johns Manville facility in Richmond, Indiana produce both bonded and unbonded wool fiberglass insulation on each line, and only one CO emission limit is specified for each line. The proposed loose fill (unbonded) wool fiberglass manufacturing line, 602 LF MFG, will produce loose fill (unbonded) wool fiberglass insulation products exclusively. Since specific CO limits are not identified for exclusive production of loose fill (unbonded) wool fiberglass insulation products, the CO limits for the Johns Manville facility in Richmond, Indiana will not be considered as BACT for this proposed loose fill (unbonded) wool fiberglass insulation manufacturing line.

Step 5: Select BACT

Based on the information submitted by Knauf Insulation GmbH and the BACT Analysis documented above pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for carbon monoxide (CO) the proposed loose fill (unbonded) wool fiberglass manufacturing line, 602 LF MFG:

(1) The CO emissions from general operation of the loose fill manufacturing process shall not exceed 8 lb/ton glass pulled 56.87 pounds per hour based on a 3-hour rolling average.

(2) The CO emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 5.04 pounds per hour based on a 3-hour rolling average.

Particulate Matter (PM/PM_{10}) BACT – 602 LF SEPARATOR

Step 1: Identify Potential Control Technologies

Emissions of particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}) are generally controlled with add-on control equipment designed to capture the emissions prior to the time they are exhausted to the atmosphere. In cases where the material being emitted is organic, particulate matter may be controlled through a combustion process. Generally, PM and PM_{10} emissions are controlled through one of the following mechanisms:

(1) Mechanical Collectors (such as Cyclones or Multiclones);

(2) Wet Scrubbers;

(3) Electrostatic Precipitators (ESP); and

(4) Fabric Filter Dust Collectors (Baghouses).

The choice of which technology is most appropriate for a specific application depends upon several factors, including particle size to be collected, particle loading, stack gas flow rate, stack gas physical characteristics (e.g., temperature, moisture content, presence of reactive materials), and desired collection efficiency.

Step 2: Eliminate Technically Infeasible Options

The RACT/BACT/LAER (RBLC) Clearinghouse and review of other New Source Review (NSR) permits reveal that similar fiberglass sources use fabric filtration baghouses for controlling particulate matter emissions from separator operations.

A fabric filter unit consists of one or more isolated compartments containing rows of fabric bags in the form of round, flat, or shaped tubes, or pleated cartridges. Particle laden gas passes up (usually) along the surface of the bags then radially through the fabric. Particles are retained on the upstream face of the bags, and the cleaned gas stream is vented to the atmosphere. The filter is operated cyclically, alternating between relatively long periods of filtering and short periods of cleaning. During cleaning, dust that has accumulated on the bags is removed from the fabric surface and deposited in a hopper for subsequent disposal.

Fabric filters collect particles with sizes ranging from submicron to several hundred microns in diameter at efficiencies generally in excess of 99 or 99.9%. The layer of dust, or dust cake, collected on the fabric is primarily responsible for such high efficiency. The cake is a barrier with tortuous pores that trap particles as they travel through the cake. Gas temperatures up to about 500°F, with surges to about 550°F, can be accommodated routinely in some configurations. Most of the energy used to operate the system appears as pressure drop across the bags and associated hardware and ducting. Typical values of system pressure drop range from about 5 to 20 inches of water.

Fabric filters are used where high efficiency particle collection is required. Limitations are imposed by gas characteristics (temperature and corrosivity) and particle characteristics (primarily stickiness) that affect the fabric or its operation and that cannot be economically accommodated. Important process variables include particle characteristics, gas characteristics, and fabric properties. The most important design parameter is the air- or gas-to-cloth ratio (the amount of gas in ft^3/min that penetrates one ft^2 of fabric) and the usual operating parameter of interest is pressure drop across the filter system. The major operating feature of fabric filters that distinguishes them from other gas filters is the ability to renew the filtering surface periodically by cleaning. Common furnace filters, high efficiency particulate air (HEPA) filters, high efficiency air filters (HEAFs), and automotive induction air filters are examples of filters that must be discarded after a significant layer of dust accumulates on the surface. These filters are typically made of matted fibers, mounted in supporting frames, and used where dust concentrations are relatively low. Fabric filters are usually made of woven or (more commonly) needle-punched felts sewn to the desired shape, mounted in a plenum with special hardware, and used across a wide range of dust concentrations.

This technology is technically feasible for controlling PM / PM_{10} emitted from the separator operations.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), the use of baghouses has been identified for control of PM and PM_{10} resulting from separator operations at a facility manufacturing loose fill (unbonded) wool fiberglass insulation products. Baghouse control efficiencies can easily exceed 99.9%.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed PM/PM_{10} BACT determination along with the existing PM/PM_{10} BACT determinations for separator operations. All data in the table is based on the information obtained from the permit application submitted by Knauf Insulation GmbH, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Table 6: Existing PM/PM_{10} BACT Limits – Separator Operations

Company Name / Operation	PM / PM_{10} Limit	Control Technology
PROPOSAL		
Knauf Insulation – Shelbyville, IN (Proposed permit 23127) Separator Operations	PM/PM_{10} 1.05 lb/hr 20% Opacity **99% control efficiency**	Baghouses

Table 6: Existing PM/PM_{10} BACT Limits – Separator Operations		
Company Name / Operation	**PM / PM_{10} Limit**	**Control Technology**
COMPARABLE BACT DETERMINATIONS (List in Top-Down Order by control efficiency)		
Certainteed Corporation – Kansas City, KS (permit 209-0001, issued 5/23/1997) Cutting Slitting Operations	PM/PM_{10} 20% Opacity 99% control efficiency	Baghouses

(a) **Proposal**: Knauf Insulation – Shelbyville, IN
The following has been proposed as BACT for PM and PM_{10} from the proposed separator operations, 602 LF SEPARATOR:

(1) Installation of baghouses operating with a minimum control efficiency of ninety-nine percent (99%) for control of PM and PM_{10}.

(2) Emission limitations of 1.05 pounds of combined PM and PM_{10} per hour of operation (lb/hr).

The proposed emission limitations include filterable and condensible particulate matter.

The proposed emission limitations did not include an opacity limit; therefore, IDEM completed an additional BACT analysis to select an appropriate limit on opacity for the separator operations.

The proposed BACT requirements for Knauf are equivalent to the most stringent PM and PM_{10} limits specified for similar emission units at facilities that produce similar wool fiberglass insulation products.

(b) Certainteed Corporation – Kansas City, KS
The following is BACT for PM and PM_{10} from the cutting and slitting operations at the Certainteed Corporation facility in Kansas City, Kansas:

(1) Installation of baghouses operating with a minimum control efficiency of ninety-nine percent (99%) for control of PM and PM_{10}.

(2) Opacity in excess of twenty percent (20%).

No emission rates (lb/hr or otherwise) specified in the permit as part of the BACT determination.

The proposed BACT for control of PM and PM_{10} from the proposed separator operations, 602 LF SEPARATOR, are equivalent to the BACT level of control achieved by the Certainteed Corporation facility in Kansas City, Kansas because the proposed baghouses will achieve 99% control efficiency.

Step 5: Select BACT

Based on the information submitted by Knauf Insulation GmbH and the BACT Analysis documented above pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for particulate matter (PM / PM_{10}) for the proposed 602 LF SEPARATOR:

(1) Two (2) baghouses shall be installed to control the PM/PM_{10} emissions from the 602 LF SEPARATOR, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouses from the 602 LF SEPARATOR shall not exceed 1.05 pounds per hour based on a 3-hour rolling average. These emission rates include filterable and condensible particulate matter.

(3) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period.

Particulate Matter (PM/PM_{10}) BACT – 602 LF PACKAGING

Step 1: Identify Potential Control Technologies

Emissions of particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}) are generally controlled with add-on control equipment designed to capture the emissions prior to the time they are exhausted to the atmosphere. In cases where the material being emitted is organic, particulate matter may be controlled through a combustion process. Generally, PM and PM_{10} emissions are controlled through one of the following mechanisms:

(1) Mechanical Collectors (such as Cyclones or Multiclones);

(2) Wet Scrubbers;

(3) Electrostatic Precipitators (ESP); and

(4) Fabric Filter Dust Collectors (Baghouses).

The choice of which technology is most appropriate for a specific application depends upon several factors, including particle size to be collected, particle loading, stack gas flow rate, stack gas physical characteristics (e.g., temperature, moisture content, presence of reactive materials), and desired collection efficiency.

Step 2: Eliminate Technically Infeasible Options

The RACT/BACT/LAER (RBLC) Clearinghouse and review of other New Source Review (NSR) permits reveal that similar fiberglass sources use fabric filtration baghouses for controlling particulate matter emissions from packaging operations.

A fabric filter unit consists of one or more isolated compartments containing rows of fabric bags in the form of round, flat, or shaped tubes, or pleated cartridges. Particle laden gas passes up (usually) along the surface of the bags then radially through the fabric. Particles are retained on the upstream face of the bags, and the cleaned gas stream is vented to the atmosphere. The filter is operated cyclically, alternating between relatively long periods of filtering and short periods of cleaning. During cleaning, dust that has accumulated on the bags is removed from the fabric surface and deposited in a hopper for subsequent disposal.

Fabric filters collect particles with sizes ranging from submicron to several hundred microns in diameter at efficiencies generally in excess of 99 or 99.9%. The layer of dust, or dust cake, collected on the fabric is primarily responsible for such high efficiency. The cake is a barrier with tortuous pores that trap particles as they travel through the cake. Gas temperatures up to about 500°F, with surges to about 550°F, can be accommodated routinely in some configurations. Most of the energy used to operate the system appears as pressure drop across the bags and associated hardware and ducting. Typical values of system pressure drop range from about 5 to 20 inches of water.

Fabric filters are used where high efficiency particle collection is required. Limitations are imposed by gas characteristics (temperature and corrosivity) and particle characteristics (primarily stickiness) that affect the fabric or its operation and that cannot be economically accommodated. Important process variables include particle characteristics, gas characteristics, and fabric properties. The most important design parameter is the air- or gas-to-cloth ratio (the amount of gas in ft^3/min that penetrates one ft^2 of fabric) and the usual operating parameter of interest is pressure drop across the filter system. The major operating feature of fabric filters that distinguishes them from other gas filters is the ability to renew the filtering surface periodically by cleaning. Common furnace filters, high efficiency particulate air (HEPA) filters, high efficiency air filters (HEAFs), and automotive induction air filters are examples of filters that must be discarded after a significant layer of dust accumulates on the surface. These filters are typically made of matted fibers, mounted in supporting frames, and used where dust concentrations are relatively low. Fabric filters are usually made of woven or (more commonly) needle-punched felts sewn to the desired shape, mounted in a plenum with special hardware, and used across a wide range of dust concentrations.

This technology is technically feasible for controlling PM / PM_{10} emitted from the packaging operations.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), the use of baghouses has been identified for control of PM and PM_{10} resulting from packaging operations at a facility manufacturing loose fill (unbonded) wool fiberglass insulation products. Baghouse control efficiencies can easily exceed 99.9%.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed PM/PM_{10} BACT determination along with the existing PM/PM_{10} BACT determinations for packaging operations. All data in the table is based on the information obtained from the permit application submitted by Knauf Insulation GmbH, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Table 7: Existing PM/PM_{10} BACT Limits – Packaging Operations

Company Name / Operation	**PM / PM_{10} Limit**	**Control Technology**
PROPOSAL		
Knauf Insulation – Shelbyville, IN (Proposed permit 23127) Packaging Operations	PM/PM_{10} 0.15 lb/hr 20% Opacity **99% control efficiency**	Baghouses
COMPARABLE BACT DETERMINATIONS (List in Top-Down Order by control efficiency)		
Certainteed Corporation – Kansas City, KS (permit 209-0001, issued 5/23/1997) Cutting Slitting Operations	PM/PM_{10} 20% Opacity 99% control efficiency	Baghouses

(a) **Proposal**: Knauf Insulation – Shelbyville, IN
The following has been proposed as BACT for PM and PM_{10} from the proposed packaging operations, 602 LF PACKAGING:

(1) Installation of baghouses operating with a minimum control efficiency of ninety-nine percent (99%) for control of PM and PM_{10}.

(2) Emission limitations of 0.15 pounds of combined PM and PM_{10} per hour of operation (lb/hr).

The proposed emission limitations include filterable and condensible particulate matter.

The proposed emission limitations did not include an opacity limit; therefore, IDEM completed an additional BACT analysis to select an appropriate limit on opacity for the packaging operations.

The proposed BACT requirements for Knauf are equivalent to the most stringent PM and PM_{10} limits specified for similar emission units at facilities that produce similar wool fiberglass insulation products.

(b) Certainteed Corporation – Kansas City, KS
The following is BACT for PM and PM_{10} from the cutting and slitting operations at the Certainteed Corporation facility in Kansas City, Kansas:

(1) Installation of baghouses operating with a minimum control efficiency of ninety-nine percent (99%) for control of PM and PM_{10}.

(2) Opacity in excess of twenty percent (20%).

No emission rates (lb/hr or otherwise) specified in the permit as part of the BACT determination.

The proposed BACT for control of PM and PM_{10} from the proposed packaging operations, 602 LF PACKAGING, are equivalent to the BACT level of control achieved by the Certainteed Corporation facility in Kansas City, Kansas because the proposed baghouses will achieve 99% control efficiency.

Step 5: Select BACT

Based on the information submitted by Knauf Insulation GmbH and the BACT Analysis documented above pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for particulate matter (PM / PM_{10}) for the proposed 602 LF PACKAGING:

(1) Two (2) baghouses shall be installed to control the PM/PM_{10} emissions from the 602 LF PACKAGING, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouses from the 602 LF PACKAGING shall not exceed 0.15 pounds per hour based on a 3-hour rolling average. These emission rates include filterable and condensible particulate matter.

(3) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period.

Particulate Matter (PM/PM_{10}) BACT – Raw Material Handling (Batch House)

Step 1: Identify Potential Control Technologies

Emissions of particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}) are generally controlled with add-on control equipment designed to capture the emissions prior to the time they are exhausted to the atmosphere. In cases where the material being emitted is organic, particulate matter may be controlled through a combustion process. Generally, PM and PM_{10} emissions are controlled through one of the following mechanisms:

(1) Mechanical Collectors (such as Cyclones or Multiclones);

(2) Wet Scrubbers;

(3) Electrostatic Precipitators (ESP); and

(4) Fabric Filter Dust Collectors (Baghouses).

The choice of which technology is most appropriate for a specific application depends upon several factors, including particle size to be collected, particle loading, stack gas flow rate, stack gas physical characteristics (e.g., temperature, moisture content, presence of reactive materials), and desired collection efficiency.

Step 2: Eliminate Technically Infeasible Options

The RACT/BACT/LAER (RBLC) Clearinghouse and review of other New Source Review (NSR) permits reveal that similar fiberglass sources use fabric filtration baghouses for controlling particulate matter emissions from raw material handling operations.

A fabric filter unit consists of one or more isolated compartments containing rows of fabric bags in the form of round, flat, or shaped tubes, or pleated cartridges. Particle laden gas passes up (usually) along the surface of the bags then radially through the fabric. Particles are retained on the upstream face of the bags, and the cleaned gas stream is vented to the atmosphere. The filter is operated cyclically, alternating between relatively long periods of filtering and short periods of cleaning. During cleaning, dust that has accumulated on the bags is removed from the fabric surface and deposited in a hopper for subsequent disposal.

Fabric filters collect particles with sizes ranging from submicron to several hundred microns in diameter at efficiencies generally in excess of 99 or 99.9%. The layer of dust, or dust cake, collected on the fabric is primarily responsible for such high efficiency. The cake is a barrier with tortuous pores that trap particles as they travel through the cake. Gas temperatures up to about 500°F, with surges to about 550°F, can be accommodated routinely in some configurations. Most of the energy used to operate the system appears as pressure drop across the bags and associated hardware and ducting. Typical values of system pressure drop range from about 5 to 20 inches of water.

Fabric filters are used where high efficiency particle collection is required. Limitations are imposed by gas characteristics (temperature and corrosivity) and particle characteristics (primarily stickiness) that affect the fabric or its operation and that cannot be economically accommodated. Important process variables include particle characteristics, gas characteristics, and fabric properties. The most important design parameter is the air- or gas-to-cloth ratio (the amount of gas in ft^3/min that penetrates one ft^2 of fabric) and the usual operating parameter of interest is pressure drop across the filter system. The major operating feature of fabric filters that distinguishes them from other gas filters is the ability to renew the filtering surface periodically by cleaning. Common furnace filters, high efficiency particulate air (HEPA) filters, high efficiency air filters (HEAFs), and automotive induction air filters are examples of filters that must be discarded after a significant layer of dust accumulates on the surface. These filters are typically made of matted fibers, mounted in supporting frames, and used where dust concentrations are relatively low. Fabric filters are usually made of woven or (more commonly) needle-punched felts sewn to the desired shape, mounted in a plenum with special hardware, and used across a wide range of dust concentrations.

This technology is technically feasible for controlling PM / PM_{10} emitted from the raw material handling operations.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

Based on the information from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), the use of baghouses has been identified for control of PM and PM_{10} resulting from raw material handling operations at a facility manufacturing loose fill (unbonded) wool fiberglass insulation products. Baghouse control efficiencies can easily exceed 99.9%.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed PM/PM_{10} BACT determination along with the existing PM/PM_{10} BACT determinations for raw material handling operations. All data in the table is based on the information obtained from the permit application submitted by Knauf Insulation GmbH, the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

Table 8: Existing PM/PM_{10} BACT Limits – Raw Material Handling Operations

Company Name / Operation	**PM / PM_{10} Limit**	**Control Technology**
PROPOSAL		
Knauf Insulation – Shelbyville, IN (Proposed permit 23127) RMH Operations	PM/PM_{10} 0.0084 gr/dscf (avg.) 0.0024 – 0.0948 lb/hr 10% Opacity **99% control efficiency**	Baghouses
COMPARABLE BACT DETERMINATIONS (List in Top-Down Order by control efficiency)		
Certainteed Corporation – Kansas City, KS (permit 209-0001, issued 5/23/1997) RMH Operations	PM/PM_{10} 20% Opacity 99% control efficiency	Baghouses
Guardian Fiberglass – Albion, MI (permit 282-02, issued 6/8/2004) RMH Operations	PM/PM_{10} 10% Opacity 95% control efficiency	Indoor Operations and Baghouses

Table 8: Existing PM/PM_{10} BACT Limits – Raw Material Handling Operations		
Company Name / Operation	**PM / PM_{10} Limit**	**Control Technology**
Owens Corning – Cordele, GA (permit 3296081-0063-P-01-0, issued 10/31/2005) RMH Operations	PM 0.01 gr/dscf	Baghouses

(a) **Proposal**: Knauf Insulation – Shelbyville, IN
The following has been proposed as BACT for PM and PM_{10} from the proposed modifications to the raw material handling operations:

(1) Installation of baghouses operating with a minimum control efficiency of ninety-nine percent (99%) for control of PM and PM_{10}.

(2) Individual emission limitations of combined PM and PM_{10} per hour of operation (lb/hr) as follows:

Table 9: Proposed PM/PM_{10} BACT Limits – Raw Material Handling Operations	
Emission Unit ID	**Emission Limit** (lb/hr)
Silo61	0.0154
Silo62	0.0031
Silo63	0.0051
Silo64	0.0015
Silo65	0.0031
Silo66	0.0046
DB602	0.0513
Silo69	0.0062
Silo612	0.0185
Silo613	0.0024
GLCONVEY / BUCKETELV	0.0948
RMUNLDR616	0.0553
GTHRNGBLT617	0.0553
BMXR618	0.0553
KCHNDLNG620	0.0024

(3) Individual emission limitations for grain loading such that the average grain loading shall not exceed 0.0084 grains per dry standard cubic foot (gr/dscf) averaged over all raw material handling operations.

The proposed emission limitations include filterable and condensible particulate matter.

The proposed emission limitations did not include an opacity limit; therefore, IDEM completed an additional BACT analysis to select an appropriate limit on opacity for the raw material handling operations.

The proposed BACT requirements for Knauf are comparable with the most stringent PM and PM_{10} limits specified for similar emission units at facilities that produce similar wool fiberglass insulation products.

(b) Certainteed Corporation – Kansas City, KS
The following is BACT for PM and PM_{10} from the raw material handling operations at the Certainteed Corporation facility in Kansas City, Kansas:

(1) Installation of baghouses operating with a minimum control efficiency of ninety-nine percent (99%) for control of PM and PM_{10}.

(2) Opacity in excess of twenty percent (20%).

No emission rates (lb/hr or otherwise) specified in the permit as part of the BACT determination.

The proposed BACT for control of PM and PM_{10} from the proposed modifications to the raw material handling operations is more stringent than the BACT level of control achieved by the Certainteed Corporation facility in Kansas City, Kansas. The proposed baghouses will achieve the same mimimum control efficiency of 99% as is required for the Certainteed Corporation facility in Kansas City, Kansas. The proposed raw material handling operations will meet an opacity limit that is more stringent than the opacity limit that is required for the Certainteed Corporation facility in Kansas City, Kansas.

(c) Guardian Fiberglass – Albion, MI
The following is BACT for PM and PM_{10} from the raw material handling operations at the Guardian Fiberglass facility in Albion, Michigan:

(1) Installation of baghouses operating with a minimum control efficiency of ninety-five percent (95%) for control of PM and PM_{10}.

(2) Opacity in excess of ten percent (10%).

No emission rates (lb/hr or otherwise) specified in the permit as part of the BACT determination.

The proposed BACT for control of PM and PM_{10} from the proposed modifications to the raw material handling operations is more stringent than the BACT level of control achieved by the Guardian Fiberglass facility located in Albion, Michigan. The proposed baghouses will achieve a control efficiency of 99% that is more stringent than the minimum efficiency required for the Guardian Fiberglass facility located in Albion, Michigan. The proposed raw material handling operations will meet an equivalent opacity limit of ten percent (10%) as is required for the Guardian Fiberglass facility located in Albion, Michigan.

(d) Owens Corning – Cordele, GA
The following is BACT for PM and PM_{10} from the raw material handling system, CG100, at the Owens Corning facility in Cordele, Georgia:

(1) Total PM in excess of 0.01 grains per dry standard cubic foot of exhaust gas.

(2) No control device or other requirements are specified in the permit as part of the BACT determination; however, the raw material handling system, CG100, is controlled by fabric filters (baghouses).

The proposed BACT for control of PM and PM_{10} from the proposed modifications to the raw material handling operations is more stringent than the BACT level of control achieved by the Owens Corning facility in Cordele, Georgia. The average grain loading for the raw material handling systems at Knauf Insulation in Shelbyville, Indiana are limited to 0.0084 grains per dry standard cubic foot of exhaust gas, which is more stringent than the grain loading limitation of 0.01 gr/dscf that is required for the Owens Corning facility in Cordele, Georgia.

Step 5: Select BACT

Based on the information submitted by Knauf Insulation GmbH and the BACT Analysis documented above pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD),

(a) Baghouses shall be installed to control the PM/PM_{10} emissions from the raw material handling operations, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(b) The Permittee shall comply with the following grain loading and emission rate requirements for particulate matter (PM / PM_{10}):

Table 10:	**PM/PM_{10} BACT Limits – RMH Operations**	
Emission Unit ID	**Grain Loading** (gr/dscf)	**Emission Limit** (lb/hr)
Silo61	0.003	0.0154
Silo62	0.001	0.0031
Silo63	0.001	0.0051
Silo64	0.0003	0.0015
Silo65	0.001	0.0031
Silo66	0.0009	0.0046
DB602	0.01	0.0513
Silo69	0.002	0.0062
Silo612	0.006	0.0185
Silo613	0.0009	0.0024
GLCONVEY / BUCKETELV	0.036	0.0948
RMUNLDR616	0.021	0.0553
GTHRNGBLT617	0.021	0.0553
BMXR618	0.021	0.0553
KCHNDLNG620	0.0009	0.0024

All pounds per hour limits specified in the table above are based on a 3-hour rolling average, and these emission rates include filterable and condensible particulate matter.

(c) Opacity shall not exceed an average of ten percent (10%) in any one (1) six (6) minute averaging period.

IDEM Contact

Questions regarding this proposed permit can be directed to Kimberly Cottrell at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-0870 or toll free at 1-800-451-6027 extension 3-0870.

Indiana Department of Environmental Management
Office of Air Quality

Appendix C – Air Quality Impact Analysis
Technical Support Document (TSD)
Prevention of Significant Deterioration (PSD)
Significant Source Modification (SSM) of a Part 70 Source
Significant Permit Modification (SPM) of Part 70 Operating Permit

Source Background and Description

Source Name:	Knauf Insulation GmbH
Source Location:	One Knauf Drive, Shelbyville, IN 46176
County:	Shelby
SIC Code:	3296
Operation Permit No.:	T 145-6038-00001
Operation Permit Issuance Date:	September 14, 1999
Significant Source Modification No.:	SSM 145-23127-00001
Significant Permit Modification No.:	SPM 145-23151-00001
Permit Writer:	Kimberly Cottrell

Proposed Project

Knauf Insulation, Inc. has submitted a request for a significant source modification of their facility in Shelbyville, Indiana with an increase in the Particulate Matter less than 10 microns (PM_{10}), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), and Sulfur Dioxide (SO_2) emissions.

Mostardi Platt Environmental in Oak Brook, Illinois prepared the Prevention of Significant Deterioration (PSD) permit application for Knauf Insulation. The Modeling Section in the Office of Air Quality (QAQ) received the permit application on May 25, 2006 with a revised air quality analysis received on July 3, 2006. This technical support document provides the air quality analysis review of the permit application.

Analysis Summary

Based on the potential emissions after controls, a Prevention of Significant Deterioration (PSD) air quality analysis was triggered for CO and PM_{10}. The significant impact analysis determined that modeling concentrations for CO and PM_{10} did not exceed the significant impact levels. A refined analysis, PSD increment analysis and National Ambient Air Quality Standards (NAAQS) analysis, was not required. The pre-and post-construction monitoring requirements were not triggered as a result of this analysis. A Hazardous Air Pollutant (HAP) analysis was not performed since there was no HAP emissions increase. An additional impact analysis was conducted and showed no significant impact. Based on the modeling results, the proposed modification will not have a significant impact upon federal air quality standards.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in this document in each section outlined below.

A. Establish which pollutants require an air quality analysis based on PSD significant emission rates.

B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used, a description of the model used in the analysis, and the receptor grid utilized for the analyses.

C. Determine the significant impact level, the area impacted by the source's emissions and background air quality levels.

D. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or Prevention of Significant Deterioration (PSD) increment if the applicant exceeds significant impact levels.

E. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park.

F. Summarize the Air Quality Analysis

Section A – Pollutants Analyzed for Air Quality Impact

Applicability
The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1 and in the Code of Federal Register (CFR) 52.21(b) (23) (i).

Proposed Project Emissions
Particulate Matter less than 10 microns (PM_{10}), Carbon Monoxide, Nitrogen Dioxide (NO_2), and Sulfur Dioxide (SO_2) are the pollutants that will be emitted from the revision of Knauf's emission limits. An air quality analysis is required for PM_{10} and CO pollutants because potential emissions after controls exceed the significant emission rate as shown in Table 1:

TABLE 1

Significant Emission Rates for PSD

POLLUTANT	POTENTIAL EMISSION RATE (Source Totals) (tons/year)	SIGNIFICANT EMISSION RATE (tons/year)	PRELIMINARY AQ ANALYSIS REQUIRED
PM_{10}	120.88	15	Yes
CO	278.3	100	Yes
NO_2	8.14	40	No
SO_2	0.06	40	No
VOC	1.21	40	No

Modeled emission rates were taken from Appendix A of the Knauf permit technical support document.

Section B – Good Engineering Practice (GEP), Met Data, Model Used, Receptor Grid

Stack Height Compliance with Good Engineering Practice (GEP)

Applicability

Stacks should comply with GEP requirements established in 326 IAC 1-7-4. If stacks are lower than GEP, excessive ambient concentrations due to aerodynamic downwash may occur. Dispersion modeling credit for stacks taller than 65 meters (213 feet) is limited to GEP for the purpose of establishing emission limitations. The GEP stack height takes into account the distance and dimensions of nearby structures, which would affect the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width. A GEP stack height is determined for each nearby structure by the following formula:

$$Hg = H + 1.5L$$

Where: Hg is the GEP stack height
H is the structure height
L is the structure's lesser dimension (height or width)

Existing Stack

Since the existing stack height of the unit for which the modification is proposed is below GEP stack height, the effect of aerodynamic downwash will be accounted for in the air quality analysis for the project.

Meteorological Data

The meteorological data used in the American Meteorological Society Environmental Protection Agency Regulatory Model (AERMOD) model consisted of 1986 through 1990 surface data from the Indianapolis Indiana National Weather Service (NWS) station merged with the upper air data from the Dayton, Ohio NWS station. The meteorological data was preprocessed into AERMOD ready format by the Indiana Department of Environmental Management (IDEM) Office of Air Quality (OAQ) using U.S.EPA's AERMET.

Model Description

Mostardi Platt Environmental Inc. used AERMOD, Version 04300. OAQ used the same model version to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Register Part 51, Appendix W "Guideline on Air Quality Models".

The Auer Land Use Classification Scheme was used to determine the land use in the area. The area is considered primarily rural; therefore, a rural classification was used.

Receptor Grid

The receptor grid extended to approximately 30 kilometers from the plant. Fence line receptors were closely spaced at 50 meters along the plant fence line and 100 meters out to a distance of 600 meters from the plant property lines to identify the influence of aerodynamic building downwash.

Section C – Significant Impact Level/Area (SIA) and Background Air Quality Levels

A significant impact analysis was conducted to determine if the source exceeded the PSD significant impact levels (concentrations). If the source's concentrations exceed these levels, further air quality analysis is required. Refined modeling for CO and PM_{10} was not required because the results did not exceed significant impact levels. Significant impact levels are defined by the following time periods in Table 2 below with all maximum-modeled concentrations from the worst case operating scenarios.

TABLE 2

Significant Impact Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS ($\mu g/m^3$)	SIGNIFICANT IMPACT LEVEL ($\mu g/m^3$)	REFINED AQ ANALYSIS REQUIRED
PM_{10}	24 Hour	4.3	5	No
PM_{10}	Annual	0.53	1	No
NO_2	Annual	-2.64	1	No
CO	1 Hour	3.0	2000	No
CO	8 Hour	3.42	500	No
SO_2	3 Hour	0.73	25	No
SO_2	24 Hour	0.27	5	No
SO_2	Annual	0.027	1	No

Pre-construction Monitoring Analysis

Applicability
The PSD requirements, 326 IAC 2-2-4, require an air quality analysis of the new source or the major modification to determine if the pre-construction monitoring threshold is triggered. In most cases, post construction monitoring can satisfy this requirement if the pre-construction monitoring threshold has been exceeded.

Modeling Results
A comparison of the preliminary modeling results was compared to the PSD preconstruction monitoring thresholds. The modeling results are listed in Table 3 below.

TABLE 3

Preconstruction Monitoring Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS ($\mu g/m^3$)	DEMINIMIS LEVEL (μg/m3)	ABOVE DE MINIMIS LEVEL
PM_{10}	24 Hour	4.3	13	No
CO	8 Hour	3.4	575	No

The criteria pollutants, CO and PM_{10} did not trigger the preconstruction monitoring requirement. As a result, no preconstruction monitoring requirement for CO and PM_{10} is required for this PSD major modification.

Background Concentrations

Applicability
EPA's "Ambient Monitoring Guidelines for Prevention of Significant Deterioration" (EPA-450/4-87-007) Section 2.4.1 is cited for approval of the monitoring sites for this area. No background monitoring concentrations for PM_{10} and CO were required as part of this analysis since the modeling results were below the significant impact levels for PM_{10} and CO and a subsequent NAAQS analysis was not required.

Section D – NAAQS and PSD Increment

NAAQS Compliance Analysis and Results
NAAQS modeling for the appropriate time-averaging periods for CO and PM_{10} was not required since the Knauf Insulation PSD modification air quality analysis was below the significant impact levels for CO - 2000 ug/m^3 (1-hour) and 500 ug/m^3 (8-hour) and for PM10 - 5 ug/m^3 (24-hour) and 1 ug/m^3 (annual). OAQ modeling results are shown in Table 2 of this Air Quality Analysis. All maximum-modeled concentrations were compared to the respective NAAQS limit. All maximum-modeled concentrations during the five years were below the NAAQS limits and further modeling was not required.

Analysis and Results of Source Impact on the PSD Increment

Applicability
Maximum allowable increases (PSD increments) are established by 326 IAC 2-2 for PM_{10}. This rule also limits a source to no more than 80 percent of the available PSD increment to allow for future growth.

Source Impact
Since the impact for PM_{10} from Knauf Insulation modeled was below the significant impact levels, of 5 ug/m^3 (24-hour) and 1ug/m^3 (annual) a PSD increment analysis for the existing major sources and its surrounding counties was not required as part of this air quality analysis.

Part E – Qualitative Analysis

Additional Impact Analysis
All PSD permit applicants must prepare additional impacts analysis for each pollutant subject to regulation under the Clean Air Act. This analysis assesses the impacts on economic growth; soils and vegetation; wildlife and plant species; and visibility caused by any increase in emissions of any regulated pollutant from the source. The Knauf Insulation PSD permit application provided an additional impact analysis performed by Mostardi Platt Environmental.

Economic Growth
The only expected impact from economic growth is the additional 20 new employees who will work in the area of the Knauf plant expansion. The existing Shelbyville community will be able to adequately handle the economic growth associated with the plant expansion.

Soils and Vegetation Analysis
A soils and vegetation analysis was performed by Mostardi Platt Environmental to asses the impact of the criteria pollutant air emissions. The results of soils and vegetation analysis show the modeled impacts are well below the thresholds necessary to have an adverse impact on the surrounding soils and vegetation. The results of the soils and vegetation analysis are listed in Table 6.4 on the Knauf Insulation PSD Permit Application.

Federal Endangered Species Analysis
Federally endangered or threatened species are listed by the U.S. Fish and Wildlife Service; Division of Endangered Species for Indiana and includes 12 species of mussels, 4 species of birds, 2 species of bat and butterflies and 1 specie of snake. The mussels and birds listed are commonly found along major rivers and lakes while the bats are found near caves. The facility is not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the industrial and residential activities in the area. The only endangered wildlife in the Shelby County area is the Indiana Bat and the only threatened wildlife is the Bald Eagle. Neither of these species maintains a habitat near the Shelbyville plant.

Federally endangered or threatened plants as listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana list no threatened or endangered species of plants in Shelby County area of central Indiana.

Visibility Analysis
The VISCREEN model is designed as a screening model to determine the visual impact parameters from a single source plume. It is used basically to determine whether or not a plume is visible as an object itself.

The PM_{10} and NOx emissions limits were used to run a local visibility Level 1 analysis. VISCREEN Version 1.01 was used to determine if the color difference parameter (Delta-E) or the plume (green) contrast limits were exceeded. The Delta-E was developed to specify the perceived magnitude of color and brightness changes and is used as the primary basis for determining the perceptibility of plume visual impacts. The plume constant can be defined at any wavelength as the relative difference in the intensity (called spectral radiance) between the viewed object and its background. This is used to determine how the human eye responds differently to different wavelengths of light. The highest Delta-E of 1.4 (inside the study area) and the plume contrast of 0.018 occurred at Fort Harrison State Park. Both of these values are below the threshold values for Delta-E of 2.0 and the plume contrast of 0.05.

Additional Analysis Conclusions
Finally, the results of the additional impact analysis concluded the operation of the Knauf Insulation facility will have no significant impact on economic growth, soils, vegetation or visibility in the immediate vicinity or on any Class I area. Since the modeled impacts do not extend beyond the immediate area just beyond the plant property, no adverse impacts are expected from the expansion of Knauf facility. Additionally, there are no threatened or endangered plant species in Shelby County.

Part F – Summary of Air Quality Analysis

Knauf Insulation has applied for a modification of their facility with an increase of their PM_{10} emissions. Mostardi Platt Environmental Incorporated of Oak Brook, Illinois prepared the PSD application. Shelby County is designated as attainment for all criteria pollutants except ozone (O_3). PM_{10} and CO emission rates associated with the proposed facility exceeded the respective significant emission rates. Modeling results taken from the latest version of the AERMOD model showed CO and PM_{10} impacts were predicted to be less than the significant impact levels. Knauf Insulation did not trigger preconstruction monitoring for PM_{10} and CO. The NAAQS and PSD increment modeling for PM_{10} and the NAAQS modeling for CO were not required as part of the air quality analysis since the Knauf PSD modification will not exceed the significant impact levels for PM_{10} and CO. An air toxic analysis was not preformed because there was no increase in Hazardous Air Pollutants (HAP). The nearest Class I area is Mammoth Cave National Park in Kentucky over 300 kilometers away from the source. An additional impact analysis was required but the operation of the proposed facility will have no significant impact.

Indiana Department of Environmental Management
Office of Air Quality

Appendix D – Part 70 Operating Permit Proposed Changes
Technical Support Document (TSD)
Prevention of Significant Deterioration (PSD)
Significant Source Modification (SSM) of a Part 70 Source
Significant Permit Modification (SPM) of Part 70 Operating Permit

Source Background and Description

Source Name:	Knauf Insulation GmbH
Source Location:	One Knauf Drive, Shelbyville, IN 46176
County:	Shelby
SIC Code:	3296
Operation Permit No.:	T 145-6038-00001
Operation Permit Issuance Date:	September 14, 1999
Significant Source Modification No.:	SSM 145-23127-00001
Significant Permit Modification No.:	SPM 145-23151-00001
Permit Writer:	Kimberly Cottrell

Proposed Expansion

On May 24, 2006, the Office of Air Quality (OAQ) received an application from Knauf Insulation GmbH to expand their Shelbyville plant, located at One Knauf, Shelbyville, Indiana, in Shelby County. The fiberglass insulation products manufactured in this expansion will manufacture unbonded commercial/industrial products.

The proposed fiberglass insulation expansion will consist of adding the following emission units:

(1) 602B FURNACE:
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE. This furnace is common to the existing bonded manufacturing line, MFG 602, and the proposed unbonded manufacturing line, 602 LF MFG. There are no changes to the existing bonded manufacturing line, MFG 602, as part of this proposed modification.

(2) 602 LF MFG:
One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # 602 LF MFG;

(3) 602 LF SEPARATOR:
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2;

(4) 602 LF PACKAGING:
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4; and

(5) Various Raw Material Handling and Storage Units:
Changes will be made that will increase the throughput capacity of the Raw Material and Handling Systems by eight and two tenths percent (8.2%).

In addition, the proposed fiberglass insulation expansion will consist of retiring the following emission units:

(1) One (1) existing permitted furnace, identified as FURN 602A.

This proposed modification is a separate project from the expansion that was approved on November 9, 2005 because the previous modification involved modifying processes for manufacturing bonded building insulation products and this proposed expansion involves adding a new process for manufacturing unbonded, loose fill insulation products.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. 145-6038-00001. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

(a) All references to the IDEM, OAQ, Compliance Section telephone number have been revised as follows: ~~317-233-5674~~ **317-233-0178**.

All references to the IDEM, OAQ, Compliance Section facsimile number have been revised as follows: ~~317-233-5967~~ **317-233-6865**.

Changes to Section A

(b) The emission unit descriptions in Condition A.2 are updated as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

SECTION D.1

~~(a) FURN 602 – Stack 2-1~~
~~One (1) gas-fired (with electric boost) glass melting furnace, identified as Unit ID # FURN 602, installed in 1983, operating at a rated heat input capacity of 30 MMBtu per hour, combusting natural gas, utilizing one (1) dry electrostatic precipitator for particulate control, exhausting through one (1) stack ID #2-1.~~

(a) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
– **installed in 2007,**
– **operating at a maximum processing capacity of 332 tons of glass per day,**
– **operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),**
– **utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and**
– **exhausting through one (1) stack ID # 6-30.**
– **602B FURNACE is common to MFG 602 and 602 LF MFG.**
– **602B FURNACE is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass**

Manufacturing (40 CFR 63, Subpart NNN).

~~(b) MFG 602 – Stack 2-2~~
~~One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602, installed in 1983, operating at a rated heat input capacity of 40 MMBtu per hour, combusting natural gas, utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, exhausting through one (1) stack ID #2-2.~~

(b) MFG 602 – Stack 2-2
One (1) rotary spin wool fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602,
- **installed in 1983,**
- **operating at a maximum processing capacity of 130 tons of glass per day,**
- **utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, and**
- **exhausting through one (1) stack ID #2-2.**
- **MFG 602 produces a bonded wool fiberglass insulation building product. MFG 602 is an existing affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(c) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- **installed in 2007,**
- **operating at a maximum processing capacity of 170 tons of glass per day,**
- **operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),**
- **utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and**
- **exhausting through one (1) stack ID # 6-22.**
- **602 LF MFG is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**
- **602 LF MFG produces an unbonded wool fiberglass insulation product.**

(d) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2,
- **installed in 2007,**
- **operating at a maximum processing capacity of 170 tons of glass per day,**
- **utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and**
- **exhausting internally through two (2) vents ID# 6-31 & 6-32.**

(e) 602 LF PACKAGING
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4,
- **installed in 2007,**
- **operating at a maximum processing capacity of 170 tons of glass per day,**
- **utilizing two (2) baghouses for particulate control (Unit ID # 602 LF PACKAGING 1&2 & 3&4), and**

– **exhausting to 602 LF SEPARATOR.**

SECTION D.2

~~(c) Nine (9) fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively, each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively, each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively; LINE 3001-3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.~~

(f) Nine (9) rotary spin wool fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively,
- **each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively,**
- **each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively,**
- **LINE 3001 – 3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.**
- **LINE 3001 – 3009 are affected facilities subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

SECTION D.3

(~~d~~**g**) Raw Material and Handling Systems

(1) The nominal capacities of these units have been classified as confidential information.

~~Table 2 –~~ **Raw Material and Handling Systems**				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Silica Sand Storage Silos	Silo61	**2006**	6-1 **a & b**	Baghouse **SILO061BIN16, SILO061BIN2**
Nepheline Syenite Storage Silos	Silo62	**2006**	6-2	Baghouse **SILO062BIN15**
Soda Ash Storage Silos	Silo63	**2006**	6-3 **a & b**	Baghouse **SILO063BIN4, SILO063BIN5**

~~Table 2 –~~ **Raw Material and Handling Systems**				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Limestone Storage Silo	Silo64	**2006**	6-4	Baghouse **SILO064BIN9**
Dolomite Storage Silo	Silo65	**2006**	6-5	Baghouse **SILO065BIN3**
Minor Ingredient Storage Silo	Silo66	**2006**	6-6	Baghouse **SILO066BIN11**
Spare Storage Silo	Silo67	**2006**	6-7	Baghouse **SILO067BIN14**
602 Furnace Day Bins	**DB602**	**2006**	**6-8 a & b**	**Baghouse DB602A, DB602B**
Borax Storage Silo	Silo69	**2006**	6-9 **a & b**	Baghouse **SILO069BIN8, SILO069BIN10**
CNSMR Cullet Storage Silo	Silo612	**2006**	6-12 **a & b**	Baghouse **SILO612BIN1**
Knauf Cullet Storage Silo	Silo613	**2006**	6-13 **a & b**	Baghouse **SILO613BIN13, SILO613BIN7**
Gallery Conveyor Systems	**GLCONVEY / BUCKETELV**	**2006**	**6-15 a, b, c, & d**	**Baghouse GLCONVEY / BUCKETELV A, GLCONVEY / BUCKETELV B, GLCONVEY 611A, GLCONVEY611B, GLCONVEY602A, GLCONVEY602B**
Raw Material Unloader	RMUNLDR616	**2006**	6-16 **a & b**	Baghouse **RMUNLDR616A, RMUNLDR616B**
Gathering Belt/Weigh Scales	GTHRNGBLT617	**2006**	6-17	Baghouse **GTHRNGBL617**
Batch Mixer/Check Scale	BMXR618	**2006**	6-18 **a & b**	Baghouse **BMXR618**
611 Furnace Day Bins	DB619	**2006**	6-19	Baghouse **DB611A, DB611B**

~~Table 2 –~~ **Raw Material and Handling Systems**				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Knauf Cullet Handling	KCHNDLNG620	**2006**	6-20 **a & b**	~~–~~ **Baghouse KCHNDLNG620A, KCHNDLNG620B**
Resin Unloading	RUNLDNG626	**2006**	6-26	–
Binder Storage	BSTG627	**2006**	6-27	–
Binder Mixing	BMXG	**2006**	6-28	–

* Controlled emissions exhaust inside the building.

(2) Thirty eight (38) binder mixing and miscellaneous storage tanks, ranging from 50 gallons to 15,000 gallons.

Volatile organic compound (VOC) emissions from these storage tanks vent inside the binder building and are then ducted to the inlet of the wet electrostatic precipitator (ESP) (Stack 6-22).

SECTION D.4

(~~e~~**h**) FURNACE 611 – Stack 6-21
One (1) electrically heated glass melting furnace, identified as FURN 611,~~.~~ **installed in 2006.**

- **The nominal capacity of FURN 611 is 300 tons of molten glass per day.**
- **The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.**
- **Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.**
- **FURNACE 611 is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

This furnace is common to:
(1) 611 FORMING,
(2) 612 FORMING,
(3) 613 FORMING,
(4) 613 CURING/COOLING,
(5) 614 FORMING, and
(6) 614 CURING/COOLING.

- ~~The nominal capacity of FURN 611 is 300 tons of molten glass per day.~~
- ~~The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.~~
- ~~Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.~~

SECTION D.5

(~~f~~**i**) Stack 6-22

(1) 611 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 611 FORMING, utilizing natural gas for fiberization. Products formed in 611 FORMING are ready for packaging.
- The nominal capacity of 611 FORMING has been classified as confidential information.
- The particulate emissions from 611 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 611 FORMING exhaust through a stack identified as Stack 6-22.
- **611 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**
- **611 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(2) 612 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 612 FORMING, utilizing natural gas for fiberization. Products formed in 612 FORMING are ready for packaging.
- The nominal capacity of 612 FORMING has been classified as confidential information.
- The particulate emissions from 612 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 612 FORMING exhaust through a stack identified as Stack 6-22.
- **612 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**
- **612 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(3) 613 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.
- The nominal capacity of 613 FORMING has been classified as confidential information.
- The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.
- **613 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

- **613 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(4) 614 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.
- The nominal capacity of 614 FORMING has been classified as confidential information.
- The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.
- **614 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**
- **614 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(~~g~~**j**) Stack 6-29

(1) 613 CURING/COOLING
One (1) **rotary spin wool** fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.
- The nominal capacity of 613 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.
- The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.
- **613 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**
- **613 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(2) 614 CURING/COOLING
One (1) **rotary spin wool** fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.
- The nominal capacity of 614 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 614 CURING/COOLING are

controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.

– The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.
– Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.
– **614 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**
– **614 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

Changes to Section B

(c) IDEM has removed original Condition B.1 – Permit No Defense and placed the applicable requirements in Condition B.12 – Permit Shield.

(d) To clarify the permit term and the term of the conditions, original Conditions B.3 (now B.2) – Permit Term, and B.18 (now B.17) – Permit Renewal have been modified. Additionally, a new Section B condition, B.3 – Term of Conditions has been added.

(e) IDEM has rearranged the permit conditions such that original Condition B.5 – Termination of Right to Operate is now Condition B.14.

(f) Original Condition B.8 (now B.7) – Duty to Supplement and Provide Information was revised because the duty to supplement an application is not an ongoing requirement after the permit is issued.

(g) IDEM has moved the requirements from original Condition B.9 – Compliance with Permit Conditions to the title page of permit

(h) Instructions for the original Condition B.11 (now B.9) – Annual Compliance Certification (ACC) have been revised. The emission statement reporting requirements changed. The submission date for the ACC will continue to depend on which county the source is located.

(i) IDEM has determined that the Permittee is not required to keep records of all preventive maintenance. However, where the Permittee seeks to demonstrate that an emergency has occurred, the Permittee must provide, upon request records of preventive maintenance in order to establish that the lack of proper maintenance did not cause or contribute to the deviation. Therefore, IDEM has deleted paragraph (b) of original Condition B.12 (now B.10) – Preventive Maintenance Plan and has amended original Condition B.13 (now B.11) – Emergency Provisions.

(j) IDEM has removed original Condition B.15 – Multiple Exceedances because 326 IAC 2-7-5(1)(E) was repealed and the requirements conflict with 40 CFR 70.6(a)(6).

(k) IDEM has added Condition B.13 – Prior Permits Superseded to implement the intent if a 326 IAC 2-1.1-9.5.

(l) For clarification purposes, original Condition B.22 (now B.20) – Operational Flexibility has been revised.

(m) Original Condition B.23 – Construction Permit Requirement was removed and replaced with an updated condition, B.21 – Source Modification Requirement.

(n) Indiana has incorporated the credible evidence provision in 326 IAC 1-1-6. This rule became effective on March 16, 2005; therefore, the condition reflecting this rule will be incorporated into the permit as condition B.25.

~~B.1 Permit No Defense [326 IAC 2-1-10] [IC 13]~~

~~(a) Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7.~~

~~(b) This prohibition shall not apply to alleged violations of applicable requirements for which the Commissioner has granted a permit shield in accordance with 326 IAC 2-1-3.2 or 326 IAC 2-7-15, as set out in this permit in the Section B condition entitled "Permit Shield."~~

~~B.2 Definitions [326 IAC 2-7-1]~~

~~Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.~~

~~B.3 Permit Term [326 IAC 2-7-5(2)]~~

~~This permit is issued for a fixed term of five (5) years from the effective date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3.~~

~~B.4 Enforceability [326 IAC 2-7-7(a)]~~

~~(a) All terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM.~~

~~(b) Unless otherwise stated, terms and conditions of this permit, including any provisions to limit the source's potential to emit, are enforceable by the United States Environmental Protection Agency (U.S. EPA) and citizens under the Clean Air Act.~~

~~B.5 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]~~

~~The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).~~

~~B.6 Severability [326 IAC 2-7-5(5)]~~

~~The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.~~

~~B.7 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]~~

~~This permit does not convey any property rights of any sort, or any exclusive privilege.~~

~~B.8 Duty to Supplement and Provide Information [326 IAC 2-7-4(b)] [326 IAC 2-7-5(6)(E)]~~

~~(a) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to:~~

~~Indiana Department of Environmental Management~~
~~Permits Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~(b) The Permittee shall furnish to IDEM, OAQ within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.~~

~~(c) Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit. If the Permittee wishes to assert a claim of confidentiality over any of the furnished records, the Permittee must furnish such records to IDEM, OAQ, along with a claim of confidentiality under 326 IAC 17. If requested by IDEM, OAQ, or the U.S. EPA, to furnish copies of requested records directly to U. S. EPA, and if the Permittee is making a claim of confidentiality regarding the furnished records, then the Permittee must furnish such confidential records directly to the U.S. EPA along with a claim of confidentiality under 40 CFR 2, Subpart B.~~

~~B.9 Compliance with Permit Conditions [326 IAC 2-7-5(6)(A)] [326 IAC 2-7-5(6)(B)]~~

~~(a) The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit constitutes a violation of the Clean Air Act and is grounds for:~~

~~(1) Enforcement action;~~

~~(2) Permit termination, revocation and reissuance, or modification; or~~

~~(3) Denial of a permit renewal application.~~

~~(b) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.~~

~~B.10 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)]~~

~~(a) Any application form, report, or compliance certification submitted under this permit shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, and any other certification required under this permit, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.~~

~~(b) One (1) certification shall be included, on the attached Certification Form, with each submittal.~~

~~(c) A responsible official is defined at 326 IAC 2-7-1(34).~~

~~B.11 Annual Compliance Certification [326 IAC 2-7-6(5)]~~

~~(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The certification shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than July 1 of each year to:~~

~~Indiana Department of Environmental Management~~
~~Compliance Data Section, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~and~~

~~United States Environmental Protection Agency, Region V~~
~~Air and Radiation Division, Air Enforcement Branch – Indiana (AE-17J)~~
~~77 West Jackson Boulevard~~
~~Chicago, Illinois 60604-3590~~

~~(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.~~

~~(c) The annual compliance certification report shall include the following:~~

~~(1) The identification of each term or condition of this permit that is the basis of the certification;~~

~~(2) The compliance status;~~

~~(3) Whether compliance was continuous or intermittent;~~

~~(4) The methods used for determining compliance of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3);~~

~~(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.~~

~~The submittal by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).~~

~~B.12 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]~~

~~(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this permit, including the following information on each facility:~~

~~(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;~~

~~(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and~~

~~(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.~~

~~If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:~~

~~Indiana Department of Environmental Management~~
~~Compliance Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that lack of proper maintenance does not cause or contribute to a violation of any limitation on emissions or potential to emit.~~

~~(c) PMP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ.~~

~~B.13 Emergency Provisions [326 IAC 2-7-16]~~

~~(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-7-16.~~

~~(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:~~

~~(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;~~

~~(2) The permitted facility was at the time being properly operated;~~

~~(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;~~

~~(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;~~

~~Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or~~
~~Telephone Number: 317-233-5674 (ask for Compliance Section)~~
~~Facsimile Number: 317-233-5967~~

~~(5) For each emergency lasting one (1) hour or more, the Permittee submitted notice, either in writing or facsimile, of the emergency to:~~

~~Indiana Department of Environmental Management~~
~~Compliance Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~within two (2) working days of the time when emission limitations were exceeded due to the emergency.~~

~~The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:~~

~~(A) A description of the emergency;~~

~~(B) Any steps taken to mitigate the emissions; and~~

~~(C) Corrective actions taken.~~

~~The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~(6) The Permittee immediately took all reasonable steps to correct the emergency.~~

~~(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.~~

~~(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions) for sources subject to this rule after the effective date of this rule. This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.~~

~~(e) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(9) be revised in response to an emergency.~~

~~(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in compliance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.~~

~~(g) Operations may continue during an emergency only if the following conditions are met:~~

~~(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.~~

~~(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:~~

~~(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and~~

~~(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value.~~

~~Any operation shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.~~

~~B.14 Permit Shield [326 IAC 2-7-15]~~

~~(a) This condition provides a permit shield as addressed in 326 IAC 2-7-15.~~

~~(b) This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits. Compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided that:~~

~~(1) The applicable requirements are included and specifically identified in this permit; or~~

~~(2) The permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable.~~

~~(c) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, including any term or condition from a previously issued construction or operation permit, IDEM, OAQ shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.~~

~~(d) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application.~~

~~(e) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:~~

~~(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;~~

~~(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;~~

~~(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and~~

~~(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.~~

~~(f) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).~~

~~(g) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ has issued the modifications. [326 IAC 2-7-12(c)(7)]~~

~~(h) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ has issued the modification. [326 IAC 2-7-12(b)(8)]~~

~~B.15 Multiple Exceedances [326 IAC 2-7-5(1)(E)]~~

~~Any exceedance of a permit limitation or condition contained in this permit, which occurs contemporaneously with an exceedance of an associated surrogate or operating parameter established to detect or assure compliance with that limit or condition, both arising out of the same act or occurrence, shall constitute a single potential violation of this permit.~~

~~B.16 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]~~

~~(a) Deviations from any permit requirements (for emergencies see Section B – Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:~~

~~Indiana Department of Environmental Management~~
~~Compliance Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report.~~

~~The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:~~

~~(1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or~~

~~(2) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.~~

~~A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred is a deviation.~~

~~(c) Emergencies shall be included in the Quarterly Deviation and Compliance Monitoring Report.~~

~~B.17 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]~~

~~(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)]~~

~~(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:~~

~~(1) That this permit contains a material mistake.~~

~~(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.~~

~~(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]~~

~~(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]~~

~~(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]~~

~~B.18 Permit Renewal [326 IAC 2-7-4]~~

~~(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40).~~

~~Request for renewal shall be submitted to:~~

~~Indiana Department of Environmental Management~~
~~Permits Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~(b) Timely Submittal of Permit Renewal [326 IAC 2-7-4(a)(1)(D)]~~

~~(1) A timely renewal application is one that is:~~

~~(A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and~~

~~(B) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due. [326 IAC 2-5-3]~~

~~(2) If IDEM, OAQ, upon receiving a timely and complete permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.~~

~~(c) Right to Operate After Application for Renewal [326 IAC 2-7-3]~~
~~If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ, any additional information identified as being needed to process the application.~~

~~(d) United States Environmental Protection Agency Authority [326 IAC 2-7-8(e)]~~
~~If IDEM, OAQ fails to act in a timely way on a Part 70 permit renewal, the U.S. EPA may invoke its authority under Section 505(e) of the Clean Air Act to terminate or revoke and reissue a Part 70 permit.~~

~~B.19 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]~~

~~(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.~~

~~(b) Any application requesting an amendment or modification of this permit shall be submitted to:~~

~~Indiana Department of Environmental Management~~
~~Permits Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~Any such application should be certified by the “responsible official” as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule.~~

~~(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]~~

~~B.20 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12 (b)(2)]~~

~~(a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.~~

~~(b) Notwithstanding 326 IAC 2-7-12(b)(1)(D)(i) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.~~

~~B.21 Changes Under Section 502(b)(10) of the Clean Air Act [326 IAC 2-7-20(b)]~~

~~The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a) and the following additional conditions:~~

~~(a) For each such change, the required written notification shall include a brief description of the change within the source, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.~~

~~(b) The permit shield, described in 326 IAC 2-7-15, shall not apply to any change made under 326 IAC 2-7-20(b).~~

~~B.22 Operational Flexibility [326 IAC 2-7-20]~~

~~(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b), (c), or (e), without a prior permit revision, if each of the following conditions is met:~~

~~(1) The changes are not modifications under any provision of Title I of the Clean Air Act;~~

~~(2) Any approval required by 326 IAC 2-1 has been obtained;~~

~~(3) The changes do not result in emissions which exceed the emissions allowable under this permit (whether expressed herein as a rate of emissions or in terms of total emissions);~~

~~(4) The Permittee notifies the:~~

~~Indiana Department of Environmental Management~~
~~Permits Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~and~~

~~United States Environmental Protection Agency, Region V~~
~~Air and Radiation Division, Regulation Development Branch – Indiana (AR-18J)~~
~~77 West Jackson Boulevard~~
~~Chicago, Illinois 60604-3590~~

~~in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and~~

~~(5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-7-20(b), (c), or (e) and makes such records available, upon reasonable request, for public review.~~

~~Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b), (c)(1), and (e)(2).~~

~~(b) For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:~~

~~(1) A brief description of the change within the source;~~

~~(2) The date on which the change will occur;~~

~~(3) Any change in emissions; and~~

~~(4) Any permit term or condition that is no longer applicable as a result of the change.~~

~~The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~(c) Emission Trades [326 IAC 2-7-20(c)]~~
~~The Permittee may trade increases and decreases in emissions in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).~~

~~(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]~~
~~The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.~~

~~(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.~~

~~B.23 Construction Permit Requirement [326 IAC 2]~~

~~Except as allowed by Indiana P.L. 130-1996 Section 12, as amended by P.L. 244-1997, modification, construction, or reconstruction shall be approved as required by and in accordance with 326 IAC 2.~~

~~B.24 Inspection and Entry [326 IAC 2-7-6(2)]~~

~~Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:~~

~~(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;~~

~~(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;~~

~~(c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;~~

~~(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and~~

~~(e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements. [326 IAC 2-7-6(6)]~~

~~B.25 Transfer of Ownership or Operation [326 IAC 2-1-6] [326 IAC 2-7-11]~~

~~Pursuant to 326 IAC 2-1-6 and 326 IAC 2-7-11:~~

~~(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change. Notification shall include a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the Permittee and the new owner.~~

~~(b) The written notification shall be sufficient to transfer the permit to the new owner by an administrative amendment pursuant to 326 IAC 2-7-11. The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~(c) IDEM, OAQ shall reserve the right to issue a new permit.~~

~~B.26 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)]~~

~~(a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. If the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.~~

~~(b) Failure to pay may result in administrative enforcement action, or revocation of this permit.~~

~~(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-0425 (ask for OAQ, Technical Support and Modeling Section), to determine the appropriate permit fee.~~

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5] [326 IAC 2-7-4(a)(1)(D)] [IC 13-15-3-6(a)]

(a) This permit, T 145-6038-00001, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by the "responsible official" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) The "responsible official" is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

**Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251**

and

**United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch – Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590**

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

**Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251**

The PMP extension notification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(h) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

(i) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5] [326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B – Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

**Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251**

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(c), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3] [326 IAC 2-7-4] [326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12] [40 CFR 72]

(a) Permit amendments and modification are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.20 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b),(c), or (e) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch – Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emission trades that are subject to 326 IAC 2-7-20(b),(c), or (e). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1), (c)(1), and (e)(2).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(c)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-30-3-1] [IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)] [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ, the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

Changes to Section C

(o) In order to avoid duplication of requirements that may be included in D sections, original Condition C.6 – Operation of Equipment has been removed from the permit.

(p) Condition C.9 – Compliance Requirements was added to state what OAQ does whenever stack testing, monitoring, or reporting is required to assure compliance with an applicable requirement.

(q) Original Condition C.10 – Compliance Schedule was deleted because it is an application requirement and not a permitting requirement.

(r) IDEM realizes that the specifications of original Condition C.14 (now C.13) – Pressure Gauge and Other Instrument Specifications, can only be practically applied to analog units, and has therefore clarified the condition to state that the condition only applies to analog units. Upon further review, IDEM has also determined that the accuracy of the instruments is not nearly as important as whether the instrument has a range that is appropriate for the normal expected reading of the parameter. Therefore, the language in original Condition C.14 has been revised.

(s) The Permittee submitted an Emergency Reduction Plan on May 19, 1999. Therefore, paragraphs (b), (c), and (d) of original Condition C.15 (now C.14) – Emergency Reduction Plans are not needed and have been removed from the permit.

(t) IDEM has reconsidered the requirement to develop and follow a Compliance Response Plan (original Condition C.17 – now C.16). The Permittee will still be required to take reasonable response steps when a compliance monitoring parameter is determined to be out of range or abnormal. Replacing the requirement to develop and follow a Compliance Response Plan with a requirement to take reasonable response steps will ensure that the control equipment is returned to proper operation as soon as practicable, while still allowing the Permittee the flexibility to respond to situations that were not anticipated. Therefore, original Condition C.17 for the "Compliance Response Plan" has been replaced by Condition C.16 for the "Response to Excursions or Exceedances". The Section D conditions that referred to "Compliance Response Plan" have been revised to reflect the new condition title – "Response to Excursions or Exceedances".

(u) Revisions were made to the Emission Statement condition (original Condition C.19 – now C.18) to incorporate the revisions to 326 IAC 2-6 that became effective March 27, 2004. The revised rule was published in the April 1, 2004 Indiana Register.

(v) Original Condition C.20 – Monitoring Data Availability was deleted because the requirements are now included in Condition C.16 – Response to Excursions or Exceedances.

(w) Revisions have been made to the Section C – General Record Keeping and Section C – General Reporting Requirements (original Conditions C.21 (now C.19) and C.22 (now C.20)) to reflect NSR (New Source Review) reform provisions at the major sources.

(x) Original Condition C.24 (now C.22) – Retirement of Existing Operation has been revised to add the the retiring furnace, FURN 602A, to the list of retired emission units.

~~Emission Limitations and Standards [326 IAC 2-7-5(1)]~~

~~C.1 Particulate Matter Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2(c)]~~

~~Pursuant to 326 IAC 6-3-2(c), the allowable particulate matter emissions rate from any process not already regulated by 326 IAC 6-1 or any New Source Performance Standard, and which has a maximum process weight rate less than 100 pounds per hour shall not exceed 0.551 pounds per hour.~~

~~C.2 Opacity [326 IAC 5-1]~~

~~Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:~~

~~(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period, as determined in 326 IAC 5-1-4.~~

~~(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.~~

~~C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]~~

~~The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.~~

~~C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]~~

~~The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.~~

~~C.5 Fugitive Dust Emissions [326 IAC 6-4]~~

~~The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.~~

~~C.6 Operation of Equipment [326 IAC 2-7-6(6)]~~

~~Except as otherwise provided in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.~~

~~C.7 Stack Height [326 IAC 1-7]~~

~~The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.~~

~~C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]~~

~~(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.~~

~~(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:~~

~~(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or~~

~~(2) If there is a change in the following:~~

~~(A) Asbestos removal or demolition start date;~~

~~(B) Removal or demolition contractor; or~~

~~(C) Waste disposal site.~~

~~(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).~~

~~(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).~~

~~All required notifications shall be submitted to:~~

~~Indiana Department of Environmental Management~~
~~Asbestos Section, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~(e) Procedures for Asbestos Emission Control~~
~~The Permittee shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.~~

~~(f) Indiana Accredited Asbestos Inspector~~
~~The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.~~

~~Testing Requirements [326 IAC 2-7-6(1)]~~

~~C.9 Performance Testing [326 IAC 3-6]~~

~~(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing methods approved by IDEM, OAQ.~~

~~A test protocol, except as provided elsewhere in this permit, shall be submitted to:~~

~~Indiana Department of Environmental Management~~
~~Compliance Data Section, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.~~

~~(b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.~~

~~The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]~~

~~C.10 Compliance Schedule [326 IAC 2-7-6(3)]~~

~~The Permittee:~~

~~(a) Has certified that all facilities at this source are in compliance with all applicable requirements; and~~

~~(b) Has submitted a statement that the Permittee will continue to comply with such requirements; and~~

~~(c) Will comply with such applicable requirements that become effective during the term of this permit.~~

~~C.11 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]~~

~~Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment, no more than ninety (90) days after receipt of this permit. If due to circumstances beyond its control, this schedule cannot be met, the Permittee may extend compliance schedule an additional ninety (90) days provided the Permittee notifies:~~

~~Indiana Department of Environmental Management~~
~~Compliance Branch, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.~~

~~The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~C.12 Maintenance of Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]~~

~~(a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.~~

~~(b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.~~

~~C.13 Monitoring Methods [326 IAC 3]~~

~~Any monitoring or testing performed to meet the applicable requirements of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.~~

~~C.14 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]~~

~~(a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent (±2%) of full scale reading. Such gauges shall be calibrated every six (6) months.~~

~~(b) Whenever a condition in this permit requires the measurement of an operating temperature, duct pressure, fan amperage, primary and secondary current, primary and secondary voltage, and inlet water flow rate, the instruments employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent (2%) of full scale reading.~~

~~(c) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.~~

~~Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]~~

~~C.15 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]~~

~~Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):~~

~~(a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on March 19, 1999.~~

~~(b) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.~~

~~(c) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.~~

~~(d) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.~~

~~(e) Upon direct notification by IDEM, OAQ, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]~~

~~C.16 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]~~

~~If a regulated substance, subject to 40 CFR 68, is present in a process in more than the threshold quantity, 40 CFR 68 is an applicable requirement and the Permittee shall:~~

~~(a) Submit:~~

~~(1) A compliance schedule for meeting the requirements of 40 CFR 68 by the date provided in 40 CFR 68.10(a); or~~

~~(2) As a part of the compliance certification submitted under 326 IAC 2-7-6(5), a certification statement that the source is in compliance with all the requirements of 40 CFR 68, including the registration and submission of a Risk Management Plan (RMP); and~~

~~(3) A verification to IDEM, OAQ that a RMP or a revised plan was prepared and submitted as required by 40 CFR 68.~~

~~(b) Provide annual certification to IDEM, OAQ that the Risk Management Plan is being properly implemented.~~

~~All documents submitted pursuant to this condition shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~C.17 Compliance Monitoring Plan – Failure to Take Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6] [326 IAC 1-6]~~

~~(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:~~

~~(1) This condition;~~

~~(2) The Compliance Determination Requirements in Section D of this permit;~~

~~(3) The Compliance Monitoring Requirements in Section D of this permit;~~

~~(4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and~~

~~(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of :~~

~~(A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and~~

~~(B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.~~

~~(b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.~~

~~(c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:~~

~~(1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.~~

~~(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied or;~~

~~(3) An automatic measurement was taken when the process was not operating; or~~

~~(4) The process has already returned to operating within "normal" parameters and no response steps are required.~~

~~(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.~~

~~C.18 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]~~

~~(a) When the results of a stack test performed in conformance with Section C – Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.~~

~~(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected facility.~~

~~The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]~~

~~C.19 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)] [326 IAC 2-6]~~

~~(a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:~~

~~(1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);~~

~~(2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.~~

~~(b) The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31. The annual emission statement must be submitted to:~~

~~Indiana Department of Environmental Management~~
~~Technical Support and Modeling Section, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~(c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.~~

~~C.20 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]~~

~~(a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.~~

~~(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.~~

~~(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.~~

~~(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.~~

~~(e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.~~

~~(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.~~

~~C.21 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]~~

~~(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.~~

~~(b) Records of required monitoring information shall include, where applicable:~~

~~(1) The date, place, and time of sampling or measurements;~~

~~(2) The dates analyses were performed;~~

~~(3) The company or entity performing the analyses;~~

~~(4) The analytic techniques or methods used;~~

~~(5) The results of such analyses; and~~

~~(6) The operating conditions existing at the time of sampling or measurement.~~

~~(c) Support information shall include, where applicable:~~

~~(1) Copies of all reports required by this permit;~~

~~(2) All original strip chart recordings for continuous monitoring instrumentation;~~

~~(3) All calibration and maintenance records;~~

~~(4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C – Compliance Monitoring Plan – Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.~~

~~(d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.~~

~~C.22 General Reporting Requirements [326 IAC 2-7-5(3)(C)]~~

~~(a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Quarterly Compliance Monitoring Report. Any deviation from the requirements and the date(s) of each deviation must be reported.~~

~~(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:~~

~~Indiana Department of Environmental Management~~
~~Compliance Data Section, Office of Air Quality~~
~~100 North Senate Avenue~~
~~Indianapolis, Indiana 46204~~

~~(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.~~

~~(d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.~~

~~(e) All instances of deviations as described in Section B- Deviations from Permit Requirements Conditions must be clearly identified in such reports.~~

~~(f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.~~

~~(g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.~~

~~The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~Stratospheric Ozone Protection~~

~~C.23 Compliance with 40 CFR 82 and 326 IAC 22-1~~

~~Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:~~

~~(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.~~

~~(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.~~

~~(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.~~

~~Retirement of Existing Operations~~

~~C.24 Retirement of Existing Operations [326 IAC 2-3]~~

~~Pursuant to 326 IAC 2-3, the Permittee shall permanently discontinue the operation of the following operations:~~

~~(a) MFG 601 – Stack 1-1 and Stack 1-2~~

~~(1) One (1) electrically heated glass melting furnace, identified as Unit ID # FURN 601, installed in 1978, exhausting through ID # 1-1.~~

~~(2) One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 601, installed in 1978, operating at a rated heat input capacity of 30 million (MM) British thermal units (Btu) per hour, combusting natural gas, utilizing one (1) wet electrostatic precipitator for particulate control, and two (2) natural gas fired thermal oxidizers with a rated combined heat input capacity of 36 MMBtu per hour, exhausting through one (1) stack ID #1-2.~~

~~(b) MFG 603 – Stack 3-1 and Stack 3-2~~

~~(1) One (1) electrically heated glass melting furnace, identified as Unit ID # FURN 603, installed in 1978, exhausting through one (1) stack ID #3-1.~~

~~(2) One (1) fiberglass manufacturing line consisting of forming section, identified as Unit ID # MFG 603, installed in 1978, operating at a rated heat input capacity of 15 million (MM) British thermal units (Btu) per hour, combusting natural gas, utilizing two (2) wet scrubbers for particulate control, exhausting through one (1) stack ID #-3-2.~~

~~(c) MFG 605 – Stack 5-1, Stack 5-2, Stack 5-3, Stack 5-4, and Stack 5-5~~

~~(1) One (1) natural gas-fired glass melting furnace, identified as Unit ID # FURN 605, installed in 1983, operating at a rated heat input capacity of 10 MMBtu per hour, utilizing a baghouse for particulate control and exhausting through one (1) stack ID #5-1.~~

~~(2) One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 605, installed in 1983, operating at a rated heat input capacity of 20 MMBtu per hour, combusting natural gas, exhausting through four (4) stacks ID #5-2, 5-3, 5-4, and 5-5.~~

~~(d) Eight (8) storage silos, identified as Unit ID # SILO 01, SILO 02, SILO 03, SILO 04, SILO 05, SILO 06, SILO 07, and SILO 08, used to store limestone, dolomite, feldspar, borax, sand, soda ash, post consumer cullet, and a spare, respectively, each utilizing a baghouse for particulate control, each exhausting through stacks S/V ID #0-1 through 0-8, respectively.~~

~~(e) One (1) batch raw material receiving bin, identified as Unit ID # RMH 02, three (3) day bins, identified as Unit ID # DB 01, DB 03, and DB 05, used to store raw materials for FURN 601, FURN 603, and FURN 605, respectively, and one (1) intermediate batch bin, identified as Unit ID #DB 02A, each utilizing a baghouse for particulate control, exhausting through stacks S/V ID # 0-10 through 0-15.~~

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR Part 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

**Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251**

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.**

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit

issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission units, compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.11 Maintenance of Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.

(b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on March 19, 1999.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.15 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.16 Response to Excursions or Exceedances [326 IAC 1-6] [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records;

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.18 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

(a) Pursuant to 326 IAC 2-6-3(b)(2), starting in 2008 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

**Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251**

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

C.19 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

(c) If there is a reasonable possibility that a "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, other than projects at a Clean Unit, which is not part of a "major modification" (as defined in 326 IAC 2-2-1 (ee) and/or 326 IAC 2-3-1 (z)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1 (rr) and/or 326 IAC 2-3-1 (mm)), the Permittee shall comply with following:

(1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii) and/or 326 IAC 2-3-1(mm)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(2) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(3) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.20 General Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

(f) If the Permittee is required to comply with the recordkeeping provisions of (c) in Section C- General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(ii).

(g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (c)(2) and (3) in Section C- General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee deems fit to include in this report,

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management
Air Compliance Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

(h) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

C.21 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

Retirement of Existing Operations

C.22 Retirement of Existing Operations [326 IAC 2-3]

Pursuant to 326 IAC 2-3, the Permittee shall permanently discontinue the operation of the following operations upon startup of the new emission units:

(a) MFG 601 – Stack 1-1 and Stack 1-2

(1) One (1) electrically heated glass melting furnace, identified as Unit ID # FURN 601, installed in 1978, exhausting through ID # 1-1.

(2) One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 601, installed in 1978, operating at a rated heat input capacity of 30 million (MM) British thermal units (Btu) per hour, combusting natural gas, utilizing one (1) wet electrostatic precipitator for particulate control, and two (2) natural gas fired thermal oxidizers with a rated combined heat input capacity of 36 MMBtu per hour, exhausting through one (1) stack ID #1-2.

(b) MFG 603 – Stack 3-1 and Stack 3-2

(1) One (1) electrically heated glass melting furnace, identified as Unit ID # FURN 603, installed in 1978, exhausting through one (1) stack ID #3-1.

(2) One (1) fiberglass manufacturing line consisting of forming section, identified as Unit ID # MFG 603, installed in 1978, operating at a rated heat input capacity of 15 million (MM) British thermal units (Btu) per hour, combusting natural gas, utilizing two (2) wet scrubbers for particulate control, exhausting through one (1) stack ID #-3-2.

(c) MFG 605 – Stack 5-1, Stack 5-2, Stack 5-3, Stack 5-4, and Stack 5-5

(1) One (1) natural gas-fired glass melting furnace, identified as Unit ID # FURN 605, installed in 1983, operating at a rated heat input capacity of 10 MMBtu per hour, utilizing a baghouse for particulate control and exhausting through one (1) stack ID #5-1.

(2) One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 605, installed in 1983, operating at a rated heat input capacity of 20 MMBtu per hour, combusting natural gas, exhausting through four (4) stacks ID #5-2, 5-3, 5-4, and 5-5.

(d) Eight (8) storage silos, identified as Unit ID # SILO 01, SILO 02, SILO 03, SILO 04, SILO 05, SILO 06, SILO 07, and SILO 08, used to store limestone, dolomite, feldspar, borax, sand, soda ash, post consumer cullet, and a spare, respectively, each utilizing a baghouse for particulate control, each exhausting through stacks S/V ID #0-1 through 0-8, respectively.

(e) One (1) batch raw material receiving bin, identified as Unit ID # RMH 02, three (3) day bins, identified as Unit ID # DB 01, DB 03, and DB 05, used to store raw materials for FURN 601, FURN 603, and FURN 605, respectively, and one (1) intermediate batch bin, identified as Unit ID #DB 02A, each utilizing a baghouse for particulate control, exhausting through stacks S/V ID # 0-10 through 0-15.

(f) FURN 602A – Stack 2-1
One (1) gas-fired (with electric boost) glass melting furnace, identified as Unit ID # FURN 602A, installed in 1983, operating at a rated heat input capacity of 30 MMBtu per hour, combusting natural gas, utilizing one (1) dry electrostatic precipitator for particulate control, exhausting through one (1) stack ID #2-1.

Changes to Section D.1

(y) Original Condition D.1.1 – General Provisions Relating to NSPS and Particulate Matter Emission Limitation was removed because all NSPS requirements are now included in Section E.2.

(z) New Condition D.1.1 – PSD Minor Limits was added to specify the limitations on NO_X, SO_2, and VOC emissions from the expansion to render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, not applicable.

(aa) New Condition D.1.2 – Emission Offset Minor Limits was added to specify the limitations on NO_X and VOC emissions from the expansion to render the requirements of 326 IAC 2-3, Emission Offset, not applicable.

(bb) New Condition D.1.3 – Particulate Matter (PM / PM_{10}) PSD BACT Requirements was added to specify the emission limitations for PM and PM_{10} based on the Best Available Control Technology for the modification under 326 IAC 2-2, Prevention of Significant Deterioration.

(cc) New Condition D.1.4 – Carbon Monoxide (CO) PSD BACT Requirements was added to specify the emission limitations for CO based on the Best Available Control Technology for the modification under 326 IAC 2-2, Prevention of Significant Deterioration.

(dd) Original Condition D.1.2 – Particulate Matter Emission Limitation was updated (and renumbered as D.1.5) to list the new emission units that will be subject to the limitations under 326 IAC 11-4-4.

(ee) Original Condition D.1.4 (now D.1.7) – Testing Requirements was modified to include initial and ongoing testing requirements for the new emission units.

(ff) Original Condition D.1.5 (now D.1.8) – Particulate Matter (PM) was modified to update the condition title to “Particulate Matter (PM) Control” and to add the control device requirements for the new emission units.

(gg) Original Condition D.1.6 (now D.1.9) – Visible Emissions Notations was modified to remove the reference to the retiring emission unit and to add the references for the new emission units. Additionally, the frequency of the monitoring was changed to once per day which is sufficient to ensure proper operation of the control device and sufficient to satisfy the requirements of 326 IAC 2-7-5 and 326 IAC 2-7-6.

(hh) Original Condition D.1.7 – Parametric Monitoring was removed because the bag leak detection requirements required as part of the BACT Analysis are more stringent than parametric monitoring. In addition, the requirement to keep records of parametric monitoring has been removed from original Condition D.1.10 (now D.1.11) – Record Keeping Requirements.

(ii) IDEM has determined that it is the Permittee’s responsibility to include routine control device inspection requirements in the applicable preventive maintenance plan. Since the Permittee is in the best position to determine the appropriate frequency of control device inspections and the details regarding which components of the control device should be inspected, original Condition D.1.8 – Electrostatic Precipitator Inspection requiring control device inspections has been removed from the permit. In addition, the requirement to keep records of the inspections has been removed from original Condition D.1.10 (now D.1.11) – Record Keeping Requirements.

(jj) Original Condition D.1.9 – Broken or Failed Electrostatic Precipitators Detection was deleted and replaced with new condition D.1.10 – Bag Leak Detection Systems (BLDS) to include the requirements necessary for detection of leaks within the baghouses.

(kk) Original Condition D.1.10 – Record Keeping Requirements was updated (and renumbered as D.1.11) to include the recordkeeping on baghouse parameters. References to renumbered conditions were also updated.

(ll) Original Condition D.1.11 – Reporting Requirements was removed because all NSPS requirements are now included in Section E.2.

(mm) New Condition D.1.12 – Reporting Requirements was added to specify the reporting requirement needed to comply with the PSD Minor Limit requirement in Condition D.1.1 and the Emission Offset Minor Limit requirement in Condition D.1.2. Additionally, a Molten Glass Production Report for the new loose fill manufacturing line was added to the back of the permit.

Facility Description [326 IAC 2-7-5(15)]

~~(a) FURN 602 – Stack 2-1~~
~~One (1) gas-fired (with electric boost) glass melting furnace, identified as Unit ID # FURN 602, installed in 1983, operating at a rated heat input capacity of 30 MMBtu per hour, combusting natural gas, utilizing one (1) dry electrostatic precipitator for particulate control, exhausting through one (1) stack ID #2-1.~~

(a) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
- **installed in 2007,**
- **operating at a maximum processing capacity of 332 tons of glass per day,**
- **operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),**
- **utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and**
- **exhausting through one (1) stack ID # 6-30.**
- **602B FURNACE is common to MFG 602 and 602 LF MFG.**

~~(b) MFG 602 – Stack 2-2~~
~~One (1) fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602, installed in 1983, operating at a rated heat input capacity of 40 MMBtu per hour, combusting natural gas, utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, exhausting through one (1) stack ID #2-2.~~

(b) MFG 602 – Stack 2-2
One (1) rotary spin wool fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602,
- **installed in 1983,**
- **operating at a maximum processing capacity of 130 tons of glass per day,**
- **utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, and**
- **exhausting through one (1) stack ID #2-2.**
- **MFG 602 produces a bonded wool fiberglass insulation building product.**

(c) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,
- **installed in 2007,**
- **operating at a maximum processing capacity of 170 tons of glass per day,**

- **operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),**
- **utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and**
- **exhausting through one (1) stack ID # 6-22.**
- **602 LF MFG produces an unbonded wool fiberglass insulation product.**

(d) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR 1 and 602 LF SEPARATOR 2,
- **installed in 2007,**
- **operating at a maximum processing capacity of 170 tons of glass per day,**
- **utilizing two (2) baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and**
- **exhausting internally through two (2) vents ID# 6-31 & 6-32.**

(e) 602 LF PACKAGING
Two (2) fiberglass manufacturing packaging lines, identified as Unit ID # 602 LF PACKAGING 1&2 and 602 LF PACKAGING 3&4,
- **installed in 2007,**
- **operating at a maximum processing capacity of 170 tons of glass per day,**
- **utilizing two (2) baghouses for particulate control (Unit ID # 602 LF PACKAGING 1&2 & 3&4), and**
- **exhausting to 602 LF SEPARATOR.**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

~~D.1.1 General Provisions Relating to NSPS and Particulate Matter Emission Limitation [326 IAC 12] [40 CFR Part 60, Subpart A] [40 CFR 60.290, Subpart CC]~~

~~(a) The provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 60, Subpart CC.~~

~~(b) Pursuant to 326 IAC 12 (40 CFR 60.290, Subpart CC) “Standard of Performance for Glass Manufacturing Plants”, the particulate matter emissions from the one (1) gas-fired (with electric boost) glass melting furnace (FURN 602) shall be limited to 0.25 grams of particulate per kilogram of glass produced.~~

D.1.1 PSD Minor Limits [326 IAC 2-2]

(a) In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply to the loose fill manufacturing line (602 LF MFG):

(1) The NO_X emissions shall not exceed 9.13 pounds per hour.

(2) The SO_2 emissions shall not exceed 0.04 pounds per hour.

(3) The VOC emissions shall not exceed 0.33 pounds per hour.

(4) The molten glass to be formed by 602 LF MFG shall not exceed 62,050 tons of molten glass per 12-consecutive month period, with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 2-2 shall not apply to 602 LF MFG for NO_X, SO_2, and VOC.

(b) There shall be no emissions of NO_X, SO_2, or VOC from 602B FURNACE; therefore, the requirements of 326 IAC 2-2 shall not apply for NO_X, SO_2, and VOC.

D.1.2 Emission Offset Minor Limits [326 IAC 2-3]

(a) In order to render the 326 IAC 2-3 (Emission Offset) requirements not applicable, the following conditions shall apply to the loose fill manufacturing line (602 LF MFG):

(1) The NO_X emissions shall not exceed 9.13 pounds per hour.

(2) The VOC emissions shall not exceed 0.33 pounds per hour.

(3) The molten glass to be formed by 602 LF MFG shall not exceed 62,050 tons of molten glass per 12-consecutive month period, with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 2-3 shall not apply to 602 LF MFG for NO_X and VOC.

(b) There shall be no emissions of NO_X or VOC from 602B FURNACE; therefore, the requirements of 326 IAC 2-3 shall not apply for NO_X and VOC.

D.1.3 Particulate Matter (PM / PM_{10}) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for particulate matter (PM / PM_{10}):

(a) 602B FURNACE – Stack 6-30:

(1) A baghouse shall be installed to control the PM/PM_{10} emissions from the glass melting furnace, 602B FURNACE, and shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouse from the 602B FURNACE shall not exceed:

(A) 0.45 pound per ton of glass pulled;

(B) 5.63 pounds per hour based on a 3-hour rolling average.

(b) 602 LF MFG – Stack 6-22:

(1) A wet electrostatic precipitator (WESP) shall be installed to control the PM/PM_{10} emissions, and shall operate at a minimum control efficiency of sixty percent (60%).

(2) The PM/PM_{10} emissions after the WESP from general operation of the loose fill manufacturing process shall not exceed:

(A) 2.8 pounds per ton of glass pulled;

(B) 19.79 pounds per hour based on a 3-hour rolling average.

(3) The PM emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 0.11 pounds per hour based on a 3-hour rolling average.

(4) The PM_{10} emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 0.46 pounds per hour based on a 3-hour rolling average.

(c) 602 LF SEPARATOR:

(1) Two (2) baghouses shall be installed to control the PM/PM_{10} emissions from the 602 LF SEPARATOR, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouses from the 602 LF SEPARATOR shall not exceed 1.05 pounds per hour based on a 3-hour rolling average.

(3) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period.

(d) 602 LF PACKAGING:

(1) Two (2) baghouses shall be installed to control the PM/PM_{10} emissions from the 602 LF PACKAGING, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(2) The PM/PM_{10} emissions after the baghouses from the 602 LF PACKAGING shall not exceed 0.15 pounds per hour based on a 3-hour rolling average.

(3) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period.

These emission rates include filterable and condensible particulate matter.

D.1.4 Carbon Monoxide (CO) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD), the Permittee shall comply with the following requirements for carbon monoxide (CO):

(a) 602B FURNACE – Stack 6-30:
The CO emissions from the 602B FURNACE shall not exceed:

(1) 0.02 pound per ton of glass pulled;

(2) 0.25 pounds per hour based on a 3-hour rolling average.

(b) 602 LF MFG – Stack 6-22:

(1) The CO emissions from general operation of the loose fill manufacturing process shall not exceed 8 pounds per ton of glass pulled or 56.87 pounds per hour based on a 3-hour rolling average.

(2) The CO emissions from natural gas combustion in the fiberizing section of the loose fill manufacturing process shall not exceed 5.04 pounds per hour based on a 3-hour rolling average.

D.1.~~2~~**5** Particulate Matter Emission Limitation [326 IAC 11-4-4]

Pursuant to 326 IAC 11-4-4 (Fiberglass Insulation Manufacturing – Emission Limitation), emission limitations for particulate matter have been set forth in Indiana's State Implementation Plan (SIP) as follows:

Process / Facility	**Max. Hourly Emissions** (lbs/hour)	**Max. Yearly Emissions** (tons/yr)
MFG 602 **(**forming**)**~~ + oven~~ **602 LF MFG (forming)** **602B FURNACE (oven)**	33.27	145.7

D.1.~~3~~**6** Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B – Preventive Maintenance Plan, of this permit, is required for the control devices described in Section D.1.

Compliance Determination Requirements

~~D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)]~~

~~The PM_{10} testing on Unit ID # FURN 602 and Unit ID # MFG 602 shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration, utilizing 40 CFR Part 60 Appendix A, Method 5E (Determination of Particulate Emissions from the Wool Fiberglass Insulation Manufacturing Industry) or other test methods as approved by the Commissioner.~~

~~In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.~~

D.1.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]

(a) Within sixty (60) days after achieving maximum capacity of the proposed modification, but no later than one hundred and eighty (180) days after initial startup of the proposed expansion, the Permittee shall perform compliance testing on the following:

(1) 602B FURNACE – Stack 6-30:

(A) PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(a) – PM / PM_{10} PSD BACT Requirements;

(B) CO – to verify compliance with the limitations in Condition D.1.4(a) – CO PSD BACT Requirements;

(2) 602 LF MFG – Stack 6-22:

(A) PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(b) – PM / PM_{10} PSD BACT Requirements;

(B) CO – to verify compliance with the limitations in Condition D.1.4(b) – CO PSD BACT Requirements;

(3) 602 LF SEPARATOR:
PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(c) – PM / PM_{10} PSD BACT Requirements; and

(4) 602 LF PACKAGING:
PM / PM_{10} – to verify compliance with the limitations in Condition D.1.3(d) – PM / PM_{10} PSD BACT Requirements

utilizing the procedures set forth in 40 CFR 60, Appendix A; 40 CFR Part 51, Appendix M; or other methods as approved by the Commissioner.

(b) The PM/PM_{10} testing on 602B FURNACE, MFG 602, 602 LF MFG, 602 LF SEPARATOR, and 602 LF PACKAGING shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration, utilizing 40 CFR Part 60 Appendix A, Method 5E (Determination of Particulate Emissions from the Wool Fiberglass Insulation Manufacturing Industry) or other test methods as approved by the Commissioner. PM_{10} includes filterable and condensible PM_{10}.

(c) The CO testing on 602B FURNACE and 602 LF MFG shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

(d) Testing shall be conducted in accordance with Section C – Performance Testing.

~~D.1.5 Particulate Matter (PM)~~

~~The wet electrostatic precipitator (for MFG 602), and the dry electrostatic precipitator (for FURN 602) for PM control shall be in operation at all times when MFG 602, and FURN 602 are in operation and exhausting to the outside atmosphere.~~

D.1.8 Particulate Matter (PM) Control

(a) The five (5) baghouses (for 602B FURNACE, 602 SEPARATOR, and 602 PACKAGING) for PM control shall be in operation at all times when any of the following: 602B FURNACE, 602 SEPARATOR, and 602 PACKAGING are in operation and exhausting to the outside atmosphere.

(b) The two (2) wet electrostatic precipitators (for MFG 602 and 602 LF MFG) for PM control shall be in operation at all times when either of the manufacturing lines, MFG 602 and 602 LF MFG, are in operation and exhausting to the outside atmosphere.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.~~6~~**9** Visible Emissions Notations

~~(a) Daily visible emission notations of MFG 602 stack exhaust (Stack 2-2) and FURN 602 (Stack 2-1) shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.~~

(a) Visible emission notations of stack exhaust from

(1) 602B FURNACE(Stack 6-30),

(2) MFG 602 (Stack 2-2), and

(3) 602 LF MFG(Stack 6-22),

shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

~~(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.~~

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

~~D.1.7 Parametric Monitoring~~

~~(a) The Permittee shall record the total secondary voltage across each of the wet electrostatic precipitators used in conjunction with the manufacturing line (MFG 602), at least once daily when the manufacturing line (MFG 602) are in operation. The Compliance Response Plan for these units shall establish the appropriate ranges and shall contain troubleshooting contingency and response steps for when the voltage reading is outside of the stated ranges for any one reading.~~

~~(b) The Permittee shall record the total secondary voltage across the dry electrostatic precipitator used in conjunction with FURN 602, at least once daily when FURN 602 is in operation. The Compliance Response Plan for these units shall establish the appropriate ranges and shall contain troubleshooting contingency and response steps for when the voltage reading is outside of the stated ranges for any one reading.~~

~~The instruments used for determining the voltage shall comply with Section C – Pressure Gauge and other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated quarterly.~~

~~D.1.8 Electrostatic Precipitator Inspections~~

~~An inspection shall be performed each calendar quarter of all electrostatic precipitators controlling manufacturing line (MFG 602) and FURN 602.~~

~~D.1.9 Broken or Failed Electrostatic Precipitators Detection~~

~~In the event that electrostatic precipitators failure has been observed, the Permittee shall take appropriate response steps in accordance with its Compliance Response Plan.~~

D.1.10 Bag Leak Detection Systems (BLDS)

(a) Compliance with §63.1383(b) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN) shall satisfy all bag leak detection system (BLDS) requirements for the 602B FURNACE.

(b) The Permittee shall install and operate continuous bag leak detection systems (BLDS) for the 602 LF SEPARATOR and 602 LF PACKAGING. The bag leak detection systems shall meet the following requirements:

(i) The bag leak detection systems must be certified by the manufacturer to be capable of detecting particulate matter emissions.

(ii) The bag leak detection system sensor must provide output of relative particulate matter loading.

(iii) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.

(iv) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.

(vii) The bag detector must be installed downstream of the baghouses.

(c) In the event of a bag leak detection system alarm:

(i) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

(ii) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

(d) If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced.

The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.~~10~~**11** Record Keeping Requirements

(a) To document compliance with Condition D.1.~~6~~**9** – Visible Emissions Notations, the Permittee shall maintain records of ~~daily~~ visible emission notations of the manufacturing lines (**602B FURNACE,** MFG 602~~ and FURN 602~~**, and 602 LF MFG**) stack exhausts.

(b) ~~To document compliance with Condition D.1.7 – Parametric Monitoring, the Permittee shall maintain the following:~~

~~(1) Daily records of the following operational parameters during normal operation:~~

~~Daily secondary voltage readings for the electrostatic precipitators.~~

~~(2) Documentation of all response steps implemented, per event.~~

~~(c) To document compliance with Condition D.1.8 – Electrostatic Precipitator Inspections, the Permittee shall maintain records of the results of the inspections required under Condition D.1.8 – Electrostatic Precipitator Inspections.~~

~~(d)~~ All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

~~D.1.11 Reporting Requirements~~

~~A quarterly summary of the information to document compliance with Conditions D.1.1 – General Provisions Relating to NSPS and Particulate Matter Emission Limitation, and D.1.2 – Particulate Matter Emission Limitation, shall be submitted to the address listed in Section C – General Reporting Requirements, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.~~

D.1.12 Reporting Requirements

To document compliance with Condition D.1.1 – PSD Minor Limits and Condition D.1.2 – Emission Offset Minor Limits, the Permittee shall submit a quarterly summary of the actual amount of glass produced, using the Annual Molten Glass Production Report or its equivalent, located at the end of this permit. These reports shall be submitted not later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Condition C – General Reporting Requirements of this permit.

Changes to Section D.2

(nn) Original Condition D.2.1 – General Provisions Relating to NSPS and Particulate Matter Emission Limitation was removed because all NSPS requirements are now included in Section E.2.

(oo) The frequency of the monitoring of Visible Emissions Notations (original Condition D.2.5 – now D.2.4) was changed to once per day which is sufficient to ensure proper operation of the control device and sufficient to satisfy the requirements of 326 IAC 2-7-5 and 326 IAC 2-7-6.

(pp) Original Conditions D.2.5 and D.2.6 (now D.2.4 and D.2.5) that referred to “Compliance Response Plan” have been revised to reflect the new condition title – “Response to Excursions or Exceedances”.

(qq) IDEM has determined that it is the Permittee’s responsibility to include routine control device inspection requirements in the applicable preventive maintenance plan. Since the Permittee is in the best position to determine the appropriate frequency of control device inspections and the details regarding which components of the control device should be inspected, original Condition D.2.7 – Dust Collector Inspections requiring control device inspections has been removed from the permit. In addition, the requirement to keep records of the inspections has been removed from original Condition D.2.9 (now D.2.7) – Record Keeping Requirements.

(rr) Original Condition D.2.8 (now D.2.6) – Broken or Failed Dust Collector Detection has been deleted and replaced with an updated condition titled “Broken or Failed Bag Detection” which includes requirements specific to single compartment baghouses.

(ss) Original Condition D.2.9 (now D.2.7) – Record Keeping Requirements was updated to correspond with the changes made to original Condition D.2.5 – Visible Emissions Notations and references to renumbered conditions have been updated.

(tt) Original Condition D.2.10 – Reporting Requirements was removed because all NSPS requirements are now included in Section E.2.

Facility Description [326 IAC 2-7-5(15)]

~~Nine (9) fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively, each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively, each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively; LINE 3001-3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.~~

(f) Nine (9) rotary spin wool fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively,

- **each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively,**
- **each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively;**
- **LINE 3001-3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

~~D.2.1 General Provisions Relating to NSPS and Particulate Matter Limitation (PM) [326 IAC 12] [40 CFR Part 60, Subpart A] [40 CFR 60.680]~~

~~(a) The provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 60, Subpart PPP.~~

~~(b) Pursuant to 326 IAC 12 (40 CFR 40 CFR 60.680, Subpart PPP) "Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants", the particulate matter emissions from the nine (9) fiberglass pipe insulation production lines shall be limited to 5.5 kg/Mg (11.0 lb/ton) of glass pulled.~~

D.2.~~5~~**4** Visible Emissions Notations

(a) ~~Daily~~ visible emission notations of the nine (9) fiberglass pipe insulation production lines stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

~~(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.~~

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.~~6~~**5** Parametric Monitoring

The Permittee shall record the leak detector picoampere (pA) **display reading** for each dust collector on the fiberglass trimming operation used in conjunction with the nine (9) fiberglass pipe insulation production lines, at least once daily when the nine (9) fiberglass production lines are in operation. ~~Unless operated under conditions for which the Compliance Response Plan specifies otherwise, leak detectors will be operated at a maximum set point of 11 pA or a range established during a stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pA display reading is outside of the above mentioned range for any one reading.~~ **When any one display reading exceeds the maximum set point of 11 pA or is outside the range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. A display reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.**

~~D.2.6 Dust Collector Inspections~~

~~An inspection shall be performed each calendar quarter of all dust collectors controlling the nine (9) fiberglass pipe insulation production lines.~~

~~D.2.8 Broken or Failed Dust Collector Detection~~

~~In the event that dust collector failure has been observed the Permittee shall take appropriate response steps in accordance with its Compliance Response Plan.~~

D.2.6 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

(b) For a single compartment baghouses controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

D.2.~~9~~**7** Record Keeping Requirements

(a) To document compliance with Condition D.2.4**3** – Particulate Matter Control, the Permittee shall maintain records of ~~daily~~ visible emission notations of the nine (9) fiberglass pipe insulation production lines taken in accordance with Condition D.2.~~5~~**4** – Visible Emissions Notations.

(b) To document compliance with Condition D.2.~~6~~**5** – Parametric Monitoring, the Permittee shall maintain the following:

(1) Daily records of picoampere **(pA) display** readings.

(2) Documentation of all response steps implemented, per event.

(c) ~~To document compliance with Condition D.2.7 – Dust Collector Inspections, the Permittee shall maintain records of the results of the inspections required under Condition D.2.7 – Dust Collector Inspections.~~

~~(d)~~ All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

~~D.2.10 Reporting Requirements~~

~~A quarterly summary of the information to document compliance with Condition D.2.1 – Provisions Relating to NSPS and Particulate Matter Limitation, shall be submitted to the address listed in Section C – General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter~~ being reported.

Changes to Section D.3

(uu) The table of emission rates in Condition D.3.1 – Particulate Matter (PM) PSD Minor Limits was updated to remove the emission units that now subject to PSD BACT.

(vv) New Condition D.3.2 – Particulate Matter (PM / PM_{10}) PSD BACT Requirements was added to specify the emission limitations for PM and PM_{10} based on the Best Available Control Technology for the modification under 326 IAC 2-2, Prevention of Significant Deterioration. The remaining Section D.3 conditions and references to these conditions were renumbered.

(ww) The list of emission units in original Condition D.3.2 (now D.3.3) – Preventive Maintenance Plan was updated to include the new emission units.

(xx) The list of emission units in Condition D.3.3 (now D.3.4) – Baghouse Operation was updated to include the new emission units.

(yy) The table of control device information in paragraph (a) of Condition D.3.4 (now D.3.5) – Bag Leak Detection System (BLDS) was updated the add the information for the new emission units and to clarify information for the existing emission units.

(zz) Paragraph (b) of Condition D.3.4 (now D.3.5) – Bag Leak Detection System (BLDS) has been deleted and replaced with an updated requirements specific to single compartment baghouses.

Facility Description [326 IAC 2-7-5(15)]

Raw Material and Handling Systems

(1) The nominal capacities of these units have been classified as confidential information.

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Silica Sand Storage Silos	Silo61	**2006**	6-1 **a & b**	Baghouse **SILO061BIN16, SILO061BIN2**
Nepheline Syenite Storage Silos	Silo62	**2006**	6-2	Baghouse **SILO062BIN15**
Soda Ash Storage Silos	Silo63	**2006**	6-3 **a & b**	Baghouse **SILO063BIN4, SILO063BIN5**
Limestone Storage Silo	Silo64	**2006**	6-4	Baghouse **SILO064BIN9**
Dolomite Storage Silo	Silo65	**2006**	6-5	Baghouse **SILO065BIN3**

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Minor Ingredient Storage Silo	Silo66	**2006**	6-6	Baghouse **SILO066BIN11**
Spare Storage Silo	Silo67	**2006**	6-7	Baghouse **SILO067BIN14**
602 Furnace Day Bins	**DB602**	**2006**	**6-8 a & b**	**Baghouse DB602A, DB602B**
Borax Storage Silo	Silo69	**2006**	6-9 **a & b**	Baghouse **SILO069BIN8, SILO069BIN10**
CNSMR Cullet Storage Silo	Silo612	**2006**	6-12 **a & b**	Baghouse **SILO612BIN1**
Knauf Cullet Storage Silo	Silo613	**2006**	6-13 **a & b**	Baghouse **SILO613BIN13, SILO613BIN7**
Gallery Conveyor Systems	**GLCONVEY / BUCKETELV**	**2006**	**6-15 a, b, c, & d**	**Baghouse GLCONVEY / BUCKETELV A, GLCONVEY / BUCKETELV B, GLCONVEY 611A, GLCONVEY611B, GLCONVEY602A, GLCONVEY602B**
Raw Material Unloader	RMUNLDR616	**2006**	6-16 **a & b**	Baghouse **RMUNLDR616A, RMUNLDR616B**
Gathering Belt/Weigh Scales	GTHRNGBLT617	**2006**	6-17	Baghouse **GTHRNGBL617**
Batch Mixer/Check Scale	BMXR618	**2006**	6-18 **a & b**	Baghouse **BMXR618**
611 Furnace Day Bins	DB619	**2006**	6-19	Baghouse **DB611A, DB611B**
Knauf Cullet Handling	KCHNDLNG620	**2006**	6-20 **a & b**	– **Baghouse KCHNDLNG620A, KCHNDLNG620B**
Resin Unloading	RUNLDNG626	**2006**	6-26	–

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
Binder Storage	BSTG627	**2006**	6-27	–
Binder Mixing	BMXG	**2006**	6-28	–

* Controlled emissions exhaust inside the building.

(2) Thirty eight (38) binder mixing and miscellaneous storage tanks, ranging from 50 gallons to 15,000 gallons.

Volatile organic compound (VOC) emissions from these storage tanks vent inside the binder building and are then ducted to the inlet of the wet electrostatic precipitator (ESP) (Stack 6-22).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.3.1 Particulate Matter (PM) PSD Minor Limits [326 IAC 2-2]

In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the Permittee shall not exceed the following emission rates:

Emission Unit ID	Internal Vent ID	~~**PTE** (pounds/hour)~~ **Emission Limit (lb/hr)**
~~Silo61~~	~~6-1~~	~~0.014~~
~~Silo62~~	~~6-2~~	~~0.0042~~
~~Silo63~~	~~6-3~~	~~0.0059~~
~~Silo64~~	~~6-4~~	~~0.00168~~
~~Silo65~~	~~6-5~~	~~0.0042~~
~~Silo69~~	~~6-9~~	~~0.0059~~
~~RMUNLDR616~~	~~6-16~~	~~0.24~~
~~GTHRNGBLT617~~	~~6-17~~	~~0.051~~
~~BMXR618~~	~~6-18~~	~~1.88~~
DB619	6-19	0.031

Therefore, the requirements of 326 IAC 2-2 shall not apply to ~~the expansion~~ **DB619**.

Compliance with these PM and PM_{10} limits satisfies the allowable particulate emission rates specified in 326 IAC 6-3 (~~Process Operations~~ **Particulate Emission Limitations for Manufacturing Processes**).

D.3.2 Particulate Matter (PM / PM_{10}) PSD BACT Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD),

(a) Baghouses shall be installed to control the PM/PM_{10} emissions from the raw material handling operations, and each shall operate at a minimum control efficiency of ninety-nine percent (99%).

(b) The Permittee shall comply with the following grain loading and emission rate requirements for particulate matter (PM / PM_{10}):

Emission Unit ID	Internal Vent ID	Grain Loading (gr/dscf)	Emission Limit (lb/hr)
Silo61	**6-1 a & b**	**0.003**	**0.0154**
Silo62	**6-2**	**0.001**	**0.0031**
Silo63	**6-3 a & b**	**0.001**	**0.0051**
Silo64	**6-4**	**0.0003**	**0.0015**
Silo65	**6-5**	**0.001**	**0.0031**
Silo66	**6-6**	**0.0009**	**0.0046**
DB602	**6-8 a & b**	**0.01**	**0.0513**
Silo69	**6-9 a & b**	**0.002**	**0.0062**
Silo612	**6-12 a & b**	**0.006**	**0.0185**
Silo613	**6-13 a & b**	**0.0009**	**0.0024**
GLCONVEY / BUCKETELV	**6-15 a, b, c, & d**	**0.036**	**0.0948**
RMUNLDR616	**6-16 a & b**	**0.021**	**0.0553**
GTHRNGBLT617	**6-17**	**0.021**	**0.0553**
BMXR618	**6-18 a & b**	**0.021**	**0.0553**
KCHNDLNG620	**6-20 a & b**	**0.0009**	**0.0024**

All pounds per hour limits specified in the table above are based on a 3-hour rolling average, and these emission rates include filterable and condensible particulate matter.

(c) Opacity shall not exceed an average of ten percent (10%) in any one (1) six (6) minute averaging period.

Compliance with these PM and PM_{10} limits satisfies the allowable particulate emission rates specified in 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).

D.3.~~2~~**3** Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B – Preventive Maintenance Plan, of this permit, is required for each baghouse, used to control the particulate emissions from the following **emission units**:

(a) Silo61;
(b) Silo62;
(c) Silo63;
(d) Silo64;
(e) Silo65;
(f) Silo66;
(g) Silo67;
(h) DB602;
(i) Silo69;
(j) Silo612;
(k) Silo613;

(l) GLCONVEY / BUCKETELV;
(m) RMUNLDR616;
(n) GTHRNGBLT617;
(o) BMXR618;
(p) DB619; and
(q) KCHNDLNG620.

~~**Emission Units**~~	
~~Silo61~~	~~Silo69~~
~~Silo62~~	~~Silo612~~
~~Silo63~~	~~Silo613~~
~~Silo64~~	~~RMUNLDR616~~
~~Silo65~~	~~GTHRNGBLT617~~
~~Silo66~~	~~BMXR618~~
~~Silo67~~	~~DB619~~

D.3.~~3~~**4** Baghouse Operation

The baghouses for PM control shall be in operation at all times when the following **emission units** are in operation~~.~~**:**

(a) Silo61;
(b) Silo62;
(c) Silo63;
(d) Silo64;
(e) Silo65;
(f) Silo66;
(g) Silo67;
(h) DB602;
(i) Silo69;
(j) Silo612;
(k) Silo613;
(l) GLCONVEY / BUCKETELV;
(m) RMUNLDR616;
(n) GTHRNGBLT617;
(o) BMXR618;
(p) DB619; and
(q) KCHNDLNG620.

~~**Emission Units**~~	
~~Silo61~~	~~Silo69~~
~~Silo62~~	~~Silo612~~
~~Silo63~~	~~Silo613~~
~~Silo64~~	~~RMUNLDR616~~
~~Silo65~~	~~GTHRNGBLT617~~
~~Silo66~~	~~BMXR618~~
~~Silo67~~	~~DB619~~

D.3.4**5** Bag Leak Detection System (BLDS)

(a) The Permittee shall install and operate continuous bag leak detection systems (BLDS) for the following:

~~Emission Unit ID~~	~~Internal Vent ID~~	~~Control Device~~
~~Silo61~~	~~6-1~~	~~Baghouse~~
~~Silo62~~	~~6-2~~	~~Baghouse~~
~~Silo63~~	~~6-3~~	~~Baghouse~~
~~Silo64~~	~~6-4~~	~~Baghouse~~
~~Silo65~~	~~6-5~~	~~Baghouse~~
~~Silo66~~	~~6-6~~	~~Baghouse~~
~~Silo67~~	~~6-7~~	~~Baghouse~~
~~Silo69~~	~~6-9~~	~~Baghouse~~
~~Silo612~~	~~6-12~~	~~Baghouse~~
~~Silo613~~	~~6-13~~	~~Baghouse~~
~~RMUNLDR616~~	~~6-16~~	~~Baghouse~~
~~GTHRNGBLT617~~	~~6-17~~	~~Baghouse~~
~~BMXR618~~	~~6-18~~	~~Baghouse~~
~~DB619~~	~~6-19~~	~~Baghouse~~

Emission Unit ID	**Internal Vent ID**	**Control Device ***
Silo61	**6-1 a & b**	**Baghouse SILO061BIN16, SILO061BIN2**
Silo62	**6-2**	**Baghouse SILO062BIN15**
Silo63	**6-3 a & b**	**Baghouse SILO063BIN4, SILO063BIN5**
Silo64	**6-4**	**Baghouse SILO064BIN9**
Silo65	**6-5**	**Baghouse SILO065BIN3**
Silo66	**6-6**	**Baghouse SILO066BIN11**
Silo67	**6-7**	**Baghouse SILO067BIN14**
DB602	**6-8 a & b**	**Baghouse DB602A, DB602B**
Silo69	**6-9 a & b**	**Baghouse SILO069BIN8, SILO069BIN10**
Silo612	**6-12 a & b**	**Baghouse SILO612BIN1**

Emission Unit ID	Internal Vent ID	Control Device *
Silo613	**6-13 a & b**	**Baghouse** **SILO613BIN13, SILO613BIN7**
GLCONVEY / BUCKETELV	**6-15 a, b, c, & d**	**Baghouse** **GLCONVEY / BUCKETELV A, GLCONVEY / BUCKETELV B, GLCONVEY 611A, GLCONVEY611B, GLCONVEY602A, GLCONVEY602B**
RMUNLDR616	**6-16 a & b**	**Baghouse** **RMUNLDR616A, RMUNLDR616B**
GTHRNGBLT617	**6-17**	**Baghouse** **GTHRNGBL617**
BMXR618	**6-18 a & b**	**Baghouse** **BMXR618**
DB619	**6-19**	**Baghouse** **DB611A, DB611B**
KCHNDLNG620	**6-20 a & b**	**Baghouse** **KCHNDLNG620A, KCHNDLNG620B**

The bag leak detection systems shall meet the following requirements:

(i) The bag leak detection systems must be certified by the manufacturer to be capable of detecting particulate matter emissions.

(ii) The bag leak detection system sensor must provide output of relative particulate matter loading.

(iii) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.

(iv) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.

(vii) The bag detector must be installed downstream of the baghouses.

(b) In the event of a bag leak detection system alarm:

~~(i) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section C- Emergency Provisions).~~

~~(ii) Within eight (8) business hours of the determination of failure, reasonable response steps according to the timetable described in the Compliance Response Plan shall be initiated.~~

~~For any failure with corresponding reasonable response steps and timetable not described in the Compliance Response Plan, reasonable response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take reasonable response steps in accordance with Section C – Compliance Response Plan – Preparation, Implementation, Records and Reports, shall be considered a deviation from this permit.~~

(i) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

(ii) For a single compartment baghouse~~s~~ controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

(c) If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced.

The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.3.~~5~~**6** Record Keeping Requirements

(a) To document compliance with Condition D.3.~~2~~**3** – Preventive Maintenance Plan, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan and make such records available upon request to IDEM, OAQ, and the US EPA.

(b) To document compliance with Condition D.3.~~4~~**5** – Bag Leak Detection System (BLDS), the Permittee shall maintain records of explanation of the corrective actions taken, when the cause of the exceedance was corrected, and make such records available upon request to IDEM, OAQ, and the US EPA.

(c) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(d) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

Changes to Section D.4

(aaa) Condition D.4.1 – PSD Minor Limits was revised to clarify that the requirements of 326 IAC 2-2 will not apply to FURN 611.

(bbb) All references to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN) have been removed because all NESHAP requirements are now included in Section E.1. This change affects Conditions D.4.6, D.4.7(a)(1), D.4.8, D.4.11, and D.4.12.

(ccc) The title line and paragraph (a)(1) of Condition D.4.7 were revised to remove the reference to 40 CFR Part 63, Subpart NNN and replace the language with a reference to Condition D.4.8 – Bag Leak Detection Requirements (BLDS).

(ddd) Condition D.4.8 – Bag Leak Detection Requirements (BLDS) was revised to remove the 40 CFR Part 63, Subpart NNN requirements and state that compliance with the NESHAP requirements will satisfy the BLDS requirements.

(eee) The frequency of the monitoring of Condition D.4.9 – Visible Emissions Notations was changed to once per day which is sufficient to ensure proper operation of the control device and sufficient to satisfy the requirements of 326 IAC 2-7-5 and 326 IAC 2-7-6.

(fff) Condition D.4.9 that referred to “Compliance Response Plan” has been revised to reflect the new condition title – “Response to Excursions or Exceedances”.

(ggg) Original Condition D.4.10 – Record Keeping Requirements was updated to correspond with the changes made to original Condition D.4.9 – Visible Emissions Notations and references to renumbered conditions have been updated.

Facility Description [326 IAC 2-7-5(15)]

<u>FURNACE 611 – Stack 6-21</u>

~~One (1) electrically heated glass melting furnace, identified as FURN 611. This furnace is common to:~~

~~(1) 611 FORMING,~~
~~(2) 612 FORMING,~~

~~(3) 613 FORMING,~~
~~(4) 613 CURING/COOLING,~~
~~(5) 614 FORMING, and~~
~~(6) 614 CURING/COOLING.~~

- ~~The nominal capacity of FURN 611 is 300 tons of molten glass per day.~~
- ~~The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.~~
- ~~Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.~~

One (1) electrically heated glass melting furnace, identified as FURN 611, installed in 2006.
- **The nominal capacity of FURN 611 is 300 tons of molten glass per day.**
- **The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.**
- **Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.**

This furnace is common to:
(1) 611 FORMING,
(2) 612 FORMING,
(3) 613 FORMING,
(4) 613 CURING/COOLING,
(5) 614 FORMING, and
(6) 614 CURING/COOLING.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.4.1 PSD Minor Limits [326 IAC 2-2]

In order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply to the FURN ~~601~~ **611** (Stack 6-21):

(a) The PM and PM_{10} emissions shall not exceed 2.02 pounds per hour.

PM_{10} includes filterable and condensible PM_{10}.

(b) The CO emissions shall not exceed 0.75 pounds per hour.

Therefore, the requirements of 326 IAC 2-2 shall not apply to ~~the expansion~~ **FURN 611 (Stack 6-21)**.

D.4.6 Baghouse Operation [326 IAC 2-7-6(6)] ~~[40 CFR Part 63, Subpart NNN]~~

Except as otherwise provided by statute or rule or in this permit, the FURN 611 Baghouse for particulate control shall be in operation and control emissions at all times when FURN 611 is in operation and exhausting to the outside atmosphere.

D.4.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)] [326 IAC 2-1.1-11] [40 CFR Part 63, Subpart NNN]

(a) Within sixty (60) day from achieving maximum capacity of the proposed expansion, but no later than one hundred and eighty (180) days after initial startup of the FURN 611, the Permittee shall conduct performance tests on Stack 6-21 for the following:

(1) PM/PM_{10} – to verify compliance with the PM /PM_{10} limitations in Condition D.4.1 – PSD Minor Limits, Condition D.4.4 – Particulate Matter Emission Limitations, **Condition D.4.8 – Bag Leak Detection System (BLDS),** and 40 CFR Part 63, Subpart NNN;

(2) CO – to verify compliance with the CO PSD Minor Limits in Condition D.4.1 – PSD Minor Limits;

using the procedures set forth in 40 CFR 60, Appendix A; 40 CFR Part 51, Appendix M; or other methods as approved by the Commissioner**.**

(b) The PM/PM_{10} test shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration.

PM_{10} includes filterable and condensible PM_{10}.

(c) The CO test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

(d) Testing shall be conducted in accordance with Section C – Performance Testing.

~~D.4.8 Bag Leak Detection System [40 CFR Part 63, Subpart NNN]~~

~~(a) Pursuant to 40 CFR Part 63, Subpart NNN, the Permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system for the FURN 611 Baghouse.~~

~~(b) Refer to Condition D.4.12 – NESHAP Wool Fiberglass Manufacturing Requirements – of this permit for additional applicable compliance monitoring of the FURN 611 Baghouse.~~

D.4.8 Bag Leak Detection System (BLDS)

Compliance with §63.1383(b) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR Part 63, Subpart NNN) shall satisfy all bag leak detection system (BLDS) requirements for FURN 611.

D.4.9 Visible Emissions Notations

(a) ~~Daily v~~**V**isible emission notations of FURN 611 (Stack 6-21) shall be performed during normal daylight operations when exhausting to the atmosphere.

A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

~~(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C – Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.~~

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.4.10 Record Keeping Requirements

(a) To document compliance with Condition D.4.3 – NOx LAER Requirements, the Permittee shall maintain records of the actual molten glass produced and make such records available upon request to IDEM, OAQ, and the US EPA.

(b) To document compliance with Condition D.4.5 – Preventive Maintenance Plan, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan and make such records available upon request to IDEM, OAQ, and the US EPA.

(c) To document compliance with Condition D.4.9 – Visible Emissions Notations, the Permittee shall maintain records of ~~daily~~ visible emission notations of the baghouse exhaust and make such records available upon request to IDEM, OAQ, and the US EPA.

(d) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(e) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

~~**National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]**~~

~~D.4.11 General Provisions Relating to NESHAP for Wool Fiberglass Manufacturing [326 IAC 20-1] [40 CFR Part 63, Subpart A]~~

~~Pursuant to 40 CFR 63.1380, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for the FURN 611 as specified in Appendix A of 40 CFR Part 63, Subpart NNN in accordance with the schedule in 40 CFR 63 Subpart NNN.~~

~~D.4.12 NESHAP Wool Fiberglass Manufacturing Requirements [40 CFR Part 63, Subpart NNN]~~

~~Pursuant to CFR Part 63, Subpart NNN the Permittee shall comply with the provisions of 40 CFR Part 63.1380, for FURN 611, as specified as follows:~~

~~**Sec. 63.1380 Applicability.**~~

~~(a) Except as provided in paragraphs (b) and (c) of this section, the requirements of this subpart apply to the owner or operator of each wool fiberglass manufacturing facility that is a major source or is located at a facility that is a major source.~~

~~(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAPs), as measured according to the methods and procedures in this subpart, emitted from the following new and existing sources at a wool fiberglass manufacturing facility subject to this subpart:~~

~~(1) Each new and existing glass-melting furnace located at a wool fiberglass manufacturing facility;~~

~~**Sec. 63.1381 Definitions.**~~

~~Terms used in this subpart are defined in the Clean Air Act, in Sec. 63.2, or in this section as follows:~~

~~Bag leak detection system means systems that include, but are not limited to, devices using triboelectric, light scattering, and other effects to monitor relative or absolute particulate matter (PM) emissions.~~

~~Bonded means wool fiberglass to which a phenol-formaldehyde binder has been applied.~~

~~Building insulation means bonded wool fiberglass insulation, having a loss on ignition of less than 8 percent and a density of less than 32 kilograms per cubic meter (kg/m3) (2 pounds per cubic foot [lb/ft3]).~~

~~Cold top electric furnace means an all-electric glass-melting furnace that operates with a temperature of 120 deg. C (250 deg. F) or less as measured at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface.~~

~~Flame attenuation means a process used to produce wool fiberglass where molten glass flows by gravity from melting furnaces, or pots, to form filaments that are drawn down and attenuated by passing in front of a high-velocity gas burner flame.~~

~~Glass-melting furnace means a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming processes. The forming apparatus, including flow channels, is not considered part of the glass-melting furnace.~~

~~Glass pull rate means the mass of molten glass that is produced by a single glass-melting furnace or that is used in the manufacture of wool fiberglass at a single manufacturing line in a specified time period.~~
~~Hazardous Air Pollutant (HAP) means any air pollutant listed in or pursuant to section 112(b) of the Clean Air Act.~~

~~Heavy-density product means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 11 to 25 percent and a density of 8 to 48 kg/m^3\ (0.5 to 3 lb/ft^3).~~

~~Incinerator means an enclosed air pollution control device that uses controlled flame combustion to convert combustible materials to noncombustible gases.~~

~~Loss on ignition (LOI) means the percent decrease in weight of wool fiberglass after it has been ignited. The LOI is used to monitor the weight percent of binder in wool fiberglass.~~

~~Manufacturing line means the manufacturing equipment for the production of wool fiberglass that consists of a forming section where molten glass is fiberized and a fiberglass mat is formed and which may include a curing section where binder resin in the mat is thermally set and a cooling section where the mat is cooled.~~

~~New source means any affected source the construction or reconstruction of which is commenced after March 31, 1997.~~

~~Pipe product means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 8 to 14 percent and a density of 48 to 96 kg/m \3\ (3 to 6 lb/ft\3\).~~

~~Rotary spin means a process used to produce wool fiberglass building insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high-velocity air flow. Any process used to produce bonded wool fiberglass building insulation by a process other than flame attenuation is considered rotary spin.~~

~~Wool fiberglass means insulation materials composed of glass fibers made from glass produced or melted at the same facility where the manufacturing line is located.~~

~~Wool fiberglass manufacturing facility means any facility manufacturing wool fiberglass on a rotary spin manufacturing line or on a flame attenuation manufacturing line.~~

~~Sec. 63.1382 Emission standards~~

~~(a) Emission limits—~~

~~(1) Glass-melting furnaces. On and after the date the initial performance test is completed or required to be completed under Sec. 63.7 of this part, whichever date is earlier, the owner or operator shall not discharge or cause to be discharged into the atmosphere in excess of 0.25 kilogram (kg) of particulate matter (PM) per megagram (Mg) (0.5 pound [lb] of PM per ton) of glass pulled for each new or existing glass-melting furnace.~~

~~(b) Operating limits. On and after the date on which the performance test required to be conducted by Secs. 63.7 and 63.1384 is completed, the owner or operator must operate all affected control equipment and processes according to the following requirements.~~

~~(1)(i) The owner or operator must initiate corrective action within 1 hour of an alarm from a bag leak detection system and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.~~

~~(ii) The owner or operator must implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the bag leak detection system alarm is sounded for more than 5 percent of the total operating time in a 6-month block reporting period.~~

~~(5)(i) The owner or operator must initiate corrective action within 1 hour when the average glass pull rate of any 4-hour block period for glass melting furnaces equipped with continuous glass pull rate monitors, or daily glass pull rate for glass melting furnaces not so equipped, exceeds the average glass pull rate established during the performance test as specified in Sec. 63.1384, by greater than 20 percent and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.~~

~~(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the glass pull rate exceeds, by more than 20 percent, the average glass pull rate established during the performance test as specified in Sec. 63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.~~

~~(iii) The owner or operator must operate each glass-melting furnace such that the glass pull rate does not exceed, by more than 20 percent, the average glass pull rate established during the performance test as specified in Sec. 63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.~~

~~Sec. 63.1383 Monitoring requirements.~~

~~On and after the date on which the performance test required to be conducted by Secs. 63.7 and 63.1384 is completed, the owner or operator must monitor all affected control equipment and processes according to the following requirements.~~

~~(a) The owner or operator of each wool fiberglass manufacturing facility must prepare for each glass-melting furnace, rotary spin manufacturing line, and flame attenuation manufacturing line subject to the provisions of this subpart, a written operations, maintenance, and monitoring plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit. The plan must include the following information:~~

~~(1) Procedures for the proper operation and maintenance of process modifications and add-on control devices used to meet the emission limits in Sec. 63.1382;~~

~~(2) Procedures for the proper operation and maintenance of monitoring devices used to determine compliance, including quarterly calibration and certification of accuracy of each monitoring device according to the manufacturers's instructions; and~~

~~(3) Corrective actions to be taken when process parameters or add-on control device parameters deviate from the limit(s) established during initial performance tests.~~

~~(b)(1) Where a baghouse is used to control PM emissions from a glass-melting furnace, the owner or operator shall install, calibrate, maintain, and continuously operate a bag leak detection system.~~

~~(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.~~

~~(ii) The bag leak detection system sensor must produce output of relative PM emissions.~~

~~(iii) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected and the alarm must be located such that it can be heard by the appropriate plant personnel.~~

~~(iv) For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell.~~

~~If a negative pressure or induced air baghouse is used, the bag leak detection system must be installed downstream of the baghouse. Where multiple bag leak detection systems are required (for either type of baghouse), the system instrumentation and alarm may be shared among the monitors.~~

~~(v) A triboelectric bag leak detection system shall be installed, operated, adjusted, and maintained in a manner consistent with the U.S. Environmental Protection Agency guidance, ``Fabric Filter Bag Leak Detection Guidance'' (EPA-454/R-98-015, September 1997). Other bag leak detection systems shall be installed, operated, adjusted, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.~~

~~(vi) Initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.~~

~~(vii) Following the initial adjustment, the owner or operator shall not adjust the range, averaging period, alarm setpoints, or alarm delay time except as detailed in the approved operations, maintenance, and monitoring plan required under paragraph (a) of this section. In no event shall the range be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless a responsible official as defined in Sec. 63.2 of the general provisions in subpart A of this part certifies that the baghouse has been inspected and found to be in good operating condition.~~

~~(2) The operations, maintenance, and monitoring plan required by paragraph (a) of this section must specify corrective actions to be followed in the event of a bag leak detection system alarm. Example corrective actions that may be included in the plan include the following:~~

~~(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in emissions.~~

~~(ii) Sealing off defective bags or filter media.~~

~~(iii) Replacing defective bags or filter media, or otherwise repairing the control device.~~

~~(iv) Sealing off a defective baghouse compartment.~~

~~(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.~~

~~(vi) Shutting down the process producing the particulate emissions.~~

~~(f)(1) The owner or operator of an existing glass-melting furnace equipped with continuous glass pull rate monitors must monitor and record the glass pull rate on an hourly basis. For glass-melting furnaces that are not equipped with continuous glass pull rate monitors, the glass pull rate must be monitored and recorded once per day.~~

~~(2) On any new glass-melting furnace, the owner or operator must install, calibrate, and maintain a continuous glass pull rate monitor that monitors and records on an hourly basis the glass pull rate.~~

~~Sec. 63.1384 Performance test requirements.~~

~~(a) The owner or operator subject to the provisions of this subpart shall conduct a performance test to demonstrate compliance with the applicable emission limits in Sec. 63.1382.~~

~~Compliance is demonstrated when the emission rate of the pollutant is equal to or less than each of the applicable emission limits in Sec. 63.1382.~~

~~The owner or operator shall conduct the performance test according to the procedures in 40 CFR part 63, subpart A and in this section.~~

~~(1) All monitoring systems and equipment must be installed, operational, and calibrated prior to the performance test.~~

~~(2) Unless a different frequency is specified in this section, the owner or operator must monitor and record process and/or add-on control device parameters at least every 15 minutes during the performance tests. The arithmetic average for each parameter must be calculated using all of the recorded measurements for the parameter.~~

~~(3) During each performance test, the owner or operator must monitor and record the glass pull rate for each glass-melting furnace and, if different, the glass pull rate for each rotary spin manufacturing line and flame attenuation manufacturing line. Record the glass pull rate every 15 minutes during any performance test required by this subpart and determine the arithmetic average of the recorded measurements for each test run and calculate the average of the three test runs.~~

~~(4) The owner or operator shall conduct a performance test for each existing and new glass-melting furnace.~~

~~(b) To determine compliance with the PM emission limit for glass-melting furnaces, use the following equation:~~

$$\cancel{E = \frac{C \times Q \times K_1}{P}} \qquad \text{(Equation 1)}$$

~~Where:~~
~~E = Emission rate of PM, kg/Mg (lb/ton) of glass pulled;~~
~~C = Concentration of PM, g/dscm (gr/dscf);~~
~~Q = Volumetric flow rate of exhaust gases, dscm/h (dscf/h);~~
~~K_1 = Conversion factor, 1 kg/1,000 g (1 lb/7,000 gr); and~~

~~P = Average glass pull rate, Mg/h (tons/h).~~

~~Sec. 63.1385 Test methods and procedures.~~

~~(a) The owner or operator shall use the following methods to determine compliance with the applicable emission limits:~~

~~Method 1 (40 CFR part 60, appendix A) for the selection of the sampling port location and number of sampling ports;~~

~~(2) Method 2 (40 CFR part 60, appendix A) for volumetric flow rate;~~

~~(3) Method 3 or 3A (40 CFR part 60, appendix A) for O_2 and CO_2 for diluent measurements needed to correct the concentration measurements to a standard basis;~~

~~(4) Method 4 (40 CFR part 60, appendix A) for moisture content of the stack gas;~~

~~(5) Method 5 (40 CFR part 60, appendix A) for the concentration of PM. Each run shall consist of a minimum run time of 2 hours and a minimum sample volume of 60 dry standard cubic feet (dscf). The probe and filter holder heating system may be set to provide a gas temperature no greater than 177 plus-minus 14 deg. C (350 plus-minus 25 deg. F);~~

~~(10) An alternative method, subject to approval by the Administrator.~~

~~(b) Each performance test shall consist of 3 runs. The owner or operator shall use the average of the three runs in the applicable equation for determining compliance.~~

~~Sec. 63.1386 Notification, recordkeeping, and reporting requirements.~~

~~(a) Notifications.~~
~~As required by Sec. 63.9(b) through (h) of this part, the owner or operator shall submit the following written initial notifications to the Administrator:~~

~~(4) Notification of intention to construct a new major source or reconstruct a major source; of the date construction or reconstruction commenced; of the anticipated date of startup; of the actual date of startup, where the initial startup of a new or reconstructed source occurs after June 14, 2002, and for which an application for approval or construction or reconstruction is required (See Sec. 63.9(b)(4) and (5) of this part);~~

~~(5) Notification of special compliance obligations;~~

~~(6) Notification of performance test; and~~

~~(7) Notification of compliance status.~~

~~(b) Performance test report.~~
~~As required by Sec. 63.10(d)(2) of the general provisions, the owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in paragraph (a)(7) of this section.~~

~~(c) Startup, shutdown, and malfunction plan and reports.~~

~~(1) The owner or operator shall develop and implement a written plan as described in Sec. 63.6(e)(3) of this part that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process modifications and control systems used to comply with the standard. In addition to the information required in Sec. 63.6(e)(3), the plan shall include:~~

~~(i) Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended;~~

~~(ii) Corrective actions to be taken in the event of a malfunction of a control device or process modification, including procedures for recording the actions taken to correct the malfunction or minimize emissions; and~~

~~(iii) A maintenance schedule for each control device and process modification that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.~~

~~(2) The owner or operator shall also keep records of each event as required by Sec. 63.10(b) of this part and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in Sec. 63.10(e)(3)(iv) of this part.~~

~~(d) Recordkeeping.~~
~~(1) As required by Sec. 63.10(b) of this part, the owner or operator shall maintain files of all information (including all reports and notifications) required by the general provisions and this subpart:~~

~~(i) The owner or operator must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site;~~

~~(ii) The owner or operator may retain records on microfilm, on a computer, on computer disks, on magnetic tape, or on microfiche; and~~

~~(iii) The owner or operator may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.~~

~~(2) In addition to the general records required by Sec. 63.10(b)(2) of this part, the owner or operator shall maintain records of the following information:~~

~~(i) Any bag leak detection system alarms, including the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected;~~

~~(ix) Glass pull rate, including any period when the pull rate exceeded the average pull rate established during the performance test by more than 20 percent, the date and time of the exceedance, when corrective actions were initiated, the cause of the exceedance, an explanation of the corrective actions taken, and when the cause of the exceedance was corrected.~~

~~(e) Excess emissions report.~~
~~As required by Sec. 63.10(e)(3)(v) of this part, the owner or operator shall report semiannually if measured emissions are in excess of the applicable standard or a monitored parameter deviates from the levels established during the performance test. The report shall contain the information specified in Sec. 63.10(c) of this part as well as the additional records required by the recordkeeping requirements of paragraph (d) of this section. When no deviations have occurred, the owner or operator shall submit a report stating that no excess emissions occurred during the reporting period.~~

Changes to Section D.5

(hhh) All references to NSPS requirements have been removed because all NSPS requirements are now included in Section E.2. This change affects Conditions D.5.9, D.5.10, D.5.11(a)(4), D.5.12(d), and D.5.15(c).

(iii) The frequency of the monitoring of Visible Emissions Notations (original Condition D.5.14) was changed to once per day which is sufficient to ensure proper operation of the control device and sufficient to satisfy the requirements of 326 IAC 2-7-5 and 326 IAC 2-7-6.

(jjj) Original Condition D.5.14 that referred to “Compliance Response Plan” has been revised to reflect the new condition title – “Response to Excursions or Exceedances”.

(kkk) Original Condition D.5.16 – Record Keeping Requirements was updated to correspond with the changes made to original Condition D.2.5 – Visible Emissions Notations.

Facility Description [326 IAC 2-7-5(15)]

FORMING – Stack 6-22

(1) 611 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 611 FORMING, utilizing natural gas for fiberization. Products formed in 611 FORMING are ready for packaging.
- The nominal capacity of 611 FORMING has been classified as confidential information.
- The particulate emissions from 611 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 611 FORMING exhaust through a stack identified as Stack 6-22.

(2) 612 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 612 FORMING, utilizing natural gas for fiberization. Products formed in 612 FORMING are ready for packaging.
- The nominal capacity of 612 FORMING has been classified as confidential information.
- The particulate emissions from 612 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 612 FORMING exhaust through a stack identified as Stack 6-22.

(3) 613 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.
- The nominal capacity of 613 FORMING has been classified as confidential information.
- The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP) This wet ESP is common to all the forming sections.
- Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.

(4) 614 FORMING
One (1) **rotary spin wool** fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.
- The nominal capacity of 614 FORMING has been classified as confidential information.
- The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.
- Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.

CURING/COOLING – Stack 6-29

(5) 613 CURING/COOLING
One (1) **rotary spin wool** fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.

- The nominal capacity of 613 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.
- The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.

(6) 614 CURING/COOLING
One (1) **rotary spin wool** fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.

- The nominal capacity of 614 CURING/COOLING has been classified as confidential information.
- The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.
- The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.
- Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.5.9 Wet Electrostatic Precipitator (ESP) Operation [326 IAC 2-7-6(6)] ~~[40 CFR Part 60, Subpart PPP]~~ [326 IAC 2-3] [326 IAC 11-4-2]

Except as otherwise provided by statute or rule or in this permit, the wet electrostatic precipitator (ESP) for particulate control shall be in operation and control emissions from the:

- 611 FORMING,
- 612 FORMING,
- 613 FORMING, and
- 614 FORMING

at all times when any of these forming sections are in operation.

D.5.10 Regenerative Thermal Oxidizers (RTOs) Operation [326 IAC 2-7-6(6)] ~~[40 CFR 63, Subpart NNN]~~ [326 IAC 2-2] [326 IAC 2-3] [326 IAC 8-1-6]

Except as otherwise provided by statute or rule or in this permit, the RTOs for volatile organic compound (VOC), hazardous air pollutants and condensible particulates control shall be in operation and control emissions from the:

- 613 CURING/COOLING and/or

– 614 CURING/COOLING

at all times when any of these curing/cooling sections are in operation.

D.5.11 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]

(a) Within sixty (60) days after achieving maximum capacity of the proposed modification, but no later than one hundred and eighty (180) days after initial startup of the proposed expansion, the Permittee shall perform compliance testing on Stack 6-22 and Stack 6-29 for the following:

(1) NO_x – to verify compliance with the NO_x limitations in Condition D.5.3 – NO_x LAER and NO_2 PSD BACT Requirements;

(2) VOC – to verify compliance with the VOC limitations in Condition D.5.2 – VOC Emission Offset Minor Limits, and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements;

(3) RTO's overall control efficiency – to verify compliance with the overall control efficiency requirement in Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements;

(4) PM/ PM_{10} – to verify compliance with the PM/PM_{10} limitations in Condition D.5.1 – PSD Minor Limits, **and** Condition D.5.6 – Particulate Matter Emission Limitations~~, and 40 CFR Part 60, Subpart PPP~~;

(5) CO – to verify compliance with the CO limitation in Condition D.5.1 – PSD Minor Limits;

utilizing the procedures set forth in 40 CFR 60, Appendix A; 40 CFR Part 51, Appendix M; or other methods as approved by the Commissioner.

Stack 6-22 is the stack exhaust of the following forming sections:

– 611 FORMING,

– 612 FORMING,

– 613 FORMING, and

– 614 FORMING.

Stack 6-29 is the stack exhaust of the following:

– 613 CURING/COOLING,

– 614 CURING/COOLING, and

– two (2) RTOs.

(b) The NO_x tests shall be repeated at least once every year from the date of the last valid compliance demonstrations.

(c) The VOC tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstrations.

(d) The PM/PM_{10} tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

PM_{10} includes filterable and condensible PM_{10}.

(e) The CO test shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

(f) In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(g) Testing shall be conducted in accordance with Section C – Performance Testing.

D.5.12 Thermal Oxidizer Operating Temperature [326 IAC 8-1-6] [326 IAC 2-3]

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature. For the purposes of this condition, continuous shall mean no less than once per minute.

The output of this system shall be recorded as a 3-hour average. From the initial operation of the thermal oxidizer until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,475^{o}F.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with VOC limits in Condition D.5.2 – VOC Emission Offset Minor Limits and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements, as approved by IDEM.

(c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.

~~(d) Refer to Section E.1 – NESHAP Wool Fiberglass Manufacturing Requirements, of this permit for additional applicable compliance monitoring for the RTOs.~~

D.5.14 Visible Emissions Notations [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) Visible emission notations of Stack 6-22 exhaust and Stack 6-29 exhaust shall be performed once per ~~shift~~ **day** during normal daylight operations when exhausting to the atmosphere.

A trained employee shall record whether emissions are normal or abnormal.

Stack 6-22 is the stack exhaust of the following forming sections:

– 611 FORMING,

– 612 FORMING,

– 613 FORMING, and

– 614 FORMING.

Stack 6-29 is the stack exhaust of the following:

– 613 CURING/COOLING,

– 614 CURING/COOLING, and

– two (2) RTOs.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

~~(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C – Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.~~

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C – Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C – Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.5.15 Wet Electrostatic Precipitator (ESP) Parametric Monitoring

(a) The Permittee shall determine the appropriate primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate of the wet electrostatic precipitator (ESP) from the most recent valid stack test that demonstrates compliance with particulate limits in Conditions D.5.1 – PSD Minor limits, and Condition D.5.6 – Particulate Matter Emission Limitations, as approved by IDEM.

(b) The primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate of the wet electrostatic precipitator (ESP) shall be observed at least once per ~~shift~~ **day** when the wet electrostatic precipitator (ESP) is in operation. On and after the date the approved stack test results are available, the appropriate primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate shall be maintained within the normal range as established in most recent compliant stack test.

~~(c) Refer to Section E.2 – NSPS Wool Fiberglass Insulation Manufacturing Plants, of this permit for additional applicable compliance monitoring for the wet electrostatic precipitator (ESP).~~

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.16 Record Keeping Requirements

(a) To document compliance with Condition D.5.1 – PSD Minor Limits, Condition D.5.2 – VOC Emission Offset Minor Limits, and Condition D.5.5 – Volatile Organic Compound (VOC) BACT Requirements, the Permittee shall maintain records that are complete and sufficient to establish compliance. Records maintained shall be taken monthly and make such records available upon request to IDEM, OAQ, and the US EPA.

Examples of such records include but are not limited to:

(1) Records shall include purchase orders, invoices, and material safety data sheets (MSDS), manufacturer's certified product data sheets, and calculations necessary to verify the type and amount of binder used; and

(2) A log of the dates of use.

(b) To document compliance with Condition D.5.7 – Preventive Maintenance Plan, the Permittee shall maintain the records of any additional inspections prescribed by the Preventive Maintenance Plan and make such records available upon request to IDEM, OAQ, and the US EPA.

(c) To document compliance with Condition D.5.12 – Thermal Oxidizer Operating Temperature, the Permittee shall maintain the records of the 3-hour average operating temperature of the thermal oxidizer and make such records available upon request to IDEM, OAQ, and the US EPA.

(d) To document compliance with Condition D.5.13 – Thermal Oxidizer Parametric Monitoring, the Permittee shall maintain the records of the once per day readings of the duct pressure or fan amperage of the thermal oxidizer and make such records available upon request to IDEM, OAQ, and the US EPA.

(e) To document compliance with Condition D.5.14 – Visible Emissions Notations, the Permittee shall maintain the records of ~~once per shift~~ visible emission notations of Stack 6-22 exhaust and Stack 6-29 exhaust and make such records available upon request to IDEM, OAQ, and the US EPA.

(f) To document compliance with Condition D.5.15 – Wet Electrostatic Precipitator (ESP) Parametric Monitoring, the Permittee shall maintain the ~~once per shift~~ records of the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate of the wet electrostatic precipitator (ESP) and make such records available upon request to IDEM, OAQ, and the US EPA.

(g) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(h) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit and make such records available upon request to IDEM, OAQ, and the US EPA.

D.5.17 Reporting Requirements

To document compliance with Condition D.5.1 – PSD Minor Limits, the Permittee shall submit a quarterly summary of the actual amount of glass produced, using the Annual Molten Glass Production Report or its equivalent, located at the end of this permit. These reports shall be submitted not later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Condition C – General Reporting Requirements of this permit.

Changes to Section E.1

(lll) Section E.1 was revised to update the list of equipment subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN) and to update the requirements that apply to these emission units.

Facility Description [326 IAC 2-7-5(15)]

~~FORMING – Stack 6-22~~

~~(1) 613 FORMING~~
~~One (1) fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.~~
- ~~The nominal capacity of 613 FORMING has been classified as confidential information.~~
- ~~The particulate emissions from 613 FORMING are controlled by the same wet electrostatic precipitator (ESP) that control the particulate emissions from 611 FORMING and 612 FORMING.~~
- ~~Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.~~

~~(2) 614 FORMING~~
~~One (1) fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.~~
- ~~The nominal capacity of 614 FORMING has been classified as confidential information.~~
- ~~The particulate emissions from 614 FORMING are controlled by the same wet electrostatic precipitator (ESP) that control the particulate emissions from 611 FORMING, 612 FORMING, and 613 FORMING.~~
- ~~Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.~~

~~CURING/COOLING – Stack 6-29~~

~~(3) 613 CURING/COOLING~~
~~One (1) fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.~~
- ~~The nominal capacity of 613 CURING/COOLING has been classified as confidential information.~~
- ~~The volatile organic compound (VOC) and hazardous air pollutants (HAPs) emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.~~
- ~~The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.~~
- ~~Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.~~

~~(4) 614 CURING/COOLING~~
~~One (1) fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.~~
- ~~The nominal capacity of 614 CURING/COOLING has been classified as confidential information.~~
- ~~The volatile organic compound (VOC) and hazardous air pollutants (HAPs) emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.~~
- ~~The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.~~
- ~~Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.~~

(a) 602B FURNACE – Stack 6-30
One (1) electric glass melting furnace, identified as Unit ID # 602B FURNACE,
- **installed in 2007,**

- **operating at a maximum processing capacity of 332 tons of glass per day,**
- **operating with two (2) emergency use natural gas direct fired burners each with a rated heat input capacity of 15 MMBtu per hour (Unit ID # 602B FURNACE),**
- **utilizing one (1) baghouse for particulate control (Unit ID # 602B FURNACE), and**
- **exhausting through one (1) stack ID # 6-30.**
- **602B FURNACE is common to MFG 602 and 602 LF MFG.**
- **602B FURNACE is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(b) MFG 602 – Stack 2-2
One (1) rotary spin wool fiberglass manufacturing line consisting of forming, curing, and cooling sections, identified as Unit ID # MFG 602,

- **installed in 1983,**
- **operating at a maximum processing capacity of 130 tons of glass per day,**
- **utilizing one (1) wet electrostatic precipitator for particulate control, and one (1) natural gas fired afterburner with a rated combined heat input capacity of 30 MMBtu per hour, and**
- **exhausting through one (1) stack ID #2-2.**
- **MFG 602 produces a bonded wool fiberglass insulation building product. MFG 602 is an existing affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(h) FURNACE 611 – Stack 6-21
One (1) electrically heated glass melting furnace, identified as FURN 611, installed in 2006.

- **The nominal capacity of FURN 611 is 300 tons of molten glass per day.**
- **The particulate emissions from FURN 611 are controlled by a baghouse, identified as FURN 611 Baghouse.**
- **Controlled emissions from FURN 611 exhaust through a stack identified as Stack 6-21.**
- **FURNACE 611 is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

This furnace is common to:
(1) 611 FORMING,
(2) 612 FORMING,
(3) 613 FORMING,
(4) 613 CURING/COOLING,
(5) 614 FORMING, and
(6) 614 CURING/COOLING.

(i) Stack 6-22

(3) 613 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.

- **The nominal capacity of 613 FORMING has been classified as confidential information.**
- **The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP) This wet ESP is common to all the forming sections.**

- **Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.**
- **613 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(4) 614 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.

- **The nominal capacity of 614 FORMING has been classified as confidential information.**
- **The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.**
- **Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.**
- **614 FORMING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(j) Stack 6-29

(1) 613 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.

- **The nominal capacity of 613 CURING/COOLING has been classified as confidential information.**
- **The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.**
- **The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.**
- **Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.**
- **613 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(2) 614 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.

- **The nominal capacity of 614 CURING/COOLING has been classified as confidential information.**
- **The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.**

- **The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.**
- **Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.**
- **614 CURING/COOLING produces a bonded wool fiberglass building insulation product and is a new affected source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing (40 CFR 63, Subpart NNN).**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

~~E.1.1 General Provisions Relating to NESHAP for Wool Fiberglass Manufacturing [326 IAC 20-1] [40 CFR Part 63, Subpart A]~~

~~Pursuant to 40 CFR 63.1380, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for:~~

~~– 613 FORMING and 613 CURING/COOLING; and~~

~~– 614 FORMING and 614 CURING/COOLING,~~

~~as specified in Appendix A of 40 CFR Part 63, Subpart NNN in accordance with schedule in 40 CFR 63 Subpart NNN.~~

~~E.1.2 NESHAP Wool Fiberglass Manufacturing Requirements [40 CFR Part 63, Subpart NNN]~~

~~Pursuant to CFR Part 63, Subpart NNN the Permittee shall comply with the provisions of 40 CFR Part 63.1380, for:~~

~~– 613 FORMING and 613 CURING/COOLING; and~~

~~– 614 FORMING and 614 CURING/COOLING,~~

~~as specified as follows:~~

~~Sec. 63.1380 Applicability.~~

~~(a) Except as provided in paragraphs (b) and (c) of this section, the requirements of this subpart apply to the owner or operator of each wool fiberglass manufacturing facility that is a major source or is located at a facility that is a major source.~~

~~(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAPs), as measured according to the methods and procedures in this subpart, emitted from the following new and existing sources at a wool fiberglass manufacturing facility subject to this subpart:~~

~~(2) Each new and existing rotary spin wool fiberglass manufacturing line producing a bonded wool fiberglass building insulation product; and~~

~~Sec. 63.1381 Definitions.~~

~~Terms used in this subpart are defined in the Clean Air Act, in Sec. 63.2, or in this section as follows:~~

~~Bag leak detection system means systems that include, but are not limited to, devices using triboelectric, light scattering, and other effects to monitor relative or absolute particulate matter (PM) emissions.~~

~~Bonded means wool fiberglass to which a phenol-formaldehyde binder has been applied.~~

~~Building insulation means bonded wool fiberglass insulation, having a loss on ignition of less than 8 percent and a density of less than 32 kilograms per cubic meter (kg/m3 (2 pounds per cubic foot [lb/ft3]).~~

~~Cold top electric furnace means an all-electric glass-melting furnace that operates with a temperature of 120 deg. C (250 deg. F) or less as measured at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface.~~

~~Flame attenuation means a process used to produce wool fiberglass where molten glass flows by gravity from melting furnaces, or pots, to form filaments that are drawn down and attenuated by passing in front of a high-velocity gas burner flame.~~

~~Glass-melting furnace means a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming processes. The forming apparatus, including flow channels, is not considered part of the glass-melting furnace.~~

~~Glass pull rate means the mass of molten glass that is produced by a single glass-melting furnace or that is used in the manufacture of wool fiberglass at a single manufacturing line in a specified time period.~~
~~Hazardous Air Pollutant (HAP) means any air pollutant listed in or pursuant to section 112(b) of the Clean Air Act.~~

~~Heavy-density product means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 11 to 25 percent and a density of 8 to 48 kg/m\3\ (0.5 to 3 lb/ft \3\).~~

~~Incinerator means an enclosed air pollution control device that uses controlled flame combustion to convert combustible materials to noncombustible gases.~~

~~Loss on ignition (LOI) means the percent decrease in weight of wool fiberglass after it has been ignited. The LOI is used to monitor the weight percent of binder in wool fiberglass.~~

~~Manufacturing line means the manufacturing equipment for the production of wool fiberglass that consists of a forming section where molten glass is fiberized and a fiberglass mat is formed and which may include a curing section where binder resin in the mat is thermally set and a cooling section where the mat is cooled.~~

~~New source means any affected source the construction or reconstruction of which is commenced after March 31, 1997.~~

~~Pipe product means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 8 to 14 percent and a density of 48 to 96 kg/m \3\ (3 to 6 lb/ft\3\).~~

~~Rotary spin means a process used to produce wool fiberglass building insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high-velocity air flow. Any process used to produce bonded wool fiberglass building insulation by a process other than flame attenuation is considered rotary spin.~~

~~Wool fiberglass means insulation materials composed of glass fibers made from glass produced or melted at the same facility where the manufacturing line is located.~~

~~Wool fiberglass manufacturing facility means any facility manufacturing wool fiberglass on a rotary spin manufacturing line or on a flame attenuation manufacturing line.~~

~~Sec. 63.1382 Emission standards~~

~~(a) Emission limits--~~

~~(2) Rotary spin manufacturing lines. On and after the date the initial performance test is completed or required to be completed under Sec. 63.7 of this part, whichever date is earlier, the owner or operator shall not discharge or cause to be discharged into the atmosphere in excess of:~~

~~(ii) 0.4 kg of formaldehyde per megagram (0.8 lb of formaldehyde per ton) of glass pulled for each new rotary spin manufacturing line.~~

~~(b) Operating limits. On and after the date on which the performance test required to be conducted by Secs. 63.7 and 63.1384 is completed, the owner or operator must operate all affected control equipment and processes according to the following requirements.~~

~~(8) (i) The owner or operator must initiate corrective action within 1 hour when the monitored process parameter level(s) is outside the limit(s) established during the performance test as specified in Sec. 63.1384 for the process modification(s) used to control formaldehyde emissions and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.~~

~~(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the process parameter(s) is outside the limit(s) established during the performance test as specified in Sec. 63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.~~

~~(iii) The owner or operator must operate the process modifications such that the monitored process parameter(s) is not outside the limit(s) established during the performance test as specified in Sec. 63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.~~

~~(9) The owner or operator must use a resin in the formulation of binder such that the free-formaldehyde content of the resin used does not exceed the free-formaldehyde range contained in the specification for the resin used during the performance test as specified in Sec. 63.1384.~~

~~(10) The owner or operator must use a binder formulation that does not vary from the specification and operating range established and used during the performance test as specified in Sec. 63.1384. For the purposes of this standard, adding or increasing the quantity of urea and/or lignin in the binder formulation does not constitute a change in the binder formulation.~~

~~Sec. 63.1383 Monitoring requirements.~~

~~On and after the date on which the performance test required to be conducted by Secs. 63.7 and 63.1384 is completed, the owner or operator must monitor all affected control equipment and processes according to the following requirements.~~

~~(a) The owner or operator of each wool fiberglass manufacturing facility must prepare for each glass-melting furnace, rotary spin manufacturing line, and flame attenuation manufacturing line subject to the provisions of this subpart, a written operations, maintenance, and monitoring plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit. The plan must include the following information:~~

~~(1) Procedures for the proper operation and maintenance of process modifications and add-on control devices used to meet the emission limits in Sec. 63.1382;~~

~~(2) Procedures for the proper operation and maintenance of monitoring devices used to determine compliance, including quarterly calibration and certification of accuracy of each monitoring device according to the manufacturers's instructions; and~~

~~(3) Corrective actions to be taken when process parameters or add-on control device parameters deviate from the limit(s) established during initial performance tests.~~

~~(g) (1) The owner or operator who uses an incinerator to control formaldehyde emissions from forming or curing shall install, calibrate, maintain, and operate a monitoring device that continuously measures and records the operating temperature in the firebox of each incinerator.~~

~~(2) The owner or operator must inspect each incinerator at least once per year according to the procedures in the operations, maintenance, and monitoring plan. At a minimum, an inspection must include the following:~~

~~(i) Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation and clean pilot sensor, as necessary;~~

~~(ii) Ensure proper adjustment of combustion air and adjust, as necessary;~~

~~(iii) Inspect, when possible, internal structures, for example, baffles, to ensure structural integrity per the design specifications;~~

~~(iv) Inspect dampers, fans, and blowers for proper operation;~~

~~(v) Inspect for proper sealing;~~

~~(vi) Inspect motors for proper operation;~~

~~(vii) Inspect combustion chamber refractory lining and clean and repair/replace lining, as necessary;~~

~~(viii) Inspect incinerator shell for corrosion and/or hot spots;~~

~~(ix) For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments; and~~

~~(x) Generally observe that the equipment is maintained in good operating condition.~~

~~(xi) Complete all necessary repairs as soon as practicable.~~

~~(j) The owner or operator must monitor and record the free-formaldehyde content of each resin shipment received and used in the formulation of binder.~~

~~(k) The owner or operator must monitor and record the formulation of each batch of binder used.~~

~~(l) The owner or operator must monitor and record at least once every 8 hours, the product LOI and product density of each bonded wool fiberglass product manufactured.~~

~~(m) For all control device and process operating parameters measured during the initial performance tests, the owners or operators of glass-melting furnaces, rotary spin manufacturing lines or flame attenuation manufacturing lines subject to this subpart may change the limits established during the initial performance tests if additional performance testing is conducted to verify that, at the new control device or process parameter levels, they comply with the applicable emission limits in Sec. 63.1382. The owner or operator shall conduct all additional performance tests according to the procedures in this part 63, subpart A and in Sec. 63.1384.~~

~~Sec. 63.1384 Performance test requirements.~~

~~(a) The owner or operator subject to the provisions of this subpart shall conduct a performance test to demonstrate compliance with the applicable emission limits in Sec. 63.1382. Compliance is demonstrated when the emission rate of the pollutant is equal to or less than each of the applicable emission limits in Sec. 63.1382. The owner or operator shall conduct the performance test according to the procedures in 40 CFR part 63, subpart A and in this section.~~

~~(1) All monitoring systems and equipment must be installed, operational, and calibrated prior to the performance test.~~

~~(2) Unless a different frequency is specified in this section, the owner or operator must monitor and record process and/or add-on control device parameters at least every 15 minutes during the performance tests. The arithmetic average for each parameter must be calculated using all of the recorded measurements for the parameter.~~

~~(8) The owner or operator must conduct a performance test for each rotary spin manufacturing line, subject to this subpart, while producing the building insulation with the highest LOI expected to be produced on that line; and for each flame attenuation manufacturing line, subject to this subpart, while producing the heavy-density product or pipe product with the highest LOI expected to be produced on the affected line.~~

~~(9) The owner or operator of each rotary spin manufacturing line and flame attenuation manufacturing line regulated by this subpart must conduct performance tests using the resin with the highest free-formaldehyde content. During the performance test of each rotary spin manufacturing line and flame attenuation manufacturing line regulated by this subpart, the owner or operator shall monitor and record the free-formaldehyde content of the resin, the binder formulation used, and the product LOI and density.~~

~~(10) During the performance test, the owner or operator of a rotary spin manufacturing line or flame attenuation manufacturing line who plans to use process modifications to comply with the emission limits in Sec. 63.1382 must monitor and record the process parameter level(s), as specified in the operations, maintenance, and monitoring plan, which will be used to demonstrate compliance after the initial performance test.~~

~~(12) During the performance test, the owner or operator of a rotary spin manufacturing line or affected flame attenuation manufacturing line shall continuously record the operating temperature of each incinerator and record the average during each 1-hour test; the average operating temperature of the three 1-hour tests shall be used to monitor compliance.~~

~~(13) Unless disapproved by the Administrator, an owner or operator of a rotary spin or flame attenuation manufacturing line regulated by this subpart may conduct short-term experimental production runs using binder formulations or other process modifications where the process parameter values would be outside those established during performance tests without first conducting performance tests. Such runs must not exceed 1 week in duration unless the Administrator approves a longer period. The owner or operator must notify the Administrator and postmark or deliver the notification at least 15 days prior to commencement of the short-term experimental production runs. The Administrator must inform the owner or operator of a decision to disapprove or must request additional information prior to the date of the short-term experimental production runs. Notification of intent to perform an experimental short-term production run shall include the following information:~~

~~(i) The purpose of the experimental production run;~~

~~(ii) The affected line;~~

~~(iii) How the established process parameters will deviate from previously approved levels;~~

~~(iv) The duration of the experimental production run;~~

~~(v) The date and time of the experimental production run; and~~

~~(vi) A description of any emission testing to be performed during the experimental production run.~~

~~(c) To determine compliance with the emission limit for formaldehyde for rotary spin manufacturing lines and flame attenuation forming processes, use the following equation:~~

$$\cancel{E = \frac{C \times MW \times Q \times K_1 \times K_2}{K_3 \times P \times 10^6}} \qquad \cancel{\text{(Equation 2)}}$$

~~Where:~~
~~E = Emission rate of formaldehyde, kg/Mg (lb/ton) of glass pulled;~~
~~C = Measured volume fraction of formaldehyde, ppm;~~
~~MW = Molecular weight of formaldehyde, 30.03 g/g-mol;~~
~~Q = Volumetric flow rate of exhaust gases, dscm/h (dscf/h);~~
~~K_1 = Conversion factor, 1 kg/1,000 g (1 lb/453.6 g);~~
~~K_2 = Conversion factor, 1,000 L/m3 (28.3 L/ft3);~~
~~K_3 = Conversion factor, 24.45 L/g-mol; and~~
~~P = Average glass pull rate, Mg/h (tons/h).~~

~~Sec. 63.1385 Test methods and procedures.~~

~~(a) The owner or operator shall use the following methods to determine compliance with the applicable emission limits:~~

~~(1) Method 1 (40 CFR part 60, appendix A) for the selection of the sampling port location and number of sampling ports;~~

~~(2) Method 2 (40 CFR part 60, appendix A) for volumetric flow rate;~~

~~(3) Method 3 or 3A (40 CFR part 60, appendix A) for O_2 and CO_2 for diluent measurements needed to correct the concentration measurements to a standard basis;~~

~~(4) Method 4 (40 CFR part 60, appendix A) for moisture content of the stack gas;~~

~~(6) Method 316 or Method 318 (appendix A of this part) for the concentration of formaldehyde. Each run shall consist of a minimum run time of 1 hour;~~

~~(7) Method contained in appendix A of this subpart for the determination of product LOI;~~

~~(8) Method contained in appendix B of this subpart for the determination of the free-formaldehyde content of resin;~~

~~(9) Method contained in appendix C of this subpart for the determination of product density;~~

~~(10) An alternative method, subject to approval by the Administrator.~~

~~(b) Each performance test shall consist of 3 runs. The owner or operator shall use the average of the three runs in the applicable equation for determining compliance.~~

~~Sec. 63.1386 Notification, recordkeeping, and reporting requirements.~~

~~(a) Notifications. As required by Sec. 63.9(b) through (h) of this part, the owner or operator shall submit the following written initial notifications to the Administrator:~~

~~(4) Notification of intention to construct a new major source or reconstruct a major source; of the date construction or reconstruction commenced; of the anticipated date of startup; of the actual date of startup, where the initial startup of a new or reconstructed source occurs after June 14, 2002, and for which an application for approval or construction or reconstruction is required (See Sec. 63.9(b)(4) and (5) of this part);~~

~~(5) Notification of special compliance obligations;~~

~~(6) Notification of performance test; and (7) Notification of compliance status.~~

~~(b) Performance test report. As required by Sec. 63.10(d)(2) of the general provisions, the owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in paragraph (a)(7) of this section.~~

~~(c) Startup, shutdown, and malfunction plan and reports.~~

~~(1) The owner or operator shall develop and implement a written plan as described in Sec. 63.6(e)(3) of this part that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process modifications and control systems used to comply with the standard. In addition to the information required in Sec. 63.6(e)(3), the plan shall include:~~

~~(i) Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended;~~

~~(ii) Corrective actions to be taken in the event of a malfunction of a control device or process modification, including procedures for recording the actions taken to correct the malfunction or minimize emissions; and~~

~~(iii) A maintenance schedule for each control device and process modification that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.~~

~~(2) The owner or operator shall also keep records of each event as required by Sec. 63.10(b) of this part and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in Sec. 63.10(e)(3)(iv) of this part.~~

~~(d) Recordkeeping. (1) As required by Sec. 63.10(b) of this part, the owner or operator shall maintain files of all information (including all reports and notifications) required by the general provisions and this subpart:~~

~~(i) The owner or operator must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site;~~

~~(ii) The owner or operator may retain records on microfilm, on a computer, on computer disks, on magnetic tape, or on microfiche; and~~

~~(iii) The owner or operator may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.~~

~~(2) In addition to the general records required by Sec. 63.10(b)(2) of this part, the owner or operator shall maintain records of the following information:~~

~~(v) The formulation of each binder batch and the LOI and density for each product manufactured on a rotary spin manufacturing line or flame attenuation manufacturing line subject to the provisions of this subpart, and the free formaldehyde content of each resin shipment received and used in the binder formulation;~~

~~(vi) Process parameter level(s) for RS and FA manufacturing lines that use process modifications to comply with the emission limits, including any period when the parameter level(s) deviated from the established limit(s), the date and time of the deviation, when corrective actions were initiated, the cause of the deviation, an explanation of the corrective actions taken, and when the cause of the deviation was corrected;~~

~~(viii) Incinerator operating temperature and results of periodic inspection of incinerator components, including any period when the temperature fell below the established average or the inspection identified problems with the incinerator, the date and time of the problem, when corrective actions were initiated, the cause of the problem, an explanation of the corrective actions taken, and when the cause of the problem was corrected;~~

~~(ix) Glass pull rate, including any period when the pull rate exceeded the average pull rate established during the performance test by more than 20 percent, the date and time of the exceedance, when corrective actions were initiated, the cause of the exceedance, an explanation of the corrective actions taken, and when the cause of the exceedance was corrected.~~

~~(e) Excess emissions report. As required by Sec. 63.10(e)(3)(v) of this part, the owner or operator shall report semiannually if measured emissions are in excess of the applicable standard or a monitored parameter deviates from the levels established during the performance test. The report shall contain the information specified in Sec. 63.10(c) of this part as well as the additional records required by the recordkeeping requirements of paragraph (d) of this section. When no deviations have occurred, the owner or operator shall submit a report stating that no excess emissions occurred during the reporting period.~~

E.1.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.3901, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING, as specified in Table 1 of 40 CFR 63, Subpart NNN in accordance with schedule in 40 CFR 63 Subpart NNN.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

**Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251**

and

**United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch – Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590**

E.1.2 Applicability of Wool Fiberglass Manufacturing NESHAP Requirements [40 CFR Part 63, Subpart NNN]

The provisions of 40 CFR Part 63, Subpart NNN (National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing) apply to the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING. A copy of this rule is available on the US EPA Air Toxics Website at www.epa.gov/ttn/atw/woolfib/woolfipg.html.

E.1.3 Wool Fiberglass Manufacturing Requirements [40 CFR Part 63, Subpart NNN]

Pursuant to CFR Part 63, Subpart NNN, the Permittee shall comply with the provisions of National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wool Fiberglass Manufacturing for the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING, as specified as follows upon startup.

§63.1380 Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section, the requirements of this subpart apply to the owner or operator of each wool fiberglass manufacturing facility that is a major source or is located at a facility that is a major source.

(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAPs), as measured according to the methods and procedures in this subpart, emitted from the following new and existing sources at a wool fiberglass manufacturing facility subject to this subpart:

(1) Each new and existing glass-melting furnace located at a wool fiberglass manufacturing facility;

(2) Each new and existing rotary spin wool fiberglass manufacturing line producing a bonded wool fiberglass building insulation product; and

(d) The provisions of this part 63, subpart A that apply and those that do not apply to this subpart are specified in Table 1 of this subpart.

§63.1381 Definitions.

Terms used in this subpart are defined in the Clean Air Act, in §63.2, or in this section as follows:

Bag leak detection system **means systems that include, but are not limited to, devices using triboelectric, light scattering, and other effects to monitor relative or absolute particulate matter (PM) emissions.**

Bonded **means wool fiberglass to which a phenol-formaldehyde binder has been applied.**

Building insulation **means bonded wool fiberglass insulation, having a loss on ignition of less than 8 percent and a density of less than 32 kilograms per cubic meter (kg/m^3) (2 pounds per cubic foot [lb/ft^3]).**

Cold top electric furnace **means an all-electric glass-melting furnace that operates with a temperature of 120 °C (250 °F) or less as measured at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface.**

Flame attenuation **means a process used to produce wool fiberglass where molten glass flows by gravity from melting furnaces, or pots, to form filaments that are drawn down and attenuated by passing in front of a high-velocity gas burner flame.**

Glass-melting furnace **means a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming processes. The forming apparatus, including flow channels, is not considered part of the glass-melting furnace.**

Glass pull rate **means the mass of molten glass that is produced by a single glass-melting furnace or that is used in the manufacture of wool fiberglass at a single manufacturing line in a specified time period.**

Hazardous Air Pollutant (HAP) **means any air pollutant listed in or pursuant to section 112(b) of the Clean Air Act.**

Heavy-density product **means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 11 to 25 percent and a density of 8 to 48 kg/m^3 (0.5 to 3 lb/ft^3).**

Incinerator **means an enclosed air pollution control device that uses controlled flame combustion to convert combustible materials to noncombustible gases.**

Loss on ignition (LOI) **means the percent decrease in weight of wool fiberglass after it has been ignited. The LOI is used to monitor the weight percent of binder in wool fiberglass.**

Manufacturing line **means the manufacturing equipment for the production of wool fiberglass that consists of a forming section where molten glass is fiberized and a fiberglass mat is formed and which may include a curing section where binder resin in the mat is thermally set and a cooling section where the mat is cooled.**

New source **means any affected source the construction or reconstruction of which is commenced after March 31, 1997.**

Pipe product **means bonded wool fiberglass insulation manufactured on a flame attenuation manufacturing line and having a loss on ignition of 8 to 14 percent and a density of 48 to 96 kg/m^3 (3 to 6 lb/ft^3).**

Rotary spin **means a process used to produce wool fiberglass building insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high-velocity air flow. Any process used to produce bonded wool fiberglass building insulation by a process other than flame attenuation is considered rotary spin.**

Wool fiberglass **means insulation materials composed of glass fibers made from glass produced or melted at the same facility where the manufacturing line is located.**

Wool fiberglass manufacturing facility **means any facility manufacturing wool fiberglass on a rotary spin manufacturing line or on a flame attenuation manufacturing line.**

§63.1382 Emission standards

(a) *Emission limits* – (1) *Glass-melting furnaces*. On and after the date the initial performance test is completed or required to be completed under §63.7 of this part, whichever date is earlier, the owner or operator shall not discharge or cause to be discharged into the atmosphere in excess of 0.25 kilogram (kg) of particulate matter (PM) per megagram (Mg) (0.5 pound [lb] of PM per ton) of glass pulled for each new or existing glass-melting furnace.

(2) *Rotary spin manufacturing lines*. On and after the date the initial performance test is completed or required to be completed under §63.7 of this part, whichever date is earlier, the owner or operator shall not discharge or cause to be discharged into the atmosphere in excess of:

(i) 0.6 kg of formaldehyde per megagram (1.2 lb of formaldehyde per ton) of glass pulled for each existing rotary spin manufacturing line; and

(ii) 0.4 kg of formaldehyde per megagram (0.8 lb of formaldehyde per ton) of glass pulled for each new rotary spin manufacturing line.

(b) *Operating limits*. On and after the date on which the performance test required to be conducted by §§63.7 and 63.1384 is completed, the owner or operator must operate all affected control equipment and processes according to the following requirements.

(1)(i) The owner or operator must initiate corrective action within 1 hour of an alarm from a bag leak detection system and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the bag leak detection system alarm is sounded for more than 5 percent of the total operating time in a 6-month block reporting period.

(2)(i) The owner or operator must initiate corrective action within 1 hour when any 3-hour block average of the monitored electrostatic precipitator (ESP) parameter is outside the limit(s) established during the performance test as specified in §63.1384 and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64 subpart D when the monitored ESP parameter is outside the limit(s) established during the performance test as specified in §63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.

(iii) The owner or operator must operate the ESP such that the monitored ESP parameter is not outside the limit(s) established during the performance test as specified in §63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.

(5)(i) The owner or operator must initiate corrective action within 1 hour when the average glass pull rate of any 4-hour block period for glass melting furnaces equipped with continuous glass pull rate monitors, or daily glass pull rate for glass melting furnaces not so equipped, exceeds the average glass pull rate established during the performance test as specified in §63.1384, by greater than 20 percent and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the glass pull rate exceeds, by more than 20 percent, the average glass pull rate established during the performance test as specified in §63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.

(iii) The owner or operator must operate each glass-melting furnace such that the glass pull rate does not exceed, by more than 20 percent, the average glass pull rate established during the performance test as specified in §63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.

(8)(i) The owner or operator must initiate corrective action within 1 hour when the monitored process parameter level(s) is outside the limit(s) established during the performance test as specified in §63.1384 for the process modification(s) used to control formaldehyde emissions and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the process parameter(s) is outside the limit(s) established during the performance test as specified in §63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.

(iii) The owner or operator must operate the process modifications such that the monitored process parameter(s) is not outside the limit(s) established during the performance test as specified in §63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.

(9) The owner or operator must use a resin in the formulation of binder such that the free-formaldehyde content of the resin used does not exceed the free-formaldehyde range contained in the specification for the resin used during the performance test as specified in §63.1384.

(10) The owner or operator must use a binder formulation that does not vary from the specification and operating range established and used during the performance test as specified in §63.1384. For the purposes of this standard, adding or increasing the quantity of urea and/or lignin in the binder formulation does not constitute a change in the binder formulation.

§63.1383 Monitoring requirements.

On and after the date on which the performance test required to be conducted by §§63.7 and 63.1384 is completed, the owner or operator must monitor all affected control equipment and processes according to the following requirements.

(a) The owner or operator of each wool fiberglass manufacturing facility must prepare for each glass-melting furnace, rotary spin manufacturing line, and flame attenuation manufacturing line subject to the provisions of this subpart, a written operations, maintenance, and monitoring plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit. The plan must include the following information:

(1) Procedures for the proper operation and maintenance of process modifications and add-on control devices used to meet the emission limits in §63.1382;

(2) Procedures for the proper operation and maintenance of monitoring devices used to determine compliance, including quarterly calibration and certification of accuracy of each monitoring device according to the manufacturer's instructions; and

(3) Corrective actions to be taken when process parameters or add-on control device parameters deviate from the limit(s) established during initial performance tests.

(b)(1) Where a baghouse is used to control PM emissions from a glass-melting furnace, the owner or operator shall install, calibrate, maintain, and continuously operate a bag leak detection system.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(ii) The bag leak detection system sensor must produce output of relative PM emissions.

(iii) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. If a negative pressure or induced air baghouse is used, the bag leak detection system must be installed downstream of the baghouse. Where multiple bag leak detection systems are required (for either type of baghouse), the system instrumentation and alarm may be shared among the monitors.

(v) A triboelectric bag leak detection system shall be installed, operated, adjusted, and maintained in a manner consistent with the U.S. Environmental Protection Agency guidance, “Fabric Filter Bag Leak Detection Guidance” (EPA–454/R–98–015, September 1997). Other bag leak detection systems shall be installed, operated, adjusted, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(vi) Initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.

(vii) Following the initial adjustment, the owner or operator shall not adjust the range, averaging period, alarm setpoints, or alarm delay time except as detailed in the approved operations, maintenance, and monitoring plan required under paragraph (a) of this section. In no event shall the range be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless a responsible official as defined in §63.2 of the general provisions in subpart A of this part certifies that the baghouse has been inspected and found to be in good operating condition.

(2) The operations, maintenance, and monitoring plan required by paragraph (a) of this section must specify corrective actions to be followed in the event of a bag leak detection system alarm. Example corrective actions that may be included in the plan include the following:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media, or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions.

(f)(1) The owner or operator of an existing glass-melting furnace equipped with continuous glass pull rate monitors must monitor and record the glass pull rate on an hourly basis. For glass-melting furnaces that are not equipped with continuous glass pull rate monitors, the glass pull rate must be monitored and recorded once per day.

(2) On any new glass-melting furnace, the owner or operator must install, calibrate, and maintain a continuous glass pull rate monitor that monitors and records on an hourly basis the glass pull rate.

(j) The owner or operator must monitor and record the free-formaldehyde content of each resin shipment received and used in the formulation of binder.

(k) The owner or operator must monitor and record the formulation of each batch of binder used.

(l) The owner or operator must monitor and record at least once every 8 hours, the product LOI and product density of each bonded wool fiberglass product manufactured.

(m) For all control device and process operating parameters measured during the initial performance tests, the owners or operators of glass-melting furnaces, rotary spin manufacturing lines or flame attenuation manufacturing lines subject to this subpart may change the limits established during the initial performance tests if additional performance testing is conducted to verify that, at the new control device or process parameter levels, they comply with the applicable emission limits in §63.1382. The owner or operator shall conduct all additional performance tests according to the procedures in this part 63, subpart A and in §63.1384.

§63.1384 Performance test requirements.

(a) The owner or operator subject to the provisions of this subpart shall conduct a performance test to demonstrate compliance with the applicable emission limits in §63.1382. Compliance is demonstrated when the emission rate of the pollutant is equal to or less than each of the applicable emission limits in §63.1382. The owner or operator shall conduct the performance test according to the procedures in 40 CFR part 63, subpart A and in this section.

(1) All monitoring systems and equipment must be installed, operational, and calibrated prior to the performance test.

(2) Unless a different frequency is specified in this section, the owner or operator must monitor and record process and/or add-on control device parameters at least every 15 minutes during the performance tests. The arithmetic average for each parameter must be calculated using all of the recorded measurements for the parameter.

(3) During each performance test, the owner or operator must monitor and record the glass pull rate for each glass-melting furnace and, if different, the glass pull rate for each rotary spin manufacturing line and flame attenuation manufacturing line. Record the glass pull rate every 15 minutes during any performance test required by this subpart and determine the arithmetic average of the recorded measurements for each test run and calculate the average of the three test runs.

(4) The owner or operator shall conduct a performance test for each existing and new glass-melting furnace.

(8) The owner or operator must conduct a performance test for each rotary spin manufacturing line, subject to this subpart, while producing the building insulation with the highest LOI expected to be produced on that line; and for each flame attenuation manufacturing line, subject to this subpart, while producing the heavy-density product or pipe product with the highest LOI expected to be produced on the affected line.

(9) The owner or operator of each rotary spin manufacturing line and flame attenuation manufacturing line regulated by this subpart must conduct performance tests using the resin with the highest free-formaldehyde content. During the performance test of each rotary spin manufacturing line and flame attenuation manufacturing line regulated by this subpart, the owner or operator shall monitor and record the free-formaldehyde content of the resin, the binder formulation used, and the product LOI and density.

(12) During the performance test, the owner or operator of a rotary spin manufacturing line or affected flame attenuation manufacturing line shall continuously record the operating temperature of each incinerator and record the average during each 1-hour test; the average operating temperature of the three 1-hour tests shall be used to monitor compliance.

(13) Unless disapproved by the Administrator, an owner or operator of a rotary spin or flame attenuation manufacturing line regulated by this subpart may conduct short-term experimental production runs using binder formulations or other process modifications where the process parameter values would be outside those established during performance tests without first conducting performance tests. Such runs must not exceed 1 week in duration unless the Administrator approves a longer period. The owner or operator must notify the Administrator and postmark or deliver the notification at least 15 days prior to commencement of the short-term experimental production runs. The Administrator must inform the owner or operator of a decision to disapprove or must request additional information prior to the date of the short-term experimental production runs. Notification of intent to perform an experimental short-term production run shall include the following information:

(i) The purpose of the experimental production run;

(ii) The affected line;

(iii) How the established process parameters will deviate from previously approved levels;

(iv) The duration of the experimental production run;

(v) The date and time of the experimental production run; and

(vi) A description of any emission testing to be performed during the experimental production run.

(b) To determine compliance with the PM emission limit for glass-melting furnaces, use the following equation:

$$E = \frac{C \times Q \times K_1}{P} \qquad \textbf{(Eq. 1)}$$

[View or download PDF: http://a257.g.akamaitech.net/7/257/2422/04mar20050800/www.access.gpo.gov/ecfr/graphics/pdfs/er14jn99.040.pdf]

Where:

E = Emission rate of PM, kg/Mg (lb/ton) of glass pulled;

C = Concentration of PM, g/dscm (gr/dscf);

Q = Volumetric flow rate of exhaust gases, dscm/h (dscf/h);

K_1 = Conversion factor, 1 kg/1,000 g (1 lb/7,000 gr); and

P = Average glass pull rate, Mg/h (tons/h).

(c) To determine compliance with the emission limit for formaldehyde for rotary spin manufacturing lines and flame attenuation forming processes, use the following equation:

$$E = \frac{C \times MW \times Q \times K_1 \times K_2}{K_3 \times P \times 10^6} \quad \textbf{(Eq. 2)}$$

[View or download PDF: http://a257.g.akamaitech.net/7/257/2422/04mar20050800/www.access.gpo.gov/ecfr/graphics/pdfs/er14jn99.041.pdf]

Where:

E = Emission rate of formaldehyde, kg/Mg (lb/ton) of glass pulled;

C = Measured volume fraction of formaldehyde, ppm;

MW = Molecular weight of formaldehyde, 30.03 g/g-mol;

Q = Volumetric flow rate of exhaust gases, dscm/h (dscf/h);

K1 = Conversion factor, 1 kg/1,000 g (1 lb/453.6 g);

K2 = Conversion factor, 1,000 L/m^3 (28.3 L/ft^3);

K3 = Conversion factor, 24.45 L/g-mol; and

P = Average glass pull rate, Mg/h (tons/h).

§63.1385 Test methods and procedures.

(a) The owner or operator shall use the following methods to determine compliance with the applicable emission limits:

(1) Method 1 (40 CFR part 60, appendix A) for the selection of the sampling port location and number of sampling ports;

(2) Method 2 (40 CFR part 60, appendix A) for volumetric flow rate;

(3) Method 3 or 3A (40 CFR part 60, appendix A) for O2 and CO2 for diluent measurements needed to correct the concentration measurements to a standard basis;

(4) Method 4 (40 CFR part 60, appendix A) for moisture content of the stack gas;

(5) Method 5 (40 CFR part 60, appendix A) for the concentration of PM. Each run shall consist of a minimum run time of 2 hours and a minimum sample volume of 60 dry standard cubic feet (dscf). The probe and filter holder heating system may be set to provide a gas temperature no greater than 177 ±14 °C (350 ±25 °F);

(6) Method 316 or Method 318 (appendix A of this part) for the concentration of formaldehyde. Each run shall consist of a minimum run time of 1 hour;

(7) Method contained in appendix A of this subpart for the determination of product LOI;

(8) Method contained in appendix B of this subpart for the determination of the free-formaldehyde content of resin;

(9) Method contained in appendix C of this subpart for the determination of product density;

(10) An alternative method, subject to approval by the Administrator.

(b) Each performance test shall consist of 3 runs. The owner or operator shall use the average of the three runs in the applicable equation for determining compliance.

§63.1386 Notification, recordkeeping, and reporting requirements.

(a) *Notifications*. As required by §63.9(b) through (h) of this part, the owner or operator shall submit the following written initial notifications to the Administrator:

(2) Notification that a source is subject to the standard, where the initial startup is before June 14, 2002.

(3) Notification that a source is subject to the standard, where the source is new or has been reconstructed, the initial startup is after June 14, 2002, and for which an application for approval of construction or reconstruction is not required;

(5) Notification of special compliance obligations;

(6) Notification of performance test; and

(7) Notification of compliance status.

(b) *Performance test report*. As required by §63.10(d)(2) of the general provisions, the owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in paragraph (a)(7) of this section.

(c) *Startup, shutdown, and malfunction plan and reports*. (1) The owner or operator shall develop a written plan as described in §63.6(e)(3) that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process modifications and control systems used to comply with the standards. In addition to the information required in §63.6(e)(3), the plan shall include:

(i) Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended;

(ii) Corrective actions to be taken in the event of a malfunction of a control device or process modification, including procedures for recording the actions taken to correct the malfunction or minimize emissions; and

(iii) A maintenance schedule for each control device and process modification that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

(2) The owner or operator shall also keep records of each event as required by §63.10(b) of this part and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in §63.10(e)(3)(iv) of this part.

(d) *Recordkeeping*. (1) As required by §63.10(b) of this part, the owner or operator shall maintain files of all information (including all reports and notifications) required by the general provisions and this subpart:

(i) The owner or operator must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site;

(ii) The owner or operator may retain records on microfilm, on a computer, on computer disks, on magnetic tape, or on microfiche; and

(iii) The owner or operator may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.

(2) In addition to the general records required by §63.10(b)(2) of this part, the owner or operator shall maintain records of the following information:

(i) Any bag leak detection system alarms, including the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected;

(ii) ESP parameter value(s) used to monitor ESP performance, including any period when the value(s) deviated from the established limit(s), the date and time of the deviation, when corrective actions were initiated, the cause of the deviation, an explanation of the corrective actions taken, and when the cause of the deviation was corrected;

(v) The formulation of each binder batch and the LOI and density for each product manufactured on a rotary spin manufacturing line or flame attenuation manufacturing line subject to the provisions of this subpart, and the free formaldehyde content of each resin shipment received and used in the binder formulation;

(ix) Glass pull rate, including any period when the pull rate exceeded the average pull rate established during the performance test by more than 20 percent, the date and time of the exceedance, when corrective actions were initiated, the cause of the exceedance, an explanation of the corrective actions taken, and when the cause of the exceedance was corrected.

(e) *Excess emissions report*. As required by §63.10(e)(3)(v) of this part, the owner or operator shall report semiannually if measured emissions are in excess of the applicable standard or a monitored parameter deviates from the levels established during the performance test. The report shall contain the information specified in §63.10(c) of this part as well as the additional records required by the recordkeeping requirements of paragraph (d) of this section. When no deviations have occurred, the owner or operator shall submit a report stating that no excess emissions occurred during the reporting period.

§63.1387 Compliance dates.

(a) *Compliance dates*. The owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of this subpart by no later than:

(1) June 14, 2002, for an existing glass-melting furnace, rotary spin manufacturing line, or flame attenuation manufacturing line; or

(2) Upon startup for a new glass-melting furnace, rotary spin manufacturing line, or flame attenuation manufacturing line.

(b) *Compliance extension*. The owner or operator of an existing source subject to this subpart may request from the Administrator an extension of the compliance date for the emission standards for one additional year if such additional period is necessary for the installation of controls. The owner or operator shall submit a request for an extension according to the procedures in §63.6(i)(3) of this part.

§63.1388 Implementation and enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in §§63.1380, 63., and 63.1387.

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f), as defined in §63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under §63.8(f), as defined in §63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f), as defined in §63.90, and as required in this subpart.

§§63.1389-63.1399 [Reserved]

Table 1 to Subpart NNN of Part 63 – Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart NNN

General Provisions Citation	Requirement	Applies to Subpart NNN	Explanation
63.1(a)(1)-(a)(4)	Applicability	Yes	

Table 1 to Subpart NNN of Part 63 – Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart NNN

General Provisions Citation	Requirement	Applies to Subpart NNN	Explanation
63.1(a)(5)		No	[Reserved].
63.1(a)(6)-(a)(8)		Yes	
63.1(a)(9)		No	[Reserved].
63.1(a)(10)-(a)(14)		Yes	
63.1(b)(1)-(b)(3)	Initial Applicability Determination.	Yes	
63.1(c)(1)-(c)(2)	Applicability After Standard Established.	Yes	
63.1(c)(3)		No	[Reserved].
63.1(c)(4)-(c)(5)		Yes	
63.1(d)		No	[Reserved].
63.1(e)	Applicability of Permit Program.	Yes	
63.2	Definitions	Yes	Additional definitions in §63.1381.
63.3(a)-(c)	Units and Abbreviations	Yes	
63.4(a)(1)-(a)(3)	Prohibited Activities.	Yes	
63.4(a)(4)		No	[Reserved].
63.4(a)(5)		Yes	
63.4(b)-(c)		Yes	
63.5(a)(1)-(a)(2)	Construction/ Reconstruction.	Yes	
63.5(b)(1)	Existing, New, Reconstructed.	Yes	
63.5(b)(2)		No	[Reserved]
63.5(b)(3)-(b)(6)		Yes	
63.5(c)		No	[Reserved]
63.5(d)	Approval of Construction/ Reconstruction.	Yes	
63.5(e)		Yes	
63.5(f)		Yes	
63.6(a)	Compliance with Standards and Maintenance Requirements.	Yes	
63.6(b)(1)-(b)(5)		Yes	
63.6(b)(6)		No	[Reserved]
63.6(b)(7)		Yes	
63.6(c)(1)	Compliance Date for Existing Sources.	Yes	§63.1387 specifies compliance dates.
63.6(c)(2)		Yes	
63.6(c)(3)-(c)(4)		No	[Reserved]
63.6(c)(5)		Yes	
63.6(d)		No	[Reserved]
63.6(e)(1)-(e)(2)	Operation & Maintenance.	Yes	§63.1383 specifies operations/ maintenance plan.
63.6(e)(3)	Startup, Shutdown Malfunction Plan.	Yes	
63.6(f)(1)-(f)(3)	Compliance with Nonopacity Emission Standards.	Yes	

Table 1 to Subpart NNN of Part 63 – Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart NNN

General Provisions Citation	Requirement	Applies to Subpart NNN	Explanation
63.6(g)(1)-(g)(3)	Alternative Nonopacity Standard.	Yes	
63.6(h)	Opacity/VE Standards.	No	Subpart NNN-no COMS, VE or opacity standards.
63.6(i)(1)-(i)(14)	Extension of Compliance	Yes	
63.6(i)(15)		No	[Reserved]
63.6(i)(16)		Yes	
63.6(j)	Exemption from Compliance.	Yes	
63.7(a)	Performance Testing Requirements.	Yes	§63.1384 has specific requirements.
63.7(b)	Notification.	Yes	
63.7(c)	Quality Assurance Program/Test Plan.	Yes	
63.7(d)	Performance Testing Facilities.	Yes	
63.7(e)(1)-(e)(4)	Conduct of Performance Tests.	Yes	
63.7(f)	Alternative Test Method	Yes	
63.7(g)	Data Analysis	Yes	
63.7(h)	Waiver of Performance Tests.	Yes	
63.8(a)(1)-(a)(2)	Monitoring Requirements	Yes	
63.8(a)(3)		No	[Reserved]
63.8(a)(4)		Yes	
63.8(b)	Conduct of Monitoring	Yes	
63.8(c)	CMS Operation/ Maintenance.	Yes	
63.8(d)	Quality Control Program	Yes	
63.8(e)	Performance Evaluation for CMS.	Yes	
63.8(f)	Alternative Monitoring Method.	Yes	
63.8(g)	Reduction of Monitoring Data.	Yes	
63.9(a)	Notification Requirements.	Yes	
63.9(b)	Initial Notifications.	Yes	
63.9(c)	Request for Compliance Extension.	Yes	
63.9(d)	New Source Notification for Special Compliance Requirements.	Yes	
63.9(e)	Notification of Performance Test.	Yes	
63.9(f)	Notification of VE/ Opacity Test.	No	Opacity/VE tests not required.
63.9(g)	Additional CMS Notifications.	Yes	
63.9(h)(1)-(h)(3)	Notification of Compliance Status.	Yes	
63.9(h)(4)		No	[Reserved]
63.9(h)(5)-(h)(6)		Yes	

Table 1 to Subpart NNN of Part 63 – Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart NNN

General Provisions Citation	Requirement	Applies to Subpart NNN	Explanation
63.9(i)	Adjustment of Deadlines	Yes	
63.9(j)	Change in Previous Information.	Yes	
63.10(a)	Recordkeeping/Reporting	Yes	
63.10(b)	General Requirements	Yes	
63.10(c)(1)	Additional CMS Recordkeeping.	Yes	
63.10(c)(2)-(c)(4)..		No	[Reserved]
63.10(c)(5)-(c)(8)..		Yes	
63.10(c)(9)		No	[Reserved]
63.10(c)(10)-(15)		Yes	
63.10(d)(1)	General Reporting Requirements.	Yes	
63.10(d)(2)	Performance Test Results.	Yes	
63.10(d)(3)	Opacity or VE Observations.	No	No limits for VE/ opacity.
63.10(d)(4)	Progress Reports	Yes	
63.10(d)(5)	Startup, Shutdown, Malfunction Reports.	Yes	
63.10(e)(1)-(e)(3)	Additional CMS Reports.	Yes	
63.10(e)(4)	Reporting COM Data	No	COM not required.
63.10(f)	Waiver of Recordkeeping/ Reporting.	Yes	
63.11(a)	Control Device Requirements.	Yes	
63.11(b)	Flares	No	Flares not applicable.
63.12	State Authority and Delegations.	Yes	
63.13	State/Regional Addresses.	Yes	
63.14	Incorporation by Reference.	No	
63.15	Availability of Information.	Yes	

Appendix A to Subpart NNN of Part 63 – Method for the Determination of LOI

1. Purpose

The purpose of this test is to determine the LOI of cured blanket insulation. The method is applicable to all cured board and blanket products.

2. Equipment

2.1 Scale sensitive to 0.1 gram.

2.2 Furnace designed to heat to at least 540 °C (1,000 °F) and controllable to ±10 °C (50 °F).

2.3 Wire tray for holding specimen while in furnace.

3. Procedure

3.1 Cut a strip along the entire width of the product that will weigh at least 10.0 grams. Sample should be free of dirt or foreign matter.

Note: Remove all facing from sample.

3.2 Cut the sample into pieces approximately 12 inches long, weigh to the nearest 0.1 gram and record. Place in wire tray. Sample should not be compressed or overhang on tray edges.

Note: On air duct products, remove shiplaps and overspray.

3.3 Place specimen in furnace at 540 °C (1,000 °F), ±10 °C (50 °F) for 15 to 20 minutes to insure complete oxidation. After ignition, fibers should be white and should not be fused together.

3.4 Remove specimen from the furnace and cool to room temperature.

3.5 Weigh cooled specimen and wire tray to the nearest 0.1 gram. Deduct the weight of the wire tray and then calculate the loss in weight as a percent of the original specimen weight.

Appendix B to Subpart NNN of Part 63 – Free Formaldehyde Analysis of Insulation Resins by Hydroxylamine Hydrochloride

1. Scope

This method was specifically developed for water-soluble phenolic resins that have a relatively high free-formaldehyde (FF) content such as insulation resins. It may also be suitable for other phenolic resins, especially those with a high FF content.

2. Principle

2.1 a. The basis for this method is the titration of the hydrochloric acid that is liberated when hydroxylamine hydrochloride reacts with formaldehyde to form formaldoxine:

$$HCHO + NH_2OH{:}HCl \rightarrow CH_2{:}NOH + H_2O + HCl$$

b. Free formaldehyde in phenolic resins is present as monomeric formaldehyde, hemiformals, polyoxymethylene hemiformals, and polyoxymethylene glycols. Monomeric formaldehyde and hemiformals react rapidly with hydroxylamine hydrochloride, but the polymeric forms of formaldehyde must hydrolyze to the monomeric state before they can react. The greater the concentration of free formaldehyde in a resin, the more of that formaldehyde will be in the polymeric form. The hydrolysis of these polymers is catalyzed by hydrogen ions.

2.2 The resin sample being analyzed must contain enough free formaldehyde so that the initial reaction with hydroxylamine hydrochloride will produce sufficient hydrogen ions to catalyze the depolymerization of the polymeric formaldehyde within the time limits of the test method. The sample should contain approximately 0.3 grams free formaldehyde to ensure complete reaction within 5 minutes.

3. Apparatus

3.1 Balance, readable to 0.01 g or better.

3.2 pH meter, standardized to pH 4.0 with pH 4.0 buffer and pH 7 with pH 7.0 buffer.

3.3 50-mL burette for 1.0 N sodium hydroxide.

3.4 Magnetic stirrer and stir bars.

3.5 250-mL beaker.

3.6 50-mL graduated cylinder.

3.7 100-mL graduated cylinder.

3.8 Timer.

4. Reagents

4.1 Standardized 1.0 N sodium hydroxide solution.

4.2 Hydroxylamine hydrochloride solution, 100 grams per liter, pH adjusted to 4.00.

4.3 Hydrochloric acid solution, 1.0 N and 0.1 N.

4.4 Sodium hydroxide solution, 0.1 N.

4.5 50/50 v/v mixture of distilled water and methyl alcohol.

5. Procedure

5.1 Determine the sample size as follows:

a. If the expected FF is greater than 2 percent, go to Part A to determine sample size.

b. If the expected FF is less than 2 percent, go to Part B to determine sample size.

c. Part A: Expected FF ≥ 2 percent.

Grams resin = 60/expected percent FF

i. The following table shows example levels:

Expected % free formaldehyde	Sample size, grams
2	30.0
5	12.0
8	7.5
10	6.0
12	5.0
15	4.0

ii. It is very important to the accuracy of the results that the sample size be chosen correctly. If the milliliters of titrant are less than 15 mL or greater than 30 mL, reestimate the needed sample size and repeat the tests.

d. Part B: Expected FF < 2 percent

Grams resin = 30/expected percent FF

i. The following table shows example levels:

Expected % free formaldehyde	Sample size, grams
2	15
1	30
0.5	60

ii. If the milliliters of titrant are less than 5 mL or greater than 30 mL, reestimate the needed sample size and repeat the tests.

5.2 Weigh the resin sample to the nearest 0.01 grams into a 250-mL beaker. Record sample weight.

5.3 Add 100 mL of the methanol/water mixture and stir on a magnetic stirrer. Confirm that the resin has dissolved.

5.4 Adjust the resin/solvent solution to pH 4.0, using the prestandardized pH meter, 1.0 N hydrochloric acid, 0.1 N hydrochloric acid, and 0.1 N sodium hydroxide.

5.5 Add 50 mL of the hydroxylamine hydrochloride solution, measured with a graduated cylinder. Start the timer.

5.6 Stir for 5 minutes. Titrate to pH 4.0 with standardized 1.0 N sodium hydroxide. Record the milliliters of titrant and the normality.

6. Calculations

$$\% FF = \frac{mL\ sodium\ hydroxide \times 3.003}{grams\ of\ sample}$$

[View or download PDF: http://a257.g.akamaitech.net/7/257/2422/04mar20050800/www.access.gpo.gov/ecfr/graphics/pdfs/er14jn99.042.pdf]

7. Method Precision and Accuracy

Test values should conform to the following statistical precision:

Variance = 0.005

Standard deviation = 0.07

95% Confidence Interval, for a single determination = 0.2

8. Author

This method was prepared by K. K. Tutin and M. L. Foster, Tacoma R&D Laboratory, Georgia-Pacific Resins, Inc. (Principle written by R. R. Conner.)

9. References

9.1 GPAM 2221.2.

9.2 PR&C TM 2.035.

9.3 Project Report, Comparison of Free Formaldehyde Procedures, January 1990, K. K. Tutin.

Appendix C to Subpart NNN of Part 63 – Method for the Determination of Product Density

1. Purpose

The purpose of this test is to determine the product density of cured blanket insulation. The method is applicable to all cured board and blanket products.

2. Equipment

One square foot (12 in. by 12 in.) template, or templates that are multiples of one square foot, for use in cutting insulation samples.

3. Procedure

3.1 Obtain a sample at least 30 in. long across the machine width. Sample should be free of dirt or foreign matter.

3.2 Lay out the cutting pattern according to the plant's written procedure for the designated product.

3.2 Cut samples using one square foot (or multiples of one square foot) template.

3.3 Weigh product and obtain area weight (lb/ft^2).

3.4 Measure sample thickness.

3.5 Calculate the product density:

Density (lb/ft^3) = area weight (lb/ft^2)/thickness (ft)

E.1.4 State Only Wool Fiberglass Manufacturing NESHAP Requirements [326 IAC 20-47]

Pursuant to 326 IAC 20-47, the Permittee shall comply with the provisions of the June 14, 1999 version of 40 CFR Part 63, Subpart NNN, which are incorporated by reference as 326 IAC 20-47, for the glass melting furnaces and rotary spin wool fiberglass manufacturing lines identified as 602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING. The Permittee shall comply with the provisions of 40 CFR Part 63, Subpart NNN, as listed in condition E.1.3, except the Permittee shall follow the requirements of the June 14, 1999 version of 40 CFR Part 63, Subpart NNN, as incorporated into 326 IAC 20-47, as follows.

§63.1386 Notification, recordkeeping, and reporting requirements.

(c) *Startup, shutdown, and malfunction plan and reports*. (1) The owner or operator shall develop and implement a written plan as described in § 63.6(e)(3) of this part that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process modifications and control systems used to comply with the standard. In addition to the information required in § 63.6(e)(3), the plan shall include:

(i) Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended;

(ii) Corrective actions to be taken in the event of a malfunction of a control device or process modification, including procedures for recording the actions taken to correct the malfunction or minimize emissions; and

(iii) A maintenance schedule for each control device and process modification that is consistent with the manufacturer's instructions and recommendations for routine and longterm maintenance.

(2) The owner or operator shall also keep records of each event as required by § 63.10(b) of this part and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in § 63.10(e)(3)(iv) of this part.

The requirements of 326 IAC 20-47 listed in this condition are not federally enforceable.

E.1.5 One-Time Deadlines Relating to Wool Fiberglass Manufacturing Notifications [40 CFR Part 63, Subpart NNN]

The Permittee shall comply with the following notification requirements by the dates listed:

Requirement	Rule Cite	Affected Facility	Deadline
General Notifications: • **Notification of Performance Test** • **Notification: source is subject to special compliance requirements**	**40 CFR 63.1386(a); 40 CFR 63.7(b) and 40 CFR 63.9(e);** **40 CFR 63.1386(a)(5); 40 CFR 63.9(d)**	**602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING**	**60 days before test** **same date as Initial Notification**
Initial Notification *	**40 CFR 63.1386(a) and 40 CFR 63.9(b)**	**MFG 602**	**October 12, 1999**
Initial Notification *	**40 CFR 63.1386(a) and 40 CFR 63.9(b)**	**602B FURNACE**	**within 120 calendar days after startup**
Initial Notification *	**40 CFR 63.1386(a) and 40 CFR 63.9(b)**	**FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING**	**within 120 calendar days after startup**
Initial Compliance Date	**40 CFR 63.1387(a)**	**MFG 602**	**June 14, 2002**
Initial Compliance Date	**40 CFR 63.1387(a)**	**602B FURNACE**	**Startup**

Requirement	Rule Cite	Affected Facility	Deadline
Initial Compliance Date	**40 CFR 63.1387(a)**	**FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING**	**Startup**
Conduct Initial Compliance Demonstration (Initial Performance Test)	**40 CFR 63.1384(a)**	**MFG 602**	**180 days after June 14, 2002**
Conduct Initial Compliance Demonstration (Initial Performance Test)	**40 CFR 63.1384(a)**	**602B FURNACE**	**180 days after startup**
Conduct Initial Compliance Demonstration (Initial Performance Test)	**40 CFR 63.1384(a)**	**FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING**	**180 days after startup**
Notification of Compliance Status	**40 CFR 63.1386(a)(7); 40 CFR 63.9(h)**	**602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING**	**within 60 days after compliance demonstration**
Excess Emissions Report	**40 CFR 63.1386(e); 40 CFR 63.10(e)(3)**	**602B FURNACE, MFG 602, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING**	**semi-annually**

The Permittee submitted the Initial Notification for FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING with the permit application for the expansion on February 28, 2005.

The Permittee submitted the Initial Notification for 602B FURNACE with the permit application for the expansion on May 24, 2006.

Changes to Section E.2

(mmm) Section E.2 was revised to update the list of equipment subject to the New Source Performance Standard (NSPS) for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP) and to update the requirements that apply to these emission units.

Facility Description [326 IAC 2-7-5(15)]

~~FORMING – Stack 6-22~~

~~(1) 613 FORMING~~
~~One (1) fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.~~
- ~~The nominal capacity of 613 FORMING has been classified as confidential information.~~
- ~~The particulate emissions from 613 FORMING are controlled by the same wet electrostatic precipitator (ESP) that control the particulate emissions from 611 FORMING and 612 FORMING.~~
- ~~Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.~~

~~(2) 614 FORMING~~
~~One (1) fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.~~
- ~~The nominal capacity of 614 FORMING has been classified as confidential information.~~
- ~~The particulate emissions from 614 FORMING are controlled by the same wet electrostatic precipitator (ESP) that control the particulate emissions from 611 FORMING, 612 FORMING, and 613 FORMING.~~
- ~~Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.~~

~~CURING/COOLING – Stack 6-29~~

~~(3) 613 CURING/COOLING~~
~~One (1) fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.~~
- ~~The nominal capacity of 613 CURING/COOLING has been classified as confidential information.~~
- ~~The volatile organic compound (VOC) and hazardous air pollutants (HAPs) emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.~~
- ~~The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.~~
- ~~Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.~~

~~(4) 614 CURING/COOLING~~
~~One (1) fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.~~
- ~~The nominal capacity of 614 CURING/COOLING has been classified as confidential information.~~
- ~~The volatile organic compound (VOC) and hazardous air pollutants (HAPs) emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.~~
- ~~The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.~~
- ~~Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.~~

(c) 602 LF MFG – Stack 6-22
One (1) rotary spin wool fiberglass manufacturing line consisting of a forming section, identified as Unit ID # 602 LF MFG,

- **installed in 2007,**
- **operating at a maximum processing capacity of 170 tons of glass per day,**
- **operating with one (1) natural gas direct fired fiberizing section with a rated heat input capacity of 60 MMBtu per hour (Unit ID # 602 LF MFG),**
- **utilizing one (1) wet electrostatic precipitator for particulate control (Unit ID # 602 LF MFG), and**
- **exhausting through one (1) stack ID # 6-22.**
- **602 LF MFG is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(f) Nine (9) rotary spin wool fiberglass pipe insulation production lines consisting of nine (9) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3009, respectively,

- **each with a maximum heat input capacity of 5 MMBtu per hour, each exhausting through two (2) stacks ID # 7-2 and 7-3, 8-2 and 8-3, 9-2 and 9-3, 10-2 and 10-3, 11-2 and 11-3, 12-2 and 12-3, 13-2 and 13-3, 14-2 and 14-3, and 16-2 and 16-3, respectively,**
- **each with a trimming process utilizing a dust collector for particulate control, each exhausting through stack ID # 7-4, 8-4, 9-4, 10-4, 11-4, 12-4, 13-4, 14-4, and 16-4, respectively,**
- **LINE 3001 – 3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, and LINE 3009 constructed October 1997.**
- **LINE 3001 – 3009 are affected facilities subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(i) Stack 6-22

(1) 611 FORMING

One (1) rotary spin wool fiberglass forming section, identified as 611 FORMING, utilizing natural gas for fiberization. Products formed in 611 FORMING are ready for packaging.

- **The nominal capacity of 611 FORMING has been classified as confidential information.**
- **The particulate emissions from 611 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.**
- **Controlled emissions from 611 FORMING exhaust through a stack identified as Stack 6-22.**
- **611 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(2) 612 FORMING

One (1) rotary spin wool fiberglass forming section, identified as 612 FORMING, utilizing natural gas for fiberization. Products formed in 612 FORMING are ready for packaging.

- **The nominal capacity of 612 FORMING has been classified as confidential information.**
- **The particulate emissions from 612 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.**
- **Controlled emissions from 612 FORMING exhaust through a stack identified as Stack 6-22.**
- **612 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(3) 613 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 613 FORMING, utilizing natural gas for fiberization. Products formed in 613 FORMING are routed to the 613 CURING/COOLING.

- **The nominal capacity of 613 FORMING has been classified as confidential information.**
- **The particulate emissions from 613 FORMING are controlled by a wet electrostatic precipitator (ESP) This wet ESP is common to all the forming sections.**
- **Controlled emissions from 613 FORMING exhaust through a stack identified as Stack 6-22.**
- **613 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(4) 614 FORMING
One (1) rotary spin wool fiberglass forming section, identified as 614 FORMING, utilizing natural gas for fiberization. Products formed in 614 FORMING are routed to the 614 CURING/COOLING.

- **The nominal capacity of 614 FORMING has been classified as confidential information.**
- **The particulate emissions from 614 FORMING are controlled by a wet electrostatic precipitator (ESP). This wet ESP is common to all the forming sections.**
- **Controlled emissions from 614 FORMING exhaust through a stack identified as Stack 6-22.**
- **614 FORMING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(j) Stack 6-29

(1) 613 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 613 CURING/COOLING, consisting of natural gas fired curing oven(s), duct burners, and edge coat dryer burner.

- **The nominal capacity of 613 CURING/COOLING has been classified as confidential information.**
- **The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 613 CURING/COOLING are controlled by two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour.**
- **The NOx emissions from each curing oven, duct burner and edge coat dryer of 613 CURING/COOLING are reduced by low NOx burners.**
- **Controlled emissions from 613 CURING/COOLING exhaust through a stack identified as Stack 6-29.**
- **613 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(2) 614 CURING/COOLING
One (1) rotary spin wool fiberglass curing/cooling section, identified as 614 CURING/COOLING, consisting of natural gas fired curing oven(s) and duct burners.

- **The nominal capacity of 614 CURING/COOLING has been classified as confidential information.**
- **The volatile organic compound (VOC), hazardous air pollutants (HAPs), and condensible particulate emissions from 614 CURING/COOLING are controlled by the same two (2) regenerative thermal oxidizers (RTOs), each rated at 2 million Btu per hour, that control VOC emissions from 613 CURING/COOLING.**
- **The NOx emissions from each curing oven and duct burner of 614 CURING/COOLING are reduced by low NOx burners.**
- **Controlled emissions from 614 CURING/COOLING exhaust through a stack identified as Stack 6-29.**
- **614 CURING/COOLING is an affected facility subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

~~E.2.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]~~

~~The provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to:~~

~~– 613 FORMING and 613 CURING/COOLING; and~~

~~– 614 FORMING and 614 CURING/COOLING,~~

~~as described in this section except when otherwise specified in 40 CFR Part 60, Subpart PPP.~~

~~E.2.2 NSPS Wool Fiberglass Insulation Manufacturing Plants [40 CFR Part 60, Subpart PPP]~~

~~Pursuant to 40 CFR Part 60, Subpart PPP the Permittee shall comply with the provisions of 40 CFR Part 60.680 for:~~

~~– 613 FORMING and 613 CURING/COOLING; and~~

~~– 614 FORMING and 614 CURING/COOLING,~~

~~as specified as follows:~~

~~Sec. 60.680 Applicability and designation of affected facility.~~

~~(a) The affected facility to which the provisions of this subpart apply is each rotary spin wool fiberglass insulation manufacturing line.~~

~~(b) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after February 7, 1984, is subject to the requirements of this subpart.~~

~~Sec. 60.681 Definitions.~~

~~As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.~~

~~Glass pull rate means the mass of molten glass utilized in the manufacture of wool fiberglass insulation at a single manufacturing line in a specified time period.~~

~~Manufacturing line means the manufacturing equipment comprising the forming section, where molten glass is fiberized and a fiberglass mat is formed; the curing section, where the binder resin in the mat is thermally "set;" and the cooling section, where the mat is cooled.~~

~~Rotary spin means a process used to produce wool fiberglass insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high velocity air flow.~~

~~Wool fiberglass insulation means a thermal insulation material composed of glass fibers and made from glass produced or melted at the same facility where the manufacturing line is located.~~

~~Sec. 60.682 Standard for particulate matter.~~

~~On and after the date on which the performance test required to be conducted by Sec. 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 5.5 kg/Mg (11.0 1b/ton) of glass pulled.~~

~~Sec. 60.683 Monitoring of operations.~~

~~(b) An owner or operator subject to the provisions of this subpart who uses a wet electrostatic precipitator control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate.~~

~~In addition, the owner or operator shall determine the total residue (total solids) content of the water entering the control device once per day using Method 209A, ``Total Residue Dried at 103-105 deg. C,'' in Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980 (incorporated by reference--see Sec. 60.17). Total residue shall be reported as percent by weight. All monitoring devices required under this paragraph are to be certified by their manufacturers to be accurate within plus-minus 5 percent over their operating range.~~

~~(c) All monitoring devices required under this section are to be recalibrated quarterly in accordance with procedures under Sec. 60.13(b).~~

~~Sec. 60.684 Recordkeeping and reporting requirements.~~

~~(b) At 30-minute intervals during each 2-hour test run of each performance test of a wet electrostatic precipitator control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by Sec. 60.683(b), except that the concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.~~

~~(c) Records of the measurements required in paragraphs (a) and (b) of this section must be retained for at least 2 years.~~

~~(d) Each owner or operator shall submit written semiannual reports of exceedances of control device operating parameters required to be monitored by paragraphs (a) and (b) of this section and written documentation of, and a report of corrective maintenance required as a result of, quarterly calibrations of the monitoring devices required in Sec. 60.683(c). For the purpose of these reports, exceedances are defined as any monitoring data that are less than 70 percent of the lowest value or greater than 130 percent of the highest value of each operating parameter recorded during the most recent performance test.~~

~~(e) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.~~

~~Sec. 60.685 Test methods and procedures.~~

~~(a) In conducting the performance tests required in Sec. 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in Sec. 60.8(b).~~

~~(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.~~

~~(c) The owner or operator shall determine compliance with the particulate matter standard in Sec. 60.682 as follows:~~

~~(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:~~

~~E = (Ct Qsd)/(Pavg K)~~

~~where: E = emission rate of particulate matter, kg/Mg (lb/ton).~~
~~Ct = concentration of particulate matter, g/dscm (gr/dscf).~~
~~Qsd = volumetric flow rate of effluent gas, (dscm/hr)~~
~~Pavg = average glass pull rate, Mg/hr (ton/hr).~~
~~K = 1,000 g/kg (7,000 gr/lb).~~

~~(2) Method 5E shall be used to determine the particulate matter concentration (Ct) and the volumetric flow rate (Qsd) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90.1 dscf).~~

~~(3) The average glass pull rate (Pavg) for the manufacturing line shall be the arithmetic average of three glass pull rate (Pi) determinations taken at intervals of at least 30 minutes during each run.~~

~~The individual glass pull rates (Pi) shall be computed using the following equation:~~

~~Pi = K' Ls Wm M [1.0-(LOI/100)]~~

~~where: Pi = glass pull rate at interval "i", Mg/hr (ton/hr).~~
~~Ls = line speed, m/min (ft/min).~~
~~Wm = trimmed mat width, m (ft).~~
~~M = mat gram weight, g/m2 (lb/ft2).~~
~~LOI = loss on ignition, weight percent.~~
~~K' = conversion factor, 6 x 10^5 (min-Mg)/ (hr-g) [3 x 10^2 (min-ton)/(hr-lb)].~~

~~(i) ASTM D2584-68 (Reapproved 1985) or 94 (incorporated by reference--see Sec. 60.17), shall be used to determine the LOI for each run.~~

~~(ii) Line speed (Ls), trimmed mat width (Wm), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.~~

~~(d) To comply with Sec. 60.684(d), the owner or operator shall record measurements as required in Sec. 60.684 (a) and (b) using the monitoring devices in Sec. 60.683 (a) and (b) during the particulate matter runs.~~

~~New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]~~

E.2.1 General Provisions Relating to National Source Performance Standards under 40 CFR Part 60 [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) The Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1-1 for:

(1) 602 LF MFG;

(2) LINE 3001 – 3009

(3) 613 FORMING and 613 CURING/COOLING; and

(4) 614 FORMING and 614 CURING/COOLING.

(b) The Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch – Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.2.2 Applicability of Wool Fiberglass Manufacturing NSPS Requirements [40 CFR Part 60, Subpart PPP]

The provisions of 40 CFR Part 60, Subpart PPP (Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants) apply to:

(1) 602 LF MFG;

(2) LINE 3001 – 3009

(3) 613 FORMING and 613 CURING/COOLING; and

(4) 614 FORMING and 614 CURING/COOLING.

A copy of this rule is available on the US EPA Website.

E.2.3 Wool Fiberglass Manufacturing Requirements [40 CFR Part 60, Subpart PPP]

Pursuant to CFR Part 60, Subpart PPP, the Permittee shall comply upon startup with the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants for:

(1) 602 LF MFG;

(2) LINE 3001 – 3009

(3) 613 FORMING and 613 CURING/COOLING; and

(4) 614 FORMING and 614 CURING/COOLING.

§60.680 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each rotary spin wool fiberglass insulation manufacturing line.

(b) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after February 7, 1984, is subject to the requirements of this subpart.

§60.681 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

***Glass pull rate* means the mass of molten glass utilized in the manufacture of wool fiberglass insulation at a single manufacturing line in a specified time period.**

***Manufacturing line* means the manufacturing equipment comprising the forming section, where molten glass is fiberized and a fiberglass mat is formed; the curing section, where the binder resin in the mat is thermally "set;" and the cooling section, where the mat is cooled.**

***Rotary spin* means a process used to produce wool fiberglass insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high velocity air flow.**

***Wool fiberglass insulation* means a thermal insulation material composed of glass fibers and made from glass produced or melted at the same facility where the manufacturing line is located.**

§60.682 Standard for particulate matter.

On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 5.5 kg/Mg (11.0 1b/ton) of glass pulled.

§60.683 Monitoring of operations.

(b) An owner or operator subject to the provisions of this subpart who uses a wet electrostatic precipitator control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate. In addition, the owner or operator shall determine the total residue (total solids) content of the water entering the control device once per day using Method 209A, "Total Residue Dried at 103 – 105 °C," in *Standard Methods for the Examination of Water and Wastewater,* 15th Edition, 1980 (incorporated by reference – see §60.17). Total residue shall be reported as percent by weight. All monitoring devices required under this paragraph are to be certified by their manufacturers to be accurate within ±5 percent over their operating range.

(c) All monitoring devices required under this section are to be recalibrated quarterly in accordance with procedures under §60.13(b).

§60.684 Recordkeeping and reporting requirements.

(b) At 30-minute intervals during each 2-hour test run of each performance test of a wet electrostatic precipitator control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by §60.683(b), except that the concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.

(c) Records of the measurements required in paragraphs (a) and (b) of this section must be retained for at least 2 years.

(d) Each owner or operator shall submit written semiannual reports of exceedances of control device operating parameters required to be monitored by paragraphs (a) and (b) of this section and written documentation of, and a report of corrective maintenance required as a result of, quarterly calibrations of the monitoring devices required in §60.683(c). For the purpose of these reports, exceedances are defined as any monitoring data that are less than 70 percent of the lowest value or greater than 130 percent of the highest value of each operating parameter recorded during the most recent performance test.

(e) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

§60.685 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in §60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (C_t\ Q_{sd}) / (P_{avg}\ K)$$

where:

E = emission rate of particulate matter, kg/Mg (lb/ton).

C_t = concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P_{avg} = average glass pull rate, Mg/hr (ton/hr).

K = 1,000 g/kg (7,000 gr/lb).

(2) Method 5E shall be used to determine the particulate matter concentration (C_t) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90.1 dscf).

(3) The average glass pull rate (P_{avg}) for the manufacturing line shall be the arithmetic average of three glass pull rate (P_i) determinations taken at intervals of at least 30 minutes during each run.

The individual glass pull rates (P_i) shall be computed using the following equation:

$$P_i = K' L_s W_m M [1.0 - (LOI/100)]$$

where:

P_i = lass pull rate at interval "i", Mg/hr (ton/hr).

L_s = line speed, m/min (ft/min).

W_m = trimmed mat width, m (ft).

M = mat gram weight, g/m ^{2} (lb/ft ^{2}).

LOI = loss on ignition, weight percent.

K′ = conversion factor, 6×10^{-5} (min-Mg)/(hr-g) [3×10^{-2} (min-ton)/(hr-lb)].

(i) ASTM D2584 – 68 (Reapproved 1985) or 94 (incorporated by reference – see §60.17), shall be used to determine the LOI for each run.

(ii) Line speed (L_s), trimmed mat width (W_m), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.

(d) To comply with §60.684(d), the owner or operator shall record measurements as required in §60.684 (a) and (b) using the monitoring devices in §60.683 (a) and (b) during the particulate matter runs.

E.2.4 Notification Dates Relating to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants [40 CFR Part 60, Subpart PPP]

The Permittee shall comply with the notification requirements by the dates listed in the following table for the following affected facilities:

(1) 602 LF MFG;

(2) LINE 3001 – 3009

(3) 613 FORMING and 613 CURING/COOLING; and

(4) 614 FORMING and 614 CURING/COOLING.

Requirement	Rule Cite	Deadline
Notification of the Date Construction (or Reconstruction) is Commenced	40 CFR 60.7(a)(1)	30 days after construction commences

Requirement	Rule Cite	Deadline
Notification of the Actual Date of Initial Startup	**40 CFR 60.7(a)(3)**	**15 days after date of initial startup**
Notification of any Physical or Operational Change	**40 CFR 60.7(a)(4)**	**60 days before change commences**
Notification of Demonstration of the Continuous Monitoring System Performance	**40 CFR 60.7(a)(5)**	**30 days prior to demonstration**
Notification of the Anticipated Date for Conducting the Opacity Observations	**40 CFR 60.7(a)(6)**	**30 days prior to opacity observations**
Conduct Performance Test	**40 CFR 60.8(a)**	**60-180 after initial startup**
Notification of Performance Test	**40 CFR 60.8(d)**	**30 days before test**

IDEM Contact

Questions regarding this proposed permit can be directed to Kimberly Cottrell at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-0870 or toll free at 1-800-451-6027 extension 3-0870.

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 145-23127-00001 and Significant Permit Modification No. 145-23151-00001. The staff recommend to the Commissioner that this Part 70 Significant Source Modification No. 145-23127-00001 and Significant Permit Modification No. 145-23151-00001 be approved.

Appendix A: Potential Emission Calculations
Tons Per Year

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

	Source Specific Emission Factors						
	PM	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**HAP Chrome**
Most RMH Emission Factors (lb/ton):	0.20	0.20	NA	NA	NA	NA	NA
Silo 612 Emission Factors (lb/ton):	0.20	0.20	NA	NA	NA	NA	NA
Silo 613 Emission Factors (lb/ton):	0.20	0.20	NA	NA	NA	NA	NA
602B Furnace Emission Factors (lb/ton):	0.45	0.45	NA	0.02	NA	NA	NA
602 LF MFG Emission Factors (lb/ton & lb/CF):	2.8	2.8	1.05	8	NA	NA	NA
602 LF SEPARATOR Emission Factors (lb/ton):	0.0005	0.0005	NA	NA	NA	NA	NA
602 LF PACKAGING Emission Factors:	NA	NA	NA	NA	NA	NA	NA

					PTE Calculations (After Control)						
Emission Unit ID	**Production Capacity** (ton/day)	**Air Flowrate** (CF/min)	**Grain Loading** (gr/dscf)	**Control Efficiency** (%)	**PM**	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**HAP Chrome**
Silo61		684	0.003	99%	0.07	0.07	0	0	0	0	0
Silo62		412	0.001	99%	0.01	0.01	0	0	0	0	0
Silo63		684	0.001	99%	0.02	0.02	0	0	0	0	0
Silo64		684	0.0003	99%	0.01	0.01	0	0	0	0	0
Silo65		412	0.001	99%	0.01	0.01	0	0	0	0	0
Silo66		675	*0.0009*	99%	0.02	0.02	0	0	0	0	0
Silo67 (spare silo)	NA	412	NA	99%	0	0	0	0	0	0	0
Silo69		412	0.002	99%	0.03	0.03	0	0	0	0	0
Silo612		412	0.006	99%	0.08	0.08	0	0	0	0	0
Silo613		351	*0.0009*	99%	0.01	0.01	0	0	0	0	0
GLCONVEY / BUCKETELV		351	0.036	99%	0.42	0.42	0	0	0	0	0
RMUNLDR616		351	0.021	99%	0.24	0.24	0	0	0	0	0
GTHRNGBLT617		351	0.021	99%	0.24	0.24	0	0	0	0	0
BMXR618		351	0.021	99%	0.24	0.24	0	0	0	0	0
DB602		684	0.01	99%	0.22	0.22	0	0	0	0	0
KCHNDLNG620		351	*0.0009*	99%	0.01	0.01	0	0	0	0	0
602B FURNACE	300	31,000	0.03	99%	24.89	25.64	6.57	12.13	0.72	0.08	0.0002
602 LF MFG	170	153,000		60%	87.35	88.85	45.67	271.17	1.45	0.16	0.0004
602 LF SEPARATOR	170	10,000	0.007	99%	4.60	4.60	0	0	0	0	0
602 LF PACKAGING	170	10,000	0.001	99%	0.66	0.66	0	0	0	0	0

0.0084 **: Average Grain Loading of the RMH Operations**

	PM	PM_{10}	NO_X	CO	VOC	SO_2	HAP Chrome
Total Controlled PTE RMH Only (ton/yr):	**1.64**	**1.64**	**0**	**0**	**0**	**0**	**0**
Total Controlled PTE (ton/yr):	**119.13**	**121.38**	**52.24**	**283.31**	**2.17**	**0.24**	**0.0006**

Appendix A: Potential Emission Calculations
Tons Per Year

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

	SOURCES OF EMISSION FACTORS						
Process	**PM**	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**HAP Chrome**
Most RMH:	AP-42 (lb/ton)	AP-42 (lb/ton)	NA	NA	NA	NA	NA
Silo 612:	AP-42 (lb/ton)	AP-42 (lb/ton)	NA	NA	NA	NA	NA
Silo 613:	AP-42 (lb/ton)	AP-42 (lb/ton)	NA	NA	NA	NA	NA
602B Furnace (non-comb):	40 CFR 63 NNN Limit	40 CFR 63 NNN Limit	NA	611 PROJ (lb/hr)	NA	NA	NA
602B Furnace (ng comb):	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)
602 LF MFG (non comb):	BACT & AL TEST (lb/hr)	BACT & AL TEST (lb/hr)	BACT & AL TEST (lb/hr)	BACT & AL TEST (lb/hr)	NA	NA	NA
602 LF MFG (ng comb):	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)	AP-42 (lb/MMCF)
602 LF SEPARATOR:	Based on CE (ton/ton)	Based on CE (ton/ton)	NA	NA	NA	NA	NA
602 LF PACKAGING:	Based on CE (ton/ton)	Based on CE (ton/ton)	NA	NA	NA	NA	NA

SOURCE SPECIFIC CALCULATION METHODOLOGY

Raw Material Handling

Since the maximum capacities for the Raw Material Handling units are classified as confidential business information, grain loading was used the estimate emissions.

PM / PM_{10} PTE		Grain Loading *		Air Flowrate		*Conversion*		*Conversion*		*Conversion*
$\frac{ton}{yr}$	=	$\frac{gr}{dsCF}$	X	$\frac{dsCF}{min}$	X	$\frac{0.002\ oz/gr}{16\ oz/lb}$	X	$\frac{525600\ min}{yr}$	X	$\frac{1\ ton}{2000\ lb}$

*The grain loading used accounts for the 99% control efficiency.
Silo66, Silo613, and KCHNDLNG620 all have grain loadings of <0.001 therefore a value of 0.0009 was used for calculations.

602B FURNACE

Potential to Emit		Maximum Capacity		Emission Factor *		*Conversion*		*Conversion*
$\frac{ton}{yr}$	=	$\frac{ton}{day}$	X	$\frac{lb}{ton}$	X	$\frac{365\ day}{yr}$	X	$\frac{1\ ton}{2000\ lb}$

*The PM / PM_{10} emission factor used accounts for 99% control efficiency.

602 LF MFG

PM / PM_{10} PTE = Refer to BACT Analysis

CO PTE		Maximum Capacity		Emission Factor		*Conversion*		*Conversion*
$\frac{ton}{yr}$	=	$\frac{ton}{day}$	X	$\frac{lb}{ton}$	X	$\frac{365\ day}{yr}$	X	$\frac{1\ ton}{2000\ lb}$

602 LF SEPARATOR

PM / PM_{10} PTE		Grain Loading *		Air Flowrate		*Conversion*		*Conversion*		*Conversion*
$\frac{ton}{yr}$	=	$\frac{gr}{dsCF}$	X	$\frac{dsCF}{min}$	X	$\frac{0.002\ oz/gr}{16\ oz/lb}$	X	$\frac{525600\ min}{yr}$	X	$\frac{1\ ton}{2000\ lb}$

*The grain loading used accounts for the 99% control efficiency.

602 LF PACKAGING

PM / PM_{10} PTE		Grain Loading *		Air Flowrate		*Conversion*		*Conversion*		*Conversion*
$\frac{ton}{yr}$	=	$\frac{gr}{dsCF}$	X	$\frac{dsCF}{min}$	X	$\frac{0.002\ oz/gr}{16\ oz/lb}$	X	$\frac{525600\ min}{yr}$	X	$\frac{1\ ton}{2000\ lb}$

*The grain loading used accounts for the 99% control efficiency.

Appendix A: Potential Emission Calculations
Pounds Per Hour

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

	PTE Calculations (After Control) - Pounds per Hour						
Emission Unit ID	**PM**	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**HAP Chrome**
Silo61	0.0154	0.0154	0	0	0	0	0
Silo62	0.0031	0.0031	0	0	0	0	0
Silo63	0.0051	0.0051	0	0	0	0	0
Silo64	0.0015	0.0015	0	0	0	0	0
Silo65	0.0031	0.0031	0	0	0	0	0
Silo66	0.0046	0.0046	0	0	0	0	0
Silo67 (spare silo)	0	0	0	0	0	0	0
Silo69	0.0062	0.0062	0	0	0	0	0
Silo612	0.0185	0.0185	0	0	0	0	0
Silo613	0.0024	0.0024	0	0	0	0	0
GLCONVEY / BUCKETELV	0.0948	0.0948	0	0	0	0	0
RMUNLDR616	0.0553	0.0553	0	0	0	0	0
GTHRNGBLT617	0.0553	0.0553	0	0	0	0	0
BMXR618	0.0553	0.0553	0	0	0	0	0
DB602	0.0513	0.0513	0	0	0	0	0
KCHNDLNG620	0.0024	0.0024	0	0	0	0	0
602B FURNACE	5.68	5.85	1.50	2.77	0.17	0.02	0.000042
602 LF MFG	19.94	20.28	10.43	61.91	0.33	0.04	0.000084
602 LF SEPARATOR	1.05	1.05	0	0	0	0	0
602 LF PACKAGING	0.15	0.15	0	0	0	0	0
Total Controlled PTE RMH Only (lb/hr):	**0.37**	**0.37**	**0**	**0**	**0**	**0**	**0**
Average PTE RMH Only (lb/hr):	**0.02**	**0.02**					
Total Controlled PTE (lb/hr)**:**	**27.20**	**27.71**	**11.93**	**64.68**	**0.50**	**0.05**	**0.000126**

CALCULATION METHODOLOGY

$$\text{Controlled PTE } \frac{\text{lb}}{\text{hr}} = \text{Controlled PTE } \frac{\text{ton}}{\text{yr}} \times \textit{Conversion } \frac{2000\ \text{lb/ton}}{\text{ton}} \times \textit{Conversion } \frac{1\ \text{yr}}{8760\ \text{hr}}$$

Appendix A: Potential Emission Calculations
BACT Analysis - 602B FURNACE; PM/PM_{10}

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

602B FURNACE PM/PM_{10} BACT CALCULATION METHODOLOGY

KNAUF BACT PROPOSAL

	Maximum Capacity		Emission Factor (before control)		*Conversion*		*Conversion*		PM/PM_{10} PTE (uncontrolled)		PM/PM_{10} PTE (uncontrolled)
Value:	300		45		365		1 / 2000		2463.75		562.50
Units:	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

	PM/PM_{10} PTE (uncontrolled)				Control Efficiency		PM/PM_{10} PTE (controlled)		PM/PM_{10} PTE (controlled)	Emission Factor (after control)
Value:	2463.75		1		99%		24.64		5.63	0.45
Units:	ton / yr	X		-	%	=	ton / yr	=	lb / hr	lb / ton glass

TOP BACT: IN - Johns Manville, Permit 16463

	Maximum Capacity		*Conversion*		Maximum Capacity		Emission Factor (before control)		*Conversion*		*Conversion*		PM/PM_{10} PTE (uncontrolled)		PM/PM_{10} PTE (uncontrolled)
Value:	4000		24 / 2000		48		45		365		1 / 2000		394.2		90.00
Units:	lb glass / hr	X	hr/day / lb/ton	=	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

	PM/PM_{10} PTE (uncontrolled)		1		Control Efficiency		PM/PM_{10} PTE (controlled)		PM/PM_{10} PTE (controlled)	Emission Factor (after control)
Value:	394.2		1		99%		3.94		0.90	0.45
Units:	ton / yr	X		-	%	=	ton / yr	=	lb / hr	lb / ton glass

Appendix A: Potential Emission Calculations
BACT Analysis - 602B FURNACE; CO

Company Name:	Knauf Insualtion GmbH
Address City IN Zip:	One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number:	145-23127-00001
SPM Permit Number:	145-23151-00002
Permit Reviewer:	Kim Cottrell
Date:	July 24, 2006

602B FURNACE CO BACT CALCULATION METHODOLOGY

KNAUF BACT PROPOSAL

	Maximum Capacity		Emission Factor		*Conversion*		*Conversion*		CO PTE (uncontrolled)		CO PTE (uncontrolled)
Value:	300		0.02		365		1 / 2000		1.10		0.25
Units:	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

TOP BACT: Owens Corning – GA, Permit 3296081-0063-P-01-0, issued 10/31/2005

	Maximum Capacity		Emission Factor		*Conversion*		*Conversion*		PM/PM_{10} PTE (uncontrolled)		PM/PM_{10} PTE (uncontrolled)
Value:	unknown		0.5		365		1 / 2000		unknown		unknown
Units:	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

Appendix A: Potential Emission Calculations
602B FURNACE; Emissions from Natural Gas Combustion

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

Heat Input Capacity	Potential Throughput	Potential Throughput	Potential Throughput
MMBtu/hr	MMCF/yr	MMCF/hr	**SCF/hr**
30	263	0.03	**30,000**

	Pollutant					
	PM*	**PM_{10}***	**NO_X ****	**CO**	**VOC**	**SO_2**
Emission Factor in lb/MMCF	*1.9*	*7.6*	*50*	*84*	*5.5*	*0.6*
Potential Emission in tons/yr	0.25	1.00	6.57	11.04	0.72	0.08
Potential Emission in lb/hr	0.06	0.23	1.50	2.52	0.17	0.02

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
Emission Factors for NO_X: Uncontrolled = 100, **Low NO_X Burner = 50, Low NO_X Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	**Dichloro-benzene**	**Formaldehyde**	**Hexane**	**Toluene**
Emission Factor in lb/MMcf	*2.1E-03*	*1.2E-03*	*7.5E-02*	*1.8E+00*	*3.4E-03*
Potential Emission in tons/yr	0.0003	0.0002	0.0099	0.2365	0.0004

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	*5.0E-04*	*1.1E-03*	*1.4E-03*	*3.8E-04*	*2.1E-03*
Potential Emission in tons/yr	0.0001	0.0001	0.0002	0.0000	0.0003

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

METHODOLOGY

All emission factors are based on normal firing.
MMBtu = 1,000,000 British thermal units
MMCF = 1,000,000 cubic feet of gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006 03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton
Emission (lb/hr) = Throughput (MMCF/hr) x Emission Factor (lb/MMCF)

Appendix A: Potential Emission Calculations
BACT Analysis - 602 LF MFG; PM/PM_{10}

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

602 LF MFG PM/PM_{10} BACT CALCULATION METHODOLOGY

KNAUF BACT PROPOSAL

	PM Limit (estimate)		Exhaust Air Flowrate		Air Density Conversion		*Conversion*		**Hourly PM Limit**		**Annual PM Limit**	PTE before control (given)
Value:	0.0288 / 1000		153,000		0.075		60		**19.83**		**86.85**	49.5
Units:	lb PM / 1000 lb exhaust gas	X	CF gas / min	X	lb gas / CF gas	X	min / hr	=	**lb PM / hr**	=	**ton PM / yr**	lb / hr

	Hourly PM Limit		Production Rate $^{-1}$		*Conversion*		**BACT Limit (RBLC)**	Production Rate (given)		Production Rate (calc)	**Control Efficiency**
Value:	19.83		1 / 170		24		**2.80**	170		14167	**60%**
Units:	lb PM / hr	X	day / ton glass	X	hr / day	=	**lb PM / ton glass pulled**	ton glass / day	=	lb glass / hr	

Based on the estimated exhaust flowrate from 602 LF MFG, the values of 0.0288 lb/ 1000 lb exhaust gas is the appropriate comparison limit to used in order to achieve the proposed BACT limit of 2.8 lb/ton glass pulled.

BACT #2: KS - Kansas City, Permit 209-0001

	PM_{10} Limit (estimate)		Exhaust Air Flowrate		Air Density Conversion		*Conversion*		**Hourly PM Limit**		**Annual PM Limit**
Value:	0.01456 / 1000		110,000		0.075		60		**7.21**		**31.57**
Units:	lb PM / 1000 lb exhaust gas	X	CF gas / min	X	lb gas / CF gas	X	min / hr	=	**lb PM / hr**	=	**ton PM / yr**

	Hourly PM Limit		Production Rate $^{-1}$		*Conversion*		**BACT Limit (RBLC)**	Production Rate (permit)		Production Rate (calc)	*Production Rate (given)*
Value:	7.21		1 / 72		24		**2.40**	72		6000	*119*
Units:	lb PM / hr	X	day / ton glass	X	hr / day	=	**lb PM / ton glass pulled**	ton glass / day	=	lb glass / hr	*ton glass / day*

110,000 CFM is the flowrate for the scrubber. Last modification was not PSD but added new MFG line (unbonded) and increased furnace capacity from 270 ton/day to 360 ton/day. 2.4 lb/ton glass pulled is for PM10 only. The rate for all PM would be 2.77 lb/ton glass pulled.

TOP BACT: MI - Albion, Permit 282-02A

	PM Limit (per rule)		Exhaust Air Flowrate		Air Density Conversion		*Conversion*		**Hourly PM Limit**		**Annual PM Limit**
Value:	**0.03** / 1000		66,150		0.075		60		**8.93**		**39.1**
Units:	lb PM / 1000 lb exhaust gas	X	CF gas / min	X	lb gas / CF gas	X	min / hr	=	**lb PM / hr**	=	**ton PM / yr**

	Hourly PM Limit		Production Rate $^{-1}$		*Conversion*		**BACT Limit (RBLC)**	Production Rate (RBLC)		Production Rate (calc)	*Production Rate (given)*
Value:	8.93		1 / 9917		2000		**1.80**	119		9917	*9000*
Units:	lb PM / hr	X	hr / lb glass	X	lb / ton	=	**lb PM / ton glass pulled**	ton glass / day	=	lb glass / hr	*lb glass / hr*

S. Zervas (Permit Engineer) states that the exhaust gas flowrate is 80,000 CFM (dry), the throughput was increased to 9000 lb glass per hour, and the PM Limit of 0.03 lb/ 1000 lb exhaust gas is based on a MI rule. According to S. Zervas, the Company is barely in compliance with the permit limits. Based on the throughput listed in the RBLC of 119 tons glass per day, the RBLC Limit of 1.8 lb PM per ton of glass pulled is accurate for an exhaust gas flowrate of 66,150 CFM.

Density of Air = 1.2 kg/m^3 or 0.075 lb/CF or 0.01 lb/gal

Appendix A: Emission Factor Calculation - 602 LF MFG
Basis - Testing Data from Facility in Lanett, AL

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

602 LF MFG EMISSION FACTOR METHODOLOGY

		PM/PM_{10}	NO_X	CO	VOC	SO_2
Lanett, AL	Emission Rate, lb/hr	6.715	0.58	7.78	NA	NA
	Emission Rate, ton/yr	29.41	2.54	34.08	NA	NA
	Production Capacity, ton glass/day	30	30	30	NA	NA
	Safety Factor	0.5	2.3	1.3	NA	NA
	Emission Factor, lb/ton glass	**2.8**	**1.05**	**8.0**	**NA**	**NA**

		PM/PM_{10}	NO_X	CO	VOC	SO_2
Shelbyville, IN	Emission Rate, lb/hr	19.79	7.43	56.87	NA	NA
	Emission Rate, ton/yr	**86.67**	**32.53**	**249.10**	**NA**	**NA**
	Production Capacity, ton glass/day	170	170	170	NA	NA
	Safety Factor	0.5	2.3	1.3	NA	NA
	Emission Factor, lb/ton glass	2.8	1.05	8.0	NA	NA

These emission estimates do not include emissions from natural gas combustion
Lanett, AL Emission Factor (lb/ton glass) = lb/hr emission rate x safety factor x 24 hr/day / production capacity (ton glass/day)
Emission Rate (ton/yr) = production capacity (ton glass/day) x emission factor (lb/ton glass) x 365 day/yr / 2000 lb/ton

Appendix A: Potential Emission Calculations
BACT Analysis - 602 LF MFG; CO

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

602 LF MFG CO BACT CALCULATION METHODOLOGY

KNAUF BACT PROPOSAL

	Maximum Capacity		Emission Factor		*Conversion*		*Conversion*		CO PTE (uncontrolled)		CO PTE (uncontrolled)
Value:	170		8.03		365		1 / 2000		249.10		56.87
Units:	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

Unverified BACT: Owens Corning – GA, Permit 3296081-0063-P-01-0, issued 10/31/2005

	Maximum Capacity		Emission Factor		*Conversion*		*Conversion*		PM/PM_{10} PTE (uncontrolled)		PM/PM_{10} PTE (uncontrolled)
Value:	Unknown		2.4		365		1 / 2000		unknown		unknown
Units:	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

Johns Manville – Richmond, IN; Permit 16463, issued 4/22/1999 (Line 2 - bonded and unbonded)

	Maximum Capacity		*Conversion*		Maximum Capacity		Emission Factor		*Conversion*		*Conversion*		PM/PM_{10} PTE (uncontrolled)		PM/PM_{10} PTE (uncontrolled)
Value:	4000		24 / 2000		48		5.82		365		1 / 2000		50.98		11.64
Units:	lb glass / hr	X	hr/day / lb/ton	=	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

Appendix A: Potential Emission Calculations
BACT Analysis - 602 LF MFG; CO

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

602 LF MFG CO BACT CALCULATION METHODOLOGY

Johns Manville – Richmond, IN; Permit 16463, issued 4/22/1999 (Line 3 - bonded and unbonded)

	Maximum Capacity		*Conversion*		Maximum Capacity		Emission Factor		*Conversion*		*Conversion*		PM/PM_{10} PTE (uncontrolled)		PM/PM_{10} PTE (uncontrolled)
Value:	4000		24 / 2000		48		6.62		365		1 / 2000		57.99		13.24
Units:	lb glass / hr	X	hr/day / lb/ton	=	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

Johns Manville – Richmond, IN; Permit 16463, issued 4/22/1999 (Line 6 - bonded and unbonded)

	Maximum Capacity		*Conversion*		Maximum Capacity		Emission Factor		*Conversion*		*Conversion*		PM/PM_{10} PTE (uncontrolled)		PM/PM_{10} PTE (uncontrolled)
Value:	7200		24 / 2000		86.4		13.3		365		1 / 2000		209.71		47.88
Units:	lb glass / hr	X	hr/day / lb/ton	=	ton glass / day	X	lb / ton glass	X	day / yr	X	ton / lb	=	ton / yr	=	lb / hr

Appendix A: Potential Emission Calculations
602 LF MFG; Emissions from Natural Gas Combustion

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

Heat Input Capacity	Potential Throughput	Potential Throughput	Potential Throughput
MMBtu/hr	MMCF/yr	MMCF/hr	**SCF/hr**
60	526	0.06	**60,000**

	Pollutant					
	PM*	**PM_{10}***	**NO_X ****	**CO**	**VOC**	**SO_2**
Emission Factor in lb/MMCF	*1.9*	*7.6*	*50*	*84*	*5.5*	*0.6*
Potential Emission in tons/yr	0.50	2.00	13.14	22.08	1.45	0.16
Potential Emission in lb/hr	0.11	0.46	3.00	5.04	0.33	0.04

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
Emission Factors for NO_X: Uncontrolled = 100, **Low NO_X Burner = 50, Low NO_X Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	**Dichloro-benzene**	**Formaldehyde**	**Hexane**	**Toluene**
Emission Factor in lb/MMcf	*2.1E-03*	*1.2E-03*	*7.5E-02*	*1.8E+00*	*3.4E-03*
Potential Emission in tons/yr	0.0006	0.0003	0.0197	0.4730	0.0009

	HAPs - Metals				
	Lead	**Cadmium**	**Chromium**	**Manganese**	**Nickel**
Emission Factor in lb/MMcf	*5.0E-04*	*1.1E-03*	*1.4E-03*	*3.8E-04*	*2.1E-03*
Potential Emission in tons/yr	0.0001	0.0003	0.0004	0.0001	0.0006

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

METHODOLOGY

All emission factors are based on normal firing.
MMBtu = 1,000,000 British thermal units
MMCF = 1,000,000 cubic feet of gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006 03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton
Emission (lb/hr) = Throughput (MMCF/hr) x Emission Factor (lb/MMCF)

Appendix A: Past Actual Emissions of FURN 602A
Tons Per Year

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

	Past Actual Emissions - Tons Per Year							
Emission Unit ID	**PM**	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**Single HAP**	**Total HAP**
2004 Emissions	0.50	0.50	44.10	5.00	0.96	0.18	0	0
2005 Emissions	0.50	0.50	44.10	5.00	0.96	0.18	0.02	0.02
Average	**0.50**	**0.50**	**44.10**	**5.00**	**0.96**	**0.18**	**0.01**	**0.01**

	Past Actual Emissions - Pounds Per Hour							
	PM	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**Single HAP**	**Total HAP**
2004 Emissions	0.11	0.11	10.07	1.14	0.22	0.04	0	0
2005 Emissions	0.11	0.11	10.07	1.14	0.22	0.04	0.0046	0.0046
Average	0.11	0.11	10.07	1.14	0.22	0.04	0.0023	0.0023

Appendix A: Summary of Sourcewide Potential Emissions

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

		PTE Calculations (After Control) - Tons Per Year							
Permit	**Emission Unit ID**	**PM**	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**Single HAP**	**Total HAP**
6038 TVOP	All Units	487.20	487.20	171.10	316.10	137.70	2.50	0	0
20887 SSM	All Retired Units	(236.70)	(236.70)	(62.94)	(141.30)	(84.05)	0.00	0	0
20887 SSM	All New Units	250.67	250.67	147.44	233.24	123.18	10.95	>10	>25
23127 SSM	Retiring FURN 602A	(0.50)	(0.50)	(44.10)	(5.00)	(0.96)	(0.18)	(0.01)	(0.01)
23127 SSM	RMH	1.64	1.64	0	0	0	0	0	0
23127 SSM	602B FURNACE	24.89	25.64	6.57	12.13	0.72	0.08	0.0002	0.0002
23127 SSM	602 LF MFG	87.35	88.85	45.67	271.17	1.45	0.16	0.0004	0.0004
23127 SSM	602 LF SEPARATOR	4.60	4.60	0	0	0	0	0	0
23127 SSM	602 LF PACKAGING	0.66	0.66	0	0	0	0	0	0

	PM	PM_{10}	NO_X	CO	VOC	SO_2	Single HAP	Total HAP
Total Controlled PTE Prior to Modification:	**501.17**	**501.17**	**255.60**	**408.04**	**176.83**	**13.45**	**>10**	**>25**
Total Controlled PTE due to Modification:	119.13	121.38	52.24	283.31	2.17	0.24	0.0006	0.0006
Total PTE Reduction due to Modification:	(0.50)	(0.50)	(44.10)	(5.00)	(0.96)	(0.18)	(0.01)	(0.01)
Net PTE due to Modification:	118.63	120.88	8.14	278.31	1.21	0.06	(0.0094)	(0.0094)
Significant Emission Rate (ton/yr):	**25**	**15**	40	**100**	NA	40	NA	NA
Total Controlled PTE after Modification:	**619.80**	**622.05**	**263.74**	**686.35**	**178.04**	**13.51**	**>10**	**>25**

Appendix A: Potential to Emit Before Control
New Emission Units

Company Name: Knauf Insualtion GmbH
Address City IN Zip: One Knauf Drive, Shelbyville, IN 46176
SSM Permit Number: 145-23127-00001
SPM Permit Number: 145-23151-00002
Permit Reviewer: Kim Cottrell
Date: July 24, 2006

			PTE Calculations (Before Control) - Tons Per Year							
Emission Unit ID	**Control Equipment**	**Control Efficiency**	**PM**	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**Single HAP**	**Total HAP**
RMH	Baghouses	99%	163.89	163.89	0	0	0	0	0	0
602B FURNACE	Baghouse	99%	2,488.72	2,563.61	6.57	12.13	0.72	0.08	0.0002	0.0002
602 LF MFG	Wet ESP	60%	218.37	222.12	45.67	271.17	1.45	0.16	0.0004	0.0004
602 LF SEPARATOR	Baghouses	99%	459.90	459.90	0	0	0	0	0	0
602 LF PACKAGING	Baghouses	99%	65.70	65.70	0	0	0	0	0	0
Total Uncontrolled PTE due to Modification:			3,396.58	3,475.22	52.24	283.31	2.17	0.24	0.0006	0.0006
Significant Emission Rate (ton/yr):			**25**	**15**	40	**100**	NA	40	NA	NA

			PTE Calculations (Before Control) - Pounds per Hour							
Emission Unit ID	**Control Equipment**	**Control Efficiency**	**PM**	**PM_{10}**	**NO_X**	**CO**	**VOC**	**SO_2**	**Single HAP**	**Total HAP**
RMH	Baghouses	99%	37.42	37.42	0	0	0	0	0	0
602B FURNACE	Baghouse	99%	568.20	585.30	1.50	2.77	0.17	0.02	0.000042	0.000042
602 LF MFG	Wet ESP	60%	49.86	50.71	10.43	61.91	0.33	0.04	0.000084	0.000084
602 LF SEPARATOR	Baghouses	99%	105.00	105.00	0	0	0	0	0	0
602 LF PACKAGING	Baghouses	99%	15.00	15.00	0	0	0	0	0	0
Total Uncontrolled PTE due to Modification:			775.47	793.43	11.93	64.68	0.50	0.05	0.000126	0.000126