INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: April 7, 2014

RE: Knauf Insulation GmbH / 145-33846-00001

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval – Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this permit modification is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of a Title V operating permit or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impractible to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNTV-PMOD.doc 6/13/2013

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Stephen R. Aldridge
Knauf Insulation GmbH
1 Knauf Drive
Shelbyville, IN 46176

April 7, 2014

Re: 145-33846-00001
Significant Permit Modification to
Part 70 Renewal No.: T145-18481-00001

Dear Mr. Aldridge:

Knauf Insulation GmbH was issued a Part 70 Operating Permit Renewal No. T145-18481-00001 on August 13, 2009 for a stationary wool fiberglass manufacturing source located at 1 Knauf Drive, Shelbyville, IN. An application requesting changes to this permit was received on October 23, 2013. Pursuant to the provisions of 326 IAC 2-7-12, a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document.

Knauf Insulation GmbH submitted an application on October 23, 2013, relating to the following proposed modifications;

1. Eliminate any reference to VOC emission testing locations and compliance limits for the individual processes in lines 611 through 614, leaving the combined emission limit of 28.13 pounds per hour for Stacks 6-22 and 6-29;

2. Modify the destruction efficiency requirements for the RTOs to accurately reflect the capabilities of the RTOs with the low VOC inlet loading present at the Knauf Shelbyville Facility;

3. Remove the mistaken reference to Stack 17-1; and

4. Install a new dust control system for the 602 LF separation and packaging process that still exhausts into the building through Emission Points/Stack ID: 6-31, 6-32, 6-33, and 6-34. Eliminate the emissions testing requirement since (a) the dust collector outlets are continuously monitored by broken bag detectors that alarm upon a minute increase in particulate matter; (b) there is no emission point outside of the building; and (c) the dust collectors discharge into an occupied building and any increase in emissions requires immediate action to maintain a safe workplace atmosphere.

For your convenience, the entire Part 70 Operating Permit Renewal as modified is attached.

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. 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.idem.in.gov

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 Josiah Balogun, of my staff, at 317-234-5257 or 1-800-451-6027, and ask for extension 4-5257.

Sincerely,

Sriperani Sinha

for Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Attachment(s): Updated Permit, Technical Support Document and Appendix A

MS/JB

cc: File - Shelby County
Shelby County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Michael R. Pence.
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Part 70 Permit Permit Renewal
OFFICE OF AIR QUALITY

Knauf Insulation GmbH
One Knauf Drive
Shelbyville, Indiana IN 46176

(herein known as the Permittee) is hereby authorized to construct 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 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 No.: T145-18481-00001	
Issued by: Chrystal A. Wagner, Section Chief Permits Branch Office of Air Quality	Issuance Date: August 12, 2009 Expiration Date: August 13, 2014

Significant Permit Modification No.: 145-33846-00001	
Issued by: Tripuran Sinha for Matt Stuckey, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 7, 2014 Expiration Date: August 13, 2014

TABLE OF CONTENTS

A. SOURCE SUMMARY

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]
A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]
A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]
A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

B. GENERAL CONDITIONS
B.1 Definitions [326 IAC 2-7-1]
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)]
B.3 Term of Conditions [326 IAC 2-1.1-9.5]
B.4 Enforceability [326 IAC 2-7-7]
B.5 Severability [326 IAC 2-7-5(5)]
B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]
B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]
B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]
B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]
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]
B.11 Emergency Provisions [326 IAC 2-7-16]
B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]
B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]
B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]
B.15 Reserved
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]
B.17 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]
B.18 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]
B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12(b)(2)]
B.20 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]
B.21 Source Modification Requirement [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]
B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]
B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]
B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

C. SOURCE OPERATION CONDITIONS

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]
C.2 Opacity [326 IAC 5-1]
C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]
C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]
C.5 Fugitive Dust Emissions [326 IAC 6-4]
C.6 Stack Height [326 IAC 1-7]
C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

Testing Requirements [326 IAC 2-7-6(1)]
C.8 Performance Testing [326 IAC 3-6]

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

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)]
C.11 Reserved
C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]
C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
C.14 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]
C.15 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]
C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
C.17 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]
C.18 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]
C.19 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2]

Stratospheric Ozone Protection
C.20 Compliance with 40 CFR 82 and 326 IAC 22-1

D.1 FACILITY OPERATION CONDITIONS – 602B FURNACE, MFG 602, 602 LF MFG, 602 LF SEPARATOR, & 602 LF PACKAGING

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.1.1 PSD Minor Limits [326 IAC 2-2]
D.1.2 Emission Offset Minor Limits [326 IAC 2-3]
D.1.3 Particulate Matter (PM / PM_{10}) PSD BACT Requirements [326 IAC 2-2-3]
D.1.4 Carbon Monoxide (CO) PSD BACT Requirements [326 IAC 2-2-3]
D.1.5 Particulate Matter Emission Limitation [326 IAC 11-4-4]
D.1.6 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

Compliance Determination Requirements
D.1.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]
D.1.8 Particulate Matter (PM) Control

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]
D.1.9 Visible Emissions Notations [40 CFR 64]
D.1.10 Bag Leak Detection Systems (BLDS) [326 IAC 2-2] [40 CFR 64]
D.1.11 Wet Electrostatic Precipitator (ESP) Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.1.12 Record Keeping Requirements
D.1.13 Reporting Requirements

D.2 FACILITY OPERATION CONDITIONS – LINE 3001 – 3010

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.2.1 Preventive Maintenance Plan [326 IAC 2-7-5(13)]
D.2.2 Prevention of Significant Deterioration (PSD) Minor Limitations [326 IAC 2-2]

Compliance Determination Requirements
D.2.3 Testing Requirements [326 IAC 2-7-6(1),(6)]
D.2.4 Particulate Matter (PM) Control

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]
D.2.5 Visible Emissions Notations
D.2.6 Parametric Monitoring
D.2.7 Broken or Failed Bag Detection

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.2.8 Record Keeping Requirements

D.3 FACILITY OPERATION CONDITIONS – Raw Material and Handling Systems

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.3.1 Particulate Matter (PM) PSD Minor Limits [326 IAC 2-2]
D.3.2 Particulate Matter (PM / PM_{10}) PSD BACT Requirements [326 IAC 2-2-3]
D.3.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

Compliance Determination Requirements
D.3.4 Baghouse Operation

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]
D.3.5 Bag Leak Detection Systems (BLDS) [326 IAC 2-2]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.3.6 Record Keeping Requirements

D.4 FACILITY OPERATION CONDITIONS – FURN 611

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.4.1 PSD Minor Limits [326 IAC 2-2]
D.4.2 NO_x LAER and NO_2 PSD BACT Requirements [326 IAC 2-3] [326 IAC 2-2]
D.4.3 NO_x Emission Offset [326 IAC 2-3]
D.4.4 Particulate Matter Emission Limitations [326 IAC 11-4-2]
D.4.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

Compliance Determination Requirements
D.4.6 Baghouse Operation [326 IAC 2-7-6(6)]
D.4.7 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)] [326 IAC 2-1.1-11]

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]
D.4.8 Bag Leak Detection System (BLDS) [40 CFR 64]
D.4.9 Visible Emissions Notations [40 CFR 64]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.4.10 Record Keeping Requirements

D.5 FACILITY OPERATION CONDITIONS – 611, 612, 613 & 614 FORMING and 613 & 614 CURING/COOLING

Emission Limitations and Standards [326 IAC 2-7-5(1)]
D.5.1 PSD Minor Limits [326 IAC 2-2]
D.5.2 VOC Emission Offset Minor Limits [326 IAC 2-3]
D.5.3 NO_x LAER and NO_2 PSD BACT Requirements [326 IAC 2-3] [326 IAC 2-2]
D.5.4 Clean Units [326 IAC 2-3.2] [326 IAC 2-2.2]
D.5.5 Volatile Organic Compound (VOC) BACT Requirements [326 IAC 8-1-6]
D.5.6 Particulate Matter Emission Limitations [326 IAC 11-4-2]
D.5.7 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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]
D.5.9 Wet Electrostatic Precipitator (ESP) Operation [326 IAC 2-7-6(6)] [326 IAC 2-3] [326 IAC 11-4-2]
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]
D.5.11 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-6(6)]
D.5.12 Thermal Oxidizer Operating Temperature [326 IAC 8-1-6] [326 IAC 2-3]
D.5.13 Thermal Oxidizer Parametric Monitoring [326 IAC 8-1-6] [326 IAC 2-3]

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)] [40 CFR 64]
D.5.15 Wet Electrostatic Precipitator (ESP) Parametric Monitoring [40 CFR 64]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
D.5.16 Record Keeping Requirements
D.5.17 Reporting Requirements

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

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]
E.1.2 Wool Fiberglass Manufacturing Requirements [40 CFR Part 63, Subpart NNN] [326 IAC 20-47]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
E.1.3 Record Keeping Requirements

E.2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) REQUIREMENTS [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to New Source Performance Standards under 40 CFR Part 60 [326 IAC 12-1] [40 CFR Part 60, Subpart A]
E.2.2 Wool Fiberglass Manufacturing Requirements [40 CFR Part 60, Subpart PPP]

Certification
Emergency Occurrence Report
Quarterly Reports
Quarterly Deviation and Compliance Monitoring Report
Attachment A - National Emission Standards for Hazardous Air Pollutants - Wool Fiberglass Manufacturing Requirements [40 CFR Part 63, Subpart NNN]
Attachment B - New Source Performance Standards - Wool Fiberglass Manufacturing Requirements [40 CFR Part 60, Subpart PPP]

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)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary wool fiberglass manufacturing source.

Source Address:	One Knauf Drive, Shelbyville, Indiana IN 46176
Mailing Address:	One Knauf Drive, Shelbyville, IN 46176
General Source Phone Number:	866-445-2363
SIC Code:	3296
County Location:	Shelby
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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, one (1) natural gas fired RTO with a rated maximum capacity of 2.1 MMBtu per hour, and
- exhausting through one (1) stack ID #2-2.
- MFG 602 does not use a phenol/formaldehyde binder.

(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 A and 602 LF SEPARATOR B,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- utilizing two (2) high efficiency baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting internally through two (2) vents ID# 6-31 & 6-33.

(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) high efficiency baghouses for particulate control (Unit ID # 602 LF Packaging A & B), and
- exhausting internally through two (2) vents ID# 6-32 & 6-34.

SECTION D.2

(f) Ten (10) rotary spin wool fiberglass pipe insulation production lines consisting of ten (10) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3010, 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, 16-2 and 16-3, and 17-2 and 17-3, 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, 15-1 or (15-2) and 16-4, respectively,
- LINE 3001 – 3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, LINE 3009 constructed October 1997, and LINE 3010 permitted in 2008.
- LINE 3001 – 3010 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 Unloader	RMUNLDR616	2006	6-16 a & b	Baghouse RMUNLDR616A, RMUNLDR616B
Gathering Belt/Weigh Scales	GTHRNGBLT617	2006	6-17	Baghouse GTHRNGBL617

Raw Material and Handling Systems				
Emission Unit	**Emission Unit ID**	**Installation / Modification Date**	**Internal Vent ID**	**Control Device ***
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) when a phenol/formaldehyde binder is being used at this facility.

(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) when a phenol/formaldehyde binder is being used at this facility.

(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) when using a phenol/formaldehyde binder, 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) when a phenol/formaldehyde binder is being used at this facility.

(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) when using a phenol/formaldehyde binder, 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) when a phenol/formaldehyde binder is being used at this facility.

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, T145-18481-00001, 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] [IC 13-17-12]

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. 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) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(i) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(34), and

(ii) the certification is based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "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) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, 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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

The Permittee shall implement the PMPs.

(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. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "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 and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "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.

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 T145-18481-00001 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 Reserved

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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "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(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.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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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, pursuant to 326 IAC 2-7-4(a)(2)(D), 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]

(a) Permit amendments and modifications 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "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 or notice 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;

(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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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, on a rolling five (5) year basis, which document 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(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.21 Source Modification Requirement [326 IAC 2-7-10.5]

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

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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "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 5-1-1 (Applicability) and 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.

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

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

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. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 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
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 a "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 Licensed 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 Licensed Asbestos Inspector to

thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

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

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

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 a certification by a "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 a certification by a "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 2-1.1-11]

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, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, 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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.11 Reserved

C.12 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.13 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 shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than ninety (90) days after the date of issuance of this permit.

The ERP does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(c) 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.

(d) 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.

(e) 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.

(f) 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.14 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

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.15 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to 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 excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning 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 normal or usual manner of operation.

(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; and/or

(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 record the reasonable response steps taken.

C.16 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 submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "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.17 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]

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year 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
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

C.18 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, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

(c) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A), 40 CFR 51.165(a)(6)(vi)(B), 40 CFR 51.166(r)(6)(vi)(a), and/or 40 CFR 51.166(r)(6)(vi)(b)) 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 source with a Plantwide Applicability Limitation (PAL), 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.

(d) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A) and/or 40 CFR 51.166(r)(6)(vi)(a)) 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 source with a Plantwide Applicability Limitation (PAL), 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) 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

(2) 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.19 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2]

(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 except that 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. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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) Reserved

(e) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. 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 (d) 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 no later than 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 (d)(1) and (2) 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 wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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.20 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 applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT 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 RTO with a rated maximum capacity of 2.1 MMBtu per hour, and
– exhausting through one (1) stack ID #2-2.
– MFG 602 does not use a phenol/formaldehyde binder.

(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 A and 602 LF SEPARATOR B,
– installed in 2007,
– operating at a nominal processing capacity of 170 tons of glass per day,
– utilizing two (2) high efficiency baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
– exhausting internally through two (2) vents ID# 6-31 & 6-33.

(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) high efficiency baghouses for particulate control (Unit ID # 602 LF Packaging A & B), and
– exhausting internally through two (2) vents ID# 6-32 & 6-34

(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 SSM No. 145-23127-00001 issued on September 1, 2006, and 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 operation of 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 PSD/SSM No. 145-23127-00001 issued on September 1, 2006, PSD/SSM No. 145-26214-00001 issued on October 23, 2008, and 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) 2.65 pounds per ton of glass pulled; and

(2) 33.1 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) 8.74 pounds per ton of glass pulled; and

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

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

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)	33.27	145.7

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

A Preventive Maintenance Plan (PMP) is required for this unit and its control device described in Section-D.1. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

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

(a) The following PM/PM10 testing on 602B FURNACE and 602 LF MFG 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. PM10 includes filterable and condensible PM10. The following 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. 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;

(b) In order to determine compliance with Condition D.1.5, the Permittee shall perform compliance testing using a non-phenol/formaldehyde binder at MFG 602 for the PM emissions, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration.

(c) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.1.8 Particulate Matter (PM) Control

(a) The applicable baghouses for the 602B FURNACE (1 ea.) and 602 LF SEPARATOR and Packaging A & B (2 ea. - 4 total) for PM control shall be in operation at all times when the applicable source is in operation (602B FURNACE, 602 LF SEPARATOR~~,~~ and PACKAGING) and exhausting to the outside atmosphere.

(b) The applicable wet electrostatic precipitator for MFG 602 and 602 LF MFG (1 ea.) for PM control shall be in operation at all times when the applicable 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 [40 CFR 64]

(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. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.1.10 Bag Leak Detection Systems (BLDS) [326 IAC 2-2] [40 CFR 64]

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.

D.1.11 Wet Electrostatic Precipitator (ESP) Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 (performed using a non-phenol/formaldehyde binder) that demonstrates compliance with particulate limit in Conditions D.1.5, 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 range as established in most recent compliant stack test performed using non-phenol/formaldehyde binder. Until the stack test (performed using non-phenol/formaldehyde binder) results are available, the Permittee shall operate wet electrostatic precipitator (ESP) as per manufacture specifications.

(c) When any reading is outside the normal range established during the latest stack test using non-phenol/formaldehyde binder; or the range specified in manufacturer specification until the stack test performed using a non-phenol/formaldehyde binder, the Permittee shall take reasonable response. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A reading that is outside the normal range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

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

D1.12 Record Keeping Requirements

(a) To document the compliance status 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 the compliance status 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. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) To document the compliance status with Condition D.1.11 – 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. The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of a reading (e.g. the process did not operate that day).

(d) Section C – General Record Keeping Requirements, of this permit contains the Permittee's obligations with regard to the records required by this condition.

D1.13 Reporting Requirements

To document the compliance status 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. Section C - General Reporting contains the Permittee’s obligation with regard to the reporting required by this condition.

SECTION D.2 FACILITY OPERATION CONDITIONS

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

(f) Ten (10) rotary spin wool fiberglass pipe insulation production lines consisting of ten (10) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3010, 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, 16-2 and 16-3, and 17-2 and 17-3, 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, 15-1, (15-2) and 16-4, respectively;
- LINE 3001-3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, LINE 3009 constructed October 1997, and LINE 3010 permitted in 2008.

(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 (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

D.2.2 Prevention of Significant Deterioration (PSD) Minor Limitations [326 IAC 2-2]

Pursuant to SSM No. 145-26896-00001 issued on December 23, 2008, and in order to render the 326 IAC 2-2 (PSD) requirements not applicable, the potential to emit of Line 3010 shall be limited as follows:

(a) The PM emission rate from the Line 3010 stacks 17-2, 17-3, and 15-1 (or 15-2) to 3.4 pounds per hour.

(b) The PM_{10} emission rate from the Line 3010 stacks 17-2, 17-3, and 15-1 (or 15-2) to 3.4 pounds per hour.

Compliance with these emission limits will ensure that the potential to emit from the installation of Line 3010 are less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of PM_{10} per year, rendering the requirements of 326 IAC 2-2 not applicable.

Compliance Determination Requirements

D.2.3 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) In order to demonstrate compliance with Condition D.2.2(a), the Permittee shall perform PM testing on Line 3010 stacks 17-2, 17-3, and 15-1 (or 15-2) utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

(b) In order to demonstrate compliance with Condition D.2.2(b), the Permittee shall perform PM10 testing on Line 3010, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 includes filterable and condensible PM.

D.2.4 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.2.5 Visible Emissions Notations

(a) Visible emission notations of the ten (10) fiberglass pipe insulation production lines stack exhausts 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.2.6 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 ten (10) fiberglass pipe insulation production lines, at least once daily when the ten (10) 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A display reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.2.7 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.2.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.5 – Visible Emissions Notations, the Permittee shall maintain records of visible emission notations of the ten (10) fiberglass pipe insulation production lines. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document the compliance status with Condition D.2.6 – 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.

The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of a reading (e.g. the process did not operate that day).

(c) Section C – General Record Keeping Requirements, of this permit contains the Permittee's obligations with regard to the records required by this condition.

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 PSD/SSM No. 145-20887-00001 issued on November 9, 2005, and 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

Emission Unit ID	Internal Vent ID	Control Device *
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 the compliance status 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 the compliance status shall be available within 30 days of the end of each compliance period.

(c) Section C – General Record Keeping Requirements, of this permit contains the Permittee's obligations with regard to the records required by this condition.

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]

Pursuant to PSD/SSM No. 145-23127-00001 issued on September 1, 2006, PSD/SSM No. 145-26214-00001 issued on October 23, 2008, and in order to render the 326 IAC 2-2 (PSD) requirements not applicable, the following conditions shall apply:

(a) The PM and PM_{10} emissions from FURN 611 (Stack 6-21) shall not exceed 2.02 pounds per hour. PM_{10} includes filterable and condensible PM_{10}.

(b) The total CO emissions from FURN 611 (Stack 6-21), forming sections (Stack 6-22) and curing/cooling sections (Stack 6-29) shall not exceed 54.8 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 PSD/SSM No. 145-23127-00001 issued on September 1, 2006, 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 PSD/SSM No. 145-23127-00001 issued on September 1, 2006, and 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) The Permittee shall conduct performance tests on Stack 6-21 for the following:

(1) No later than sixty (60) days after achieving maximum capacity of the proposed expansion, but no later than one hundred eighty (180) days after initial startup of the FURN 611, for 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) No later than one hundred eighty (180) days after the issuance of SPM No. 145-26651-00001, for 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 the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

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

D.4.8 Bag Leak Detection System (BLDS) [40 CFR 64]

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 [40 CFR 64]

(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 the compliance status 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 the compliance status 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. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

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

(d) Section C – General Record Keeping Requirements, of this permit contains the Permittee's obligations with regard to the records required by this condition.

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) when using a phenol/formaldehyde binder, 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) when using a phenol/formaldehyde binder, 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:

(a) The PM and PM_{10} emissions from the forming sections (Stack 6-22) and curing/cooling sections (Stack 6-29) combined 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 from FURN 611 (Stack 6-21), the forming sections (Stack 6-22) and curing/cooling sections (Stack 6-29) combined shall not exceed 54.8 pounds per hour.

(c) The SO_2 emissions from the forming sections (Stack 6-22) and curing/cooling sections (Stack 6-29) combined 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 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 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 - 614 FORMING

Pursuant to 326 IAC 8-1-6, the following BACT requirement applies: The loss of ignition (LOI) of the binders used by 611-614 FORMING shall not exceed 18%.

(b) Stack 6-22
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-22 that consists of 611 - 614 FORMING operations shall not exceed 25.13 pounds per hour.

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

(i) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 613 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

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

(i) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 614 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

(e) Stack 6-29
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-29 that consists of 613 - 614 CURING/COOLING shall not exceed and 3.0 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 (PMP) is required for for the wet electrostatic precipitator (ESP), and RTOs. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

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 particulate 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

– 614 CURING/COOLING

at all times when these curing/cooling sections are in operation and using a phenol/formaldehyde binder.

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

(a) In order to determine compliance with Conditions D.5.1, D.5.2, D.5.3, D.5.5 and D.5.6, the Permittee shall perform compliance testing using a phenol/formaldehyde binder on Stack 6-22 and Stack 6-29 for the following:

(1) NOx – to verify compliance with the NOx limitations in Condition D.5.3 – NOx LAER and NO2 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;

(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/ PM10 – to verify compliance with the PM/PM10 limitations in Condition D.5.1 – PSD Minor Limits, and Condition D.5.6 – Particulate Matter Emission Limitations;

utilizing methods as approved by the Commissioner.

(b) In order to determine compliance with Condition D.5.1 - PSD Minor Limits, the Permittee shall perform compliance testing using a phenol/formaldehyde binder on Stack 6-22 and Stack 6-29 for 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; and

– 614 CURING/COOLING.

–

(c) In order to demonstrate the compliance with Conditions D.5.1 and D.5.6, the Permittee shall perform PM and PM10 testing using a non-phenol/formaldehyde binder at Lines 613 and 614 and a phenol/formaldehyde binder at Lines 611 and 612 on Stack 6-22 and Stack 6-29.

(d) In order to determine compliance with Condition D.5.1– PSD Minor Limits, the Permittee shall perform compliance testing using a non-phenol/formaldehyde binder at Lines 613 and 614 and a phenol/formaldehyde binder at Lines 611 and 612 on Stack 6-22 and Stack 6-29 for the CO emissions 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; and

– 614 CURING/COOLING.

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

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

(g) The PM/PM_{10} tests specified in paragraph (a)(4) and (c) above 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}.

(h) The CO tests shall be repeated at least once every two (2) years from the date of the last

valid compliance demonstration.

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

(j) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

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.

This condition is not applicable when using a non-phenol/formaldehyde binder at Lines 613 and 614.

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.

This condition is not applicable when using a non-phenol/formaldehyde binder at Lines 613 and 614.

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)] [40 CFR 64]

(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. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.5.15 Wet Electrostatic Precipitator (ESP) Parametric Monitoring [40 CFR 64]

(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.

(c) When any reading is outside the normal range established during the latest stack test, the Permittee shall take reasonable response. Section C – Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A reading that is outside the normal range is not a deviation from this permit. Failure to take response steps 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.5.16 Record Keeping Requirements

(a) To document the compliance status 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 the compliance status 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. The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of a reading (e.g. the process did not operate that day).

(c) To document the compliance status with Condition D.5.12 – Thermal Oxidizer Operating Temperature, the Permittee shall maintain the records of time and dates when a non phenol/formaldehyde binder is used at 613 FORMING, 613 CURING/COOLING, 614 FORMING and 614 CURING/COOLING.

(d) To document the compliance status 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 the compliance status 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. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(f) To document the compliance status 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. The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of a reading (e.g. the process did not operate that day).

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

(h) Section C – General Record Keeping Requirements, of this permit contains the Permittee's obligations with regard to the records required by this condition and the Permittee make such records available upon request to IDEM, OAQ, and the US EPA.

D.5.17 Reporting Requirements

To document the compliance status 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. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition.

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).

(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) when a phenol/formaldehyde binder is being used at this facility.

(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) when a phenol/formaldehyde binder is being used at this facility.

(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) when using a phenol/formaldehyde binder, 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) when a phenol/formaldehyde binder is being used at this facility.

(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) when using a phenol/formaldehyde binder, 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) when a phenol/formaldehyde binder is being used at this facility.

–

(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 identified as 602B FURNACE and FURNACE 611, 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 63.3901, 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 rotary spin wool fiberglass manufacturing lines identified as 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 when a phenol/formaldehyde binder is being used at these facilities.

E.1.2 Wool Fiberglass Manufacturing Requirements [40 CFR Part 63, Subpart NNN] [326 IAC 20-47]

Pursuant to CFR Part 63, Subpart NNN, and 326 IAC 20-47, 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, FURNACE 611, 613 FORMING, 614 FORMING, 613 CURING/COOLING, and 614 CURING/COOLING, as specified as follows upon startup.

(1) §63.1380(a), (b), (d)
(2) §63.1381(a)(2), (b)
(3) §63.1382
(4) §63.1383(a), (b), (f), (j), (k), (l), (m)
(5) §63.1384
(6) §63.1385
(7) §63.1386
(8) §63.1387(a), (b)
(9) §63.1388(a), (b), (c)
(10) Table 1 to Subpart NNN of Part 63
(11) Appendix A to Subpart NNN of Part 63
(12) Appendix B to Subpart NNN of Part 63
(13) Appendix C to Subpart NNN of Part 63

This condition is not applicable to the forming and curing/cooling operations specified in this section when a non-phenol/formaldehyde binder is being used at forming and curing/cooling operations.

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

E.1.3 Record Keeping Requirements

The Permittee shall maintain the records of the time and dates when a phenol/formaldehyde binder is not used at forming and curing/cooling operations specified in this section. The Permittee shall make such records available upon request to IDEM, OAQ, and the US EPA.

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) Ten (10) rotary spin wool fiberglass pipe insulation production lines consisting of ten (10) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3010, 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, 16-2 and 16-3, and 17-2 and 17-3, 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, 15-1 or (15-2) and 16-4, respectively,
- LINE 3001 – 3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, LINE 3009 constructed October 1997, and LINE 3010 permitted in 2008.
- LINE 3001 – 3010 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]

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 – 3010
(3) 613 FORMING and 613 CURING/COOLING; and
(4) 614 FORMING and 614 CURING/COOLING.

E.2.2 Wool Fiberglass Manufacturing Requirements [40 CFR Part 60, Subpart PPP]

Pursuant to CFR Part 60, Subpart PPP, the Permittee shall comply with the following requirements under Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants for LINE 3001 – 3010, 602 LF MFG, 613 FORMING and 613 CURING/COOLING and 614 FORMING and 614 CURING/COOLING:

(1) §60.680(a), (b)
(2) §60.681
(3) §60.682
(4) §60.683(b), (c)
(5) §60.684(b), (c), (d), (e)
(6) §60.685

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 IN 46176
Mailing Address: One Knauf Drive, Shelbyville, IN 46176
Part 70 Permit No.: T145-18481-00001

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 AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
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 IN 46176
Mailing Address: One Knauf Drive, Shelbyville, IN 46176
Part 70 Permit No.: T145-18481-00001

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**) working 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
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: _____

A certification is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

100 North Senate Avenue, MC 61-53 IGCN 1003
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 IN 46176
Mailing Address:	One Knauf Drive, Shelbyville, Indiana IN 46176
Part 70 Permit No.:	T145-18481-00001
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 and Enforcement Branch

100 North Senate Avenue, MC 61-53 IGCN 1003
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 IN 46176
Mailing Address: One Knauf Drive, Shelbyville, Indiana IN 46176
Part 70 Permit No.: T145-18481-00001
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 IN 46176
Mailing Address: One Knauf Drive, Shelbyville, IN 46176
Part 70 Permit No.: T145-18481-00001

Months: _____ to _ Year: _____

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements of this permit, 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 #)	
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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.

Attachment A

Indiana Department of Environmental Management
Office of Air Quality

Source Name:	**Knauf Insulation GmbH**
Source Location:	**One Knauf Drive, Shelbyville, Indiana 46176**
County:	**Shelby**
SIC Code:	**3296**
Operation Permit No. (First Renewal):	**T 145-18481-00001**
Permit Reviewer:	**Madhurima D. Moulik**

Title 40: Protection of Environment

Subpart NNN—National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing

Source: 64 FR 31709, June 14, 1999, unless otherwise noted.

§ 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

(3) Each new and existing flame attenuation wool fiberglass manufacturing line producing a bonded pipe product and each new flame attenuation wool fiberglass manufacturing line producing a bonded heavy-density product.

(c) The requirements of this subpart do not apply to a wool fiberglass manufacturing facility that the owner or operator demonstrates to the Administrator is not a major source as defined in §63.2.

(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.

(3) *Flame attenuation 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) 3.9 kg of formaldehyde per megagram (7.8 lb of formaldehyde per ton) of glass pulled for each new flame attenuation manufacturing line that produces heavy-density wool fiberglass; and

(ii) 3.4 kg of formaldehyde per megagram (6.8 lb of formaldehyde per ton) of glass pulled from each existing or new flame attenuation manufacturing line that produces pipe product wool fiberglass.

(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.

(3)(i) The owner or operator must initiate corrective action within 1 hour when any 3-hour block average temperature of a cold top electric furnace as measured at a location 46 to 61 centimeters (18 to 24 inches) above

the molten glass surface, exceeds 120 °C (250 °F) and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan.

(ii) The owner or operator of a cold top electric furnace must implement a QIP consistent with the compliance assurance monitoring provisions of 40 CFR part 64, subpart D when the temperature, as measured at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface, exceeds 120 °C (250 °F) 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 cold top electric furnace such that the temperature does not exceed 120 °C (250 °F) as measured at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface, for more than 10 percent of the total operating time in a 6-month reporting period.

(4)(i) The owner or operator must initiate corrective action within 1 hour when any 3-hour block average value for the monitored parameter(s) for a glass-melting furnace, which uses no add-on controls and which is not a cold top electric furnace, 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 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 a glass-melting furnace, which uses no add-on controls and which is not a cold top electric furnace, such that the monitored 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.

(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.

(6) The owner or operator must operate each incinerator used to control formaldehyde emissions from forming or curing such that any 3-hour block average temperature in the firebox does not fall below the average established during the performance test as specified in §63.1384.

(7)(i) The owner or operator must initiate corrective action within 1 hour when the average pressure drop, liquid flow rate, or chemical feed rate for any 3-hour block period is outside the limits established during the performance tests as specified in §63.1384 for each wet scrubbing control device 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 any scrubber 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 each scrubber such that each monitored 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.

(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 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 §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.

(c)(1) Where an ESP is used to control PM emissions from a glass-melting furnace, the owner or operator must monitor the ESP according to the procedures in the operations, maintenance, and monitoring plan. (2)The operations, maintenance, and monitoring plan for the ESP must contain the following information:

(i) The ESP operating parameter(s), such as secondary voltage of each electrical field, to be monitored and the minimum and/or maximum value(s) that will be used to identify any operational problems;

(ii) A schedule for monitoring the ESP operating parameter(s);

(iii) Recordkeeping procedures, consistent with the recordkeeping requirements of §63.1386, to show that the ESP operating parameter(s) is within the limit(s) established during the performance test; and

(iv) Procedures for the proper operation and maintenance of the ESP.

(d) The owner or operator must measure and record at least once per shift the temperature 46 to 61 centimeters (18 to 24 inches) above the surface of the molten glass in a cold top electric furnace that does not use any add-on controls to control PM emissions.

(e)(1) Where a glass-melting furnace is operated without an add-on control device to control PM emissions, the owner or operator must monitor the glass-melting furnace according to the procedures in the operations, maintenance, and monitoring plan.

(2) The operations, maintenance, and monitoring plan for the glass-melting furnace must contain the following information:

(i) The operating parameter(s) to be monitored and the minimum and/or maximum value(s) that will be used to identify any operational problems;

(ii) A schedule for monitoring the operating parameter(s) of the glass-melting furnace;

(iii) Recordkeeping procedures, consistent with the recordkeeping requirements of §63.1386, to show that the glass-melting furnace parameter(s) is within the limit(s) established during the performance test; and

(iv) Procedures for the proper operation and maintenance of the glass-melting furnace.

(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.

(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.

(h) The owner or operator who uses a wet scrubbing control device to control formaldehyde emissions must install, calibrate, maintain, and operate monitoring devices that continuously monitor and record the gas pressure drop across each scrubber and scrubbing liquid flow rate to each scrubber according to the procedures in the operations, maintenance, and monitoring plan. The pressure drop monitor is to be certified by its manufacturer to be accurate within ±250 pascals (±1 inch water gauge) over its operating range, and the flow rate monitor is to be certified by its manufacturer to be accurate within ±5 percent over its operating range. The owner or operator must also continuously monitor and record the feed rate of any chemical(s) added to the scrubbing liquid.

(i)(1) The owner or operator who uses process modifications to control formaldehyde emissions must establish a correlation between formaldehyde emissions and a process parameter(s) to be monitored.

(2) The owner or operator must monitor the established parameter(s) according to the procedures in the operations, maintenance, and monitoring plan.

(3) The owner or operator must include as part of their operations, maintenance, and monitoring plan the following information:

(i) Procedures for the proper operation and maintenance of the process;

(ii) Process parameter(s) to be monitored to demonstrate compliance with the applicable emission limits in §63.1382. Examples of process parameters include LOI, binder solids content, and binder application rate;

(iii) Correlation(s) between process parameter(s) to be monitored and formaldehyde emissions;

(iv) A schedule for monitoring the process parameter(s); and

(v) Recordkeeping procedures, consistent with the recordkeeping requirements of §63.1386, to show that the process parameter value(s) established during the performance test is not exceeded.

(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.

(5) During the performance test, the owner or operator of a glass-melting furnace controlled by an ESP shall monitor and record the ESP parameter level(s), as specified in the operations, maintenance, and monitoring plan, and establish the minimum and/or maximum value(s) that will be used to demonstrate compliance after the initial performance test.

(6) During the performance test, the owner or operator of a cold top electric furnace that is not equipped with an add-on control device for PM emissions control, must monitor and record the temperature 46 to 61 centimeters (18 to 24 inches) above the molten glass surface to ensure that the maximum temperature does not exceed 120 °C (250 °F).

(7) During the performance test, the owner or operator of a glass melting furnace (other than a cold top electric furnace) that is not equipped with an add-on control device for PM emissions control, must monitor and record the furnace parameter level, and establish the minimum and/or maximum value(s) that will be used to demonstrate compliance after the initial performance test.

(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 §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.

(11) During the performance test, the owner or operator of a rotary spin manufacturing line or flame attenuation manufacturing line who plans to use a wet scrubbing control device to comply with the emission limits in §63.1382 must continuously monitor and record the pressure drop across the scrubber, the scrubbing liquid flow rate, and addition of any chemical to the scrubber, including the chemical feed rate, and establish the minimum and/or maximum value(s) that will be used to determine 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.

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

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

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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:

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

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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/m^3 (28.3 L/ft^3);

K_3= 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 $O_2$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 ±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:

(1) Notification for an area source that subsequently increases its emissions such that the source is a major source subject to the standard;

(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;

(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 §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 §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;

(iii) Air temperature above the molten glass in an uncontrolled cold top electric furnace, including any period when the temperature exceeded 120 °C (250 °F) at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface, 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;

(iv) Uncontrolled glass-melting furnace (that is not a cold top electric furnace) parameter value(s) used to monitor furnace performance, including any period when the value(s) exceeded the established limit(s), 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;

(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;

(vii) Scrubber pressure drop, scrubbing liquid flow rate, and any chemical additive (including chemical feed rate to the scrubber), including any period when a 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 §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.

[64 FR 31709, June 14, 1999, as amended at 71 FR 20460, Apr. 20, 2006]

§ 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.

[68 FR 37358, June 23, 2003]

§§ 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].

General provisions citation	Requirement	Applies to subpart NNN	Explanation
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.	
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.	

General provisions citation	Requirement	Applies to subpart NNN	Explanation
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.	
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].

General provisions citation	Requirement	Applies to subpart NNN	Explanation
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

$$\% \ FF = \frac{mL \ sodium \ hydroxide \times normality \times 3.003}{grams \ of \ sample}$$

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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)

Attachment B

Indiana Department of Environmental Management
Office of Air Quality

Source Name:	**Knauf Insulation GmbH**
Source Location:	**One Knauf Drive, Shelbyville, Indiana 46176**
County:	**Shelby**
SIC Code:	**3296**
Operation Permit No. (First Renewal):	**T 145-18481-00001**
Permit Reviewer:	**Madhurima D. Moulik**

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart PPP—Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants

Source: 50 FR 7699, Feb. 25, 1985, unless otherwise noted.

§ 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.

(a) An owner or operator subject to the provisions of this subpart who uses a wet scrubbing control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the gas pressure drop across each scrubber and the scrubbing liquid flow rate to each scrubber. The pressure drop monitor is to be certified by its manufacturer to be accurate within ±250 pascals (±1 inch water gauge) over its operating range, and the flow rate monitor is to be certified by its manufacturer to be accurate within ±5 percent over its operating range.

(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.

(a) At 30-minute intervals during each 2-hour test run of each performance test of a wet scrubber control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by §60.683(a).

(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=glass 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.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a Part 70 Operating Permit (TITLE V)

Source Background and Description

Source Name:	**Knauf Insulation GmbH**
Source Location:	**1 Knauf Drive, Shelbyville, IN 46176**
County:	**Shelby**
SIC Code:	**3296**
Operation Permit No:	**T145-18481-00001**
Operation Permit Issuance Date:	**August 13, 2009**
Significant Source Modification No.:	**145-33807-00001**
Significant Permit Modification No.:	**145-33846-00001**
Permit Reviewer:	**Josiah Balogun**

On February 1, 2014, 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 Permit to a Part 70 Operating Permit (TITLE V) to continue to operate stationary wool fiberglass manufacturing source. The notice also stated that OAQ proposed to issue a Title V permit for this operation and provided information on how the public could review the proposed Title V 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 Title V permit should be issued as proposed.

On February 23, 2014, Stephen R. Aldridge of Knauf Insulation submitted comments on the proposed Title V Operating Permit. The comments are summarized in the subsequent pages, with IDEM corresponding responses.

No changes have been made to the TSD because the OAQ prefers that the Technical Support Document reflects the permit that was on public notice. Changes that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result, ensuring that these types of concerns are documented and part of the record regarding this permit decision.

The summary of the comments and IDEM, OAQ responses, including changes to the permit No. T145-18481-00001 (language deleted is shown in ~~strikeout~~ and language added is shown in **bold**) are as follows:

Comment 1: The TSD – Appendix B was not updated after our redistribution of the VOCs on stack 6-22 and 6-29. The permit conditions are correct – 25.13 lbs/hr on 6-22 (forming) and 3.0 lbs.hr on 6-29 (curing oven – RTO).

Response 1: No changes shall be made to the Technical Support Document (TSD) - Appendix B because the OAQ prefers that the TSD reflects the permit that was public noticed. The changes made have been documented in this Addendum to the Technical Support Document. This accomplishes the desired result, ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for Forming 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.

BACT ID or Permit #	Facility	Issued Date	Process Description	Rating	Limitation	Control Method
Draft Permit No. 145-33807-00001 Proposed Limit	**Knauf Insulation GmbH - *proposed***	**Proposed**	**611 - 614 Forming operation**	**NA**	**loss on ignition (LOI) of the binders used by Forming and shall not exceed 18%. And a stack limit of ~~17.95~~ 25.13 pounds per hour**	**None**

****

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for Forming, Curing/Cooling 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.

BACT ID or Permit #	Facility	Issued Date	Process Description	Rating	Limitation	Control Method
Draft Permit No. 145-33807-00001 Proposed Limit	**Knauf Insulation GmbH - *proposed***	**Proposed**	**613 and 614 Curing/Cooling operation**	**NA**	**95% or 10ppm loss on ignition (LOI) of the binders used by Forming and Curing/Cooling shall not exceed 18%. And a stack limit of ~~10.18~~ 3.0 pounds per hour**	**Thermal Oxidizer**

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Public Comments

Public Comment 1: Your web site gives as "publication dates" "01/25/2014 - 02/24/2014." I interpret that as the dates you are allowing for the 30-day comment period. Please note that the notice was published in The Shelbyville News on Saturday, February 1. Therefore the end of the 30-day comment period is March 3, 7 days later then the date given on your web site. Please change the dates on your web site to reflect the correct dates for the 30-day public comment period.

IDEM Response 1: The Shelbyville News had scheduled the public notice to be included in its January 25, 2014 edition but this did not occur. The Shelbyville News sent an e-mail to IDEM, Office of Air Quality (OAQ) on January 30, 2014 stating the public notice did not in fact run on the scheduled date, but that it would be published on February 1, 2014. IDEM did update its website to reflect the actual public notice period of February 1 through March 3rd. IDEM, OAQ has accepted all the public comments it has received on the draft permit. IDEM, OAQ apologizes for any inconvenience or confusion this might have caused.

Public Comment 2: I would also appreciate it if you would summarize what this action is all about. The Notice itself gives no clear information for the average citizen, other than it has to do with air pollution. Your draft letters of renewal written to the applicant summarizes what they're asking for, but that doesn't make it clear for us either. The draft permits are each 136 pages long and extremely technical. It is my firm belief that IDEM would better serve the public in these matters by including in these documents (at the beginning) a concise summary in relatively non-technical language which actually tells the public what the net effect of the action is. For example, you could simply explain: What emissions are being increased or decreased, and by how much? Otherwise, if your true purpose is to inform the public and elicit their comments, this sort of procedure is pretty much a waste of time if few or even no members of the general public understand what you're talking about. For that matter, don't you receive comments and suggestions regarding the lack of clarity of these types of procedures? Surely I'm not the first person to mention it.

My name is Hope Fenton and I am a librarian at the Shelby County Public Library in Shelbyville. Currently, we have a hard copy of the proposed modifications to Knauf Insulation's current Part 70 Operating Permit. Many patrons have sat down to read it only to be left with many questions about how it will exactly impact the environment, air quality and residents of our community. Would you be at all available to provide a brief explanation in layman's terms? Any information would be appreciated. Thank you for your time.

IDEM Response 2: IDEM, OAQ realizes that air permitting is a highly technical and complicated process based on complex state and federal rules. IDEM, OAQ uses the Technical Support Document (TSD) as a way to set out information about the permitting action, the emissions from the source and to summarize the permitting action, in as non-technical a manner as practicable. The TSD for this permitting action was included with the other documents on public notice and available at the public library and on IDEM's website.

Page 1 of the TSD starts with the Existing Approvals section, listing the source's existing operating permit and the two modifications to that permit that were done in 2010. These permits can be viewed at http://www.in.gov/idem/airquality/2494.htm on IDEM's website.

The second section of the TSD is the County Attainment Status. The federal Clean Air Act requires the U.S. EPA to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. These standards are set at levels that protect human health, including the health of very sensitive persons, such as asthmatics, children and the elderly. The NAAQS are often referred to as the federal health standards for outdoor air. The table on page one shows that Shelby County is in attainment for all the National Ambient Air Quality Standards.

The six criteria pollutants are sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), fine particulate matter (PM_{10}), nitrogen dioxide (NO_2), and lead (Pb). More information about these pollutants is available at www.epa.gov/air/airpollutants.html on U.S. EPA's website. The complete table of the NAAQS can be found at the www.epa.gov/air/criteria.html on U.S. EPA's website. Detailed information about the health affects of these common pollutants is available at www.epa.gov/air/urbanair/. IDEM conducts sampling of the ambient air at monitoring stations around Indiana. This air monitoring is conducted to measure whether the NAAQS are being met. Information about Indiana's air monitoring system and monitoring results is available at www.idem.IN.gov/4116.htm. Information about current and expected air pollution levels throughout Indiana is on IDEM's SmogWatch site at www.smogwatch.IN.gov on the Internet.

The Source Status section on the second page of the TSD includes a table setting out the source's potential to emit air pollutants. It lists the maximum emissions of particulate matter (PM), PM_{10}, very fine particulate matter ($PM_{2.5}$), SO_2, volatile organic compounds (VOC), CO, nitrogent oxides (NOx) and hazardous air pollutants (HAPs). No emisson number is listed for green house gases (GHGs) because they are not calculated for this type of permit.

The Description of Proposed Modification section, starting at the bottom of page 3, sets out the the proposed permit changes in general terms. Changes are being made because the source applied for a re-evaluation of the Best Available Control Technology (BACT) under 326 Indiana Administrative Code (IAC) 8-1-6 for production lines 611 through 614. (326 IAC 8-1-6, and all of Title 326, can be found at http://www.in.gov/legislative/iac/iac_title?iact=326 on the Internet.) The re-evaluated BACT analyses are set out in "Appendix B – BACT Analyses" of the TSD (please note the corrections to Appendix B that are in IDEM's Response to the source's Comment 1, above, on page one of this Addendum to the TSD).

The Enforcement Issues section, on page 3 of the TSD, stated that there were no pending enforcement issues. This statement was made in error. IDEM, OAQ's Air Compliance and Enforcement Branch does have two enforcement actions pending against the source. These actions are under case number 2012-20736-A and 2013-21810-A. Information about these enforcement actions can be found using the IDEM Enforcement searchable database located at http://www.state.in.us/serv/idem_oe_order on IDEM's website. More information about IDEM's Enforcement Programs is located at http://www.in.gov/idem/airquality/2408.htm on the Internet. You may also contact IDEM's Office of Air Quality, Air Compliance and Enforcement Branch, at (317) 233-0178 or toll free at (800) 451-6027 and ask for extension 3-0178.

The next section, Emission Calculations, also located on page 3 of the TSD, states that there "is no increase in the potential to emit of any regulated pollutant as the source is not adding any new emission unit." Even though some permit

terms are being changed, there are no changes that would allow the source to increase any of its air emissions beyond what it was allowed to emit under its previously issued operating permit. If there had been a change in the source's potential to emit, those changes would have been listed in this section and the actual emission calculations would have been included in an Appendix A to the TSD. Because there were no emission calculations, there is no Appendix A to this TSD. Because there were no increases in the source's emissions, there will be no impact on the environment, air quality or residents due to this permit modification.

The next several sections of the TSD set out the permit level determinations and the applicability of federal and state rules. Under the State Rule Applicability Determination section, starting on page 4 of the TSD, IDEM states:

326 IAC 8-1-6 (New facilities; General Reduction Requirements)
The existing 326 8-1-6 VOC BACT requirements in the permit for the lines 611 through 614 were established through source modification No. 145-22817-00001, issued on July 13, 2010. This BACT requirement has been re-evaluated through this modification to eliminate individual limits for the lines and established a new limit for lines 611 through 614.

This section also sets out the new BACT limits for lines 611 through 614, on pages 4 and 5 of the TSD:

New BACT Limits:
611 - 614 Forming Line
(A) Pursuant to 326 IAC 8-1-6, the BACT requirement:

The loss of ignition (LOI) of the binders used by 611 - 614 FORMING shall not exceed 18%.

(B) Stack 6-22
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-22 that consists of 611 – 614 FORMING operations shall not exceed 25.13 pounds per hour.

613 CURING/COOLING
Pursuant to 326 IAC 8-1-6, the following BACT requirements apply:

(A) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 613 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

614 CURING/COOLING
Pursuant to 326 IAC 8-1-6, the following BACT requirements apply:

(A) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 614 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

(C) Stack 6-29
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-29 that consists of 613 – 614 CURING/COOLING shall not exceed 3.0 pounds per hour.

The exact permit language changes that put these BACT limits into the source's operating permit are included in the Proposed Changes section, pages 5 through 13 of the TSD. This section shows all of the changes made to the source's operating permit as a result of this permitting action. Deleted language appears as strikethroughs and new language appears in bold font. As stated above, the re-evaluated BACT analyses for lines 611 through 614 are in Appendix B of the TSD (please note the corrections to Appendix B that are in IDEM's Response to the source's Comment 1, above, on page 1 of this Addendum to the TSD).

Public Comment 3: Finally, information from US EPA has been stating, since at least last July, that the Knauf facility, or facilties, in Shelbyville are in "high-priority violation" and/or "non-compliance", with the State given as the lead agency dealing with the matter. Does that have anything to do with the current permit renewals? I'd appreciate more information on the violation or non-compliance.

IDEM Response 3: As stated above in IDEM's Response to Comment 2, IDEM, OAQ's Air Compliance and Enforcement Branch has two enforcement actions pending against the source. These enforcement actions are under case numbers 2012-20736-A and 2013-21810-A. Information about these enforcement actions can be found using the IDEM Enforcement searchable database located at http://www.state.in.us/serv/idem_oe_order on IDEM's website. More information about IDEM's Enforcement Programs is located at http://www.in.gov/idem/airquality/2408.htm on the Internet. You can contact IDEM's Office of Air Quality, Air Compliance and Enforcement Branch, at (317) 233-0178 or toll free at (800) 451-6027 and ask for extension 3-0178.

The enforcement actions involve several of the source's operating permit conditions, including conditions related to lines 611 through 614. The Notices of Violation for case numbers 2012-20736-A and 2013-21810-A set out the exact alleged violations and are available using the IDEM Enforcement searchable database located at http://www.state.in.us/serv/idem_oe_order on IDEM's website.

The source filed an application to renew its current operating permit on November 7, 2013. This renewal application is under number 145-33858-00001. You can view the current status of this application using IDEM's Air Quality Permit Status Search at http://www.in.gov/idem/airquality/2494.htm on IDEM's website.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source and Permit Modification

Source Description and Location

Source Name:	**Knauf Insulation GmbH**
Source Location:	**1 Knauf Drive, Shelbyville, IN 46176**
County:	**Shelby**
SIC Code:	**3296**
Operation Permit No:	**T145-18481-00001**
Operation Permit Issuance Date:	**August 13, 2009**
Significant Source Modification No.:	**145-33807-00001**
Significant Permit Modification No.:	**145-33846-00001**
Permit Reviewer:	**Josiah Balogun**

Existing Approvals

The source was issued Part 70 Operating Permit No. 145-18481-00001 on August 13, 2009. The source has since received the following approvals:

(a) Significant Source Modification No. 145-28817-00001**,** issued on July 13, 2010; and

(b) Significant Permit Modification No. 145-28835-00001**,** issued on August 2, 2010.

County Attainment Status

The source is located in Shelby County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Attainment effective October 19, 2007, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

(a) Ozone Standards
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 ozone. Shelby County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Shelby County has been classified as attainment for $PM_{2.5}$. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air

pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective June 28, 2011. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Shelby County has been classified as attainment or unclassifiable in Indiana for all other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this source is considered one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Source Status

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:

Pollutant	**Emissions** (ton/yr)
PM	511
PM_{10}	514
$PM_{2.5}$	514
SO_2	13
VOC	226
CO	783
NO_X	276
GHGs as CO_2e	---
Single HAP	greater than 10
Total HAPs	greater than 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(ff)(1).

(b) These emissions are based upon Significant Permit Modification No. 145-28835-00001, issued August 2, 2010.

(c) This existing source is a major source of HAPs, as defined in 40 CFR 63.2, 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).

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Knauf Insulation GmbH on October 23, 2013, relating to the following proposed modifications;

1. Eliminate any reference to VOC emission testing locations and compliance limits for the individual processes in lines 611 through 614, leaving the combined emission limit of 28.13 pounds per hour for Stacks 6-22 and 6-29;

2. Modify the destruction efficiency requirements for the RTOs to accurately reflect the capabilities of the RTOs with the low VOC inlet loading present at the Knauf Shelbyville Facility;

3. Remove the mistaken reference to Stack 17-1; and

4. Install a new dust control system for the 602 LF separation and packaging process that still exhausts into the building through Emission Points/Stack ID: 6-31, 6-32, 6-33, and 6-34. Eliminate the emissions testing requirement since (a) the dust collector outlets are continuously monitored by broken bag detectors that alarm upon a minute increase in particulate matter; (b) there is no emission point outside of the building; and (c) the dust collectors discharge into an occupied building and any increase in emissions requires immediate action to maintain a safe workplace atmosphere.

Enforcement Issues

There are no pending enforcement actions.

Emission Calculations

There is no increase in the potential to emit of any regulated pollutants as the source is not adding any new emission unit.

Permit Level Determination – Part 70

This source modification is subject to 326 IAC 2-7-10.5(g)(2) because this modification is subject to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements). Additionally, the modification will be incorporated into the Part 70 Operating Permit through a significant permit modification issued pursuant to 326 IAC 2-7-12(d), because this modification requires significant changes to the permit conditions.

Permit Level Determination – PSD

This modification does not cause any emission increases. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

Federal Rule Applicability Determination

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) applicable to this proposed modification.

(c) The proposed modification does not involve any new emission units or modified emission units, therefore, no CAM (40 CFR 64) requirements are included in the permit due to this proposed modification.

State Rule Applicability Determination

326 IAC 2-2 and 2-3 (PSD and Emission Offset)
PSD and Emission Offset applicability is discussed under the Permit Level Determination – PSD and Emission Offset section.

326 IAC 8-1-6 (New facilities; General Reduction Requirements)
The existing 326 8-1-6 VOC BACT requirements in the permit for the lines 611 through 614 were established through source modification No. 145-22817-00001, issued on July 13, 2010. This BACT requirement have been re-evaluated through this modification to eliminate individual limits for the lines and established a new limit for lines 611 through 614.

New BACT Limits:

611 - 614 Forming Line

(A) Pursuant to 326 IAC 8-1-6, the BACT requirement:

The loss of ignition (LOI) of the binders used by 611 - 614 FORMING shall not exceed 18%.

(B) Stack 6-22

Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-22 that consists of 611 - 614 FORMING operations shall not exceed 25.13 pounds per hour.

613 CURING/COOLING
Pursuant to 326 IAC 8-1-6, the following BACT requirements apply:

(A) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 613 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

614 CURING/COOLING
Pursuant to 326 IAC 8-1-6, the following BACT requirements apply:

(A) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 614 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

(C) Stack 6-29
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-29 that consists of 613 - 614 CURING/COOLING shall not exceed and 3.0 pounds per hour.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

There are no Compliance Determination and Monitoring Requirements applicable to this modification at this time.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. 145-18481-00001. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

Change 1: The emission units in Section A.2 and Section D.1 have been updated in the permit accordingly. The Preventive Maintenance Plan and the Testing Requirements have been updated as well in the permit

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

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(d) 602 LF SEPARATOR
Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR **A** ~~1~~ and 602 LF SEPARATOR **B** ~~2~~,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- utilizing two (2) **high efficiency** baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting internally through two (2) vents ID# 6-31 & 6-3**3** ~~2~~.

(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) **high efficiency** baghouses for particulate control (Unit ID # 602 LF ~~SEPARATOR~~ **Packaging** A & B), and
- exhausting **internally through two (2) vents ID# 6-32 & 6-34.** ~~to 602 LF~~

~~SEPARATOR.~~

SECTION D.2

(f) Ten (10) rotary spin wool fiberglass pipe insulation production lines consisting of ten (10) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3010, 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, 16-2 and 16-3, and 17-2 and 17-3, 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, **15-1, or (15-2)** and 16-4, respectively,
- LINE 3001 – 3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, LINE 3009 constructed October 1997, and LINE 3010 permitted in 2008.
- LINE 3001 – 3010 are affected facilities subject to the Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (40 CFR 60, Subpart PPP).

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SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

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

.....

(d) 602 LF SEPARATOR

Two (2) fiberglass manufacturing separator lines, identified as Unit ID # 602 LF SEPARATOR **A**~~1~~ and 602 LF SEPARATOR **B** ~~2~~,
- installed in 2007,
- operating at a nominal processing capacity of 170 tons of glass per day,
- utilizing two (2) **high efficiency** baghouses for particulate control (Unit ID # 602 LF SEPARATOR A & B), and
- exhausting internally through two (2) vents ID# 6-31 & 6-3**3** ~~2~~.

(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) **high efficiency** baghouses for particulate control (Unit ID # 602 LF ~~SEPARATOR~~ **Packaging** A & B), and
- exhausting **internally through two (2) vents ID# 6-32 & 6-34** ~~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)]

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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.~~ **A Preventive Maintenance Plan (PMP) is required for this unit and its control** device described in Section **D.1. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.**

Compliance Determination Requirements

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

(a) The following PM/PM10 testing on 602B FURNACE~~,~~ **and** 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. PM10 includes filterable and condensible PM10. The following 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. 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.~~

(b) **In order to determine compliance with Condition D.1.5,** ~~No later than sixty (60) days after the issuance of SSM No. 145-28817-00001,~~ the Permittee shall perform compliance testing using a non-phenol/formaldehyde binder at MFG 602 for **the** PM **emissions,** ~~– to verify compliance with the PM limitation in Condition D.1.5~~ utilizing methods as approved by the Commissioner. This test shall be repeated at least once every two (2) years from the date of the most recent valid compliance demonstration.

(c) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.1.8 Particulate Matter (PM) Control

(a) The ~~three (3)~~ **applicable** baghouses ~~(~~for **the** 602B FURNACE **(1 ea.)** and 602 LF SEPARATOR **and Packaging A & B (2 ea. - 4 total**) for PM control shall be in operation at all times when ~~any of~~ the ~~following:~~ **applicable source is in operation (**602B FURNACE, 602 LF SEPARATOR~~,~~ and ~~602 LF~~ PACKAGING**)** ~~are in operation~~ and exhausting to the outside atmosphere.

(b) The ~~two (2)~~ **applicable** wet electrostatic precipitator~~s~~ ~~(~~for MFG 602 and 602 LF MFG (**1 ea.**) for PM control shall be in operation at all times when **the applicable** ~~either of the~~ manufacturing lines, MFG 602 and 602 LF MFG, are in operation and exhausting to the outside atmosphere.

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Change 2: Conditions D.2.1, D.2.2 and D.2.3 have been updated in the permit accordingly.

SECTION D.2 FACILITY OPERATION CONDITIONS

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

(f) Ten (10) rotary spin wool fiberglass pipe insulation production lines consisting of ten (10) natural gas fired curing ovens, identified as Unit ID # LINE 3001 – 3010, 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, 16-2 and 16-3, and 17-2 and 17-3, 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, **15-1 or (15-2)** and 16-4, respectively;
- LINE 3001-3005 and 3008 each constructed in April 1996, LINE 3006-3007 each constructed in December 1994, LINE 3009 constructed October 1997, and LINE 3010 permitted in 2008.

(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.~~ **A Preventive Maintenance Plan (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.**

D.2.2 Prevention of Significant Deterioration (PSD) Minor Limitations [326 IAC 2-2]

Pursuant to SSM No. 145-26896-00001 issued on December 23, 2008, and in order to render the 326 IAC 2-2 (PSD) requirements not applicable, the potential to emit of Line 3010 shall be limited as follows:

(a) The PM emission rate from the Line 3010 stacks ~~17-1,~~ 17-2, 17-3, and 15-1 (or 15-2) to 3.4 pounds per hour.

(b) The PM_{10} emission rate from the Line 3010 stacks ~~17-1,~~ 17-2, 17-3, and 15-1 (or 15-2) to 3.4 pounds per hour.

Compliance with these emission limits will ensure that the potential to emit from the installation of Line 3010 are less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of PM_{10} per year, rendering the requirements of 326 IAC 2-2 not applicable.

Compliance Determination Requirements

D.2.3 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) ~~No later than 60 days after achieving the maximum capacity, but no later than 180 days after start-up, in~~ **In** order to demonstrate compliance with Condition D.2.2(a), the Permittee shall perform PM testing on Line 3010 stacks ~~17-1,~~ 17-2, 17-3, and 15-1 (or 15-2) utilizing methods as approved by the Commissioner. **This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.**

(b) In order to demonstrate compliance with Condition D.2.2(b), the Permittee shall perform PM10 testing on Line 3010 ~~no later than 180 days after publication of the new or revised condensible PM test method(s) referenced in the U. S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM2.5), signed on May 8, 2008. This testing shall be conducted~~ utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 includes filterable and condensible PM.

Change 3: Conditions D.5.5, D.5.7 and D.5.11 have been revised and updated in the permit accordingly.

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

(a) 611 **- 614** 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.~~

Pursuant to 326 IAC 8-1-6, the following BACT requirement applies: The loss of ignition (LOI) of the binders used by 611-614 FORMING shall not exceed 18%.

~~(b) 612 FORMING~~
~~Pursuant to 326 IAC 8-1-6, the following BACT requirements **applies** 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%.~~

(b) Stack 6-22
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-22 that consists of 611 - 614 FORMING operations shall not exceed 25.13 pounds per hour.

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

(i) When using a phenol/formaldehyde binder:

(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 **VOC** overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 613 CURING/COOLING **or**

a VOC stack concentration of equal to or less than 10 ppm.

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

(ii) ~~When using a non-phenol/formaldehyde binder:~~
~~(1) The VOC emissions from 613 CURING/COOLING shall not exceed 3.6 pounds per hour.~~

~~(iii)~~ 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:

(i) When using a phenol/formaldehyde binder:
(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 **VOC** overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 614 CURING/COOLING **or a VOC stack concentration of equal to or less than 10 ppm**.

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

(ii) ~~When using a non-phenol/formaldehyde binder:~~
~~(1) The VOC emissions from 614 CURING/COOLING shall not exceed 3.6 pounds per hour.~~

~~(iii)~~ 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.~~
.....

(e) Stack 6-29
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-29 that consists of 613 - 614 CURING/COOLING shall not exceed and 3.0 pounds per hour.

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.~~ **A Preventive Maintenance Plan (PMP) is required for for the wet electrostatic precipitator (ESP), and RTOs. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.**

Compliance Determination Requirements

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

(a) **In order to determine compliance with Conditions D.5.1, D.5.2, D.5.3, D.5.5 and D.5.6** ~~No later than sixty (60) days after achieving maximum capacity of the proposed modification approved under SSM# 145-20887-00001, but no later than one hundred and eighty (180) days after initial startup of the proposed expansion approved under SSM# 145-20887-00001,~~ the Permittee shall perform compliance testing using a phenol/formaldehyde binder on Stack 6-22 and Stack 6-29 for the following:

(1) NOx – to verify compliance with the NOx limitations in Condition D.5.3 – NOx LAER and NO2 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 ~~(excluding D.5.5(c)(ii) and (d)(ii)) – 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/ PM10 – to verify compliance with the PM/PM10 limitations in Condition D.5.1 – PSD Minor Limits, and Condition D.5.6 – Particulate Matter Emission Limitations;

utilizing methods as approved by the Commissioner.

(b) **In order to determine compliance with Condition D.5.1 - PSD Minor Limits** ~~No later than one hundred eighty (180) days after the issuance of SPM No. 145-26651-00001,~~ the Permittee shall perform compliance testing using a phenol/formaldehyde binder on Stack 6-22 and Stack 6-29 for **the** CO **emissions,** ~~– 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~~,~~**; and**

– 614 CURING/COOLING, ~~and~~

~~– two (2) RTOs.~~

(c) In order to demonstrate the compliance with Conditions D.5.1 and D.5.6, the Permittee shall perform PM and PM10 testing using a non-phenol/formaldehyde binder at Lines 613 and 614 and a phenol/formaldehyde binder at Lines 611 and 612 on Stack 6-22 and Stack 6-29**.** ~~on whichever later date from the time period specified in (1) and (2) below utilizing methods as approved by the Commissioner:~~

~~(1) No later than sixty (60) days after the issuance of SSM No. 145-28817-00001.~~

~~(2) No later than 180 days of publication of the new or revised condensable PM test method(s) referenced in the U. S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM2.5), signed on May 8, 2008.~~

(d) **In order to determine compliance with Condition D.5.1– PSD Minor Limits** ~~No later than sixty (60) days after the issuance of SSM No. 145-28817-00001~~, the Permittee shall perform compliance testing using a non-phenol/formaldehyde binder at Lines 613 and 614 and a phenol/formaldehyde binder at Lines 611 and 612 on Stack 6-22 and Stack 6-29 for **the** CO **emissions** ~~– 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~~,~~**; and**

– 614 CURING/COOLING~~, and~~.

~~– two (2) RTOs.~~

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

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

(g) The PM/PM_{10} tests specified in paragraph (a)(4) **and (c)** above shall be repeated **at least once every two (2) years from the date of the last valid compliance demonstration.** ~~on whichever later date from the time period specified in (1) and (2) below and then every two (2) years thereafter.~~

~~(1) No later than 180 days of publication of the new or revised condensable PM test method(s) referenced in the U. S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM2.5), signed on May 8, 2008.~~

~~(2) No later than two (2) years from the date of the last valid compliance demonstration~~.

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

~~(h) The PM/PM$_{10}$ tests specified in paragraph (c) above tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.~~

(~~i~~**h**) The CO tests shall be repeated at least once every two (2) years from the date of the last valid compliance demonstration.

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

(~~k~~**j**) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

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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. 145-33807-00001 and Significant Permit Modification No. 145-33846-00001. The staff recommends to the Commissioner that this Part 70 Significant Source and Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Josiah Balogun at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5257 or toll free at 1-800-451-6027 extension 4-5257.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) 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.idem.in.gov

Indiana Department of Environmental Management
Office of Air Quality

Appendix B – BACT Analyses
Technical Support Document (TSD)

Source Background and Description

Source Name:	**Knauf Insulation GmbH**
Source Location:	**1 Knauf Drive, Shelbyville, IN 46176**
County:	**Shelby**
SIC Code:	**3296**
Operation Permit No:	**T145-18481-00001**
Operation Permit Issuance Date:	**August 13, 2009**
Significant Source Modification No.:	**145-33807-00001**
Significant Permit Modification No.:	**145-33846-00001**
Permit Reviewer:	**Josiah Balogun**

Proposed Re-Evaluation of BACT

The requirements of 326 IAC 8-1-6 (New Facilities, General Reduction Requirements) applies to facilities located anywhere in the state that are constructed on or after January 1, 1980, which have potential volatile organic compounds (VOC) emissions greater than 25 tons per year, and which are not otherwise regulated by other provisions of 326 IAC 8 rule, and requires the reduction of VOC emissions using Best Available Control Technology (BACT). The propose lines 611 through 614 have potential VOC emissions of greater than 25 tons per year and is therefore subject to the requirements of this rule.

On October 23, 2013, the Office of Air Quality (OAQ) received an application from Knauf Insulation GmbH to eliminate any reference to VOC emission testing locations and compliance limits for the individual processes in lines 611 through 614.

Requirement for Best Available Control Technology (BACT), 326 IAC 8-1-6

326 IAC 8-1-6 requires a best available control technology (BACT) review to be performed on the proposed new emission unit:

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) when a phenol/formaldehyde binder is being used at this facility.

(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) when a phenol/formaldehyde binder is being used at this facility.

(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) when using a phenol/formaldehyde binder, 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) when a phenol/formaldehyde binder is being used at this facility.

(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) when using a phenol/formaldehyde binder, 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) when a phenol/formaldehyde binder is being used at this facility.

Summary of the Best Available Control Technology (BACT) Process

BACT is an 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. There will still be air pollution from this project; however, Knauf Insulation GmbH will be required to demonstrate that the emissions will be reduced to the maximum extent.

Federal EPA generally 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. IDEM evaluates BACT based on a "top down" approach.

The five (5) basic steps of a top-down BACT analysis used by the Office of Air Quality (OAQ) to make BACT determinations 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 and controls applied to similar source categories.

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. IDEM evaluates any innovative controls if proposed by the source. Knauf Insulation GmbH has not submitted any innovative control technology. 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 control effectiveness (percent pollutant removed). 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 and any more stringent limits established from other RBLC Permits.

Step 4: Evaluate the Most Effective Controls and Document the Results
The fourth step begins with an evaluation of the remaining technologies under consideration for each pollutant of concern in regards to energy, environmental, and economic impacts for determining a final control technology. The highest ranked alternative is evaluated for environmental, energy and economic impacts specific to the proposed modification. If the analysis determines that the highest ranked control is not appropriate as BACT, due to any of the energy, environmental, and economic impacts, then the next most effective control is evaluated. The evaluation continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic

impacts. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further economic or environmental analysis. In no case can the selected BACT be less stringent than any New Source Performance Standard (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) or Reasonably Available Control Technologies (RACT) standard or emission limit.

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.

Volatile Organic Compounds (VOC) BACT – Lines 611 and 614-Forming

Step 1: Identify Potential Control Technologies

Emissions of volatile organic compounds (VOCs) are generally controlled by oxidation. Oxidation technologies include regenerative thermal oxidation, catalytic oxidation, and flares.

(1) Regenerative Thermal Oxidizer;

(2) Recuperative Thermal Oxidizer;

(3) Catalytic Oxidizer;

(4) Flare; and

(5) No Control

If add-on control technology is not feasible, an alternate method of control may be implemented.

Step 2: Eliminate Technically Infeasible Options

Regenerative Thermal Oxidizer

The thermal oxidizer has a high temperature combustion chamber that is maintained by a combination of auxiliary fuel, waste gas compounds, and supplemental air added when necessary. This technology is typically applied for destruction of organic vapors, nevertheless it is also considered as a technology for controlling VOC emissions. Upon passing through the flame, the waste gas containing VOC is heated. The mixture continues to react as it flows through the combustion chamber.

The required level of VOC destruction of the waste gas that must be achieved within the time that it spends in the thermal combustion chamber dictates the reactor temperature. The shorter the residence time, the higher the reactor temperature must be. Most thermal units are designed to provide no more than 1 second of residence time to the waste gas with typical temperatures of 1,200 to 2,000^{o}F. Once the unit is designed and built, the residence time is not easily changed, so that the required reaction temperature becomes a function of the particular gaseous species and the desired level of control.

A Regenerative Thermal Oxidizer incorporates heat recovery and greater thermal efficiency through the use of direct contact heat exchangers constructed of a ceramic material that can tolerate the high temperatures needed to achieve ignition of the waste stream.

The inlet gas first passes through a hot ceramic bed thereby heating the stream (and cooling the bed) to its ignition temperature. The hot gases then react (releasing energy) in the combustion chamber and while passing through another ceramic bed, thereby heating it. The process flows are then switched, feeding the inlet stream to the hot bed. This cyclic process affords very high energy recovery (up to 95%). The higher capital costs associated with these high-performance heat exchangers and combustion chambers may be offset by the increased auxiliary fuel savings to make such a system economical.

Due to the process characteristics, it is technically infeasible to control VOCs emissions from the Forming operations. A WESP for PM control on the forming process would have no impact on VOC control. The only other alternative would be thermal oxidation. The exhaust volume thru the WESP is approximately 600,000 ACFM at 105F with a very, very low VOC concentration and moisture at saturation. The cost of thermal oxidation for that volume, temperature, VOC concentration and moisture content would be hundreds of thousands of dollars per ton, requiring massive amounts of natural gas combustion, and thus significant CO_2 generation.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a regenerative thermal oxidizer is not a technically feasible option for the Forming operations at this source.

Recuperative Thermal Oxidizer
This control technology oxidizes combustible materials by raising the temperature of the material above the auto-ignition point in the presence of oxygen and maintaining the high temperature for sufficient time to complete combustion. The operating temperature ranges from 1,100 - 1.200^{o}F and the waste stream inlet pollutants concentration is as low as 500-50,000 scfm.
Additional fuel is required to reach the ignition temperature of the waste gas stream. Oxidizers are not recommended for controlling gases with sulfur containing compounds because of the formation of highly corrosive acid gases.

Due to the process characteristics, it is technically infeasible to control VOCs emissions from the Forming operations. A WESP for PM control on the forming process would have no impact on VOC control. The only other alternative would be thermal oxidation. The exhaust volume thru the WESP is approximately 600,000 ACFM at 105F with a very, very low VOC concentration and moisture at saturation. The cost of thermal oxidation for that volume, temperature, VOC concentration and moisture content would be hundreds of thousands of dollars per ton, requiring massive amounts of natural gas combustion, and thus significant CO_2 generation.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a recuperative thermal oxidizer is not a technically feasible option for the Forming operations at this source.

Catalytic Oxidizer
Catalytic oxidation is also a widely used control technology to control pollutants where the waste gas is passed through a flame area and then through a catalyst bed for complete combustion of the waste in the gas. This technology is typically applied for destruction of organic vapors, nevertheless it is considered as a technology for controlling VOC emissions. A catalyst is an element or compound that speeds up a reaction at lower temperatures compared to thermal oxidation without undergoing change itself. Catalytic oxidizers operate at 650°F to 1000°F and approximately require 1.5 to 2.0 ft^3 of catalyst per 1000 standard ft^3 per gas flow rate.

Application of catalytic oxidation to control VOC emissions from the Forming operation poses a major problem which is the failure of the catalyst. Emissions from Forming operation contain significant amount of particulates and iron oxides. These particulates and iron oxides can poison the catalyst resulting in the failure of catalytic oxidation. In addition, the gas stream from the Forming operation comes out with at high temperatures of about 1500 ° F which can speed up

the poisoning of the catalyst. Additionally, the auto ignition temperature of VOC is about 1150 - 1250°F and the presence of a catalyst would not provide any additional VOC reduction.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a catalytic oxidizer is not a technically feasible option for the Forming operations at this source.

Flare
The overall flow rate of this stream is very high, but VOC concentrations are low. As such, the heating value of the stream is too low for effective destruction in a flare. Since there are insufficient organics in this vent stream to support combustion, use of a flare would require a significant addition of supplementary fuel. Therefore, a secondary impact of the use of flare for this stream would be the creation of additional emissions from burning supplemental fuel, including NOx. Flares have not been utilized or demonstrated as a control device for VOC from this type of high-volume process stream.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a flare is not a technically feasible option for the Forming operations at this source.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

(1) No control

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for Forming 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.

BACT ID or Permit #	Facility	Issued Date	Process Description	Rating	Limitation	Control Method
Draft Permit No. 145-33807-00001 Proposed Limit	**Knauf Insulation GmbH - *proposed***	**Proposed**	**611 - 614 Forming operation**	**NA**	**loss on ignition (LOI) of the binders used by Forming and shall not exceed 18%. And a stack limit of 17.95 pounds per hour**	**None**
Permit No. 145-28817-00001	Knauf Insulation GmbH	7/13/2012	Forming Operation	NA	loss on ignition (LOI) of the binders used by FORMING shall not exceed 18%.	None
			Curing/Cooling operation		95%	Thermal Oxidizer
GA-0125	Owens Coring Cordele	10/31/2005	Bonded Forming and Curing	NA	4 lb/tgp	Thermal Oxidizer
TX-0460	Cleburne Plant	11/20/2003	Line 92 and 93 Filters	NA	21.6 1lb/hr	None

BACT ID or Permit #	Facility	Issued Date	Process Description	Rating	Limitation	Control Method
TX-0460	Cleburne Plant	11/20/2003	Glass Furnaces	NA	0.24 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	1901 Forming Area	NA	4.39 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	Wet Scrubbers 1-4	NA	3.84 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	Oven Wet Scrubber	NA	7.16 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	Baghouse 1	NA	7.16 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	E-Glass Reclaim Area 4	NA	0.45 lb/hr	None
MI-0374	Guardian Fiberglass, Inc	12/18/2003	Resinated fiberglass insulation forming and collection	108 t/d	125 tons per year	None
MI-0374	Guardian Fiberglass, Inc	12/18/2003	Non-Resinated forming and collection	119 t/d	31 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Resinated fiberglass insulation forming and collection	108 t/d	125 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Resinated Line No. 1	108 t/d	140 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Resinated Line No. 2	96 t/d	124.4 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Non-Resinated Forming and Collection	119 t/d	50 tons per year	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forehearth Area 9212	8.4 ton Glass/hour	0.13 lb/hr	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forming Area 9211	8 ton glass/hour	0.09 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forming Area 9212	8.4 ton glass/hour	0.09 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Glass Melting Furnace 9211	8 ton glass/hour	0.04 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Glass Melting Furnace 9212	8.4 ton glass/hour	0.04 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forehearth Area 9211	8 ton glass/hour	0.12 lb/hr	None

BACT ID or Permit #	Facility	Issued Date	Process Description	Rating	Limitation	Control Method
GA-0125	Owens Coring Cordele	10/31/2005	Bonded line Cooling Section CG106	NA	0.2 lb/TGP	None
GA-0125	Owens Coring Cordele	10/31/2005	Glass Melt Furnace CG101	NA	0.38 lb/TGP	None
GA-0125	Owens Coring Cordele	10/31/2005	Rotary Spin Fiberglass Line CG2	NA	2.37 lb/TGP	None

Based on the RBLC analysis for this industrial group (SIC Code 3296), IDEM has identified the Owens Corning Cordele, GA plant as the only facility permitted with a thermal oxidizer for the control of VOCs. This Owens plant was permitted for the manufacturing of fiber glass insulation. Similar products are manufactured by Knauf on lines 613 and 614, and Knauf controls VOC from these sources using a thermal oxidizer. Knauf manufactures phenolic binder resinated products on the subject lines that have higher loss on ignition (LOI) composition than the comparable Owens FDM 4.2 production line listed in the RBLC, yet the overall BACT emission rate for Knauf lines is more stringent compare to Owens. The comparable Owens' facility was permitted to operate a thermal oxidizer for the control of VOCs, and was permitted to emit 4.0 pounds VOC per ton of glass pulled. The VOC emission limit for the Knauf processes is 2.26 pounds VOC per ton of glass pulled. As stated above this limit from Knauf is more stringent compare to Owens VOC limit.

Proposal: **Knauf Insulation GmbH – Shelbyville, Indiana**

The following has been proposed as BACT for VOC from the proposed Forming Operations:

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

Step 5: Select BACT

Pursuant to 326 IAC 8-1-6 (New facilities; General Reduction Requirements), IDEM has established the following as BACT for VOC for 611-614 Forming Operations.

(A) Pursuant to 326 IAC 8-1-6, the following BACT requirement applies:

(i) The loss of ignition (LOI) of the binders used by 611 - 614 FORMING shall not exceed 18%.

(B) Stack 6-22
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-22 that consists of 611 - 614 FORMING operations shall not exceed 25.13 pounds per hour.

Volatile Organic Compounds (VOC) BACT – Lines 613 and 614 (Curing/Cooling)

Step 1: Identify Potential Control Technologies

Emissions of volatile organic compounds (VOCs) are generally controlled by oxidation. Oxidation technologies include regenerative thermal oxidation, catalytic oxidation, and flares.

(1) Regenerative Thermal Oxidizer,

(2) Conventional Thermal Oxidizer,

(3) Catalytic Oxidizer, and

(4) Flare.

If add-on control technology is not feasible, an alternate method of control may be implemented.

Step 2: Eliminate Technically Infeasible Options

Regenerative Thermal Oxidizer

Regenerative Thermal Oxidizer consists of direct contact heat exchangers constructed of a ceramic material that can tolerate the high temperatures needed to achieve ignition of the waste stream.

Thermal oxidizers destroy air toxics and organic compounds that are discharged in industrial process exhausts. Thermal oxidizers achieve destruction through the process of high temperature thermal oxidation, converting combustible compounds to carbon dioxide and water vapor, and oxidizing toxic compounds to non-toxic compounds. Some thermal oxidizers preheat the incoming air by capturing heat from the outgoing air stream to reduce operating costs. Regenerative thermal oxidizers use ceramic heat transfer beds to recover thermal energy from the oxidation process.

The inlet gas first passes through a hot ceramic bed thereby heating the stream (and cooling the bed) to its ignition temperature. The hot gases then react (releasing energy) in the combustion chamber and while passing through another ceramic bed, thereby heating it to the combustion chamber outlet temperature. The process flows are then switched, now feeding the inlet stream to the hot bed. This cyclic process affords very high energy recovery (up to 95%). The higher capital costs associated with these high-performance heat exchangers and combustion chambers may be offset by the increased auxiliary fuel savings to make such a system economical.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a regenerative thermal oxidizer (RTO) is a technically feasible option for Curing/Cooling operation at this source.

Recuperative Thermal Oxidizer

The Recuperative Thermal Oxidizer is comprised of the combustion chamber and heat exchanger. After leaving the combustion chamber, the exhaust gas enters a heat exchanger where it transfers heat to the waste gas through conduction. The waste gas is thus preheated.

Considerable fuel savings can be achieved by using the exhaust gas to preheat the incoming waste gas, combustion air, or both via a heat exchanger. These heat exchangers can recover up to 70% of the energy (enthalpy) in the product gas. Most heat exchangers are not designed to withstand high temperatures, so that most of the energy needed to reach ignition is supplied by the combustion of fuel in the combustion chamber and only moderate preheat temperatures are sought in practice (<1200°F).

A Recuperative Thermal Oxidizer is an add-on control device to control VOC emissions by introducing VOC laden gas stream into the oxidizer. Before entering the oxidizer, the VOC laden gas stream is pre-heated by exiting flue gas from the same system in a heat exchanger or recuperator. A burner in the oxidizer then heats the VOC laden gas stream to the required temperature of 1200° F, to complete the VOC oxidation process. The gas stream (flue gas) leaving the oxidizer is then passed through the heat exchanger where incoming VOC laden gas is preheated by the heat of the exiting flue gas. Finally, the flue gas is discharged into the atmosphere.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a recuperative thermal oxidizer is not a technically feasible option for the Curing/Cooling operations at this source.

Catalytic Oxidizer
A catalytic oxidizer converts the VOC in the combustion gases to CO_2 at temperatures ranging from 500 degrees F to 700 degrees F in the presence of a catalyst. This technology is typically applied for destruction of organic vapors, nevertheless it is considered as a technology for controlling VOC emissions. A catalyst is an element or compound that speeds up a reaction at lower temperatures compared to thermal oxidation without undergoing change itself. Catalytic oxidizers approximately require 1.5 to 2.0 ft^3 of catalyst per 1000 standard ft^3 per gas flow rate. A Catalytic Oxidizer is an add-on control device to control VOC emissions by using a bed of catalyst that facilitates the oxidation of combustible gases. The catalyst increases the reaction rate and allows the conversion of VOC at lower temperature than a thermal oxidizer.

The use of an oxidation catalyst to control VOC emissions may be more feasible for this emission unit than for other units because the fuel is a low sulfur fuel with relatively low concentrations of other contaminants, such as metals.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a catalytic oxidizer is a technically feasible option for the Curing/Cooling operations at this source.

Flare
The overall flow rate of this stream is very high, but VOC concentrations are low. As such, the heating value of the stream is too low for effective destruction in a flare. Since there are insufficient organics in this vent stream to support combustion, use of a flare would require a significant addition of supplementary fuel. Therefore, a secondary impact of the use of flare for this stream would be the creation of additional emissions from burning supplemental fuel, including NOx. Flares have not been utilized or demonstrated as a control device for VOC from this type of high-volume process stream. In addition, the flare would have no additional control effectiveness versus the thermal oxidizers.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a recuperative thermal oxidizer is not a technically feasible option for the Curing/Cooling operations at this source.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

(1)	Regenerative thermal oxidation	(95% VOC Reduction)
(2)	Conventional thermal oxidation	(95% VOC Reduction)
(3)	Catalytic Oxidation	(> 90% VOC Reduction)

Step 4: Evaluate the Most Effective Controls and Document the Results

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for Forming, Curing/Cooling 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.

BACT ID or Permit #	Facility	Issued Date	Process Description	Rating	Limitation	Control Method
Draft Permit No. 145-33807-00001 Proposed Limit	**Knauf Insulation GmbH - *proposed***	**Proposed**	**613 and 614 Curing/Cooling operation**	**NA**	**95% or 10ppm loss on ignition (LOI) of the binders used by Forming and Curing/Cooling shall not exceed 18%. And a stack limit of 10.18 pounds per hour**	**Thermal Oxidizer**
Draft Permit No. 145-28817-00001	Knauf Insulation GmbH	7/13/2012	Forming Operation	NA	loss on ignition (LOI) of the binders used by FORMING shall not exceed 18%.	None
			Curing/Cooling operation		95%	Thermal Oxidizer
GA-0125	Owens Coring Cordele	10/31/2005	Bonded Forming and Curing	NA	4 lb/tgp	Thermal Oxidizer
TX-0460	Cleburne Plant	11/20/2003	Line 92 and 93 Filters	NA	21.6 1lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	Glass Furnaces	NA	0.24 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	1901 Forming Area	NA	4.39 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	Wet Scrubbers 1-4	NA	3.84 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	Oven Wet Scrubber	NA	7.16 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	Baghouse 1	NA	7.16 lb/hr	None
TX-0460	Cleburne Plant	11/20/2003	E-Glass Reclaim Area 4	NA	0.45 lb/hr	None
MI-0374	Guardian Fiberglass, Inc	12/18/2003	Resinated fiberglass insulation forming and collection	108 t/d	125 tons per year	None

BACT ID or Permit #	Facility	Issued Date	Process Description	Rating	Limitation	Control Method
MI-0374	Guardian Fiberglass, Inc	12/18/2003	Non-Resinated forming and collection	119 t/d	31 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Resinated fiberglass insulation forming and collection	108 t/d	125 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Resinated Line No. 1	108 t/d	140 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Resinated Line No. 2	96 t/d	124.4 tons per year	None
MI-0375	Guardian Fiberglass, Inc	6/8/2004	Non-Resinated Forming and Collection	119 t/d	50 tons per year	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forehearth Area 9212	8.4 ton Glass/hour	0.13 lb/hr	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forming Area 9211	8 ton glass/hour	0.09 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forming Area 9212	8.4 ton glass/hour	0.09 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Glass Melting Furnace 9211	8 ton glass/hour	0.04 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Glass Melting Furnace 9212	8.4 ton glass/hour	0.04 lb/T glass pulled	None
OH-0296	Johns Manville Plant 1	5/20/2004	Fiberglass Forehearth Area 9211	8 ton glass/hour	0.12 lb/hr	None
GA-0125	Owens Coring Cordele	10/31/2005	Bonded line Cooling Section CG106	NA	0.2 lb/TGP	None
GA-0125	Owens Coring Cordele	10/31/2005	Glass Melt Furnace CG101	NA	0.38 lb/TGP	None
GA-0125	Owens Coring Cordele	10/31/2005	Rotary Spin Fiberglass Line CG2	NA	2.37 lb/TGP	None

None of these projects incorporate a more effective technology or represent a more stringent emissions limit for VOCs. All but one of these other facilities has proposed use of similar thermal oxidation for control of VOC emissions for the Curing/Cooling operation. This Owens plant was permitted for the manufacturing of fiber glass insulation. Similar products are manufactured by Knauf on lines 613 and 614, and Knauf controls VOC from these sources using a thermal oxidizer. Knauf manufactures phenolic binder resinated products on the subject lines that have higher loss on ignition (LOI) composition than the comparable Owens FDM 4.2 production line listed in the RBLC, yet the overall BACT emission rate for the Knauf lines is lower compared to the Owens emission rate. The comparable Owens' facility was permitted to operate a thermal oxidizer for the control of VOCs, and was permitted to emit 4.0 pounds VOC per ton of glass pulled. The Curing/Cooling operation at Knauf Insulation GmbH is already equipped

with VOC control technology (Thermal oxidizer). Therefore, the use of the RTO shall be BACT for the Curing/Cooling operation.

Proposal: **Knauf Insulation GmbH – Shelbyville, Indiana**

The following has been proposed as BACT for VOC from the proposed Curing/Cooling lines, identified as 613 and 614 Curing/Cooling:

(A) When using a phenol/formaldehyde binder:

(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 or a VOC emission rate of less than 10 ppm based on method 25A.

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

(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 or a VOC emission rate of less than 10 ppm based on method 25A.

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

(D) 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.

Step 5: Select BACT

Pursuant to 326 IAC 8-1-6 (New facilities; General Reduction Requirements), IDEM has established the following as BACT for VOC for the Curing/Cooling lines, identified as 613 and 614 Curing/Cooling.

(A) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 613 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

(C) When using a phenol/formaldehyde binder:

(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 VOC overall control efficiency of each RTO shall be at least 95% when controlling the VOC emissions from the 614 CURING/COOLING or a VOC stack concentration of equal to or less than 10 ppm.

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

(E) Stack 6-29
Pursuant to 326 IAC 8-1-6, the VOC emissions from Stack 6-29 that consists of 613 - 614 CURING/COOLING shall not exceed and 3.0 pounds per hour.

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Stephen Aldridge
Knauf Insulation GmbH
1 Knauf Drive
Shelbyville, Indiana 46176

DATE: April 7, 2014

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Title V – Significant Permit Modification
145-33846-00001

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Iain James, Director of Operations / Knauf Insulation GmbH
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

April 7, 2014

TO: Shelby County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Knauf Insulation GmbH
Permit Number: 145-33846-00001

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

Mail Code 61-53

IDEM Staff	AWELLS 4/7/2014 Knauf Insulation GmbH 145-33846-00001 Final			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Stephen R Aldridge Knauf Insulation GmbH 1 Knauf Dr Shelbyville IN 46176 (Source CAATS) confirmed delivery									
2		Iain James Director of Operations Knauf Insulation GmbH 1 Knauf Dr Shelbyville IN 46176 *(RO CAATS)*									
3		Mr. Hugh Garner 10203 S Degelow Road Milroy IN 46156 *(Affected Party)*									
4		Shelbyville City Council and Mayors Office 44 West Washington Shelbyville IN 46176 *(Local Official)*									
5		Shelby County Commissioners 25 West Polk Shelbyville IN 46176 *(Local Official)*									
6		Shelbyville Shelby Co Public Library 57 W Broadway Shelbyville IN 46176-1294 *(Library)*									
7		Shelby County Health Department 1600 E. SR 44B Shelbyville IN 46176 *(Health Department)*									
8		Margaret Brunk Shelby County Council PO Box 107 Fountaintown In 46130 *(Affected Party)*									
9		Tami Grubbs Shelby County Council 2961 N 100 W Shelbyville In 46176 *(Affected Party)*									
10											
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