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

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: April 7, 2008

RE: FlexForm Tech, Inc. / 039-25900-00516

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

Notice of Decision: Approval - Registration

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 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires 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 of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar 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.

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
FN-REGIS.dot 1/2/08

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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REGISTRATION
OFFICE OF AIR QUALITY

FlexForm Technologies, LLC
4955 Beck Drive
Elkhart, Indiana 46516

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 039-25900-00516	
Issued by: *Original signed by* Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 7, 2008

SECTION A SOURCE SUMMARY

This registration 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 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary non-woven mat production.

Source Address:	4955 Beck Drive, Elkhart, Indiana 46516
Mailing Address:	4955 Beck Drive, Elkhart, IN 46516
General Source Phone Number:	(574) 295-3777
SIC Code:	2299
County Location:	Elkhart
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

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

(a) A non-woven mat production plant, constructed in 1999 and modified in 2005, which has a maximum usage rate of 3,837 pounds of fibers per hour and using filters system which is considered an integral part of the process for particulate control. The production process involves blending, carding, crosslapping, needle punching, cutting and trimming. It also includes one (1) natural gas-fired pre-contact oven, with a heat input of 1 million British Thermal Units per hour (MMBtu/hr) and a second contact oven, with a heat input of 1 MMBtu/hr. The mat is used for side panels in cars.

(b) One (1) non-woven mat production line, identified as no-heat production line #1, approved for construction in 2007, with a maximum usage rate of 1,100 pounds of fibers per hour, using filters system which is considered an integral part of the process for particulate control. The production process involves blending, air card fiber forming, needle punching, cutting and trimming.

(c) One (1) non-woven mat treating line, identified as non-woven mat treating line #1, approved for construction in 2008, with a maximum throughput rate of 2,677 pounds of non-woven mat, 1070 pounds of powder per hour, and 908 pounds of liquid retardant treatment per hour, using dust collectors which are considered integral parts of the process for particulate control. The treating process involves milling, blending, curing, cooling, cutting, drying, and stacking on pallets.

(d) One (1) storage silo, with a maximum storage capacity of 60,000 pounds of sodium borate, using a baghouse which is considered an integral part of the process for particulate control.

(e) Three (3) natural gas-fired ovens with heat input rates of 2.2, 3.3 and 2 MMBtu per hour.

(f) Skids to store 2,000 bulk bags of heat set resin.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration 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 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this registration.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.

(d) For any cause which establishes in the judgment of IDEM, the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to Registration No. 039-25900-00516 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

(a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.

(b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue

MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

(c) The notification 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.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

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

(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.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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).

SECTION D.1 OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(a) A non-woven mat production plant, constructed in 1999 and modified in 2005, which has a maximum usage rate of 3,837 pounds of fibers per hour and using filters system which is considered an integral part of the process for particulate control. The production process involves blending, carding, crosslapping, needle punching, cutting and trimming. It also includes one (1) natural gas-fired pre-contact oven, with a heat input of 1 million British Thermal Units per hour (MMBtu/hr) and a second contact oven, with a heat input of 1 MMBtu/hr. The mat is used for side panels in cars.

(b) One (1) non-woven mat production line, identified as no-heat production line #1, approved for construction in 2007, with a maximum usage rate of 1,100 pounds of fibers per hour, using filters system which is considered an integral part of the process for particulate control. The production process involves blending, air card fiber forming, needle punching, cutting and trimming.

(c) One (1) non-woven mat treating line, identified as non-woven mat treating line #1, approved for construction in 2008, with a maximum throughput rate of 2,677 pounds of non-woven mat, 1070 pounds of powder per hour, and 908 pounds of liquid retardant treatment per hour, using dust collectors which are considered integral parts of the process for particulate control. The treating process involves milling, blending, curing, cooling, cutting, drying, and stacking on pallets.

(d) One (1) storage silo, with a maximum storage capacity of 60,000 pounds of sodium borate, using a baghouse which is considered an integral part of the process for particulate control.

(e) Three (3) natural gas-fired ovens with heat input rates of 2.2, 3.3 and 2 MMBtu per hour.

(f) Skids to store 2,000 bulk bags of heat set resin.

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

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e) (Particulate Emission Limitations for Manufacturing Processes):

(a) the allowable particulate emission rate from the existing non-woven mat production plant:

(i) shall not exceed 6.1 pounds per hour when operating at a maximum process weight rate of 1.82 tons per hour.

(II) shall not exceed 0.88 pounds per hour when operating at a maximum process weight rate of 0.1 tons per hour.

(b) the allowable particulate emission rate from the new non-woven mat production line (no-heat production line #1), shall not exceed 2.75 pounds per hour when operating at a maximum process weight rate of 0.55 tons per hour.

(c) the allowable particulate emission rate from the silo filling shall not exceed 30.5 pounds per hour when operating at a maximum process weight rate of 20 tons per hour.

(d) the allowable particulate emission rate from the mixed powder application of the non-woven mat treating line, shall not exceed 2.7 pounds per hour when operating at a maximum process weight rate of 0.54 tons per hour.

Interpolation of the data for each above process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by the use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

Compliance Determination Requirements

D.1.2 Particulate Matter (PM)

To comply with the Conditions D.1.1(a) - D.1.1(c), the baghouse and dust collectors which are considered integral parts of the processes shall be in operation at all times while the associate process is in operation.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

REGISTRATION
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	FlexForm Technologies, LLC
Address:	4955 Beck drive
City:	Elkhart, Indiana 46516
Phone #:	(574) 295-3777
MSOP #:	039-25900-00516

I hereby certify that FlexForm Technologies, LLC is :	☐ still in operation.
	☐ no longer in operation.
I hereby certify that FlexForm Technologies, LLC is :	☐ in compliance with the requirements of Registration 039-25900-00516.
	☐ not in compliance with the requirements of Registration 039-25900-00516.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Exemption transitioning to a Registration

Source Description and Location

Source Name:	**FlexForm Technologies, LLC**
Source Location:	**4955 Beck Drive, Elkhart, Indiana 46516**
County:	**Elkhart**
SIC Code:	**2299**
Operation Permit No.:	**M 039-25900-00516**
Permit Reviewer:	**Renee Traivaranon**

On January 15, 2008, the Office of Air Quality (OAQ) has received an application from FlexForm Technologies, LLC related to the construction and operation of new emission units, non-woven mat treating facilities, at an existing non-woven mat production source, which causes the source to transition from an exemption to a Registration.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) Exemption No. 039-10746-00516 issued on May 3, 1999
(b) Exemption No. 039-19935-00516 issued on January 26, 2005
(c) Exemption No. 039-22922-00516 issued on May 5, 2006
(d) Exemption No. 039-25532-00516 issued on December 26, 2007

Due to this application, the source is transitioning from an exemption to a Registration.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O3	Attainment effective July 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]Attainment effective October 18, 2000, for the 1-hour ozone standard for the Elkhart County, and is a maintenance area for the 1-hour National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour standard was revoked effective June 15, 2005.

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 NOx emissions are considered when evaluating the rule applicability relating to ozone. Elkhart County has been designated as

attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5

Elkhart County has been classified as attainment or unclassifiable for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.

(c) Other Criteria Pollutants

Elkhart 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

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.5 (Registration) applicability.

Background and Description of Permitted Emission Units

The source consists of the following permitted emission units:

(a) A non-woven mat production plant, constructed in 1999 and modified in 2005, which has a maximum usage rate of 3,837 pounds of fibers per hour and using filters system which is considered an integral part of the process for particulate control. The production process involves blending, carding, crosslapping, needle punching, cutting and trimming. It also includes one (1) natural gas-fired pre-contact oven, with a heat input of 1 million British Thermal Units per hour (MMBtu/hr) and a second contact oven, with a heat input of 1 MMBtu/hr. The mat is used for side panels in cars.

(b) One (1) non-woven mat production line, identified as no-heat production line #1, approved for construction in 2007, with a maximum usage rate of 1,100 pounds of fibers per hour, using filters system which is considered an integral part of the process for particulate control. The production process involves blending, air card fiber forming, needle punching, cutting and trimming.

The following is a list of the new emission units and pollution control devices:

(c) One (1) non-woven mat treating line, identified as non-woven mat treating line #1, approved for construction in 2008, with a maximum throughput rate of 2,677 pounds of non-woven mat, 1070 pounds of powder per hour, and 908 pounds of liquid retardant treatment per hour, using dust collectors which are considered integral parts of the process for particulate control. The treating process involves milling, blending, curing, cooling, cutting, drying, and stacking on pallets.

(d) One (1) storage silo, with a maximum storage capacity of 60,000 pounds of sodium borate, using a baghouse which is considered an integral part of the process for particulate control.

(e) Three (3) natural gas-fired ovens with heat input rates of 2.2, 3.3 and 2 MMBtu per hour.

(f) Skids to store 2,000 bulk bags of heat set resin.

"Integral Part of the Process" Determination

The applicant submitted the information to justify reasons the baghouse at the top of the silo and the dust collectors at the receivers should be considered integral parts of the processes:

(1) The source indicated that the silo is filled by the bower on the truck. The baghouse on top of the silo is required to separate the borate from the airsteram used in conveying it and the bag at the top of the silo pulsate to release the material back into the silo. This silo can't be operated if the baghouse is not operated properly.

(2) The dust collector at the receiver of the treatment line is operated in the same manor- to carry the borate from the silo to the receiver at the treatment line. There is a pipe located at the bottom of the silo which feeds material into the mill. The milled powder is then fed into a receiver. The powder is then mixed with a resin in a blender. Once it is mixed the material is fed into a bin and this bin then feeds this mixed material into another receiver.

A dust collector located at the top of each receiver. This dust collector has to be operating in order for the material to be fed into the receiver. The bag at the top of the receiver pulsates to release the material back into the receiver. Clean air is then exhaust to the inside.

IDEM, OAQ has evaluated the information submitted and will consider each baghouse and dust collector as an integral part of the process. This equipment is interlock with the process and this silo and the receiver will not work without the baghouse/dust collector is in operation. Therefore, the permitting level will be determined using the potential to emit after the control.

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations. (See pages 1 through 6 of Appendix A)

Permit Level Determination – Registration

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	2.3
PM10[(1)]	2.3
SO_2	negligible
NO_x	4
VOC	24
CO	3.5
Single HAP	negligible
Total HAPs	negligible

(1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

(a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of VOC are within the ranges listed in 326 IAC 2-5.1-2(a)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.1-2(a)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5-2 (Registrations). A Registration will be issued.

(b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

(a) There are no New Source Performance Standards (NSPS)(40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

(c) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

(a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.

(b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

(c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

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

(1) 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.

(2) 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.

(f) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.

(g) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Each emission unit is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each unit is less than twenty-five (25) tons per year.

(h) There are no other 326 IAC 8 Rules that are applicable to each unit at the source.

Mat Treating Line:

(i) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes):

(a) The allowable particulate emission rate from the existing non-woven mat production plant:

(i) shall not exceed 6.1 pounds per hour when operating at a maximum process weight rate of 1.82 tons per hour.

(ii) shall not exceed 0.88 pounds per hour when operating at a maximum process weight rate of 0.1 tons per hour.

(b) The allowable particulate emission rate from the new non-woven mat production line (no-heat production line #1), shall not exceed 2.75 pounds per hour when operating at a maximum process weight rate of 0.55 tons per hour.

Interpolation of the above (a) and (b) data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by the use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The filter which is considered an integral part of the process for each above (a) and (b) shall be in operation at all times while the process is in operation, in order to comply with this limit. (See calculations page 1 of 6 of TSD)

(c) Pursuant to 326 IAC 6-3, the allowable particulate emission rate from the mixed powder to the non-woven mat shall not exceed 2.7 pounds per hour when operating at a maximum process weight rate of 0.54 tons per hour.

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by the use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

See compliance demonstration calculation page 4 of 6 of TSD

Silo:

(j) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3, the allowable particulate emission rate from filling the silo shall not exceed 30.5 pounds per hour when operating at a maximum process weight rate of 40,000 pounds per hour.

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by the use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The baghouse which is considered an integral part of the process located at the top of the silo shall be in operation at all times while the filling is in operation, in order to comply with this limit. (See calculations page 5 of 6 of TSD)

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on January 15, 2008.

The construction and operation of this source shall be subject to the conditions of the attached proposed Registration No. 039-25900-00516. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Renee Traivaranon 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) 234-5615 or toll free at 1-800-451-6027 extension 4-5615.

(b) A copy of the findings is available on the Internet at: www.in.gov/idem/permits/air/pending.html.

(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.in.gov/idem/permits/guide/.

Appendix A: Emissions Calculations
Mat Production Lines

Company Name: Flexform Technologies, Inc.
Address City IN Zip: 4955 Beck Drive, Elkhart, IN 46516
Permit Number: R 039-25900-00516
Reviewer: Renee Traivaranon
Date: March 26, 2008

Original Plant	Hourly Rate lbs/Hr	% Synthetic	% Natural	% VOC	Synthetic Fiber Loss	Natural Fiber Loss	Volatile Emissions	CFM	EF (mg/m3)	PM Emissions
Maximum production	3637.0	60.0%	40.0%	0.0075%	1.0%	1.0%	0.717	60,000.0	1.0	0.58

Modification Plant	Hourly rate (kg/hr)	Hourly rate (lb/hr)	% Polymer	% Natural	% VOC	Polymer fiber loss	Natural fiber loss	Poly fiber Screening Efficiency %	Natural Blend Screening Efficiency %	Filter control %
Maximum production	90.7	200.0	50.0%	50.0%	0.0075%	1.50%	1.50%	99.7%	97.0%	98.0%

New Line (No heat line)	Hourly Rate lbs/Hr	% Synthetic	% Natural	% VOC	Synthetic Fiber Loss	Natural Fiber Loss	Volatile Emissions	CFM	EF (mg/m3)	PM Emissions
Maximum production	1100.0	50.0%	50.0%	0.0075%	1.0%	1.0%	0.181	90,000.0	1.0	0.87

Potential VOC Emissions (TPY)

Production Lines	Original	Modification	New	Total
Potential VOC Emissions (TPY)	0.717	0.077	0.181	0.98

Potential PM Emissions (TPY)

Matterials	Permit N0. 10746	Permit No. 19935		Permit No. 25532	Total (T/Y)
	Original Plant	Pre-Filter	Post-Filter	New line	
	T/Y	T/Y	T/Y	T/Y	
Poly fiber	0.58	0.02	0.000	0.87	1.67(no-filter)
Natural fiber		0.20	0.004		1.45 (w/filter)

Summary of Potential PM Emissions of the entire mat production lines (TPY)

Original Plant
Controlled PM Emissions (TPY) 0.58

First Modified plant
Pre-Filter Potential PM Emissions (TPY) 0.22
Controlled PM Emissions (TPY) 0.004

New line (no heat line)
Controlled PM Emissions (TPY) 0.87

Compliance with 326 IAC 6-3-2 requirements

Exising non-woven mat production plant (Original plus first Modifcation)
Allowable particulate emission rate = 4.1 $P^{0.67}$= 6.34 lb/hr
Controlled PM emissions = 0.58 lb/hr

The above calculations demonstrate compliance with the allowable PM emission limit of 6.34 lb/hr for the non-woven mat production plant.

New Non-woven mat production line (no heat line)
Allowable particulate emission rate = 4.1 $P^{0.67}$= 2.75 lb/hr
Controlled PM emissions = 0.87 lb/hr

The above calculations demonstrate compliance with the allowable PM emission limit of 2.74 lb/hr for the non-woven mat production line (no heat production line.)

METHODOLOGY
Potential VOC emissions (tons per year) = Hourly rate (pounds/hr) * Weight % VOC * 8760 hours/yr * 1/2000 tons/lb
Potential emisions from the process are calculated by taking into consideration the hourly rate of the material processed, the blend of polymer vs natural fibers, the associated fiber loss rate, the screening efficiency (primary filter) and the Filter filtration efficiency. The screen efficiency is 99.7% for the poly fibers and 97% for the natural fibers (the poly fibers tend to be larger in size than the natural, therefore higher filtration efficiency). The Filter filter is 98% efficient on the particulate size that passes through the initial screening.
Potential PM emissions (tons per year) = Hourly rate (pounds/hr) * Weight % polymer/natural fiber * (1-screening efficiency)* (1-Filter control efficiency)* 8760 hours/yr * 1/2000 tons/lb

Appendix A: Emissions Calculations
Natural Gas Combustion Only
(Production Line)
Company Name: Flexform Technologies, Inc.
Address City IN Zip: 4955 Beck Drive, Elkhart, IN 46516
Permit Number: R 039-25900-00516
Reviewer: Renee Traivaranon
Date: March 26, 2008

Heat Input Capacity* MMBtu/hr	Potential Throughput MMCF/yr
2.0	17.5

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.1	0.1	0.01	0.9	0.05	0.7

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
(Ovens for Mat Treatment)
(2.2, 3.3 and 2 MMBtu)

Company Name: **Flexform Technologies, Inc.**
Address City IN Zip: **4955 Beck Drive, Elkhart, IN 46516**
Permit Number: **R 039-25900-00516**
Reviewer: **Renee Traivaranon**
Date: **March 26, 2008**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
7.5	65.8

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.25	0.25	0.02	3.3	0.18	2.76

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Treatment Line

Company Name: Flexform Technologies, Inc.
Address City IN Zip: 4955 Beck Drive, Elkhart, IN 46516
Permit Number: R 039-25900-00516
Reviewer: Renee Traivaranon
Date: March 26, 2008

	Non-Woven Mat lbs/hr	Powder* lbs/hr	Liq. Fire Retardant lb/hr	% VOC	Volatile Emissions (lbs/hr)	Volatile Emissions (tons/yr))	CFM	grain/cf	PM/PM10 Emissions (lb/hr)	PM/PM10 Emissions (tons/yr)	Transfer Efficiency (%)
Application process	2677.0	1,070.0	908.0	0.99%	5.30	23.20	700.0	0.02	0.11	0.47	100.0%

Compliance with 326 IAC 6-3-2 requirements

Allowable particulate emission rate = 4.1 $P^{0.67}$	=	2.7 lb/hr
Uncontrolled PM emissions	=	0.1 lb/hr

The above calculations demonstrate compliance with the allowable PM

METHODOLOGY

* Powder contains 50% sodium borate and 50% blend of fiber link heat set resin
Potential VOC emissions (tons per year) from treating process = Hourly rate of fiber link heat set resin (535 pounds/hr) * Weight % VOC * 8760 hours/yr * 1/2000 tons/lb
Potential PM/PM10 emissions (pounds per hour) = Hourly rate of powder * (1-control efficiency) = (1070)*(1-0.9999)
Potential PM/PM10 emissions (tons per year) = Potential PM emissions (pounds/hour) * 8760 hours/yr * 1/2000 ton/pounds

Appendix A: Emissions Calculations
Emissions from Storage Silo

Company Name: Flexform Technologies, Inc.
Address City IN Zip: 4955 Beck Drive, Elkhart, IN 46516
Permit Number: R 039-25900-00516
Reviewer: Renee Traivaranon
Date: March 26, 2008

The uncontrolled potential emissions of particulate from dry ingredient storage before controls are estimated using AP-42 Table 11.12-2 emission factors for the uncontrolled truck unloading to elevated storage silo (pneumatic)

Emission Factor (lbs/ton)*	
PM	PM10
0.79	0.46

Filter Unit Control Efficiency	
PM	PM10
99.0%	99.0%

Potential to Emit (PTE) of Particulate (PM and PM10)

Emission Unit	Maximum Throughput (lbs/hr)**	Maximum Throughput (tons/hr)**	Uncontrolled PTE of PM (lbs/hour)	Uncontrolled PTE of PM10 (lbs/hour)	Uncontrolled PTE of PM (tons/yr)	Uncontrolled PTE of PM10 (tons/yr)	Controlled PTE of PM (lbs/hr)	Controlled PTE of PM10 (lbs/hr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
One Sodium Borate Silo	40,000.0	20.00	1.6E+01	9.2E+00	3.1E-01	1.7E-01	1.6E-01	8.5E-02	3.1E-03	1.7E-03
		Totals	**15.8**	**9.2**	**0.3**	**0.2**	**0.2**	**0.1**	**0.003**	**0.002**

Methodology
* Emission Factors from AP-42 Table 11.12-2 for uncontrolled truck unloading of cement supplement to elevated storage silo (pneumatic)

Maximum Hourly Throughput (tons/hr) = [Maximum Hourly Throughput (lbs/hr)] / [2000 lbs/ton]
Uncontrolled PTE of PM or PM10 (lbs/hour) = [Maximum Hourly Throughput (tons/hr)] * [Emission Factor (lbs/ton)]
Uncontrolled PTE of PM or PM10 (tons/year) = [Uncontrolled PTE of PM or PM10 (lbs/hour)] * [39 hours/year)] / [2000 lbs/ton]
Controlled PTE of PM or PM10 (tons/year) = [Uncontrolled PTE of PM or PM10 (tons/year)] *[1 - Control Efficiency]

Compliance with 326 IAC 6-3-2

Emission Unit Type	Maximum Batch Filling Rate (lbs/hr)	Maximum Batch Filling Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)
One Sodium Borate Silo	40000.0	20.00	30.5

The storage silo has a maximum batch filling rate of 40,000 lbs/hour, based on the capacity of the silo and the unloading of sodium borate for about 1-2 hours (using average of 1.5 hrs) in every two weeks.
The use of the baghouse and dust collector will ensure compliance with the limit above.

Appendix A: Emission Calculations

Company Name: Flexform Technologies, Inc.
Address City IN Zip: 4955 Beck Drive, Elkhart, IN 46516
Permit Number: R 039-25900-00516
Reviewer: Renee Traivaranon
Date: March 26, 2008

Potential Emissions (tons/year)

Emissions Activity for Entire Source								
Pollutant	Original Plant		First Modification	New Line (no heat line)	Treating Line	Nat-Gas for treating line	Silo Filling	Total
	Mat-Plant	Nat-Gas Heater						
PM	0.58	0.10	0.004	0.87	0.47	0.25	0.003	2.28
PM10	0.58	0.10	0.004	0.87	0.47	0.25	0.002	2.27
SO2	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.03
NOx	0.00	0.90	0.00	0.00	0.00	3.29	0.00	4.19
VOC	0.72	0.05	0.08	0.18	23.20	0.18	0.00	24.41
CO	0.00	0.70	0.00	0.00	0.00	2.76	0.00	3.46
total HAPs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
worst case single HAP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: The emission from each pollutan from each receiver is considered negligible.