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MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY

**Thermal Ceramics Min-k Division
2730 Industrial Parkway
Elkhart, Indiana 46516**

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

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 039-17912-00524	
Issued by: Original signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: April 13, 2004 Expiration Date: April 13, 2009

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in Conditions A.1 and A.2 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 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary high temperature insulation products manufacturing plant.

Authorized Individual: Operations Manager
Source Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
Mailing Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
General Source Phone: (574) 296-3511
SIC Code: 3479
County Location: Elkhart
Source Location Status: Attainment for all criteria pollutants
Source Status: Minor Source Operating Permit
Minor Source, under PSD Rules
Minor Source, Section 112 of the Clean Air Act
Not in 1 of 28 Source Categories

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

- (a) Two (2) high temperature insulation lines, constructed in 1986 and consisting of:
 - (1) Four (4) mixing chambers with a total maximum throughput rate of 210 pounds of raw material per hour.
 - (2) One (1) molding and pressure curing facility with a maximum throughput rate of 50 pounds of raw material per hour.
 - (3) One (1) machining facility with a maximum throughput rate of 50 pounds per hour.
 - (4) One (1) fills/spread bag for pressing with a maximum throughput rate of 180 pounds per hour.

The above emission units are controlled by two (2) baghouses (identified as DC1 and DC2), operating in series.

- (5) One (1) cutting facility with a maximum throughput rate of 180 pounds per hour.
- (6) One (1) quilting facility, consisting of a quilter no. 1, a die cutter, and a finishing machine, with a maximum throughput rate of 180 pounds per hour.
- (b) Three (3) storage silos (identified as S01, S02, and S03), with a combined maximum throughput rate of 210 pounds of raw material per hour, and controlled by bag filters.

- (c) One (1) surface coating facility, constructed in 1986, using airless and air atomization guns, with a maximum throughput rate of 18 parts per hour, controlled by dry particulate filters, and exhausting at stack SV06.
- (d) Nineteen (19) space heaters and two (2) ovens, burning natural gas, with a total maximum heat-input capacity of 4.85 MMBtu per hour.
- (e) One (1) process furnace, using natural gas as fuel, with a maximum heat input capacity of 2.3 MMBtu per hour, and exhausting at SV05.

SECTION B GENERAL CONDITIONS

B.1 Permit No Defense [IC 13]

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

B.2 Definitions

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 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Permit Term and Renewal [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5]

This permit 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 of this permit do not affect the expiration date.

The Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date. If a timely and sufficient permit application for a renewal has been made, this permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

B.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled "Minor Source Operating Permit", all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted 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 permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and 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, P.O. Box 6015
Indianapolis, IN 46206-6015
- (d) 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.7 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each emissions unit:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.
- (c) A copy of the PMP's 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 PMP whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) 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.8 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) Permit revisions are governed by the requirements of 326 IAC 2-6.1-6.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.9 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2] [IC 13-17-3-2] [IC13-30-3-1]

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 permitted 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, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;
- (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, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;
- (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, at reasonable times, 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.10 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

B.11 Annual Fee Payment [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.
- (b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, I/M & Billing Section), to determine the appropriate permit fee.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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 Permit Revocation [326 IAC 2-1.1-9]

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

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (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 permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 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).

C.5 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 by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

C.6 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
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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 an "authorized individual" as defined by 326 IAC 2-7-1(34).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The

requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements

C.7 Performance Testing [326 IAC 3-6]

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date.

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual date.
- (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 the IDEM, OAQ, if the source 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.8 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

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

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.10 Monitoring Methods [326 IAC 3][40 CFR 60][40 CFR 63]

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

C.11 Compliance Response Plan - Preparation and Implementation

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. If a Permittee is required to have an Operation, Maintenance and Monitoring (OMM) Plan under 40 CFR 60/63, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
 - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan, the Permittee shall amend its Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan to include such response steps taken.

The OMM Plan shall be submitted within the time frames specified by the applicable 40 CFR60/63 requirement.

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
- (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be ten (10) days or more until the unit or device will be shut down, then the permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down. The notification shall also include the status of the applicable compliance monitoring parameter with respect to normal, and the results of the response actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
- (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously

submitted a request for a minor permit modification to the permit, and such request has not been denied.

- (3) An automatic measurement was taken when the process was not operating.
- (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

Record Keeping and Reporting Requirements

C.12 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.13 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

- (a) The Permittee shall submit an emission statement certified pursuant to the requirements of 326 IAC 2-6. This statement must be received in accordance with the minimum requirements specified in 326 IAC 2-6-3 and must comply with the minimum requirements specified in 326 IAC 2-6-4. The emission statement shall meet the following requirements:
 - (1) Indicate estimated actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
 - (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 purposes of Part 70 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, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The emission statement does require the certification by the responsible official as defined by 326 IAC 2-1.1-1(1).

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

C.14 General Record Keeping Requirements [326 IAC 2-6.1-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when operation begins.

C.15 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) Reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (b) 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.
- (c) Unless otherwise specified in this permit, any reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-6.1-5 (a)(1)]:

- (a) Two (2) high temperature insulation lines, constructed in 1986 and consisting of:
- (1) Four (4) mixing chambers with a total maximum throughput rate of 210 pounds of raw material per hour.
 - (2) One (1) molding and pressure curing facility with a maximum throughput rate of 50 pounds of raw material per hour.
 - (3) One (1) machining facility with a maximum throughput rate of 50 pounds per hour.
 - (4) One (1) fills/spread bag for pressing with a maximum throughput rate of 180 pounds per hour.

The above emission units are controlled by two (2) baghouses (identified as DC1 and DC2), operating in series.

- (5) One (1) cutting facility with a maximum throughput rate of 180 pounds per hour.
 - (6) One (1) quilting facility, consisting of a quilter no. 1, a die cutter, and a finishing machine, with a maximum throughput rate of 180 pounds per hour.
- (b) Three (3) storage silos (identified as S01, S02, and S03), with a combined maximum throughput rate of 210 pounds of raw material per hour, and controlled by bag filters.

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

Emission Limitations and Standards

D.1.1 Particulate [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the cutting facility, the fills/spread bag, and the quilting facility shall each not exceed 0.81 pound per hour when operating at a process weight rate of 180 pounds per hour.

The pounds per hour limitations were calculated using the following equation:

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

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

- (b) Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from each of the four (4) mixing chambers, each of the three (3) silos, the molding and pressure curing facility, and one (1) machining facility shall not exceed 0.551 pounds per hour.

Compliance Determination Requirements

D.1.2 Particulate Control

In order to comply with D.1.1, the two (2) baghouses (identified as DC1 and DC2) for particulate control shall be in operation and control emissions from the two (2) high temperature insulation lines (consisting of four (4) mixing chambers, three (3) silos, one (1) molding and pressure curing facility, one (1) machining facility, and one (1) fills/spread bags at all times that the two (2) high temperature insulation lines are in operation.

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-6.1-5 (a)(1)]:

- (c) One (1) surface coating facility, constructed in 1986, using airless and air atomization guns, with a maximum throughput rate of 18 parts per hour, controlled by dry particulate filters, and exhausting at stack SV06.
- (d) Nineteen (19) space heaters and two (2) ovens, burning natural gas, with a total maximum heat-input capacity of 4.85 MMBtu per hour.
- (e) One (1) process furnace, using natural gas as fuel, with a maximum heat input capacity of 2.3 MMBtu per hour, and exhausting at SV05.

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

Emission Limitations and Standards

There are no specifically applicable regulations that apply to these emission units.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH**

**MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	Thermal Ceramics Min-k Division
Address:	2730 Industrial Parkway
City:	Elkhart, Indiana 46516
Phone #:	(574) 296-3569
MSOP #:	039-17912-00524

I hereby certify that Thermal Ceramics Min-k Division is still in operation.
 no longer in operation.

I hereby certify that Thermal Ceramics Min-k Division is in compliance with the requirements of MSOP 039-17912-00524
 not in compliance with the requirements of MSOP 039-17912-00524

Authorized Individual (typed):
Title:
Signature:
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:

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?____, 25 TONS/YEAR SULFUR DIOXIDE ?____, 25 TONS/YEAR NITROGEN OXIDES?____, 25 TONS/YEAR VOC ?____, 25 TONS/YEAR HYDROGEN SULFIDE ?____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?____, 25 TONS/YEAR FLUORIDES ?____, 100TONS/YEAR CARBON MONOXIDE ?____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Issued April 13, 2004

**Indiana Department of Environmental Management
Office of Air Quality**

**Addendum to the Technical Support Document
for a Minor Source Operating Permit**

Source Background and Description

Source Name:	Thermal Ceramics Min-k Division
Source Location:	2730 Industrial Parkway, Elkhart, Indiana 46516
County:	Elkhart
SIC Code:	3299
Operation Permit No.:	039-17912-00524
Permit Reviewer:	ERG/SD

On February 27, 2004, the Office of Air Quality (OAQ) had a notice published in the Elkhart Truth, of Elkhart, Indiana, stating that Thermal Ceramics Min-k Division had applied for a Minor Source Operating Permit (MSOP) to operate a high temperature insulation products manufacturing plant with control. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAQ has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted). The Table Of Contents has been modified, if applicable, to reflect these changes.

C.13 Emission Statement ~~[326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)]~~[326 IAC 2-6]

- (a) The Permittee shall submit an ~~annual~~ emission statement certified pursuant to the requirements of 326 IAC 2-6, ~~that must be received by April 15 of each year and. This statement must be received in accordance with the minimum requirements specified in 326 IAC 2-6-3 and~~ must comply with the minimum requirements specified in 326 IAC 2-6-4. The ~~annual~~ emission statement shall meet the following requirements:
- (1) Indicate estimated actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
 - (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 purposes of Part 70 fee assessment.
- ~~(b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:~~

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015

Indianapolis, Indiana 46206-6015

The emission statement does require the certification by the responsible official as defined by 326 IAC 2-1.1-1(1).

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

~~The submittal by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.~~

issued April 13, 2004
Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a
Minor Source Operating Permit

Source Background and Description

Source Name: Thermal Ceramics Min-k Division
Source Location: 2730 Industrial Parkway, Elkhart, Indiana 46516
County: Elkhart
SIC Code: 3299
Operation Permit No.: 039-17912-00524
Permit Reviewer: ERG/SD

The Office of Air Quality (OAQ) has reviewed an application from Thermal Ceramics Min-k Division relating to the operation of a high temperature insulation products manufacturing plant.

Permitted Emission Units and Pollution Control Equipment

There are no permitted facilities operating at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted facilities/units:

- (a) Two (2) high temperature insulation lines, constructed in 1986 and consisting of:
- (1) Four (4) mixing chambers with a total maximum throughput rate of 210 pounds of raw material per hour.
 - (2) One (1) molding and pressure curing facility with a maximum throughput rate of 50 pounds of raw material per hour.
 - (3) One (1) machining facility with a maximum throughput rate of 50 pounds per hour.
 - (4) One (1) fills/spread bag for pressing with a maximum throughput rate of 180 pounds per hour.

The above emission units are controlled by two (2) baghouses (identified as DC1 and DC2), operating in series.

- (5) One (1) cutting facility with a maximum throughput rate of 180 pounds per hour.
 - (6) One (1) quilting facility, consisting of a quilter no. 1, a die cutter, and a finishing machine, with a maximum throughput rate of 180 pounds per hour.
- (b) Three (3) storage silos (identified as S01, S02, and S03), with a combined maximum throughput rate of 210 pounds of raw material per hour, and controlled by bag filters.

- (c) One (1) surface coating facility, constructed in 1986, using airless and air atomization guns, with a maximum throughput rate of 18 parts per hour, controlled by dry particulate filters, and exhausting at stack SV06.
- (d) Nineteen (19) space heaters and two (2) ovens, burning natural gas, with a total maximum heat-input capacity of 4.85 MMBtu per hour.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

The source plans to construct the following emission units and pollution control devices:

- (e) One (1) process furnace, using natural gas as fuel, with a maximum heat input capacity of 2.3 MMBtu per hour, and exhausting at SV05.

Existing Approvals

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

- (d) Exempt construction and operation status (Permit number not assigned), issued on April 11, 1986.

All conditions from previous approvals were incorporated into this permit.

Enforcement Issue

- (a) IDEM is aware that equipment has been operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled Unpermitted Emission Units and Pollution Control Equipment. The source failed to submit an application for a permit prior to November 25, 1999.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction and operation permit rules.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
SV01	Primary Baghouse	127	36 x 36	20,000	Ambient
SV02	Secondary Baghouse	40	12 x 14	3,000	Ambient
SV03	IR Oven	420	12 x 120	--	Ambient
SV04	New Oven	372	10	1,500	Ambient
SV05	Kuch Furnace	152	6	100	Ambient
SV06	Paint Booth	372	30 x 72	--	Ambient

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

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 September 9, 2003. Additional information received on November 10, 2003.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 10).

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	31.5
PM10	31.5
SO ₂	0.02
VOC	23.4
CO	2.63
NO _x	3.13

HAPs	Potential To Emit (tons/year)
Benzene	6.58 E-05
Dichlorobenzene	3.76 E-05
Formaldehyde	2.35 E-03
Hexane	5.64 E-02
Toluene	1.06 E-04
Total	5.89 E-02

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants is less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM10 and PM pollutants is greater than 25 tons per year, therefore, the source is subject to the provisions of 326 IAC 2-6.1. A MSOP will be issued.
- (c) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year, therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (d) Fugitive Emissions
Since this type of operation is not in one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Maintenance Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Elkhart County has been classified as attainment or unclassifiable for PM10, SO₂, NO_x, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Fugitive Emissions
Since this type of operation is not in one of the 28 listed source categories under 326 IAC 2-2, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD, Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons per year)
PM	31.5
PM10	31.5
SO ₂	0.02
VOC	23.4
CO	2.63
NO _x	3.13

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions were based on potential to emit calculations for this source as shown in Appendix A.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,

- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on the potential to emit calculations for this source (see Appendix A).

Federal Rule Applicability

- (a) This source is not subject to the requirements of the New Source Performance Standard (NSPS), 40 CFR 60, Subpart FFF - Standard of Performance for Flexible Vinyl and Urethane Coating and Printing (326 IAC 12) because this source does not use any rotogravure printing line to print or coat flexible vinyl or urethane products.
- (b) This source is not subject to the requirements of the New Source Performance Standard (NSPS), 40 CFR 60, Subpart PPP - Standards of Performance for Wool Fiberglass Insulation Manufacturing Plant because this source does not utilize a rotary spin wool fiberglass insulation manufacturing line.

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

- (c) This source is not subject to the requirements of 40 CFR 63, Subpart U - National Emission Standards for Hazardous Air Pollutant Emissions: Group I Polymers and Resins because this source does not manufacture Group I polymers and resins.
- (d) This source is not subject to the requirements of 40 CFR 63, Subpart W - National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production because this source does not produce epoxy resins or non-nylon polyamides.
- (e) This source is not subject to the requirements of 40 CFR 63, Subpart JJJ - National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins because this source is not a major source of hazardous air pollutants.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source was a minor source when it was built in 1986 and is not in one (1) of the twenty-eight (28) listed source categories. At construction, the potential to emit of each criteria pollutant and PM from the entire source was less than 250 tons per year. The source submitted an application on September 2, 2003 to construct one (1) process furnace with a maximum heat input capacity of 2.3 MMBtu per hour. After this modification, the potential to emit of each criteria pollutant and PM remains less than 250 tons per year threshold. Therefore, the requirements of 326 IAC 2-2 are not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs))

This source was constructed prior to the July 27, 1997 applicability date for this rule. The modification in 2003 does not have HAP emissions greater than the HAP major source thresholds. Therefore, the source is not subject to the provisions of 326 IAC 2-4.1.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of VOC and is located in Elkhart County. Pursuant to this rule, the Permittee must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

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:

- (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.

State Rule Applicability - High Temperature Insulation Lines

326 IAC 8-1-6 (New Facilities-General Reduction Requirement)

Although constructed after January 1, 1980, the molding facility and quilting facility each do not have potential VOC emissions equal to or greater than twenty-five (25) tons per year. Therefore, these facilities are not subject to the provisions of 326 IAC 8-1-6.

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

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the one (1) cutting facility, the one (1) fills/spread bags, and the one (1) quilting facility shall each not exceed 0.81 pound per hour when operating at a process weight rate of 180 pounds per hour.

The pounds per hour limitations were calculated using the following equation:

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

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

The baghouses for particulate control shall be in operation at all times the fills/spread bags is in operation, in order to comply with this rule.

The particulate emissions from the cutting and quilting facilities are negligible because these units deal with shear cuts on large fiberglass pieces.

- (b) Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process which has a maximum process weight rate less than 100 pounds per hour shall not exceed 0.551 pounds per hour. Therefore, particulate emissions from each of the four (4) mixing chambers, each of the three (3) silos, the one (1) molding and pressure curing facility, and the one (1) machining facility shall each not exceed 0.551 pounds per hour.

The baghouse for particulate control shall be in operation at all times the mixing chambers, silos, molding and pressure curing facility, and machining facility are in operation, in order to comply with this rule

State Rule Applicability - Surface Coating

326 IAC 8-1-6 (New Facilities-General Reduction Requirement)

Although constructed after January 1, 1980, the surface coating facility does not have potential VOC emissions equal to or greater than twenty-five (25) tons per year. Therefore, this source is not subject to the provisions of 326 IAC 8-1-6.

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

The surface coating facility is not subject to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) because this facility uses less than five (5) gallons of coating per day pursuant to 326 IAC 6-3-1(a)(15).

State Rule Applicability - One (1) Process Furnace, Two (2) Ovens, Nineteen (19) Space Heaters

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

The one (1) process furnace, the two (2) ovens, and the nineteen (19) space heaters are not subject to the requirements of 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) because particulate emissions from these units are from combustion only.

Conclusion

The operation of this high temperature insulation products manufacturing plant shall be subject to the conditions of the attached Minor Source Operating Permit 039-17912-00524.

**Appendix A: Emission Calculations
One (1) Process Furnace**

Company Name: Thermal Ceramics, Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

Heat Input Capacity
MMBtu/hour

Potential Throughput
MMCF/year

2.30 (1 unit only)

20.1

	Pollutant					
	* PM	* PM10	SO ₂	** NO _x	VOC	CO
Emission Factor (lb/MMCF)	7.6	7.6	0.6	100	5.5	84.0
Potential To Emit (tons/year)	0.08	0.08	0.01	1.01	0.06	0.85

*PM and PM10 emission factors are filterable and condensable PM and PM10 combined.

**Emission factors for NO_x (Uncontrolled) = 100 lb/MMCF.

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All Emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

METHODOLOGY

Potential Throughput (MMCF/year) = Heat Input Capacity (MMBtu/hour) * 8760 hours/year * 1 MMCF/1000 MMBtu

Potential To Emit (tons/year) = Potential Throughput (MMCF/year) * Emission Factor (lb/MMCF) * 1 ton/2000 lbs

See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations
One (1) Process Furnace**

Company Name: Thermal Ceramics Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

HAPs - Organics

Emission Factor (lb/MMCF)	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential To Emit (tons/year)	2.12E-05	1.21E-05	7.56E-04	1.81E-02	3.43E-05

HAPs - Metals

Emission Factor (lb/MMCF)	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential To Emit (tons/year)	5.04E-06	1.11E-05	1.41E-05	3.83E-06	2.12E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations
Nineteen (19) Space Heaters, Two (2) Ovens**

Company Name: Thermal Ceramics, Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

Heat Input Capacity
MMBtu/hour

Potential Throughput
MMCF/year

4.85 (21 units only)

42.5

	Pollutant					
Emission Factor (lb/MMCF)	* PM 7.6	* PM10 7.6	SO ₂ 0.6	** NO _x 100	VOC 5.5	CO 84.0
Potential To Emit (tons/year)	0.16	0.16	0.01	2.12	0.12	1.78

*PM and PM10 emission factors are filterable and condensable PM and PM10 combined.

**Emission factors for NO_x (Uncontrolled) = 100 lb/MMCF.

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All Emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

METHODOLOGY

Potential Throughput (MMCF/year) = Heat Input Capacity (MMBtu/hour) * 8760 hours/year * 1 MMCF/1000 MMBtu

Potential To Emit (tons/year) = Potential Throughput (MMCF/year) * Emission Factor (lb/MMCF) * 1 ton/2000 lbs

See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations
Nineteen (19) Space Heaters, Two (2) Ovens**

Company Name: Thermal Ceramics Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

HAPs - Organics

Emission Factor (lb/MMCF)	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential To Emit (tons/year)	4.46E-05	2.55E-05	1.59E-03	3.82E-02	7.22E-05

HAPs - Metals

Emission Factor (lb/MMCF)	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential To Emit (tons/year)	1.06E-05	2.34E-05	2.97E-05	8.07E-06	4.46E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations
VOC and PM/PM10 Emissions
From One (1) Paint Booth**

Company Name: Thermal Ceramics Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

Material	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Max Usage (gal/unit)	Max (units/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	PTE of VOC (lbs/hour)	PTE of VOC (lbs/day)	PTE of VOC (tons/year)	PTE of PM/PM10 (ton/year)	*Transfer Efficiency	PTE of PM/PM10 (lbs/hour)	
Acrylic Coating	13.0	32.0%	30.0%	2.0%	49.9%	68.0%	0.002	18.0	0.52	0.26	0.01	0.22	0.04	0.63	55%	0.14	
TOTAL										0.01	0.2	0.04	0.63	0.14			
										Actual Emissions (lbs/day) =		0.06					

* Coating is applied using airless and air atomization guns

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = Density (lb/gal) * Weight % Organics
PTE of VOC (lbs/hour) = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hour)
PTE of VOC (lbs/day) = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hour) * 24 hours/day
PTE of VOC (tons/year) = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hour) * 8760 hours/year * 1 ton/2000 lbs
PTE of PM/PM10 (tons/year) = Max. (units/hour) * Gal of Material (gal/unit) * Density (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer Efficiency %) * 8760 hours/year * 1 ton/2000 lbs
PTE of PM/PM10 (lbs/hour) = Maximum (unit/hour) * Gal of Material (gal/unit) * Density (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer Efficiency %)
Actual VOC Emissions (lbs/day) = PTE of VOC (lbs/hour) * Actual Hours of Operation (2020 hours)/year * 1/ Actual Days of Operation (312 days)/year

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Mixing Chambers, Molding & Pressure Curing, Machining, Fills/Spread bags Facilities**

Company Name: Thermal Ceramics Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Pit ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

Primary Baghouse

		PTE After Control PM/PM10	PTE Before Control PM/PM10
		(ton per year)	
*Particulate Control Equipment = Baghouse			
Grain Loading in grains/acf	0.002	1.50	30.0
Air Flow Rate in acf/min	20000		
Control Efficiency in %	95%		

* Assume all PM emissions are equal to PM10 emissions.

Secondary Baghouse

		PTE After Control PM/PM10	PTE Before Control PM/PM10
		(ton per year)	
*Particulate Control Equipment = Baghouse			
Grain Loading in grains/acf	0.002	0.23	4.51
Air Flow Rate in acf/min	3000		
Control Efficiency in %	95%		

* Assume all PM emissions are equal to PM10 emissions.

Methodology

PTE of PM/PM10 (lbs/hour) = Grain loading (grains/acf) * Air flow rate (acf/minutes) * 60 minutes/hour * 1 lb/7000grains

PTE of PM/PM10 (tons/year) = Grain loading (grains/acf) * Air flow rate (acf/minutes) * 60 minutes/hour * 1 lb/7000 grains * 8760 hour/year * 1 ton /2000 lbs

**Appendix A: Emissions Calculations
VOC & HAP Emissions
From Molding Operation**

Company Name: Thermal Ceramics Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

Material	Max.Usage Rate (lbs/hour)	Weight % Volatiles	PTE of VOC/HAP (lb/hour) (ton/year)
Resins	50	1.00%	0.50 2.19

METHODOLOGY

PTE of VOC (lb/hour) = Max.Usage Rate (lbs/hour) * Weight % Volatiles
PTE of VOC (tons/year) = Max.Usage Rate (lbs/hour) * Weight % Volatiles * 8760 hours/year * 1 ton/2000 lbs

**Appendix A: Emissions Calculations
VOC Emissions
From Quilting Operation**

Company Name: Thermal Ceramics Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

POTENTIAL TO EMIT OF VOC

Max. No of Fiber Panels Per Hour =	20.0
Weight % Loss Per Panel After Curing =	0.24
Weight % Loss Per Hour =	4.80
% VOC	100%
PTE of VOC (lbs/hour) =	4.80
PTE of VOC (tons/year) =	21.0
Actual Emissions (lbs/day) =	31.1
TOTAL	21.0

METHODOLOGY

PTE of VOC (lbs/hour) = Max. no of fiber panels (no. of panels/hour) * Weight % loss per panel post curing * % VOC

PTE of VOC (tons/year) = Max. no of fiber panels (no. of panels/hour) * Weight % loss per panel post curing * % VOC * 8760 hours/year * 1 ton/2000 lbs

Actual VOC Emissions (lbs/day) = PTE of VOC (lbs/hour) * Actual Hours of Operation (2020 hours)/year * 1/ Actual Days of Operation (240 days)/year

**Appendix A: Emission Calculations
PM/PM10 Emissions
From Three (3) Resin Silos**

Company Name: Thermal Ceramics Min-K Division
Address: 2730 Industrial Parkway, Elkhart, Indiana 46516
MSOP: 039-17912
Plt ID: 039-00524
Reviewer: ERG/SD
Date: November 11, 2003

Emission Unit	Max. Throughput Rate (lbs/hour)	Emission Factor (lb/ton)	Controlled PTE of PM/PM10 (lbs/hour)	Controlled PTE of PM/PM10 (tons/year)	Control Efficiency %	Uncontrolled PTE of PM/PM10 (tons/year)
Resin Silos	360	0.007	1.3E-03	5.5E-03	99%	0.55

Assume all PM emissions are equal to PM10.

* There are no emission factors available for PVOH resin handling. Therefore, the emission factors are from AP-42, Chapter 11.26 (Talc Processing), Table 11.26-1 SCC 3-05-089-85 (November 1995) was used.

Control = Bag filters with 99 % efficiency

METHODOLOGY

Controlled PTE of PM/PM10 (lbs/hour) = Max. Throughput Rate of Resin (lbs/hour) * Emission Factor (lb/ton) * 1 ton/2000 lbs

Controlled PTE of PM/PM10 (tons/year) = Max.Throughput Rate of Resin (lbs/hour) * Emission Factor (lb/ton) * 1 ton/2000 lbs * 8760 hours/year * 1 ton/2000 lbs

Uncontrolled PTE of PM/PM10 (tons/year) =Controlled PTE of PM/PM10 (tons/year) * 1/(1 - Control Efficiency %)

**Appendix A: Emissions Calculations
Summary**

Company Name: Thermal Ceramics Min-K Division

Address: 2730 Industrial Parkway, Elkhart, Indiana 46516

MSOP: 039-17912

Plt ID: 039-00524

Reviewer: ERG/SD

Date: November 11, 2003

Emission Units	PM	PM10	SO₂	NO_x	VOC	CO
Process Furnace	0.08	0.08	0.01	1.01	0.06	0.85
21 Combustion Units	0.16	0.16	0.01	2.12	0.12	1.78
Paint Booth	0.63	0.63			0.04	
Primary/Secondary Baghouses	30.0	30.0				
Molding					2.19	
Lubricant Application					21.0	
3 Silos	0.55	0.55				
TOTAL	31.5	31.5	0.02	3.13	23.4	2.63