

**CONSTRUCTION PERMIT  
OFFICE OF AIR MANAGEMENT**

**Fabwel Composites, Inc.  
16710 Maple Drive  
Goshen, Indiana 46526**

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-039-9288-00002	
Issued by:  Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

## SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM), and presented in the permit application.

### A.1 General Information

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The Permittee owns and operates a fiberglass panel manufacturing operation.

Responsible Official: Larry Farver  
Source Address: 16710 Maple Drive, Goshen, Indiana 46526  
Mailing Address: 16710 Maple Drive, Goshen, Indiana 46526  
SIC Code: 3089  
County Location: Elkhart  
County Status: Attainment for all other criteria pollutants  
Source Status: Minor Source, under PSD Rules  
Major Source, under Title V Rules

### A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) fiberglass panel manufacturing line coating a maximum of 4.5 molds per hour, consisting of two (2) fiberglass panel reciprocators, each equipped with one (1) air assisted airless gel coat application system and one (1) air assisted airless resin application system, with dry filters for overspray and exhausts through twelve (12) stacks designated as SV-36 through SV-47.
- (b) One (1) woodworking station, with a maximum raw material input rate of 265 lb/hr, consisting of a wide belt sander, a table saw, a panel saw and controlled by one (1) dust collector, designated as DC-004.
- (c) Four (4) natural gas air make-up units, designated as AM 41-44, with a maximum heat input capacity of 0.044 mmBtu/hr each.
- (d) One (1) natural gas air make-up unit, designated as AM 40, with a maximum heat input capacity of 0.012 mmBtu/hr each.
- (e) Eight (8) natural gas radiant tube heaters, designated as SV-27 thru SV-34, with a maximum heat input capacity of 0.12 mmBtu/hr each and exhausts to stacks designated as SV-27 through SV-34.
- (f) Two (2) CNC Routers, designated as 001 and 002 and controlled by one (1) dust collector designated as DC-005.
- (g) Two (2) fiberglass/wood grind machines, with a maximum raw material input rate of 627 lb/hr.

### A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

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

- (a) It is a major source, as defined in 326 IAC 2-7-1(22).
- (b) The source has submitted their Title V application (T-039-6091-00002), on June 7, 1996. The Office of Air Management shall incorporate this construction permit into their Title V.

## **SECTION B GENERAL CONSTRUCTION AND OPERATION CONDITIONS**

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

### **Construction Conditions [326 IAC 2-1-3.4]**

#### **B.1 General Construction Conditions**

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- (a) The data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
- (b) This permit to construct does not relieve the Permitted 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 Effective Date of the Permit [IC13-15-5-3]**

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

#### **B.3 Revocation of Permits [326 IAC 2-1-9(b)]**

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Pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

#### **B.4 Permit Review Rules [326 IAC 2]**

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Notwithstanding Operation Condition B.11, 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.5 First Time Operation Permit [326 IAC 2-1-4]**

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This document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
- (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
- (c) The Permitted shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

- (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1 (Fees).

## **Operation Conditions**

### **B.6 General Operation Conditions**

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- (a) The data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
- (d) The Permitted shall 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 (IC13-17) and the rules promulgated thereunder.

### **B.7. Preventive Maintenance Plan [326 IAC 1-6-3]**

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Pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permitted shall prepare and maintain a preventive maintenance plan, including the following information:

- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
- (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
- (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

### **B.8 Malfunctions Report [326 IAC 1-6-2]**

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— 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 Management (OAM) 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 OAM, 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]

**B.9 Transfer of Permit [326 IAC 2-1-6]**

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Pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this custom resin production operation is changed, the Permitted shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

**B.10 Permit Revocation [326 IAC 2-1-9]**

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Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and 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 326 IAC 2-1 (Permit Review Rules).

**B.11 Availability of Permit [326 IAC 2-1-3(I)]**

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Pursuant to 326 IAC 2-1-3(I), the Permitted shall maintain the applicable permit on the premises of the source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

## SECTION C

## SOURCE OPERATION CONDITIONS

Entire Source

### Emission Limitation and Standards

#### C.1 PSD Major Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source potential to emit of VOC and PM10 are less than 250 tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase the potential emissions to the following:
- 1.) 25 tons per year or more (326 IAC 2-1),
  - 2.) 100 tons per year or more, and greater than 10 tons per year for a single HAP or combination HAPs greater than 25 tons per year (326 IAC 2-7),
  - 3.) 250 tons per year or more (326 IAC 2-2),
- from the equipment covered in this construction permit must be approved by the Office of Air Management (OAM) before such change may occur.

#### C.2 Opacity Limitations [326 IAC 5-1-2]

Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

#### C.3 Operation of Equipment [326 IAC 2-1-3]

All air pollution control equipment listed in this permit shall be in placed or operated at all times that the emission units vented to the control equipment are in operation, as described in Section D of this permit.

#### C.4 Stack Height [326 IAC 1-7]

- (a) The Permitted shall comply with the 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.
- (b) Any change in an applicable stack shall require prior approval from IDEM, OAM.

#### C.5 Asbestos Abatement Projects - Accreditation [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

Prior to the commencement of any demolition or renovation activities, the Permitted shall use an Indiana accredited asbestos inspector to inspect thoroughly the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos,

including Category I and Category II nonfriable asbestos containing material. The requirement that the inspector be accredited is federally enforceable.

### **Testing Requirements [326 IAC 3-6]**

#### **C.6 Performance Testing [326 IAC 3-6]**

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- (a) All testing shall be performed according to the provisions of 326 IAC 3-2.1 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing methods approved by IDEM, OAM.

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 Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

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

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

### **Compliance Monitoring Requirements**

#### **C.7 Compliance Monitoring [326 IAC 2-1-3]**

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Compliance with applicable requirements shall be documented as required by this permit. The Permitted shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment, no more than ninety (90) days after receipt of this permit. If due to circumstances beyond its control, this schedule cannot be met, the Permitted shall notify:

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

in writing, no more than ninety (90) days after receipt of this permit, with full justification of the reasons for the inability to meet this date and a schedule which it expects to meet. If a denial of the request is not received before the monitoring is fully implemented, the schedule shall be deemed approved.

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

#### **C.8 Monitoring Methods [326 IAC 3]**

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Any monitoring or testing performed to meet the requirements of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.9 Pressure Gauge Specifications [326 IAC 2-1-3]

Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ( $\pm 2\%$ ) of full scale reading.

C.10 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permitted 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
  - (3) Waste disposal site.
- (c) The Permitted 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 Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015
- (e) Procedures for Asbestos Emission Control  
The Permitted shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

- (f) Indiana Accredited Asbestos Inspector  
The Permitted shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

### **Corrective Actions and Response Steps**

#### **C.11 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]**

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

- (a) The Permitted shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

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

within 180 days from the date on which this source commences operation.

- (c) If the ERP is disapproved by IDEM, OAM, the Permitted shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permitted does not submit an approvable ERP, then IDEM, OAM, shall supply such a plan.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permitted shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

### **Record Keeping Requirements**

#### **C.12 Emission Statement [326 IAC 2-6]**

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- (a) The Permitted shall submit a certified, annual emission statement that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:
- (1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
  - (2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.

- (b) The annual emission statement covers the twelve (12) consecutive month time period starting 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 Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

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

C.13 Monitoring Data Availability [326 IAC 2-1-3]

- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permitted shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.14 General Record Keeping Requirements [326 IAC 2-1-3]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM, representative, for a minimum of three (3) years. They may be stored elsewhere for the remaining two (2) years providing they are made available within thirty (30) days after written request.

- (b) Records of required monitoring information shall include, where applicable:
  - (1) The date, place, and time of sampling or measurements;
  - (2) The dates analyses were performed;
  - (3) The company or entity performing the analyses;
  - (4) The analytic techniques or methods used;
  - (5) The results of such analyses; and
  - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
  - (1) Copies of all reports required by this permit;
  - (2) All original strip chart recordings for continuous monitoring instrumentation;
  - (3) All calibration and maintenance records;
  - (4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.15 General Reporting Requirements [326 IAC 2-1-3]

- (a) To affirm that the source has met all the requirements stated in this permit the source shall submit a Quarterly Compliance Report. Any deviation from the requirements and the date(s) of each deviation must be reported.
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.

- (d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.
  - (e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
    - (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
    - (2) An emergency as defined in 326 IAC 2-7-1(12); or
    - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
    - (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.
- A Permitted's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.
- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
  - (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

### **Stratospheric Ozone Protection**

#### **C.16 Compliance with 40 CFR 82 and 326 IAC 22-1**

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

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1 FACILITY CONDITIONS

One (1) fiberglass panel manufacturing line coating a maximum of 4.5 molds per hour, consisting of two (2) fiberglass panel reciprocators, each equipped with one (1) air assisted airless gel coat application system and one (1) air assisted airless resin application system, with dry filters for overspray and exhausts through twelve (12) stacks designated as SV-36 through SV-47.

### Emissions Limitation and Standards

#### D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

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Pursuant to 326 IAC 8-1-6 (New Facilities; general reduction requirements), the BACT for the fiberglass panel manufacturing line shall be satisfied by the requirements of 326 IAC 2-1-3.4 (New Source Toxics Control) specified in Condition D.1.3.

#### D.1.2 PM Process Operations [326 IAC 6-3]:

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Pursuant to 326 IAC 6-3 (Process Operations), the new fiberglass panel manufacturing line shall have a PM allowable emission using the following equation:

$$(a) E = 4.10 P^{0.67}$$

Where: E = PM allowable emissions in pounds hour  
P = Process weight rate in tons per hour.

(b) The allowable PM emissions limit, determined from 326 IAC 6-3, shall be 1.88 lb/hr.

#### D.1.3 New Source Toxics Control [326 IAC 2-1-3.4]

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Pursuant to 326 IAC 2-1-3.4, the MACT for the new fiberglass panel manufacturing line shall be the following:

1. Use of the following work practices:
  - (a) Spray applicators will be cleaned with a non-VOC, non-HAP (to the extent possible).
  - (b) The cleanup solvent containers, used to transport solvent from drums to work stations, shall be closed containers having soft gasketed spring-loaded closures.
  - (c) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
  - (d) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.
  - (e) All solvent sprayed during cleanup or resin and or gel coat changes shall be directed into containers. Such containers shall be closed as soon as solvent spraying is complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.
  - (f) Storage containers used to store VOC and/or HAPs containing materials shall be kept covered when not in use.

2. The source shall be limited to a VOC potential to emit (PTE) of 249.0 tons/yr. That the VOC usage, including volatile organic HAP resin and gel coat of the entire source shall be limited to 249 tons per year, rolled on a monthly basis. This production limitation is equivalent to VOC emissions of 249 tons per year, rolled on a monthly basis. The VOC usage limit is required as a component of the MACT determination and compliance with this limit shall be determined based upon the following criteria:
  - (a) Monthly usage by weight, monomer content, method of application, and other emission reduction techniques for each gel coat and resin shall be recorded. Volatile organic compound emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.
  - (b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA-approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries", Composites Fabricators Association, February 28, 1998, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.

During the first 12 months of operation, the VOC usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the limit specified.

3. Use of resins and gel coats, including filled resins and tooling resins and gel coats, containing a maximum monomer content of 35 percent (35%) by weight for resins, 37 percent (37%) by weight for gel coats or their equivalent on an emissions mass basis. Monomer contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these monomer content limits shall be demonstrated on a monthly basis.

The use of resins with monomer contents lower than 35%, gel coats with monomer contents lower than 37%, or the use of additional emission reduction techniques approved by IDEM, OAM, may be used to offset the use of resins with monomer contents higher than 35%, and gel coats with monomer contents higher than 37%. Such examples to this, but are not limited to, could be lower monomer content resins and gel coats, closed molding, vapor suppression, controlled spraying, vacuum bagging, or installing a control device with an overall efficiency of 95%. This is allowed to meet the monomer content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

(Emissions from >35% resin or >37% gel coat) - (Emissions from 35% resin or 37% gel coat)  
# (Emissions from 35% resin or 37% gel coat) - (Emissions from <35% resin or <37% gel coat, and/or other emission reduction techniques)

Where: Emissions, lb or ton = M (Mass of resin or gel coat used, lb or ton) \* EF ( Monomer emission factor for resin or gel coat used, %);

EF, Monomer emission factor = emission factor, expresses as % styrene emitted per weight resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.

4. Use of flow coaters, a type of non-spray application technology of a design and specifications to be approved by IDEM, OAM, shall be used in the following manner:

- (i) to apply 50% of neat resins within six (6) months of commencement of operation.
- (ii) to apply 100% of all neat resins used within one (1) year of commencement of operation.

If this is still not possible to apply a portion of neat resins with flow coaters after one (1) year, equivalent emission reduction techniques must be obtained via use of other techniques elsewhere in the process.

5. Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.

HVLP spray is the technology used to apply material to substrate by means of application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

6. Roll-out and placement of wood reinforcing panels and sealing strips shall be performed immediately after the resin application process.
7. The Permittee has demonstrated to the satisfaction of IDEM, OAM that use of the following alternative emission reduction techniques can be considered equivalent to meeting the requirements of Conditions 3, 4, and 5 listed above:
  - (i) Monomer contents of 36 percent (36%) by weight for resins and 35 percent (35%) by weight for gel coats.
  - (ii) Overhead mechanized spray reciprocator to apply all gel coats and resins, which minimizes overspray off the mold through proper placement of spray gun stops and spray gun pressure calibration according to guidelines published by IDEM, OAM. The spray gun type shall be high volume low pressure (HVLP) or equivalent.
  - (iii) Minimizing the period of roll-out and placement of wood panels immediately after the last resin application.

Hence, the use of the emission reduction techniques listed above is hereby approved by IDEM, OAM as alternatives to meeting the requirements of Conditions 3, 4 and 5 provided the techniques are employed from the startup of operation. All other conditions stated in this permit remain in effect.

#### D.1.4 PSD Minor Modification

Pursuant to 326 IAC 2-2, this modification to an existing minor source shall be considered minor since the VOC emissions are less than 250 tons per year.

#### D.1.5 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control devices.

### **Compliance Determination Requirements**

#### D.1.6 Performance Testing [326 IAC 3-6]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the VOC limit specified in Condition D.1.3 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

#### D.1.7 Volatile Organic Compounds

Compliance with the styrene content and usage limitations contained in Condition D.1.3 shall be determined pursuant to 326 IAC 8-1-4(a)(3)(A) using formulation data supplied by the coating manufacturer. However, IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

#### D.1.8 Particulate Matter (PM)

The dry filters for PM control shall be in operation at all times when the fiberglass panel manufacturing line is in operation.

#### D.1.9 Monitoring

- (a) Weekly inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, daily observations shall be made of the overspray while one or more of the spray equipment is in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (b) Monthly inspections shall be performed of the fiberglass panel manufacturing line emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an overspray emission, evidence of overspray emission, or other abnormal emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

#### **D.1.10 Visible Emissions Notations**

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- (a) Weekly visible emission notations of the fiberglass panel manufacturing line stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

#### **Record Keeping and Reporting Requirements**

##### **D.1.11 Record Keeping Requirements [326 IAC 2-1-3]**

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- (a) To document compliance with Conditions D.1.1 and D.1.3, the Permitted shall maintain records in accordance with (1) through (8) below. Records maintained for (1) through (8) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC and monomer usage limits and/or the VOC and monomer emission limits established in Condition D.1.1 and D.1.3.
  - (1) The amount of each resin and gel coat used. The VOC and mass weighted monomer content of each resin and gel coat used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
  - (2) A log of the dates of use;
  - (3) The volume weighted VOC content of the coatings used for each month;
  - (4) The cleanup solvent usage for each month;
  - (5) The total VOC usage for each month;
  - (6) The weight of VOCs emitted for each compliance period;
  - (7) The total monomer usage for each month; and
  - (8) Method of application and other emission reduction techniques for each resin and gel coat use for each month.

- (b) To document compliance with Condition D.1.2 and D.1.9, the Permitted shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (c) To document compliance with D.1.10, the Permitted shall maintain records of daily visible emission notations of the fiberglass panel manufacturing line stack exhaust.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### D.1.12 Reporting Requirements [326 IAC 2-1-3]

A quarterly summary of the information to document compliance with Condition D.1.1 and D.1.3 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

### **SECTION D.2 FACILITY OPERATION CONDITIONS**

- (a) One (1) woodworking station, with a maximum raw material input rate of 265 lb/hr, consisting of a wide belt sander, a table saw, a panel saw and controlled by one (1) dust collector, designated as DC-004.
- (b) Four (4) natural gas air make-up units, designated as AM 41-44, with a maximum heat input capacity of 0.044 mmBtu/hr each.
- (d) One (1) natural gas air make-up unit, designated as AM 40, with a maximum heat input capacity of 0.012 mmBtu/hr each.
- (e) Eight (8) natural gas radiant tube heaters, designated as SV-27 thru SV-34, with a maximum heat input capacity of 0.12 mmBtu/hr each and exhausts to stacks designated as SV-27 through SV-34.
- (f) Two (2) CNC Routers, designated as 001 and 002 and controlled by one (1) dust collector designated as DC-005.
- (g) Two (2) fiberglass/wood grind machines, with a maximum raw material input rate of 627 lb/hr.

### **Emission Limitations and Standards**

#### D.2.1 Particulate Matter (PM) Woodworking Station [326 IAC 6-3]

Pursuant to 326 IAC 6-3 (Process Operations), the following applies:

- (a) the allowable PM emission rate from the woodworking station shall not exceed 1.06 pounds per hour when operating at a total process weight rate of 627 pounds per hour.
- (b) the allowable PM emission rate from the CNC routers shall not exceed 1.88 pounds per hour when operating at a total process weight rate of 265 pounds per hour.

- (c) the allowable PM emission rate from the grind machines shall not exceed 1.88 pounds per hour when operating at a total process weight rate of 627 pounds per hour.

The pounds per hour limitation was calculated with the following equation:

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

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

## Compliance Determination Requirements

### D.2.2 Testing Requirements

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Testing of this facility is not specifically required by this permit. However, if testing is required, compliance with the PM limit specified in Condition D2.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing. This does not preclude testing requirements on this facility under 326 IAC 2-7-5 and 326 IAC 2-7-6.

### D.2.3 Particulate Matter (PM)

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The dust collectors for PM control shall be in operation at all times when the woodworking station is in operation and exhausting to the outside atmosphere.

## Compliance Monitoring Requirements

### D.2.4 Visible Emissions Notations

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- (a) Weekly visible emission notations of the woodworking station, CNC routers and grind machines at the point of exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

### D.2.5 Parametric Monitoring

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The Permittee shall record the total static pressure drop across the dust collectors used in conjunction with the woodworking process, at least once weekly when the woodworking process is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the dust collectors

shall be maintained within the range of 2.0 and 4.0 inches of water. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

### **Record Keeping and Reporting Requirement**

#### **D.2.6 Record Keeping Requirements [326 IAC 2-1-3]**

- (a) To document compliance with Condition D.2.5, the Permittee shall maintain records of weekly visible emission notations of the woodworking station and CNC routers at the point of exhaust.
- (b) To document compliance with Condition D.2.5, the Permittee shall maintain the following:
  - (1) Weekly records of the following operational parameters during normal operation when venting to the atmosphere:
    - (A) Inlet and outlet differential static pressure; and
    - (B) Cleaning cycle: frequency and differential pressure; this only applies to the CNC routers.
  - (2) Documentation of all response steps implemented, per event .
  - (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
  - (4) Quality Assurance/Quality Control (QA/QC) procedures.
  - (5) Operator standard operating procedures (SOP).
  - (6) Manufacturer's specifications or its equivalent.
  - (7) Equipment "troubleshooting" contingency plan.
  - (8) Documentation of the dates vents are redirected.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.



(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

FAXNUMBER - 317233-5967

**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. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO<sub>2</sub>, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

**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. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

**\*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:

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## Indiana Department of Environmental Management Office of Air Management Compliance Data Section

### Quarterly Report

Company Name: Fabwell Composites, Inc.  
 Location: 16710 Maple Drive, Goshen Indiana 46526  
 Permit No.: 039-9288-00002  
 Source: Fiberglass Operation - Entire Source  
 Pollutant: VOC PTE (includes volatile organic HAP from resins and gel coats)  
 Limit: 249 tons per twelve month period

Year: \_\_\_\_\_

Month	Usage (tons/ month)	Usage for previous month (tons)	Usage for previous twelve month period (tons)	Emissions (tons/ month)	Emissions for previous month (tons)	VOC PTE for previous twelve month period (tons)

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_  
 Title / Position: \_\_\_\_\_  
 Signature : \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Phone: \_\_\_\_\_

## Indiana Department of Environmental Management Office of Air Management

### Technical Support Document (TSD) for New Construction and Operation

#### Source Background and Description

Source Name: Fabwel Composites, Inc.  
Source Location: 16710 Maple Drive, Goshen, Indiana 46526  
County: Elkhart  
Construction Permit No.: CP-039-9288-00002  
SIC Code: 3089  
Permit Reviewer: Nysa L. James

The Office of Air Management (OAM) has reviewed an application from Fabwel Composites, Inc. relating to the construction and operation of a motor home fiberglass manufacturing operation , consisting of the following equipment:

- (a) One (1) fiberglass panel manufacturing line coating a maximum of 4.5 molds per hour, consisting of two (2) fiberglass panel reciprocators, each equipped with one (1) air assisted airless gel coat application system and one (1) air assisted airless resin application system, with dry filters for overspray and exhausts through twelve (12) stacks designated as SV-27 through SV-34.
- (b) One (1) woodworking station, with a maximum raw material input rate of 265 lb/hr, consisting of a wide belt sander, a table saw, a panel saw and controlled by one (1) existing dust collector, designated as DC-004.
- (c) Four (4) natural gas air make-up units, designated as AM 41-44, with a maximum heat input capacity of 0.035 mmBtu/hr each.
- (d) One (1) natural gas air make-up unit, designated as AM 40, with a maximum heat input capacity of 0.012 mmBtu/hr each.
- (e) Eight (8) natural gas radiant tube heaters, designated as SV-27 thru SV-34, with a maximum heat input capacity of 0.12 mmBtu/hr each and exhausts to stacks designated as SV-27 through SV-34.
- (f) Two (2) CNC Routers, designated as 001 and 002 and controlled by one (1) dust collector designated as DC-005.
- (g) Two (2) fiberglass/wood grind machines, with a maximum raw material input rate of 265 lb/hr.

**Stack Summary**

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
SV-27 thru SV-34	Tube Heaters	25	0.5	100	77
SV-36 thru SV-47; Exhaust fans with filters	fiberglass operation	27	2.5	8395	Ambient
SV-48 thru SV-51; Building vent fans	general ventilation	8	2.5	8395	Ambient
AM-40 thru AM-44	Air Make-Up Systems	no stack, air over flame	--	--	--

**Recommendation**

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

Information, unless otherwise stated, 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 December 10, 1997, with additional information received on May 22 , 1998.

**Emissions Calculations**

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (five (5) pages).

**PM potential emissions from woodworking:**

Process	Total PM Collected at Dry Collector	Control Efficiency	Actual Hours of Operation Per Year	Potential Hours of Operation Per Year	Total (Ton/Year)
Woodworking	44.0	99.9%	8560	8760	0.04

**Methodology:**

PM Potential (ton/yr) = tons PM collected/ % collection efficiency \* potential hours / actual hours \* (1-collection efficiency)

**Total Potential and Allowable Emissions**

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	32.97	394.93
Particulate Matter (PM10)	32.97	394.93
Sulfur Dioxide (SO <sub>2</sub> )	--	0.003
Volatile Organic Compounds (VOC)	--	375.3
Carbon Monoxide (CO)	--	0.102
Nitrogen Oxides (NO <sub>x</sub> )	--	0.486
Methyl Methacrylate	--	3.57
Dimethyl Phthalate	--	78.98
Styrene	--	292.33
Combination of HAPs	--	374.88

- (a) Allowable emissions are determined from the applicability of rule 326 IAC 6-3.
- (i) The wide belt sander, table saw and panel saw shall comply with 326 IAC 6-3-2(c) using the following equation:  
 $E = 4.10P^{0.67};$  where P = process weight in tons per hour  
 E = rate of emission in pounds per hour.  
 $E = 4.10 * (265 \text{ lb/hr} / 2000 \text{ lb/ton}) ^{0.67} = 1.06 \text{ lb/hr}; 4.64 \text{ ton/yr.}$
- (ii) The fiberglass panel coating line shall comply with 326 IAC 6-3-2(c) using the following equation:  
 $E = 4.10P^{0.67};$  where P = process weight in tons per hour  
 E = rate of emission in pounds per hour.  
 The allowable emissions from this facility is 2.70 lb/hr; 11.83 ton/yr.
- (iii) The CNC routers shall comply with 326 IAC 6-3-2(c) using the following equation:  
 $E = 4.10P^{0.67};$  where P = process weight in tons per hour  
 E = rate of emission in pounds per hour.  
 $E = 4.10 * (627 \text{ lb/hr} / 2000 \text{ lb/ton}) ^{0.67} = 1.88 \text{ lb/hr}; 8.25 \text{ ton/yr.}$

- (iv) The grind machines shall comply with 326 IAC 6-3-2(c) using the following equation:

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

E = rate of emission in pounds per hour.

$$E = 4.10 * (627 \text{ lb/hr} / 2000 \text{ lb/ton})^{0.67} = 1.88 \text{ lb/hr}; 8.25 \text{ ton/yr.}$$

The source complies with 326 IAC 6-3 because of the dry filters for overspray control and dust collectors for the facilities which yields a total PM after control emissions of 20.20 ton/yr.

- (b) The allowable emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of VOC and particulate matter are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.
- (d) Allowable emissions (as defined in the Indiana Rule) of a single hazardous air pollutant (HAP) are greater than 10 tons per year and/or the allowable emissions of any combination of the HAPs are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is required.

### County Attainment Status

- (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 and 40 CFR 52.21.
- (b) Elkhart County has been classified as attainment or unclassifiable for particulate matter, CO, NO<sub>x</sub> and SO<sub>2</sub>. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions  
Since this type of operation is not one of the 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 PM emissions are not counted toward determination of PSD and Emission Offset applicability.

### Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	15.3
PM10	15.3
SO <sub>2</sub>	0.00
VOC	247.5
CO	1.7
NO <sub>x</sub>	7.2

- (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 the construction permit CP 039-4937-00002, issued on March 21, 1996.

**Proposed Modification**

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO <sub>2</sub> (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO <sub>x</sub> (ton/yr)
Proposed Modification	20.20	20.20	0.003	249*	0.102	0.486
PSD or Offset Threshold Level	250	250	250	250	250	250

\* The 249 ton VOC/yr limit is a combination of the proposed modification and the existing facilities.

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

**Part 70 Permit Determination**

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-039-6091-00002) application on June 7, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

**Federal Rule Applicability**

- (a) There are no New Source Performance Standards 40 CFR Part 60 applicable to these facilities.

- (b) NESHAP 40 CFR Part 63 Subpart T does not apply to the fiberglass panel coating line because the clean-up solvent utilized is acetone.
- (c) There are no other NESHAP 40 CFR Part 63 applicable to these facilities.

### State Rule Applicability

#### 326 IAC 2-1-3.4 (New Source Toxics Control):

The fiberglass panel coating line is subject to 326 IAC 2-1-3.4 (MACT) because the facility emits either a single HAP greater than 10 ton/yr or a combination of HAPs greater than 25 ton/yr.

This facility has potential styrene emissions of 292.33 ton/yr. The total potential combination HAPs are 374.88 ton/yr

The options that were considered for MACT are the following:

1. Zeolite Rotary Oxidizer;
2. Catalytic Bed Oxidizer;
3. Recuperative Catalytic Oxidizer;
4. A source-wide VOC PTE limit of 249 ton/yr with the following emission reduction techniques:
  - a. Use of resins and gel coats, including tooling resins and gel coats, containing a maximum mass-weighted average styrene content of 35 percent (35%) by weight for resins, 37 percent (37%) by weight for gel coats. Styrene contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these mass-weighted average styrene content limits shall be demonstrated on a monthly basis.

The use of resins with styrene contents lower than 35%, or gel coats with styrene contents lower than 37%, can be used to offset the use of resins with styrene contents higher than 35%, or gel coats with styrene contents higher than 37%. This is allowed to meet the weighted average styrene content limits for resins and gel coats.

This shall be calculated on an equivalent emissions mass basis as shown below:

$$\frac{(\text{Emissions from } >35\% \text{ resin or } >37\% \text{ gel coat}) - (\text{Emissions from } 35\% \text{ resin or } 37\% \text{ gel coat})}{\# (\text{Emissions from } 35\% \text{ resin or } 37\% \text{ gel coat}) - (\text{Emissions from } <35\% \text{ resin or } <37\% \text{ gel coat})}$$

Where: Emissions, lb or ton = M (Mass of resin or gel coat used, lb or ton) \* EF (Styrene emission factor for resin or gel coat used, %).  
(Styrene emission factor = emission factor indicated for the styrene content of the resin or gel coat used and approved for use by IDEM.)

- b. Use of flow coaters, a type of non-spray application technology, in the following manner:
    - (i) to apply 50% of neat resins used by January 1, 1999.
    - (ii) to apply all resins used, neat and filled, by July 1, 1999. If this is still not possible for filled resins in a years time, equivalent emission reduction techniques must be obtained elsewhere in the process. Such examples to this could be lower styrene content, closed molding on a portion of resin usage, or installing a control device with an overall efficiency of 95%.
  - c. Use controlled spray techniques according to a manner approved by IDEM at all times for gelcoats and for neat and filled resins, until such time that flow coaters must be used.
  - d. If other emission reduction techniques are identified and demonstrated to IDEM's satisfaction, they may be proposed for use instead of or in addition to the use of flow coaters.
5. Limit on the VOC PTE of 197.95 tons/yr, air assisted airless guns with work practices; and
  6. No Controls.

The following list of controls were determined to be economically infeasible because a cost-effective capture system could not be determined at the time of review:

1. Zeolite Rotary Oxidizer
2. Catalytic Bed Oxidizer
3. Recuperative Catalytic Oxidizer.

A floor duct system was researched as a possible capture system for any of the above listed control devices, but has been determined to be economically infeasible. The area under the mold could not be closed sufficiently to capture VOC/HAPs at the spraying point. Suction would run along the 42 foot length of the line and would follow the path of least resistance, taking its suction at the first point of the opening and thus not doing an effective job. An overhead duct system could not be considered because of the overhead tram system that the line utilizes for part movement. The entire building could be enclosed to produce an effective capture system. The overall costs for enclosing the building are as follows:

**Cost Analysis:**

<b>Control Device</b>	<b>Overall Cost (Control Device + Enclosure)</b>	<b>Expected Emission Rate Reduction (ton/yr)</b>	<b>Energy Impacts (KWH)</b>	<b>Environmental Impacts (ton NOx produced/ VOC removed)</b>	<b>Economic Impacts (cost \$/ton removed)</b>
Rotary Concentrator	1,268,584	178.32	159.5	0.006	3,379.11
Catalytic Oxidizer	1,968,386	178.32	328.73	0.09	5,243.16
Recuperative Oxidizer	1,502,168	178.32	157.46	0.16	4,001.30

The cost analysis above demonstrates that the overall cost is considerably high when compared to the amount of emissions reduced. The overall efficiency of the control devices listed above is 47.5%. This efficiency is relatively low when compared to the other types of MACT proposed. This reduces emissions by only 178.32 tons per year. The after control emissions would still be 197.1 tons per year and the total overall source VOC (including HAPs) emissions would be 444.6 tons per year.

The total emissions of 444.6 tons per year for the overall source compared to the source-wide limit of 249 tons year (reduction of 370.38 tons per year) demonstrates that the control devices mentioned option reduce less than the overall source-wide limit. Because the cost is economically infeasible (when compared to the amount of VOC reduced) and when comparing it to an overall source limit, this option has been determined to be an invalid for this particular MACT.

Since the control devices listed above have been determined to be economically infeasible and not an effective option to reduce emissions, the MACT for this facility shall be the following:

1. Use of the following work practices:
  - (a) Spray applicators will be cleaned with acetone.
  - (b) The cleanup solvent containers used to transport solvent from drums to work
  - (c) Stations be closed containers having soft gasketed spring-loaded closures.
  - (d) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
  - (e) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.

- (f) All solvent sprayed during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as solvent spraying is complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.
  - (g) Storage containers used to store VOC and/or HAPs containing materials shall be kept covered when not in use.
2. The source shall be limited to a VOC potential to emit (PTE) of 249.0 tons/yr. The potential styrene emissions from the new facility are 292.33 tons per year, potential VOC emissions from the new facility are 371.88 tons/yr and the existing limited VOC emissions are 247.5 tons/yr. The overall source-wide VOC reduction is 370.38 ton/yr. That the input resin and/or gel coat of the entire source shall be limited to 249 tons per year, rolled on a monthly basis. This production limitation is equivalent to VOC emissions of 249 tons per year, rolled on a monthly basis. The VOC usage limit is required as a component of the MACT determination and compliance with this limit shall be determined based upon the following criteria:
- (a) VOC usage for the gel coats delivered to the applicator shall be determined by multiplying the gel coat usage times the appropriate CFA emission factor.
  - (b) VOC usage for the resins delivered to the applicator shall be determined by multiplying the resin usage times the appropriate CFA emission factor.

During the first 12 months of operation, the VOC usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the limit specified.

3. Use of resins and gel coats, including tooling resins and gel coats, containing a maximum mass-weighted average styrene content of 35 percent (35%) by weight for resins, 37 percent (37%) by weight for gel coats. Styrene contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these mass-weighted average styrene content limits shall be demonstrated on a monthly basis.

The use of resins with styrene contents lower than 35%, or gel coats with styrene contents lower than 37%, can be used to offset the use of resins with styrene contents higher than 35%, or gel coats with styrene contents higher than 37%. This is allowed to meet the weighted average styrene content limits for resins and gel coats.

This shall be calculated on an equivalent emissions mass basis as shown below:

$$\frac{(\text{Emissions from } >35\% \text{ resin or } >37\% \text{ gel coat}) - (\text{Emissions from } 35\% \text{ resin or } 37\% \text{ gel coat})}{(\text{Emissions from } 35\% \text{ resin or } 37\% \text{ gel coat}) - (\text{Emissions from } <35\% \text{ resin or } <37\% \text{ gel coat})}$$

Where: Emissions, lb or ton = M (Mass of resin or gel coat used, lb or ton) \* EF (Styrene emission factor for resin or gel coat used, %).  
(Styrene emission factor = emission factor indicated for the styrene content of the resin or gel coat used and approved for use by IDEM.)

4. Use of flow coaters, a type of non-spray application technology, in the following manner:
  - (i) to apply 50% of neat resins used by January 1, 1999.
  - (ii) to apply all resins used, neat and filled, by July 1, 1999. If this is still not possible for filled resins in a years time, equivalent emission reduction techniques must be obtained elsewhere in the process. Such examples to this could be lower styrene content, closed molding on a portion of resin usage, or installing a control device with an overall efficiency of 95%.
5. Use of controlled spray techniques according to a manner approved by IDEM for gel coats at all times and for neat and filled resins until such time that flow coaters must be used. Controlled spray techniques include, but are not limited to, the use of airless, air-assisted airless, or high volume low pressure (HVLV) spray applicators.
6. If other emission reduction techniques are identified and demonstrated to IDEM's satisfaction, they may proposed for use instead of or in addition to the use of flow coaters.
7. Roll-out and placement of wood reinforcing panels and sealing strips shall be performed immediately after the resin application process.

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

326 IAC 2-2 does not apply because the source's potential to emit from the referenced facilities is 249 tons/yr, which is less than the PSD threshold of 250 tons/yr.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 10 tons/yr of VOC and is located in Elkhart County. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by April 15 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 5-1-2 (Opacity Limitations)

That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 6-3-2(c) (Process Operations):

Pursuant to 326 IAC 6-3 (Process Operations):

- (a) The dust collectors and dry filters for particulate matter control shall be in operation at all times when the table saw, panel saw, wide belt sander, fiberglass panel coating line, CNC routers and grind machines are in operation.
- (b) The table saw, panel saw, wide belt sander, fiberglass panel coating line, CNC routers and grind machines shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10P^{0.67}$$

where: E = rate of emission in pounds per hour,  
P = process weight in tons per hour

- (c) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the dust collectors and dry filters.
- (d) The Permittee shall take readings of the total static pressure drop across the dust collectors, at least once a week. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the dust collector shall be maintained within the range of 2 and 4 inches of water. The Preventive Maintenance Plan for the dust collector shall contain troubleshooting contingency and corrective actions for the dust collector when the pressure reading is outside of this range for any one reading.
- (e) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
- (f) The gauge employed to take the pressure drop across the dust collector or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within  $\pm 2\%$  of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.
- (g) That visible emission notations of all exhaust to the atmosphere from the dust collectors shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
- (h) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80% of the time, the process is in operation, not counting start up or shut down time.
- (i) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
- (j) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
- (k) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

326 IAC 1-6-3 (Preventive Maintenance):

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

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that lack of proper maintenance does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM and OAM upon request and shall be subject to review and approval by IDEM and OAM.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements):

Pursuant to 326 IAC 8-1-6, the fiberglass panel coating line is subject to 326 IAC 8-1-6 because the VOC potential emissions are greater than 25 tons per year, shall commence operation after January 1, 1980 and is governed by no other provisions of Article 8 Pursuant to this rule, a Best Available Control Technology (BACT) Analysis is required. This facility has not constructed yet and the potential VOC emissions are 371.88 tons/yr. Since 326 IAC 2-1-3.4 (New Source Toxics Rule) is the most stringent manner in controlling VOC/HAPs emissions, the MACT shall be the BACT and shall satisfy the requirements of 326 IAC 8-1-6 (BACT).

**Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) This proposed modification will emit levels of air toxics greater than those that constitute major source applicability according to Section 112 of the Clean Air Act. The concentrations of these air toxics were modeled and found to be (in worst case possible) as follows: The concentrations of these air toxics were compared to the Permissible Exposure Limits (PEL) developed by the Occupational Safety and Health Administration (OSHA). The Office of Air Management (OAM) does not have at this time any specific statutory or regulatory authority over these substances.

HAP	Styrene	Dimethyl Phthalate
Concentrations (ug/m3)	490.74	185.540
PEL (ug/m3)	420000.0	5000.0
% PEL	0.12	3.7

- (b) See attached spreadsheets for detailed air toxic calculations (page 5 of 5).

**Conclusion**

The construction of this motor home fiberglass manufacturing operation will be subject to the conditions of the attached proposed **Construction Permit No. CP-039-9288-00002**.

## Indiana Department of Environmental Management Office of Air Management

### Addendum to the Technical Support Document for New Construction and Operation

Source Name: Fabwel Composites, Inc.  
 Source Location: 16710 Maple Drive, Goshen, Indiana 46526  
 County: Elkhart  
 Construction Permit No.: CP-039-9288-00002  
 SIC Code: 3089  
 Permit Reviewer: Nysa L. James

On June 26, 1998, the Office of Air Management (OAM) had a notice published in the Goshen News, Goshen, Indiana, stating that Fabwel Composites, Inc., had applied for a construction permit to construct and operate fiberglass manufacturing operation. The notice also stated that OAM proposed to issue a permit for this installation 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.

On July 24, 1998, Fabwel Composites, Inc. submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows (changes are bolded and stricken for emphasis):

- Comment 1: This plant has an existing fiberglass panel process line that is currently permitted and operating. The equipment is listed in the existing permit (CP-039-4937) dated 3/21/1996. In order to ensure that there is no confusion regarding the new equipment being permitted under the proposed permit and the existing equipment that currently is permitted, it is suggested that an additional section be included in Section A that lists the existing equipment and draws this distinction.
- Response 1: Section A.2, Emission Units and Pollution Control Equipment Summary, lists only the new facilities reviewed for this permit. Existing equipment has already been reviewed and distinguished under CP-039-4937. The Title V will incorporate both the new equipment (039-9288) and the existing equipment (039-4937).
- Comment 2: The description of the stacks as SV-27 through SV-34 in Section A.2 (a) needs to be corrected to read SV-36 through SV-47.
- Response 2: Section A.2 (a), Emission Units and Pollution Control Equipment Summary, and Section D.1, Facility Description, is amended to the following (changes are bolded and stricken for emphasis):
- One (1) fiberglass panel manufacturing line coating a maximum of 4.5 molds per hour, consisting of two (2) fiberglass panel reciprocators, each equipped with one (1) air assisted airless gel coat application system and one (1) air assisted airless resin application system, with dry filters for overspray and exhausts through twelve (12) stacks designated as ~~SV-27 through SV-34~~ **SV-36 through SV-47**.
- Comment 3: The dust collector referred to in section A.2(b) will be a new piece of equipment . Therefore, the word "existing" needs to be stricken.

Response 3: Section A.2 (b), Emission Units and Pollution Control Equipment Summary, and Section D.2(a), Facility Description, is amended to the following (changes are bolded and stricken for emphasis):

One (1) woodworking station, with a maximum raw material input rate of 265 lb/hr, consisting of a wide belt sander, a table saw, a panel saw and controlled by one (1) ~~existing~~ dust collector, designated as DC-004.

Comment 4: The capacity of the air make-up units is 0.044 mmBtu/hr.

Response 4: According to the application the air make-up units each had a capacity of 0.035 mmBtu/hr. Section A.2(c), Emission Units and Pollution Control Equipment Summary, and D.2(b), Facility Description, is amended to the following (changes are bolded and stricken for emphasis):

Four (4) natural gas air make-up units, designated as AM 41-44, with a maximum heat input capacity of ~~0.035~~ **0.044** mmBtu/hr each.

Comment 5: Section A.3(b) should read "The source has submitted their Title V application (T-039-6091-00002), on June 7, 1996 to cover the existing equipment. Within 90 days of the issuance of this permit, the Title V application shall be revised to incorporate the same, as appropriate.

Response 5: Section A.3(b), Part 70 Permit Applicability, states that this source is subject to the requirements of 326 IAC 2-7. The Office of Air Management shall incorporate this construction permit, 039-9288, into the Title V. The source does not need to re-submit information from this construction permit. Condition A.3(b) is amended as follows (changes are bolded and stricken for emphasis):

(b) The source has submitted their Title V application (T-039-6091-00002), on June 7, 1996. **The Office of Air Management shall incorporate this construction permit into their Title V.**

Comment 6: Condition C.1(a) is mislabeled and needs to be changed to C.1(b).

Response 6: Condition C.1, PSD Major Source Status, is amended as follows (changes are bolded and stricken for emphasis):

~~(a)~~(b) Any change or modification which may increase the potential emissions to the following:

- 1.) 25 tons per year or more (326 IAC 2-1),
- 2.) 100 tons per year or more, and greater than 10 tons per year for a single HAP or combination HAPs greater than 25 tons per year (326 IAC 2-7),
- 3.) 250 tons per year or more (326 IAC 2-2),

from the equipment covered in this construction permit must be approved by the Office of Air Management (OAM) before such change may occur.

Comment 7: Condition D.1.3.1 (b) and (c), should be written as "The cleanup solvent containers used to transport solvent from storage drums to work stations shall be securely closed.

Response 7: The Office of Air Management (OAM) has revised Condition D.1.3.1 (b) and (c) below in section 1 under OAM changes. Soft gasketed spring-loaded closures for cleanup solvent containers, is a requirement of 326 IAC 2-1-3.4 (MACT). This portion is standard for all fiberglass operations.

Comment 8: In regards to Condition D.1.3.1(d), Fabwel may generate solvent (acetone) saturated rags during some cleanup processes. Rags are provided by a service company that regularly retrieves them for cleaning and reuse. The service company is responsible for transporting and cleaning or disposing of the rags. We suggest the condition be reworded to "Used cleanup rags saturated with solvent shall be stored onsite in closed containers.

Response 8: Condition D.1.3.1(d), now re-numbered as D.1.3.1(c), is a standard work practice requirement for fiberglass operations under 326 IAC 2-1-3.4 (MACT). This condition does not state that the saturated rags cannot be stored onsite, only that they be stored, transported and disposed of in closed containers.

Comment 9: In regards to Condition D.1.3.1(g), the word "covered" needs to be changed to "closed" to avoid confusion.

Response 9: Condition D.1.3.1(g), now renumbered as Condition D.1.3.1(f), is a standard work practice requirement for fiberglass operations under 326 IAC 2-1-3.4 (MACT). The words covered and closed are synonymous in this condition. The condition shall remain unchanged.

Comment 10: Fabwel considers condition D.1.3.2 to be confusing and suggest the following language: The source shall be limited to a VOC potential to emit (PTE) of 249.0 tons/yr. The VOC input derived from the resin and/or gel coat of the entire source shall be limited to 249 tons per year, rolled on a monthly basis. This production limitation is equivalent to VOC emissions of 249 tons per year, rolled on a monthly basis. The VOC usage limit is required as a component of the MACT determination and compliance with this limit shall be determined based upon the following criteria:

- (a) VOC input for the gel coats delivered to the applicator shall be determined by multiplying the gel coat usage times the appropriate CFA emission factor of 19%.
- (b) VOC input for the resins delivered to the applicator shall be determined by multiplying the resin usage times the appropriate CFA emission factor of 7%.

During the first 12 months of operation, the VOC input shall be limited such that the total input divided by the accumulated months of operation shall not exceed the limit specified.

Response 10: OAM has revised Condition D.1.3.2 in section 1, listed below under OAM changes.

Comment 11: In regards to Condition D.1.3.6, Fabwel understands that our current process of controlled spray application of the gel coat and resin, immediate application of the wood reinforcement panels, and application of a vacuum bag is approved by IDEM as an alternate reduction technique that is equivalent to flow coating.

- Response 11: Condition D.1.3, New Source Toxics Rule, has been revised in the below section under OAM changes.
- Comment 12: In regards to Condition D.1.3.7, Fabwel believes that it needs to be explained that this condition only applied to controlled spray technology and does not apply to flow coat technology because of substantially increased manual roll-out times required immediately after the resin is applied but before the wood panel can be laid down.
- Response 12: Condition D.1.3, New Source Toxics Rule, has been revised in the below section under OAM changes. Condition D.1.3.7, now renumbered as D.1.3.6, shall remain regardless of the method of application.
- Comment 13: In regards to Condition D.1.9(a), the dry filters are used to catch overspray from the reciprocators not booths and such overspray is minute and invisible to the observer. Whereas daily inspections of filters and observations of overspray in a spray booth are appropriate, they are inappropriate and serve no useful purpose in an open mold, controlled spray or flow coat process. We recommend that daily inspections be changed to weekly inspections and that daily observations of overspray be eliminated.
- Response 13: This condition shall be amended as follows (changes are bolded and stricken for emphasis):
- (a) ~~Daily~~ **Weekly** inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, daily observations shall be made of the overspray while one or more of the ~~booths~~ **spray equipment** are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- Comment 14: Weekly inspections of the stacks and rooftops for the presence of overspray would be hazardous operation, particularly in winter. The building roof is not made for employees to walk on. Furthermore, this condition is unnecessary with regard to Fabwel's operation, because the potential overspray with controlled spray reciprocators is very low and with flow-coating is non-existent. Although this requirement may be appropriate for a spray booth operation where there are high overspray loadings on filters, the controlled spray that cannot be observed with the unaided eye. We recommend this condition be combined with D.1.9(a) to require weekly inspection of the overspray filters for placement, integrity, particle loading and function. An inspection of nearby grounds could be done, weather permitting, but the presence of overspray, if unobservable in the plant, will in no way be observable on the nearby grounds.
- Response 14: Pursuant to 326 IAC 2-1-3(h)(8), the commissioner may impose such conditions as compliance monitoring, on the permit as necessary to ensure that the source or facility will comply with all applicable rules; and that the ambient air quality standards established in 326 IAC 1-3, the prevention of significant deterioration standards established in 326 IAC 2-2 and the offset requirements established in 326 IAC 2-3, will be attained and maintained and the public health will be protected. The opacity limit is also an applicable requirement that must be included in the permit pursuant to 326 IAC 5-1. This condition shall be amended as follows (changes are bolded and stricken for emphasis):

- (b) ~~Weekly~~ **Monthly** inspections shall be performed of the ~~coating~~ **fiberglass panel manufacturing line** emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an overspray emission, evidence of overspray emission, or other abnormal emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

Comment 15: Due to the nature of the process, as described previously, there are no visible emissions from the fiberglass panel manufacturing line stacks. Furthermore, because they are situated along the east-west centerline of the building, the stacks cannot be seen from the ground. As an alternative, we recommend that weekly visible emission notations be made at the point where air from the fiberglass panel line enters the filter bank which is then exhausted through the stacks to the outside. The employee can then effectively note and record whether emissions are normal and abnormal.

Response 15: In order to make sure the filters are working appropriately and that the source is complying with 326 IAC 5-1, the source needs to check the visible emissions at the point of exhaust. Pursuant to 326 IAC 2-1-3(h)(8), the commissioner may impose such conditions as compliance monitoring, on the permit as necessary to ensure that the source or facility will comply with all applicable rules; and that the ambient air quality standards established in 326 IAC 1-3, the prevention of significant deterioration standards established in 326 IAC 2-2 and the offset requirements established in 326 IAC 2-3, will be attained and maintained and the public health will be protected. The opacity limit is also an applicable requirement that must be included in the permit pursuant to 326 IAC 5-1. Condition D.1.10 and condition D.2.4 shall be amended as follows (changes are bolded and stricken for emphasis):

- (a) ~~Daily~~ **Weekly** visible emission notations of the fiberglass panel manufacturing line stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Comment 16: In regards to Condition D.1.11, it appears that the wrong terminology has been used in this condition. We would suggest the terms "coating and solvent" to be replaced with gel coat and resin.

Response 16: Condition D.1.11, Record Keeping Requirement, has been revised in the below section under OAM changes.

Comment 17: The quarterly report form, in Condition D.1.12, appears to be flawed or certain columns mislabeled. We would suggest the following column headings to achieve the objectives of the quarterly report:  
Column 1 - Month, Column 2 - Total VOC/HAP input (tons/month), Total VOC/HAP Input for current 12-month period. Also, the last line of the flash-off be eliminated.

Response 17: Condition D.1.12, Reporting Requirements, the report form has been revised in the below section under OAM changes.

Comment 18: Condition D.1.2 and D.2.1 is based on something other than the maximum production rate, panel size and throughput capacity, and therefore needs to be revised. The maximum process weight rate of the fiberglass panel manufacturing line is 1626 lb/hr. The maximum process weight rate of the CNC routers and grinders is 6,503 lb/hr. The maximum process weight rate of the woodworking station is 2,104 lb/hr.

Response 18: The changes to the process weight rate listed in Condition D.1.2 and Condition D.2.1, increase the PM allowable emissions by 80 tons per year. Since the source did not want to incorporate this significant change into the construction permit at the time of review, the source can submit a modification request, to increase the process weight rate, for this construction permit after the issuance of this permit.

Comment 19: Condition 2.1(b) and (c) does not appear to be applicable to the woodworking station. However, emission limitations do not need to be included here for CNC routers and grinders.

Response 19: 326 IAC 6-3 applies to all PM emitting processes, regardless of the level emitted or if the processes are controlled. Condition D.2.1(b) and (c) applies to the CNC routers and grind machines. This condition is amended to the following (changes are bolded and crossed out for emphasis):

(b) the allowable PM emission rate from the ~~woodworking station~~ **CNC routers** shall not exceed 1.88 pounds per hour when operating at a total process weight rate of 627 pounds per hour.

(c) the allowable PM emission rate from the ~~woodworking station~~ **grind machines** shall not exceed 1.88 pounds per hour when operating at a total process weight rate of 627 pounds per hour.

Comment 20: Conditions D.2.4 and D.2.5 should be eliminated since there is no external exhaust and stacks associated with the woodworking station, CNC routers and grind machines.

Response 20: In order to document compliance with 326 IAC 5-1 and 6-3 conditions D.2.4 and D.2.5 are necessary. Even though these emission unit do not exhaust to a stack, these emissions can be monitored at the point of exhaust. The conditions are amended as follows (changes are bolded and crossed out for emphasis):

#### D.2.4 Visible Emissions Notations

(a) Weekly visible emission notations of the woodworking station, CNC routers and grind machines ~~stack at the point of~~ **stack at the point of** exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

#### D.2.5 Parametric Monitoring

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The Permittee shall record the total static pressure drop across the dust collectors used in conjunction with the woodworking process ~~and CNC routers~~, at least once weekly when the woodworking process ~~and CNC routers are~~ **is** in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the dust collectors shall be maintained within the range of 2.0 and 4.0 inches of water ~~or a range established during the latest stack test~~. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

Upon further review, OAM has made the following changes (changes are bolded and crossed out for emphasis):

#### 1. D.1.3 New Source Toxics Control [326 IAC 2-1-3.4]

Pursuant to 326 IAC 2-1-3.4, the MACT for the fiberglass panel manufacturing line shall be the following:

- 1. Use of the following work practices:
  - (a) Spray applicators will be cleaned with ~~acetone~~ **a non-VOC, non-HAP (to the extent possible)**.
  - (b) The cleanup solvent containers, used to transport solvent from drums to work **stations, shall be closed containers having soft gasketed spring-loaded closures**.
  - (c) ~~Stations be closed containers having soft gasketed spring-loaded closures.~~
  - (c)(d)** Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.

- ~~(d)~~(e) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.
- ~~(e)~~(f) All solvent sprayed during cleanup or ~~color resin and or gel coat~~ changes shall be directed into containers. Such containers shall be closed as soon as solvent spraying is complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.
- ~~(f)~~(g) Storage containers used to store VOC and/or HAPs containing materials shall be kept covered when not in use.

2. The source shall be limited to a VOC potential to emit (PTE) of 249.0 tons/yr. ~~The potential styrene emissions from the new facility are 292.33 tons per year, potential VOC emissions from the new facility are 371.88 tons/yr and the existing limited VOC emissions are 247.5 tons/yr. The overall source wide VOC reduction is 370.38 ton/yr.~~ That the **VOC input usage, including volatile organic HAP resin and/or gel coat** of the entire source shall be limited to 249 tons per year, rolled on a monthly basis. This production limitation is equivalent to VOC emissions of 249 tons per year, rolled on a monthly basis. The VOC usage limit is required as a component of the MACT determination and compliance with this limit shall be determined based upon the following criteria:

- (a) ~~VOC usage for the gel coats delivered to the applicator shall be determined by multiplying the gel coat usage times the appropriate CFA emission factor.~~ **Monthly usage by weight, monomer content, method of application, and other emission reduction techniques for each gel coat and resin shall be recorded. Volatile organic compound emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.**
- (b) ~~VOC usage for the resins delivered to the applicator shall be determined by multiplying the resin usage times the appropriate CFA emission factor.~~ **Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA-approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries", Composites Fabricators Association, February 28, 1998, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.**

During the first 12 months of operation, the VOC usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the limit specified.

3. Use of resins and gel coats, including **filled resins and** tooling resins and gel coats, containing a maximum ~~mass-weighted average styrene monomer~~ content of 35 percent (35%) by weight for resins, 37 percent (37%) by weight for gel coats **or their equivalent on an emissions mass basis. Styrene Monomer** contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these ~~mass-weighted average styrene monomer~~ content limits shall be demonstrated on a monthly basis.

The use of resins with ~~styrene monomer~~ contents lower than 35%, ~~or~~ gel coats with ~~styrene monomer~~ contents lower than 37%, ~~can~~ **or the use of additional emission reduction techniques approved by IDEM, OAM, may** be used to offset the use of resins with ~~styrene monomer~~ contents higher than 35%, ~~and/or~~ gel coats with ~~styrene monomer~~ contents higher than 37%. **Such examples to this, but are not limited to, could be lower monomer content resins and gel coats, closed molding, vapor suppression, controlled spraying, vacuum bagging, or installing a control device with an overall efficiency of 95%.** This is allowed to meet the ~~styrene monomer~~ content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

~~This shall be calculated on an equivalent emissions mass basis as shown below:~~

(Emissions from >35% resin or >37% gel coat) - (Emissions from 35% resin or 37% gel coat) # (Emissions from 35% resin or 37% gel coat) - (Emissions from <35% resin or <37% gel coat, **and/or other emission reduction techniques**)

Where: Emissions, lb or ton = M (Mass of resin or gel coat used, lb or ton) \* EF (~~Styrene Monomer~~ emission factor for resin or gel coat used, %);

**EF, Styrene Monomer emission factor = emission factor, expresses as % styrene emitted per weight resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.** ~~indicated for the styrene content of the resin or gel coat used and approved for use by IDEM.);~~

4. Use of flow coaters, a type of non-spray application technology **of a design and specifications to be approved by IDEM, OAM, shall be used** in the following manner:

(i) to apply 50% of neat resins ~~used by January 1, 1999~~ **within six (6) months of commencement of operation.**

(ii) to apply **100% of all neat** resins used, ~~neat and filled, by July 1, 1999~~ **within one (1) year of commencement of operation.**

If this is still not possible to apply **a portion of neat resins with flow coaters after one (1) year** ~~for filled resins in a years time,~~ equivalent emission reduction techniques must be obtained **via use of other techniques** elsewhere in the process. ~~Such examples to this could be lower styrene content, closed molding on a portion of resin usage, or installing a control device with an overall efficiency of 95%.~~

5. ~~Use of controlled spray techniques according to a manner approved by IDEM for gel coats at all times and for neat and filled resins until such time that flow coaters must be used. Controlled spray techniques include, but are not limited to, the use of airless, air-assisted airless, or high volume low pressure (HVLP) spray applicators.~~

**Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.**

**HVLP spray is the technology used to apply material to substrate by means of application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.**

- ~~6. If other emission reduction techniques are identified and demonstrated to IDEM's satisfaction, they may proposed for use instead of or in addition to the use of flow coaters.~~

- ~~76.~~ Roll-out and placement of wood reinforcing panels and sealing strips shall be performed immediately after the resin application process.

7. **The Permittee has demonstrated to the satisfaction of IDEM, OAM that use of the following alternative emission reduction techniques can be considered equivalent to meeting the requirements of Conditions 3, 4, and 5 listed above:**

- (i) **Monomer contents of 36 percent (36%) by weight for resins and 35 percent (35%) by weight for gel coats.**
- (ii) **Overhead mechanized spray reciprocator to apply all gel coats and resins, which minimizes overspray off the mold through proper placement of spray gun stops and spray gun pressure calibration according to guidelines published by IDEM, OAM. The spray gun type shall be high volume low pressure (HVLP) or equivalent.**
- (iii) **Minimizing the period of roll-out and placement of wood panels immediately after the last resin application.**

**Hence, the use of the emission reduction techniques listed above is hereby approved by IDEM, OAM as alternatives to meeting the requirements of Conditions 3, 4 and 5 provided the techniques are employed from the startup of operation. All other conditions stated in this permit remain in effect.**

2. D.1.11 Record Keeping Requirements [326 IAC 2-1-3]

(a) To document compliance with Conditions D.1.1 and D.1.3, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (7) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC and ~~styrene~~ **monomer** usage limits and/or the VOC and ~~styrene~~ **monomer** emission limits established in Condition D.1.1 and D.1.3.

- (1) The amount of each ~~coating and solvent~~ **resin and gel coat** used. The VOC and ~~styrene~~ **mass weighted monomer** content of each ~~coating and solvent~~ **resin and gel coat** used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
- (2) A log of the dates of use;
- (3) The volume weighted VOC content of the coatings used for each month;
- (4) The cleanup solvent usage for each month;
- (5) The total VOC usage for each month;
- (6) The weight of VOCs emitted for each compliance period;
- (7) The total ~~styrene~~ **monomer** usage for each month; **and**
- ~~(8) The mass weighted styrene contents of the coatings used for each month;~~
- (8) Method of application and other emission reduction techniques for each resin and gel coat use for each month.**

(b) To document compliance with Condition D.1.2 and D.1.9, the Permittee shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.

(c) To document compliance with D.1.10, the Permittee shall maintain records of daily visible emission notations of the fiberglass panel manufacturing line stack exhaust.

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

3. Condition 1.12, Reporting Requirements, the report form has been amended to the following:  
Quarterly Report

Company Name: Fabwel Composites, Inc.  
Location: 16710 Maple Drive, Goshen Indiana 46526  
Permit No.: 039-9288-00002  
Source: Fiberglass Operation - Entire Source  
Pollutant: VOC PTE (**includes volatile organic HAP from resins and gel coats**)  
Limit: 249 tons per twelve month period

Year: \_\_\_\_\_

Month	Usage (tons/month)	Usage for previous month (tons)	Usage for previous twelve month period (tons)	Usage Emissions (tons/month)	Usage Emissions for previous month (tons)	VOC PTE for previous twelve month period (tons)

- 9      **No deviation occurred in this quarter.**
- 9      **Deviation/s occurred in this quarter.**  
          **Deviation has been reported on:** \_\_\_\_\_

Submitted by: \_\_\_\_\_  
 Title / Position: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Phone: \_\_\_\_\_

Flash-off: \_\_\_\_\_

- 4.      According to the technical support document, the reason why the control devices were not an option for Fabwel is because it was economically infeasible. In actuality, the cost for the devices listed on page 8 of 12 (TSD) is economically feasible. The control devices were not the maximum reduction option when comparing the amount of VOC reduced. By limiting the source to 249 tons per year, the source is reducing more emissions than the control devices listed would.
- 5.      Condition D.2.6, Record Keeping Requirements, is amended as follows changes are bolded and crossed out for emphasis):

**D.2.6 Record Keeping Requirements [326 IAC 2-1-3]**

- (a)      To document compliance with Condition D.2.5, the Permittee shall maintain records of ~~daily~~ **weekly** visible emission notations of the woodworking station and CNC routers at the point of exhaust.
- (b)      To document compliance with Condition D.2.5, the Permittee shall maintain the following:
  - (1)      ~~Daily~~ **Weekly** records of the following operational parameters during normal operation when venting to the atmosphere:
    - (A)      Inlet and outlet differential static pressure; and
    - (B)      Cleaning cycle: frequency and differential pressure; this only applies to the CNC routers.
  - (2)      Documentation of all response steps implemented, per event .

- (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
  - (4) Quality Assurance/Quality Control (QA/QC) procedures.
  - (5) Operator standard operating procedures (SOP).
  - (6) Manufacturer's specifications or its equivalent.
  - (7) Equipment "troubleshooting" contingency plan.
  - (8) Documentation of the dates vents are redirected.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Mail to: Permit Administration & Development Section  
Office Of Air Management  
100 North Senate Avenue  
P. O. Box 6015  
Indianapolis, Indiana 46206-6015

Fabwel Composites, Inc.  
16710 Maple Drive  
Goshen, Indiana 46526

**Affidavit of Construction**

I, \_\_\_\_\_, being duly sworn upon my oath, depose and say:  
(Name of the Authorized Representative)

1. I live in \_\_\_\_\_ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of \_\_\_\_\_ for \_\_\_\_\_.  
(Title) (Company Name)
3. By virtue of my position with \_\_\_\_\_, I have personal  
(Company Name)  
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of \_\_\_\_\_.  
(Company Name)
4. I hereby certify that Fabwel Composites, Inc., 16710 Maple Drive, Goshen, Indiana , 46526, has constructed the fiberglass manufacturing operation in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on December 10, 1997 and as permitted pursuant to **Construction Permit No. CP-039-9288, Plant ID No. 039-00002** issued on \_\_\_\_\_

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

STATE OF INDIANA)  
)SS

COUNTY OF \_\_\_\_\_ )

Subscribed and sworn to me, a notary public in and for \_\_\_\_\_ County and State of  
Indiana on this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.  
My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name (typed or printed)

**Appendix A: Emission Calculations  
 Natural Gas Combustion Only  
 MM Btu/hr 0.3 - < 10  
 Air Make-Up AM-40**

**Company Name: Fabwel Composites, Inc.  
 Address City IN Zip: 16710 Maple Drive, Goshen, IN. 46526  
 CP: 039-9288  
 Plt ID: 039-00002  
 Reviewer: NLJ  
 Date: 1/20/98**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

0.012

0.1

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	11.9	11.9	0.6	100.0	5.3	21.0
Potential Emission in tons/yr	0.001	0.001	0.000	0.005	0.000	0.001

**Methodology**

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emission Calculations**

**Natural Gas Combustion Only**

**MM Btu/hr 0.3 - < 10**

**Air Make-Up AM-41-44**

**Company Name: Fabwel Composites, Inc.**  
**Address City IN Zip: 16710 Maple Drive, Goshen, IN. 46526**  
**CP: 039-9288**  
**Plt ID: 039-00002**  
**Reviewer: NLJ**  
**Date: 1/20/98**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

0.18

1.5

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	11.9	11.9	0.6	100.0	5.3	21.0
Potential Emission in tons/yr	0.009	0.009	0.000	0.077	0.004	0.016

**Methodology**

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emissions Calculations**  
**Form DD: Reinforced Plastics and Composites**  
**Fiberglass Processes**

**Company Name: Fabwel Composites, Inc.**  
**Address City IN Zip: 16710 Maple Drive, Goshen, IN. 46526**  
**CP: 039-9288**  
**Plt ID: 039-00002**  
**Reviewer: NLJ**  
**Date: 1/20/98**

Material	Density (lb/gal)	Weight % Styrene Monomer	Weight % Organic	Gallons per unit	Pounds per Part	Units per hour	Pound VOC per hour	Pounds VOC per day	Tons of VOC per Year	PM tons per year	Emission Factor (Flash off)	Transfer Efficiency
Mould Release	7.3	--	98.0%	--	0.02740	4.50	0.12	2.90	0.53	0.00	100%	100%
Gel Coat	10.6	38.0%	40.0%	4.55	--	4.50	41.62	998.85	182.29	147.35	19%	75%
Resin	9	39.0%	--	9.15	--	4.50	25.94	622.57	113.62	247.53	7%	75%
Acetone (Cleaner)	6.6	0.0%	0.0%	--	5.50	4.50	0.00	0.00	0.00	0.00	100%	100%
Catalyst	9.75	0.0%	60.0%	0.69	--	4.50	18.03	432.78	78.98	0.00	100%	100%
<b>Totals:</b>							<b>85.59</b>	<b>2054.20</b>	<b>375.42</b>	<b>394.87</b>		

**METHODOLOGY**

Potential VOC Pounds per Hour = Density (lb/gal) \* Weight % Monomer \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* Emission factor

Potential VOC Pounds per Day = Density (lb/gal) \* Weight % Monomer \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* (24 hrs / 1 day) \* Emission factor

Potential VOC Tons per Year = Density (lb/gal) \* Weight % Monomer \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* (8760 hr/yr) \* (1 ton / 2000 lbs) \* Emission factor

Potential VOC Tons per Year = Density (lb/gal) \* Weight % Organic \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* (8760 hr/yr) \* (1 ton / 2000 lbs)

Potential VOC Tons per Year = Density (lb/gal) \* Weight % Organic \* Pounds per Part of Material (lb/unit) \* Maximum (unit/hr) \* (8760 hr/yr) \* (1 ton / 2000 lbs)

Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1 - Weight % Volatiles) \* (1 - Transfer efficiency) \* (8760 hr/yr) \* (1 ton / 2000 lbs)

Total = Worst Coating + Sum of all solvents used

Emission Factor for Spray Layup of resin NVS is 7.0%, VS is 4.3%

Emission Factor for Hand and Spray Layup of gelcoat NVS is 18.8%

Emission Factors are from CFA

NVS = Non-vapor suppressed resin

VS = Vapor suppressed resin

**Appendix A: Emission Calculations  
 Natural Gas Combustion Only  
 MM Btu/hr 0.3 - < 10  
 Radiant Tube SV-27-SV-34**

**Company Name: Fabwel Composites, Inc.  
 Address City IN Zip: 16710 Maple Drive, Goshen, IN. 46526  
 CP: 039-9288  
 Plt ID: 039-00002  
 Reviewer: NLJ  
 Date: 1/20/98**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

0.96

8.4

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	11.9	11.9	0.6	100.0	5.3	21.0
Potential Emission in tons/yr	0.050	0.050	0.003	0.420	0.022	0.088

**Methodology**

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

### HAP Emission Calculations

**Company Name:** Fabwel Composites, Inc.  
**Plant Location:** 16710 Maple Drive, Goshen, IN. 46526  
**County:** Elkhart  
**Permit Reviewer:** NLJ  
**Date:** 1/27/98

Material	Density (Lb/Gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Weight % Methyl Methacrylate	Weight % Dimethyl Phthalate	Weight % Styrene	Methyl Methacrylate Emissions (ton/yr)	Dimethyl Phthalate Emissions (ton/yr)	Styrene Emissions (ton/yr)	Emission Factor %
Gel Coat	10.6	4.55	4.50	2.00%	0.00%	38.00%	3.57	0.00	178.72	18.80%
Resin	9	9.15	4.50	0.00%	0.00%	39.00%	0.00	0.00	113.62	7.00%
Catalyst	9.75	0.69	4.50	0.00%	60.00%	0.00%	0.00	78.98	0.00	100.00%

Total State Potential Emissions

**3.57**

**78.98**

**292.33**

#### METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* Weight % HAP \* 8760 hrs/yr \* 1 ton/2000 lbs

Styrene emissions rate (tons/yr) = Density (lb/gal) \* Gal of material (gal/unit) \* Maximum (unit/hr) \* Emission factor (18.8% NVS gelcoat and 7.0% NVS resin)

Styrene emission factors are from CFA.