

217/782-2113

JOINT CONSTRUCTION AND LIFETIME OPERATING PERMIT

PERMITTEE

Marble Works  
Attn: Tom Wienckowski  
1601 La Fox  
South Elgin, Illinois 60177

Application No.: 00120001  
Applicant's Designation:  
Subject: Molded Fiberglass Products  
Date Issued: January 22, 2001

I.D. No.: 089080AAW  
Date Received: December 1, 2000

Operating Permit Expiration  
Date: See Condition 1.

Location: 1601 La Fox, South Elgin

This permit is hereby granted to the above-designated Permittee to CONSTRUCT and OPERATE emission unit(s) and/or air pollution control equipment consisting of:

Marble Casting Operation  
Gelcoat Spray Lay-Up Operation  
Resin Storage Tank  
Miscellaneous Cleaning and Mold Prep Operations

pursuant to the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This operating permit is effective only if the Permittee has complied with all standard conditions of the construction permit.
  - b. Operation of the emission units included in this permit shall not begin until all associated air pollution control equipment has been constructed and is operational.
  - c. This operating permit shall expire 180 days after the Illinois EPA sends a written request for the renewal of this permit.
  - d. This permit shall terminate if it is withdrawn or is superseded by a revised permit.
- 2a. These conditions effectively limit the potential emissions of air pollutants from the source to less than major source thresholds (i.e., volatile organic material (VOM) to less than 25 tons per year, individual hazardous air pollutant (HAP) to less than 10 tons per year, and a combination of HAPs to less than 25 tons per year). As a result,

the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit.

- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.

3. Emissions of volatile organic material (VOM) and operation of the marble casting and gel coat operation shall not exceed the following limits:

<u>Material</u>	<u>Usage</u>		<u>VOM/Styrene Content</u>	<u>VOM/Styrene Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>		<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Gelcoat	1.85	18.5	50%	0.60	5.98
Resin	4.78	478	31.4%	0.30	3.00
			Total:	0.90	8.98

These limits define the potential emissions of VOM and are based on maximum material usage, maximum VOM content, AP-42 Standard Emission Factors, and USEPA CFA emission factors. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months. The equations in Attachment A shall be used to calculate the emissions.

- 4a. Emissions of volatile organic material (VOM) and operation of the miscellaneous cleaning and mold prep operations shall not exceed the following limits:

<u>Material</u>	<u>Usage</u>		<u>VOM Content</u>	<u>VOM Emissions</u>	
	<u>(T/Mo)</u>	<u>(T/Yr)</u>		<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
All VOM Containing Material*	0.20	1.82	100%	0.20	1.82

\* These limits exclude acetone.

These limits define the potential emissions of VOM and are based on maximum material usage and maximum VOM content. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

- b. This permit is issued based upon acetone being used as a cleaning solvent during process cleanup and maintenance. Acetone is not defined as an organic material, pursuant to 35 Ill. Adm. Code 211.4250, therefore, emissions of acetone are not subject to any of the provisions of 35 Ill. Adm. Code Section 218.
5. This permit is issued based on negligible emissions of VOM and styrene from the resin storage tank. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
6. This permit is issued based on negligible emissions of particulate matter from the marble casting and gelcoat operation. For this purpose emissions from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/yr.

7. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program Permit (CAAPP), and Section 112(G) of the Clean Air Act.

8. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.
9. No person shall cause or allow any visible emissions of fugitive particulate matter from any process, including any material handling or storage activity beyond the property line of the emission source, pursuant to 35 Ill. Adm. Code 212.301.
10. This permit is issued based upon the volatile organic material (VOM) emissions from the above referenced emission units being subject to 35 Ill. Adm. Code 218.301. Therefore, emissions of VOM from any single emission unit shall not exceed 8 lb/hr. If no odor nuisance exists this limitation shall apply only to photochemically reactive materials.
- 11a. Upon request by the Illinois EPA, the VOM content of specific materials (i.e., solvents, glues, etc.) shall be determined according to manufacturer's data, sampling and analysis by appropriate methods formally adopted by USEPA (i.e., USEPA Methods 24 and 24A of 40 CFR 60 Appendix A), or by site-specific sampling and analysis methods approved by the Illinois EPA and USEPA. In the event of a difference, between manufacturer's data and laboratory analysis, the results of the laboratory analysis shall govern. VOM and organic material content of solvents (i.e., acetone) shall be determined by manufacturer's data.
- b. Upon request by the Illinois EPA, the VOM content of the polyester resin, gelcoat, and polyester resin mixtures, including the amount of free monomer present, shall be determined by South Coast Air Quality Management District (SCAQMD) Method 309-91 and 312-91, manufacturer's data, sampling and analysis by appropriate methods formally adopted by USEPA, or by site-specific sampling and analysis methods approved by the Illinois EPA and USEPA. In the event of a difference, between manufacturer's data and laboratory analysis, the results of the laboratory analysis shall govern.
- c. Data provided by the supplier of a material shall be accompanied by appropriate documentation.
12. Pursuant to 35 Ill. Adm. Code Section 218.666, the owner or operator of a polyester resin products manufacturing process shall comply with the following operating requirements:
  - a. The monomer content of the clear gelcoat shall not exceed 50% by weight as applied;
  - b. The monomer content of all other polyester resins shall not exceed 35 % by weight as applied;
  - c. For spraying operations, use only high-volume low pressure (HVLP), airless, air-assisted airless, or electrostatic spray equipment

except for touch-up and repair using a hand-held, air-atomized spray gun which has a container for polyester resin material as part of the gun.;

- d. Use a closed-mold system or pultrusion system which will result in less than 4% weight loss of polyester resin materials;

- e. Use vapor suppressed polyester resin approved by the Illinois EPA in the source's permit such that weight loss from VOM emissions does not exceed 60 grams per square meter of exposed surface area during molding;
  - f. Use closed containers for all polyester resin materials, cleaning materials which contain VOM (including waste cleaning materials), and other materials that contain VOM (including waste resin materials) in such a manner as to effectively control VOM emissions to the atmosphere;
  - g. A cover shall be in place on any tank, vat, or vessel with a capacity greater than 7.5 liters (2 gallons), including a container in which polyester resin materials are delivered to the source, while polyester resin materials are being formulated. The cover shall:
    - i. Completely cover the tank, vat, or vessel opening except for an opening no larger than necessary to allow for safe clearance for a mixer shaft;
    - ii. Extend at least 1.27 cm (0.5 inch) beyond the outer rim of the opening or be attached to the rim;
    - iii. Remain closed except when adding or removing material or when sampling or inspection procedures require access; and
    - iv. Be maintained in good condition such that, when in place, the cover maintains contact with the rim of the opening for at least 90% of the circumference of the rim.
  - h. Carry out emissions shall be minimized when a mixer used for formulation of polyester resin material is being removed from a tank, vat, or vessel containing polyester resin material by allowing the material retained on the mixer blades to drain back into the tank, vat, or vessel before the mixer is completely removed from the tank, vat, or vessel.
  - i. Any owner or operator of polyester resin products manufacturing processes which as a group use more than 4 gallons per day of cleaning materials which contain more than 200 grams of VOM per liter (1.7 pound per gallon) shall use a solvent recovery system for such materials. Solvent recovery may be done at the source or by using an off-site commercial solvent recovery service. The waste residue from a solvent recovery system located at the source shall not contain more than 20% VOM by weight.
13. Pursuant to 35 Ill. Adm. Code Section 218.672, the owner or operator of a polyester resin products manufacturing process shall upon initial

start-up of a process subject to this Subpart certify to the Illinois EPA that the process will be in compliance with Section 218.666(a). Such certification shall include:

- a. The name and identification number of each polyester resin products manufacturing process at the source;

- b. The name and identification number of each polyester resin material used in these processes, the means by which it may be applied and the classification of the polyester resin material under Section 218.666(a)(1)(A) of this Subpart;
  - c. The particular operating requirement with which each polyester resin material will comply, the actual monomer content of the material (percent by weight) and other relevant data to show compliance with the operating requirement, including:
    - i. For each polyester resin material which is applied in a closed-mold or pultrusion system so as to comply with Section 218.666(a)(1)(B) of this Subpart, the weight loss from the polyester resin material (percent by weight) during molding;
    - ii. For each polyester resin material which is vapor suppressed so as to comply with Section 218.666(a)(1)(C) of this Subpart, the type and content (percent by weight) of catalyst in the materials, the maximum process temperature for resin application, the maximum gel time and the weight loss (grams per square meter exposed surface) during; and
  - d. A description of the testing which was performed, in accordance with Section 218.668 of this Part, to determine the monomer content of polyester resin materials to show compliance with Sections 218.666(a)(1) and (2) of this Subpart;
  - e. For spraying operations, the equipment for spraying polyester resin materials and the equipment for touch up and repair;
  - f. The method by which the owner or operator will create and maintain records as required; and
  - g. An example of the format in which the records as required will be kept.
14. Pursuant to 35 Ill. Adm. Code Section 218.672, on and after initial start-up date, the owner or operator of a subject process shall collect and record the following information to maintain a complete record of all polyester resin materials which are used by such polyester resin products manufacturing process:
- a. The name and identification number of each polyester resin material used in the process;
  - b. The particular operating requirement with which each polyester resin material will comply, the actual monomer content of the

material (percent by weight) and other relevant data to show compliance with the operating requirement including:

- i. For each polyester resin material which is applied in a spraying operation, the type of spray equipment with which the material will be applied;

- ii. For each polyester resin material which is applied in a closed-mold or pultrusion system so as to comply with Section 218.666(a)(1)(B), the weight loss from the polyester resin material (percent by weight) during molding; and
    - iii. For each polyester resin material which is vapor suppressed so as to comply with Section 218.666(a)(1)(C), the type and content (percent by weight) of catalyst in the materials, the maximum process temperature for resin application, the maximum gel time and the weight loss (grams per square meter exposed surface) during.
  - c. A description of the testing which was performed, in accordance with Section 218.668 of this Part, to determine the monomer content of polyester resin materials to show compliance with Sections 218.666(a)(1) and (2) of this Subpart;
  - d. The processes and applications for which each polyester resin material may be used in compliance with applicable operating requirements; and
  - e. For each polyester resin material which is applied in a spraying operation, the type of spray equipment with which the material will be applied so as to comply with Section 218.666(a)(2) of this Subpart.
15. Pursuant to 35 Ill. Adm. Code Section 218.672, on and after the initial start-up date, the owner or operator of a subject process shall collect and record all of the following information each day for each process:
- a. The name, identification number and amount of each polyester resin material applied on each process; and
  - b. The specific data identified to confirm that the polyester resin material was applied in such a manner that it complied with the applicable operating requirements.
16. Pursuant to 35 Ill. Adm. Code Section 218.672, on and after the initial start-up date, the owner or operator of a subject process shall notify the Illinois EPA:
- a. Of any violation of the operating requirements of this Subpart by sending a copy of such record to the Illinois EPA within 30 days following the occurrence of the violation; and
  - b. At least 30 calendar days before changing the method of compliance with this Subpart from one operating requirement among 35 Ill Adm. Code Section 218.666(a)(1)(A), (B), (C), or (D) to another operating requirement, of compliance. Upon changing the method of

compliance with this Subpart from one operating requirement to another, the owner or operator shall comply with all applicable requirements.

17. Pursuant to 35 Ill. Adm. Code Section 218.672, upon initial start-up of a new source, the owner or operator of the source shall certify to the Illinois EPA that the source will be in compliance with Sections 218.666(b) and (d): Such certification shall include:
  - a. A description of the handling practices for polyester resin material, cleaning materials which contain VOM and waste materials which contain VOM including the use of closed containers and a statement that these practices effectively control VOM emissions to the atmosphere; and
  - b. The usage on a daily basis of each cleanup material which contains VOM, the VOM content per liter of each such material and whether a reclamation system is required by Section 218.666(d) of for such material or will be used; a description of the solvent recovery practices if recovery is required or will be used; and a statement that where a solvent recovery system is required and will be at the source, that the waste residue contains 20% or less VOM by weight.
  
18. Pursuant to 35 Ill. Adm. Code Section 218, on and after the initial start-up date, the owner or operator of the process shall collect and record all the following information and maintain the information at the source for a period of three years:
  - a. The date, time and duration of scheduled inspections performed to confirm the proper use of closed containers to control VOM emissions, and any instances of improper use of closed containers, with descriptions of actual practice and corrective action taken, if any;
  - b. Information on a daily basis confirming the proper use of a recovery system if one is required or is used, including operation of a recovery system at the source to produce a waste residue that is 20% or less VOM by weight and information identifying any observation of noncompliance; and
  - c. Information on a daily basis on the use of cleaning materials which contain more than 200 grams of VOM per liter (1.7 pound per gallon) if a recovery system is not required or is not used. This information shall include the name, identification number, amount used and VOM content of each such cleaning material.
  - d. The date, time, and duration of scheduled inspections to confirm the proper use and maintenance of covers on vats, vessels, and tanks and proper drainage of mixers and any instance of improper use, with description of actual practice and corrective action taken, if any; and

- e. A maintenance log for covers on vats, vessels, and tanks, detailing all routine and non-routine maintenance performed and initial use of new covers, including dates of such activities.

19. Pursuant to 35 Ill. Adm. Code Section 218, upon initial start-up of a new emission unit, the owner or operator of the source shall certify to the Illinois EPA that the emission unit will be in compliance with Section 218.666(c). Such certification shall include:
  - a. A description of the equipment used for formulation of polyester resin materials, including the types of tanks, vats, and vessels and their size and the types of mixers and the covers associated with this equipment; and
  - b. A description of the practices used to minimize VOM emissions to the atmosphere from formulation activity, including the use and maintenance of covers on tanks, vats, and vessels and drainage of mixers.
- 20a. The Permittee shall maintain monthly and annual records of the following information, and such other items as may be appropriate to allow the Illinois EPA to review compliance with the limits in Special Condition 3.
  - i. Name or identification number, VOM content and HAP content of each material used (i.e., raw polyester styrene resin, gelcoat, solvents other than acetone, etc.),
  - ii. Usage of materials (i.e., raw polyester styrene resin, gelcoat, solvents other than acetone, etc.),
  - iii. Emissions of VOM and speciated HAP for each operation, and
  - iv. A running total of annual VOM, speciated HAP, and total HAP emissions, calculated monthly, based on the preceding 12 calendar months.
- b. The Permittee shall make the above determinations as follows.
  - i. Annual Usage: Compute the weight of each (i.e., raw polyester styrene resin, gelcoat, solvent, etc.) used each month by the 15th of the following month. By the 15th of each month, add the latest monthly material usage used for the month to the monthly usage for the 11 previous months (to obtain the annual usage of each material)
  - ii. Annual Emissions: Compute the emissions of each material (i.e., raw polyester styrene resin, gelcoat, solvent, etc.) used each month by the 15th of the following month. By the 15th of each month, add the latest monthly material emissions for the month to the emissions of the 11 previous months (to obtain the annual emissions of each material).

- iii. The monthly determination of compliance, for the month of record, shall be performed by the 15th of the following month. By the 15th of each month, add the latest calculated monthly emissions and material usages for the month of record to the calculated emissions and material usages of the 11 previous months (to obtain the annual emissions of each material).

21. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.
22. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.
23. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 West Harrison  
Des Plaines, Illinois 60016

24. Persons with lifetime operating permits must obtain a revised permit for any of the following changes at the source:
  - a. An increase in emissions above the amount the emission unit or the source is permitted to emit;
  - b. A modification;
  - c. A change in operations that will result in the source's noncompliance with conditions in the existing permit; or
  - d. A change in ownership, company name, or address, so that the application or existing permit is not longer accurate.

It should be noted that the space heaters, cutting and grinding process controlled by dust collectors, and the fuel combustion emissions from the two cure ovens are exempt from state permit requirements, pursuant to 35 Ill. Adm. Code 201.146(c), (aa), and (fff), respectively.

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If you have any questions on this permit, please contact Tara T. Nguyen-Ede at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

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cc: Region 1

Attachment A

Compliance with the limitations in Special Condition 3, 4, and 6 shall be determined as follows:

1. Volatile Organic Material (VOM) and Styrene emissions from the marble casting operations and gelcoat booths shall be calculated based upon the quantity of VOM present in each resin or gelcoat (% VOM) and the quantity of resin used. Emission factors for VOM emissions for the marble casting operation shall be calculated using USEPA publication AP-42 (Table 4.12-2) and gelcoat booth emission factors shall be calculated using the equations from the report titled CFA Emission Models for the Reinforced Plastics Industries by Robert A. Haberlein on behalf of the Composites Fabricators Association, dated April 7, 1999:

$$E_{VOM} = \sum_{i=1}^3 (U_i \times EF_i)$$

Where:

$E_{VOM}$ : VOM emission rate

$U_i$ : Lamination resin or gelcoat usage rate for each resin (tons).

$EF_i$ : Appropriate emission factor (ton/ton) calculated for each resin or gelcoat

Marble Casting

$$EF_i = (0.02 \times VOM_i)$$

Gelcoat (Equation 2.6.3 (EQ 18), Page 21)

$$EF_i = (1.036 \times VOM_i - 0.195)$$

$VOM_i$ : The maximum weight fraction of styrene monomer present in the neat resin or gelcoat (i.e., weight percent styrene/100) pursuant to determination methods provided above (i.e., Special Condition 3).

All VOM emissions shall be assumed to be styrene emissions unless the resin or gelcoat used utilizes another material as the polymerization vehicle. In such case the chemical compound used shall be assumed to be emitted at the same rate as lamination resins and gelcoats that contain only styrene monomer.

2. Particulate matter (TSP) emissions for spray lay-up operations shall be calculated based upon the following formula:

$$E_{TSP} = PWR \times 0.03 \times (1 \text{ B CE})$$

Where:

$E_{TSP}$  Particulate matter emission rate, for the lamination resins and gelcoat spray lay-up operations;

0.03 TSP emission rate based upon an emission factor of 0.32 lb/gal and the typical density of resins and gel coats of 10.7 lb/gal (ton/ton);

CE Control efficiency of applicable control (i.e., dry filters)

3. Solvent emissions, for all solvents other than acetone, shall be based upon mass balance calculations. Where 100% of solvent used is assumed to be emitted.

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