MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT
AIR QUALITY DIVISION

August 23, 2010

PERMIT TO INSTALL
No. 399-93C

ISSUED TO
Owens Products, Inc.

LOCATED AT
1000 Progress Street
Sturgis, Michigan 49091

IN THE COUNTY OF
Saint Joseph

STATE REGISTRATION NUMBER
N5257

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Natural Resources and Environment. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **July 20, 2010**	
DATE PERMIT TO INSTALL APPROVED: **August 23, 2010**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO_x	Oxides of Nitrogen
MDNRE	Michigan Department of Natural Resources and Environment (Department)	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than 2.5 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO_2	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Natural Resources and Environment, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Natural Resources and Environment. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUFLOWCHOP	Resin lamination process with associated mechanical non-atomized flow/chop applicator gun for resin and fiberglass application used in a flow/chop spray booth. The spray booth is equipped with a dry filter overspray control system. Mechanical atomized applicator gun will also be allowed for use in applying tooling resin(s) and ceramic resin(s).	FGFIBERGLASS, FGFACILITY
EUGELCOAT	Gelcoat application process with associated mechanical non-atomized applicator gun used in a gelcoat spray booth. The spray booth is equipped with a dry filter overspray control system. Mechanical atomized applicator gun will also be allowed for use in applying tooling gelcoat(s).	FGFIBERGLASS, FGFACILITY
EUTRIM	Cutting/sanding of molded materials in the trim area with dust control provided by Donaldson Torit Power Environmental Control Booth which is equipped with fabric filter collector bags and a differential pressure gauge. Control system may be exhausted indoors or outdoors.	NA
EUCLEANUP	Miscellaneous cleanup activities including the use of acetone and Superblue cleaner for use in cleanup and purging activities.	FGFIBERGLASS, FGFACILITY
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.		

The following conditions apply to: EUFLOWCHOP

DESCRIPTION: Resin lamination process

Flexible Group ID: FGFIBERGLASS, FGFACILITY

POLLUTION CONTROL EQUIPMENT: Dry filter overspray control system

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	5.3 tpy	12-month rolling time period as determined at the end of each calendar month	EUFLOWCHOP	SC VI.1, VI.2, VI.3	**R 336.1702(a)**
The emission limits are based upon the emission factors listed in the Unified Emission Factor (UEF) Table in Appendix A					

II. MATERIAL LIMITS

The permittee shall not exceed the styrene monomer content limits identified in the following table:

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Lamination Resin	29% by weight	NA	EUFLOWCHOP	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**
2. Ceramic Resin	35% by weight	NA	EUFLOWCHOP	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**
3. Tooling Resin	39% by weight	NA	EUFLOWCHOP	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate any booth associated with EUFLOWCHOP unless its respective exhaust filter is installed, maintained and operated in a satisfactory manner. **(R 336.1301, R 336.1331, R 336.1901)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip and maintain the spray booth in EUFLOWCHOP with non-atomized applicators or technology with equivalent or lower styrene emission rates for the application of lamination resins. For the application of tooling resin(s) and ceramic resin(s), the permittee may use mechanical atomized applicators. **(R 336.1225, R 336.1702(a))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1225, R 336.1702)**

2. The permittee shall keep a separate record of the styrene monomer content for each shipment of resin received. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

3. The permittee shall keep the following information for each calendar month for EUFLOWCHOP:

a) The identity and amount (in pounds) of each resin used.

b) The identity and amount (in pounds) of each catalyst used.

c) The identity and amount (in pounds) of each additive used.

d) The styrene content of each resin used determined as supplied, plus any extra styrene added by the permittee, but before the addition of other additives such as powders, fillers, glass, catalyst, etc.

e) The alpha methyl styrene content of each resin used determined as supplied, before the addition of other additives such as powders, fillers, glass, catalyst, etc.

f) The VOC content of each catalyst used determined as specified in Appendix B, or in an alternate method approved by the AQD District Supervisor.

g) The appropriate emission factor for each raw material used, as applicable, according to Appendix A.

h) VOC emission calculations determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records in the format specified in Appendix B, or in an alternate method that is acceptable to the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVFLOWCHOP	24	40	**R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENTS

NA

The following conditions apply to: EUGELCOAT

DESCRIPTION: Gelcoat application process

Flexible Group ID: FGFIBERGLASS, FGFACILITY

POLLUTION CONTROL EQUIPMENT: Dry filter overspray control system

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	2.6 tpy	12-month rolling time period as determined at the end of each calendar month	EUGELCOAT	SC VI.1, VI.2, VI.3	**R 336.1702(a)**
2. Acetone	0.1 tpy	12-month rolling time period as determined at the end of each calendar month	EUGELCOAT	SC VI.1. VI.3	**R 336.1224**
The emission limits are based upon the emission factors listed in the Unified Emission Factor (UEF) Table in Appendix A					

II. MATERIAL LIMITS

The permittee shall not exceed the styrene monomer content limits identified in the following table:

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Clear gelcoat	37% by weight	NA	EUGELCOAT	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**
2. Black gelcoat	40% by weight	NA	EUGELCOAT	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**
3. Bronze gelcoat	40% by weight	NA	EUGELCOAT	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**
4. All other color gelcoats	35% by weight	NA	EUGELCOAT	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**
5. Tooling gelcoat (any color)	40% by weight	NA	EUGELCOAT	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**
6. Methyl methacrylate (MMA) content	10% by weight	NA	EUGELCOAT	SC VI.1, VI.2, VI.3	**R 336.1225, R 336.1702(a)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate any booth associated with EUGELCOAT unless its respective exhaust filter is installed, maintained and operated in a satisfactory manner. **(R 336.1301, R 336.1331, R 336.1901)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip and maintain the spray booth in EUGELCOAT with non-atomized applicators or technology with equivalent or lower styrene emission rates for the application of all gelcoats, except for tooling gelcoats which may use mechanical atomized applicators. **(R 336.1225, R 336.1702(a))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1225, R 336.1702)**

2. The permittee shall keep a separate record of the styrene and MMA monomer contents for each shipment of gelcoat received. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

3. The permittee shall keep the following information for each calendar month for EUGELCOAT:

    a) The identity and amount (in pounds) of each gelcoat used

    b) The styrene content of each gelcoat used determined as supplied, plus any extra styrene added by the permittee, but before the addition of other additives such as powders, fillers, glass, catalyst, etc.

    c) The MMA content of each gelcoat used determined as supplied, plus any extra MMA added by the permittee, but before the addition of other additives such as powders, fillers, glass, catalyst, etc.

    d) The acetone content of each gelcoat used

    e) The identity and amount (in pounds) of each catalyst used

    f) The VOC content of each catalyst used determined as specified in Appendix C, or an alternate method approved by the AQD District Supervisor

    g) The identity and amount (in pounds) of each additive used

    h) The appropriate emission factor for each gelcoat used, as applicable, according to Appendix A

    i) VOC emission calculations determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

    j) Acetone emission calculations determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

    The permittee shall keep the records in the formats specified in Appendix C, or in an alternate method that is acceptable to the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVGELCOAT	24	40	**R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENTS

NA

The following conditions apply to: EUCLEANUP

DESCRIPTION: Miscellaneous cleanup activities

Flexible Group ID: FGFIBERGLASS, FGFACILITY

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	0.3 tpy	12-month rolling time period as determined at the end of each calendar month	EUCLEANUP	SC VI.1, VI.2	**R 336.1225, R 336.1702(a)**
2. Acetone	4.5 tpy	12-month rolling time period as determined at the end of each calendar month	EUCLEANUP	SC VI.1, VI.2	**R 336.1225, R 336.1224**

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1224, R 336.1225, R 336.1702(a))**

2. The permittee shall keep the following information on a monthly basis for EUCLEANUP:

    a) The identity of each clean-up solvent used

    b) The amount (in gallons or pounds) of each clean-up solvent used

    c) Where applicable, gallons or pounds of each clean-up solvent reclaimed

    d) Acetone emission calculations determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

    e) VOC emission calculation determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

    The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

The following conditions apply to: EUTRIM

DESCRIPTION: Cutting/sanding of molded materials in the trim area

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Fabric filter collector with differential pressure gauge

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUTRIM unless the fabric filter control system is installed, maintained, and operated in a satisfactory manner. **(R 336.1301, R 336.1331, R 336.1901)**

2. The permittee shall not operate EUTRIM unless a gauge, which measures the pressure drop across the fabric filter collector is installed, maintained and operated in a satisfactory manner. **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGFIBERGLASS	Fiberglas manufacturing operations	EUFLOWCHOP, EUGELCOAT, EUCLEANUP
FGFACILITY	All process equipment at the stationary source including equipment covered by other permits, grand-fathered equipment and exempt equipment.	EUFLOWCHOP, EUGELCOAT, EUCLEANUP

The following conditions apply to: FGFIBERGLASS

DESCRIPTION: Fiberglas manufacturing operations

Emission Units: EUFLOWCHOP, EUGELCOAT, EUCLEANUP

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall capture all waste cleanup solvent(s), catalyst(s), resin(s), and gelcoat(s) used in FGFIBERGLASS and store them in closed containers. The permittee shall dispose of all waste cleanup solvent(s), catalyst(s), resin(s), and gelcoat(s) in an acceptable manner in compliance with all applicable state rules and federal regulations. **(R 336.1224, R 336.1702(a))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material (i.e. lamination resin, gelcoat, catalyst, etc.), including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

The following conditions apply Source-Wide to: FGFACILITY

POLLUTION CONTROL EQUIPMENT:

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Each Individual HAP	Less than 9.0 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.1, VI.2	**R 336.1205(3)**
2. Aggregate HAPs	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.1, VI.2	**R 336.1205(3)**

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall determine the HAP content of any material as received and as applied, using manufacturer's formulation data. Upon request of the AQD District Supervisor, the permittee shall verify the manufacturer's HAP formulation data using EPA Test Method 311. **(R 336.1205(3))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(3))**

2. The permittee shall keep the following information on a monthly basis for FGFACILITY:

    a) Gallons or pounds of each HAP containing material used.

    b) Where applicable, gallons or pounds of each HAP containing material reclaimed.

    c) HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used.

    d) Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.

    e) Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.

    The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1205(3))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

APPENDIX A

Unified Emission Factors for Open Molding of Composites
July 23, 2001
Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed

Styrene content in resin /gelcoat, % [1]	<33 [2]	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	>50 [2]
Manual	0.126 x %styrene x 2000	83	89	94	100	106	112	117	123	129	134	140	146	152	157	163	169	174	180	((0.286 x %styrene) - 0.0529) x 2000
Manual w/Vapor Suppressed Resin VSR [3]	Manual emission factor [listed above] x (1 – (0.50 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Atomized	0.169 x %styrene x 2000	111	126	140	154	168	183	197	211	225	240	254	268	283	297	311	325	340	354	((0.714 x %styrene) – 0.18) x 2000
Mechanical Atomized with VSR [3]	Mechanical Atomized emission factor [listed above] x (1 – (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Atomized Controlled Spray [4]	0.130 x %styrene x 2000	86	97	108	119	130	141	152	163	174	185	196	207	218	229	240	251	262	273	0.77 x ((0.714 x %styrene) – 0.18) x 2000
Mechanical Controlled Spray with VSR	Mechanical Atomized Controlled Spray emission factor [listed above] x (1 – (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Non-Atomized	0.107 x %styrene x 2000	71	74	77	80	83	86	89	93	96	99	102	105	108	111	115	118	121	124	((0.157 x %styrene) – 0.0165) x 2000
Mechanical Non-Atomized with VSR [3]	Mechanical Non-Atomized emission factor [listed above] x (1 – (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Filament Application	0.184 x %styrene x 2000	122	127	133	138	144	149	155	160	166	171	177	182	188	193	199	204	210	215	((0.2746 x %styrene) – 0.0298) x 2000
Filament Application with VSR [3]	0.120 x %styrene x 2000	79	83	86	90	93	97	100	104	108	111	115	118	122	125	129	133	136	140	0.65 x ((0.2746 x %styrene) – 0.0298) x 2000

Gelcoat Application	**0.445 x %styrene x 2000**	**294**	**315**	**336**	**356**	**377**	**398**	**418**	**439**	**460**	**481**	**501**	**522**	**543**	**564**	**584**	**605**	**626**	**646**	**((1.03646 x %styrene) – 0.195) x 2000**
Gelcoat Controlled Spray Application [4]	**0.325 x %styrene x 2000**	**215**	**230**	**245**	**260**	**275**	**290**	**305**	**321**	**336**	**351**	**366**	**381**	**396**	**411**	**427**	**442**	**457**	**472**	**0.73 x ((1.03646 x %styrene) – 0.195) x 2000**
Gelcoat Non-Atomized Application [8]	**SEE Note 9 below**	**196**	**205**	**214**	**223**	**232**	**241**	**250**	**259**	**268**	**278**	**287**	**296**	**305**	**314**	**323**	**332**	**341**	**350**	**((0.4506 x %styrene) – 0.0505) x 2000**
Covered-Cure after Roll-Out	**Non-VSR process emission factor [listed above] x (0.80 for Manual <or> 0.85 for Mechanical)**																			
Covered-Cure without Roll-Out	**Non-VSR process emission factor [listed above] x (0.50 for Manual <or> 0.55 for Mechanical)**																			

Emission Rate in Pounds of Methyl Methacrylate Emitted per Ton of Gelcoat Processed

MMA content in gelcoat, % [6]	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**≥20**
Gel coat application [7]	**15**	**30**	**45**	**60**	**75**	**90**	**105**	**120**	**135**	**150**	**165**	**180**	**195**	**210**	**225**	**240**	**255**	**270**	**285**	**0.75 x %MMA x 2000**

Notes

1 Including styrene monomer content as supplied, plus any extra styrene monomer added by the molder, but before addition of other additives such as powders, fillers, glass,…etc.

2 Formulas for materials with styrene content <33% are based on the emission rate at 33% (constant emission factor expressed as percent of available styrene), and for styrene content >50% on the emission rate based on the extrapolated factor equations; these are not based on test data but are believed to be conservative estimates. The value for "% styrene" in the formulas should be input as a fraction. For example, use the input value 0.30 for a resin with 30% styrene content by wt.

3 The VSR reduction factor is determined by testing each resin/suppressant formulation according to the procedures detailed in the CFA Vapor Suppressant Effectiveness Test.

4 SEE the CFA Controlled Spray Handbook for a detailed description of the controlled spray procedures.

5 The effect of vapor suppressants on emissions from filament winding operations is based on the Dow Filament Winding Emissions Study.

6 Including MMA monomer content as supplied, plus any extra MMA monomer added by the molder, but before addition of other additives such as powders, fillers, glass,…etc.

7 Based on gelcoat data from NMMA Emission Study.

8 SEE the July 17, 2001 EECS report Emission Factors for Non-Atomized Application of Gel Coats used in the Open Molding of Composites for a detailed description of the Non-Atomized gelcoat testing.

9 Use the equation ((0.4506 x %styrene) – 0.0505) x 2000 for gelcoats with styrene contents between 19% and 32% by wt.; use the equation 0.185 x %styrene x 2000 for gelcoats with less than 19% styrene content by wt.

APPENDIX B
Resin Process Emission Calculations

Resin Process:

		A	B	C[1]	D = A x C
Resin Description	Application Method	Resin Usage (lb/mo)	Styrene Content[1] (% by wt. as supplied)	Styrene Emission Factor (lb emitted/lb material applied)	Calendar Month Styrene Emissions (lb/mo)

Total Pounds Styrene/VOC Emitted per Calendar Month from Resin, **E =** (sum of all D's)
E =

	F	G	H = F x (G / 100)
CATALYST DESCRIPTION	**CATALYST USAGE (LB/MONTH)**	**VOC[2] (% BY WEIGHT)**	**CALENDAR MONTH VOC EMISSIONS (LB/MONTH)**
TOTAL POUNDS VOC EMITTED FROM CATALYST PER MONTH, I = (sum of all H's) **I=**			

Emission Unit Totals:
Emission Unit Tons VOC Emitted per Calendar Month, **J = (E + I)** / 2000

12-Month Rolling Emission Unit Totals:
Emission Unit 12-Month Rolling Period VOC Emitted (Tons), **K = J** + Total of 11 Previous Months **K =**

1. Styrene content shall be determined as supplied, plus any extra styrene added by the molder, but before the addition of other additives such as fillers, glass, catalyst, etc.

2. Determine VOC content for catalyst (Cadox L-50a Red, Cadox D-50) as follows: Catalyst VOC = 2 percent by weight. (This is based on maximum Methyl Ethyl Ketone content per supplier MSDS).

NOTE: The other organic ingredients in the catalyst, including Methyl Ethyl Ketone Peroxide and 2,2,4-Trimethylpentanediol-1,3-Diisobutyrate, may be considered as either totally consumed in the cross-linking reactions or non-volatile. Also, hydrogen peroxide is not an organic compound.

APPENDIX C
Gelcoat Process Emission Calculations

Gelcoat ID:_____
Styrene Content[1] (% wt)_____ **MMA Content (%wt)**_____

	A	**B**	**C**	**D = A x C**
Gelcoat Description	Gelcoat Usage (lb/mo)	Styrene Content[1] (% by weight as supplied)	Styrene Emission Factor (lb emitted / lb gelcoat applied) (See Appendix A)	Calendar Month Styrene Emissions (lb/mo)

Total lbs. styrene emitted per calendar month from gelcoat, **E** = (sum of all D's) **E =**

	F	**G**	**H**	**I = F x H**
Gelcoat Description	Gelcoat Usage (lb/mo)	MMA Content[1] (% by weight as supplied)	MMA Emission Factor (lb emitted / lb gelcoat applied) (See Appendix A)	Calendar Month MMA Emissions (lb/mo)

Total lbs. MMA emitted per calendar month from gelcoat, **J** = (sum of all I's) **J =**

	K	**L**	**M = K x L**
Gelcoat Description	Gelcoat Usage (lb/mo)	Acetone Content (% by weight)	Calendar Month Acetone Emissions (lb/mo)

Total lbs. acetone emitted per calendar month from gelcoat , N=(sum of all M's) **N** =

Catalyst:

	O	**P**	**Q**
Catalyst Description	**Catalyst Usage (lb/mo)**	**VOC[2] (% by wt.)**	**Calendar Month VOC Emissions (lb/mo)**

Total lbs. VOC emitted per calendar month from catalyst, **R** = (sum of all Q's) **R =**

Emission Unit Totals:
Emission Unit Tons VOC Emitted per Calendar Month, **S =** (E + J + R) / 2000
S =

Emission Unit Totals:
Emission Unit Tons Acetone Emitted per Calendar Month, **T =** N / 2000
T =

12-Month Rolling Emission Unit Totals:
Emission Unit 12-Month Rolling Period VOC Emitted (Tons), **U =** S + Total of 11 Previous Months
U =

12-Month Rolling Emission Unit Totals:
Emission Unit 12-Month Rolling Period Acetone Emitted (Tons), **V =** T + Total of 11 Previous Months
V =

1. Styrene content shall be determined as supplied, plus any extra styrene added by the molder, but before the addition of other additives such as fillers, glass, catalyst, etc.

2. Determine VOC content for catalyst (Cadox L-50a Red, Cadox D-50) as follows: Catalyst VOC = 2 percent by weight. (This is based on maximum Methyl Ethyl Ketone content per supplier MSDS).

NOTE: The other organic ingredients in the catalyst, including Methyl Ethyl Ketone Peroxide and 2,2,4-Trimethylpentanediol-1,3-Diisobutyrate, may be considered as either totally consumed in the cross-linking reactions or non-volatile. Also, hydrogen peroxide is not an organic compound.