

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

April 4, 2011

PERMIT TO INSTALL
597-87A

ISSUED TO
Thelamco, Inc.

LOCATED AT
1202 Territorial Road
Benton Harbor, Michigan

IN THE COUNTY OF
Berrien

STATE REGISTRATION NUMBER
B6608

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. 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:

March 3, 2011

DATE PERMIT TO INSTALL APPROVED:

April 4, 2011

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
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
EPA	Environmental Protection Agency	gr	Grains
EU	Emission Unit	Hg	Mercury
FG	Flexible Group	hr	Hour
GACS	Gallon of Applied Coating Solids	H ₂ S	Hydrogen Sulfide
GC	General Condition	hp	Horsepower
HAP	Hazardous Air Pollutant	lb	Pound
HVLP	High Volume Low Pressure *	m	Meter
ID	Identification	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	ng	Nanogram
MDNRE	Michigan Department of Natural Resources and Environment (Department)	NO _x	Oxides of Nitrogen
MSDS	Material Safety Data Sheet	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM10	PM less than 10 microns diameter
NSPS	New Source Performance Standards	PM2.5	PM less than 2.5 microns diameter
NSR	New Source Review	pph	Pound per hour
PS	Performance Specification	ppm	Parts per million
PSD	Prevention of Significant Deterioration	ppmv	Parts per million by volume
PTE	Permanent Total Enclosure	ppmw	Parts per million by weight
PTI	Permit to Install	psia	Pounds per square inch absolute
RACT	Reasonably Available Control Technology	psig	Pounds per square inch gauge
ROP	Renewable Operating Permit	scf	Standard cubic feet
SC	Special Condition	sec	Seconds
SCR	Selective Catalytic Reduction	SO ₂	Sulfur Dioxide
SRN	State Registration Number	THC	Total Hydrocarbons
TAC	Toxic Air Contaminant	tpy	Tons per year
TEQ	Toxicity Equivalence Quotient	µg	Microgram
VE	Visible Emissions	VOC	Volatile Organic Compounds
		yr	Year

* 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 Environmental Quality, 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 Environmental Quality. **(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

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EULAMINATOR01	Direct Gravure application of adhesive to web of plastic film or paper for combining as a lamination to paper, film or paper board. (Thelma)	1978	FGLAMINATORS
EULAMINATOR02	Direct Gravure application of adhesive to web of plastic film or paper for combining as a lamination to paper, film or paper board. (Thundar)	1987	FGLAMINATORS
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.			

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
FGLAMINATORS	Direct Gravure application of adhesive to web of plastic film or paper for combining as a lamination to paper, film or paper board. The emissions from the laminators are controlled by a thermal oxidizer, except for waterborne coatings with a VOC content of 0.30 lb/gallon, minus water as applied or less.	EULAMINATOR01 EULAMINATOR02
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	

The following conditions apply to: FGLAMINATORS

DESCRIPTION: Direct Gravure application of adhesive to web of plastic film or paper for combining as a lamination to paper, film or paper board.

Emission Units: EULAMINATOR01 and EULAMINATOR02

POLLUTION CONTROL EQUIPMENT: Thermal oxidizer, except that bypass is allowed for waterborne coatings with a VOC content of 0.30 lb/gal minus water as applied, or less.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOCs	60 tpy	12-month rolling time period as determined at the end of each calendar month	FGLAMINATORS	SC VI.1 SC VI.4	R 336.1205, R 336.1702(a)
2. VOCs	1,000 lb/day	Calendar Day	FGLAMINATORS	SC VI.1 SC VI.5	R 336.1205, R 336.1702(a)
3. VOCs	55.0 pph	Test Protocol	FGLAMINATORS solvent based coatings(adhesives)	SC V.2	R 336.1702(a)
4. Acetaldehyde (CAS # 75070)	8.9 tpy	12-month rolling time period as determined at the end of each calendar month	FGLAMINATORS	SC VI.1 SC VI.4	R 336.1225
5. Acetaldehyde (CAS # 75070)	66.24 lb/day	Calendar Day	FGLAMINATORS	SC VI.1 SC VI.5	R 336.1225
6. Acrylic Acid (CAS # 79107)	7.68 lb/day	Calendar Day	FGLAMINATORS	SC VI.1 SC VI.5	R 336.1225
7. Tetramethyl-5-decyne-4,7-diol,2,3,7,9 (CAS # 126863)	1419.12 lb/year	12-month rolling time period as determined at the end of each calendar month	FGLAMINATORS	SC VI.1 SC VI.4	R 336.1225

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	0.30 lb/gal, minus water as applied*	Instantaneous	Waterborne Coatings for FG-LAMINATORS Thermal Oxidizer Bypass	SC VI.1 SC VI.4	R 336.1225 R 336.1702(a)

*The phrase "minus water" shall also include compounds which are used as organic solvents and which are excluded from the definition of volatile organic compound. **(R 336.1602(4))**

2. Applicant shall not substitute any adhesives and solvents (reducers) for those described in this permit application which would result in an appreciable change in the quality or any appreciable increase in the quantity of the emission of an air contaminant without prior notification to and approval by the Air Quality Division. **(R 336.1225, R 336.1702)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall handle all VOC and HAP containing materials, including coatings, reducers, solvents and thinners, in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times except when operator access is necessary. **(R 336.1205(3), R 336.1225, R 336.1702(a), R 336.1901)**
2. The permittee shall only operate one laminator in FGLAMINATORS during the use of solvent based coatings. **(R 336.1225, R 336.1702)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate FGLAMINATORS unless the thermal oxidizer is installed, maintained and operated in a satisfactory manner, unless waterborne coatings with VOC content of not greater than 0.30 lb/gallon, minus water, are used as allowed in SC II.1. Satisfactory operation of the thermal oxidizer includes a minimum VOC capture efficiency of 90 percent (by weight), a minimum VOC destruction efficiency of 97 percent (by weight), and maintaining a minimum temperature of 1400°F and a minimum retention time of 0.5 seconds. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901, R 336.1910)**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a temperature monitoring device in the combustion chamber of the thermal oxidizer to monitor and record the temperature on a continuous basis, during operation of FGLAMINATORS. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901)**

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 VOC content, water content, and density of any coating (adhesive) and reducer as applied and as received, using federal Reference Test Method 24. Upon prior approval by the AQD District Supervisor, the permittee may determine the VOC content from manufacturer's formulation data. If the Method 24 and the formulation values should differ, the permittee shall use the Method 24 results to determine compliance. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901, R 336.2001, R 336.2003, R 336.2004)**
2. Upon request from the AQD District Supervisor, the permittee may be required to verify the VOC emission rate while using non-waterborne coatings by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004)**

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 monitoring/recordkeeping special condition. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901)**

2. The permittee shall monitor, in a satisfactory manner, the temperature in the thermal oxidizer on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901)**
3. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each coating (adhesive) and reducer, 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 and make them available to the Department upon request. **(R 336.1225, R 336.1702, R 336.1901)**
4. The permittee shall keep the following information on a monthly basis for each coating line in FGLAMINATORS:
 - a) Gallons (with water) or pounds of each coating (adhesive) and reducer used.
 - b) VOC content (minus water and with water) of each coating (adhesive) and reducer as applied.
 - c) Density of each coating (adhesive) and reducer.
 - d) VOC and acetaldehyde mass emission calculations determining the monthly emission rate in tons per calendar month.
 - e) VOC and acetaldehyde mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
 - f) Tetramethyl-5-decyne-4,7-diol,2,3,7,9 mass emission calculations determining the monthly emission rate in pounds per month and annual emission rate in pounds per 12-month rolling time period as determined at the end of each calendar month.
 - g) Hours of operation when using thermal oxidizer.
 - h) Emission unit, date and duration of thermal oxidizer bypass while using waterborne coatings.The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901)**
5. The permittee shall keep the following information on a daily basis for each coating line in FGLAMINATORS:
 - a) VOC mass emission calculations determining the daily emission rate in pounds per calendar day.
 - b) Acetaldehyde and acrylic acid emission calculations determining the daily emission rate in pounds per calendar day.The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901)**
5. The permittee shall keep the following information on a monthly basis for the use of purge and clean-up solvents associated with the FGLAMINATORS:
 - a) Gallons of each solvent used and reclaimed.
 - b) VOC content, in pounds per gallon, of each solvent used.
 - c) VOC mass emission calculations determining the monthly emission rate in tons per calendar month.
 - d) VOC mass emission calculations determining 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 and make them available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901)**
6. The permittee shall keep, in a satisfactory manner, continuous records of the temperature in the thermal oxidizer. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1299, R 336.1702, R 336.1901)**

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. SV-THERMOX	39	40	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
2. SV-BYPASS01	30	41	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
3. SV-BYPASS02	30	41	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENTS

1. Within 30 calendar days after the issuance of this permit, the permittee shall label each emission unit with a method acceptable to the District Supervisor. The permittee must notify the District Supervisor, Air Quality Division, in writing as to the date that the labeling was completed. This notification shall take place within 15 calendar days after the labeling has been completed. **(R 336.1201)**
2. The minimum stack height above ground level listed in SC VIII.2 and SC VIII.3 shall apply within 30 days of issuance of this permit. **(R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply Source-Wide to: FGFACILITY

POLLUTION CONTROL EQUIPMENT: Thermal oxidizer, except that bypass is allowed for waterborne coatings with a VOC content of 0.30 lb/gal minus water as applied, or less.

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.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.2	R 336.1205(3)
3. VOCs	70 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.3	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 coating (adhesive) and reducer as applied and as received, 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))**
2. The permittee shall determine the VOC content, water content, and density of any coating (adhesive) and reducer as applied and as received, using federal Reference Test Method 24. Upon prior approval by the AQD District Supervisor, the permittee may determine the VOC content from manufacturer's formulation data. If the Method 24 and the formulation values should differ, the permittee shall use the Method 24 results to determine compliance. **(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 monitoring/recordkeeping 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. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

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

3. The permittee shall keep the following information on a monthly basis for FGFACILITY:
 - a) Gallons or pounds of each VOC containing material used.
 - b) Where applicable, gallons or pounds of each VOC containing material reclaimed.
 - c) VOC content, in pounds per gallon or pounds per pound, of each VOC containing material used.
 - d) VOC emission calculations determining the monthly emission rate in tons per calendar month.
 - e) VOC emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, 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

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b)