MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION

September 30, 2009

PERMIT TO INSTALL

No. 126-00A

ISSUED TO

Shape Corporation

LOCATED AT

1820 Hayes Street Grand Haven, Michigan 49417

IN THE COUNTY OF

Ottawa

STATE REGISTRATION NUMBER

N1185

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: 9/21/2009			
DATE PERMIT TO INSTALL APPROVED: 9/30/2009	SIGNATURE:		
DATE PERMIT VOIDED:	SIGNATURE:		
DATE PERMIT REVOKED:	SIGNATURE:		

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Appreviat			Pollutant/Measurement Abbreviations		
AQD	Air Quality Division	BTU	British Thermal Unit		
BACT	Best Available Control Technology	°C	Degrees Celsius		
CAA	Clean Air Act	СО	Carbon Monoxide		
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot		
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter		
СОМ	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		
MDEQ	Michigan Department of Environmental Quality	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).

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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 AQD District Supervisor shall be notified, in writing, of a change in ownership or operational control of the stationary source or emission unit(s) authorized by this Permit to Install pursuant to R 336.1219. The notification shall include all of the information required by R 336.1219(1)(a) and (b). In addition, a new owner or operator must submit a written statement pursuant to R 336.1219(1)(c), agreeing to and accepting the terms and conditions of this Permit to Install, and shall notify the AQD District Supervisor of any change in the contact person for this Permit to Install. (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.

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- 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)

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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)	Installation Date / Modification Date	Flexible Group ID
EU-SURFPREP	Non-VOC alkaline cleaner (spray and dip clean); tap water rinse; surface conditioner dip rinse; zinc phosphate dip; tap water rinse; chrome-free sealer dip; and reverse osmosis water dip.	6 -30-00 / NA	N/A
EU-ECOATLINE	Electrocoat dip; three permeate rinsing stages; dehydration oven; final bake oven; and force-cooling.	6-30-00 / 10-09	N/A

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: EU-SURFPREP

<u>DESCRIPTION</u>: Non-VOC alkaline cleaner (spray and dip clean); tap water rinse; surface conditioner dip rinse; zinc phosphate dip; tap water rinse; chrome-free sealer dip; and reverse osmosis water dip.

Flexible Group ID: N/A

POLLUTION CONTROL EQUIPMENT: N/A

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Nitric acid ¹ [CAS # 7697-37-2]	0.5 tpy	12-month rolling time period as determined at the end of each calendar month	EU-SURFPREP	SC VI.1, SC VI.2	R 336.1224
2. Phosphoric acid ¹ [CAS # 7664-38-2]	0.4 tpy	12-month rolling time period as determined at the end of each calendar month	EU-SURFPREP	SC VI.1, SC VI.2	R 336.1224
3. Nitric acid ¹ [CAS # 7697-37-2]	0.14 lb/hr	Test protocol	EU-SURFPREP	GC 13	R 336.1225
4. Phosphoric acid ¹ [CAS # 7664-38-2]	0.11 lb/hr	Test protocol	EU-SURFPREP	GC 13	R 336.1225

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II. MATERIAL LIMITS

N/A

III. PROCESS/OPERATIONAL RESTRICTIONS

- 1. The permittee shall capture all waste acids and shall store them in closed containers. The permittee shall dispose of all waste acids in an acceptable manner in compliance with all applicable state rules and federal regulations.¹ (R 336.1224, R 336.1225, R 336.1901)
- 2. The permittee shall not operate the surface preparation machine dip tanks (alkaline cleaner, surface conditioner, zinc phosphate coating, and chrome-free sealer) at temperatures greater than 160°F. (R 336.1224, R 336.1225, and R 336.1702(a))

IV. <u>DESIGN/EQUIPMENT PARAMETERS</u>

N/A

V. TESTING/SAMPLING

N/A

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 336.1224)
- 2. The applicant shall calculate the nitric acid and phosphoric acid emission rates from the zinc phosphate stage in tons per month; and a 12-month rolling time period mass emission at the end of each calendar month in tons per year. This information shall be made available to the Department upon request.

 (R 336.1224)

VII. REPORTING

N/A

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 noted¹:

Stack & Vent ID	Maximum Exhaust Diameter/ Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV00005 (Surface Prep Entrance Exhaust)	24	43.75	R 336.1225, R 336.1901

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Stack & Vent ID	Maximum Exhaust Diameter/ Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
2. SV00006 (Surface Prep Zinc Phos Stage Exhaust)	24	43.75	R 336.1225, R 336.1901

IX. OTHER REQUIREMENTS

N/A

Footnotes:

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

The following conditions apply to: EU-ECOATLINE

<u>DESCRIPTION</u>: Electrocoat dip; three permeate rinsing stages; dehydration oven; final bake oven; and force-cooling.

Flexible Group ID: N/A

POLLUTION CONTROL EQUIPMENT: N/A

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOCs	41.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU- ECOATLINE	SC VI.1, SC VI.3	R 336.1702(a)

II. MATERIAL LIMITS

Material	VOC Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
Electrocoat Coating	0.5 lb/gal (minus water)* as applied	Instantaneous	EU- ECOATLINE	SC V.1	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))

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III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall capture all waste coatings and additives and shall store them in closed containers. The permittee shall dispose of all waste coatings and additives in an acceptable manner in compliance with all applicable state rules and federal regulations. (R 336.1225, R 336.1702(a))

2. The permittee shall handle all VOC and / or HAP containing materials, including coatings and additives 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 336.1225, R 336.1702(a))

IV. DESIGN/EQUIPMENT PARAMETERS

N/A

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 or flow additive, as applied and as received, using federal Reference Test Method 24. Upon prior written 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 336.1702(a), R 336.2001, R 336.2003, R 336.2004, R 336.2040(5))

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 336.1702(a))
- The permittee shall maintain a current listing from the manufacturer of the chemical composition of each coating and flow additive 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 336.1224, R 336.1225, R 336.1702(a))
- 3. The permittee shall keep the following information on a calendar month basis for EU-ECOATLINE:
 - a) Gallons (with water) of each coating and flow additive used.
 - b) VOC content (minus water and with water) of each coating and flow additive as applied.
 - 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 336.1702(a))

VII. REPORTING

N/A

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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
SV00007 (Electrocoat Tank Hood Exhaust)	24	43.75	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
2. SV00008 (Postrinse Exit Exhaust)	24	43.75	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
3. SV00009 (Dehydration Zone Exhaust)	18	43.75	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
4. SV00010 (Cure Oven Exhaust)	18	43.75	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
5. SV00011 (Cure Oven Purge Exhaust)	27	43.75	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENTS

N/A