

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

June 13, 2016

**PERMIT TO INSTALL**  
103-02C

**ISSUED TO**  
Tower Automotive Operations, LLC

**LOCATED AT**  
43995 Plymouth Oaks Boulevard  
Plymouth, Michigan

**IN THE COUNTY OF**  
Wayne

**STATE REGISTRATION NUMBER**  
N7871

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: <b>April 18, 2016</b>	
DATE PERMIT TO INSTALL APPROVED: <b>June 13, 2016</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

**PERMIT TO INSTALL**

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant / Measurement Abbreviations</b>	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO <sub>2</sub> e	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
EU	Emission Unit	gr	Grains
FG	Flexible Group	HAP	Hazardous Air Pollutant
GACS	Gallons of Applied Coating Solids	Hg	Mercury
GC	General Condition	hr	Hour
GHGs	Greenhouse Gases	HP	Horsepower
HVLP	High Volume Low Pressure*	H <sub>2</sub> S	Hydrogen Sulfide
ID	Identification	kW	Kilowatt
IRSL	Initial Risk Screening Level	lb	Pound
ITSL	Initial Threshold Screening Level	m	Meter
LAER	Lowest Achievable Emission Rate	mg	Milligram
MACT	Maximum Achievable Control Technology	mm	Millimeter
MAERS	Michigan Air Emissions Reporting System	MM	Million
MAP	Malfunction Abatement Plan	MW	Megawatts
MDEQ	Michigan Department of Environmental Quality	NMOC	Non-methane Organic Compounds
MSDS	Material Safety Data Sheet	NO <sub>x</sub>	Oxides of Nitrogen
NA	Not Applicable	ng	Nanogram
NAAQS	National Ambient Air Quality Standards	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM10	Particulate Matter equal to or less than 10 microns in diameter
NSPS	New Source Performance Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NSR	New Source Review	pph	Pounds 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	Reasonable 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 <sub>2</sub>	Sulfur Dioxide
SNCR	Selective Non-Catalytic Reduction	TAC	Toxic Air Contaminant
SRN	State Registration Number	Temp	Temperature
TEQ	Toxicity Equivalence Quotient	THC	Total Hydrocarbons
USEPA/EPA	United States Environmental Protection Agency	tpy	Tons per year
VE	Visible Emissions	µg	Microgram
		µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
		yr	Year

\*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 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 48909-7760, 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**

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

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EUELECTROCOAT	An electrodeposition coating process and an associated 8.7 MMBTU/HR natural gas-fired curing oven.	January 1, 1996 / June 13, 2016	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: EUELECTROCOAT**

**DESCRIPTION:** An electrodeposition coating process and an associated 8.7 MMBTU/HR natural gas-fired curing oven.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOCs	41.9 tpy	12-month rolling time period as determined at the end of each calendar month	EUELECTROCOAT	SC VI.1 SC VI.2 SC VI.3	R 336.1702(a)

**II. MATERIAL LIMITS**

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOCs	0.6 lb/gal (minus water) <sup>a</sup> as applied	Instantaneous	EUELECTROCOAT	SC V.1 SC VI.1 SC VI.2 SC VI.3	R 336.1702(a)

<sup>a</sup> 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))**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall capture all waste coatings and other materials and shall store them in closed containers. The permittee shall dispose of all waste coatings and other materials in an acceptable manner in compliance with all applicable state rules and federal regulations. **(R 336.1702(a))**
2. 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 336.1225, R 336.1702(a), R 336.1901)**
3. The permittee shall implement and maintain the Nuisance Minimization Plan (NMP) for odors specified in Appendix A. The provisions and procedures of the NMP are subject to adjustment by written notification if the AQD finds that permittee is not meeting the NMP requirements. The permittee may propose revisions to the NMP by submitting a request to the AQD District Supervisor. If the proposed NMP revisions are acceptable, written approval will be provided from the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. Records shall be maintained on file for a period of five years. **(R 336.1201(3), R 336.1901(b))**

#### **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 VOC content, water content, and density of any material, as applied and as received, using federal Reference Test Method 24. As an alternative, upon prior written approval by the AQD District Supervisor, the permittee may determine the VOC content, water content, and density from the Material Safety Data Sheet, manufacturer's formulation data, or both. If Method 24 is performed, the Method 24 test results shall be used to determine compliance unless the test results produce a zero or non-detect value for VOC content. If Method 24 test results produce a zero or non-detect value for VOC content, the permittee shall use the MSDS and/or manufacturer's formulation data to determine compliance. **(R 336.1225, R 336.1702, R 336.1901)**

#### **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 336.1225, R 336.1702)**
2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material, 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, R 336.1901)**
3. The permittee shall keep the following information on a monthly basis for EUELECTROCOAT:
  - a) Gallons (with water) of each material used.
  - b) VOC content (minus water and with water) of each material as applied.
  - c) VOC mass emission calculations determining the monthly emission rate in tons per calendar month.
  - e) 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 using mass balance or an alternative method and 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 336.1225, R 336.1702, R 336.1901)**

4. The permittee shall keep all applicable records on a calendar month basis for the frame carrier cleaning program 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), R 336.1901(b))**

#### **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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/ Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVELECTROCOAT1	30	54	R 336.1225, R 336.1901(b), 40 CFR 52.21(c) & (d)
2. SVELECTROCOAT2	30	57	R 336.1225, R 336.1901(b), 40 CFR 52.21(c) & (d)
3. SVELECTROCOAT3	30	54	R 336.1225, R 336.1901(b), 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENTS**

NA

**FLEXIBLE GROUP SUMMARY TABLE**

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

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	NA

**The following conditions apply Source-Wide to: FGFACILITY**

**POLLUTION CONTROL EQUIPMENT:**

**I. EMISSION LIMITS**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
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)

**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 a Material Safety Data Sheet, manufacturer's formulation data, or both. 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 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.

The permittee shall keep the records using mass balance or an alternative method and 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))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA

## APPENDIX A

### Nuisance Minimization Plan Odor Minimization

#### I. Introduction

Tower Automotive Operations, LLC, has submitted a permit to install (PTI) application to the Michigan Department of Environmental Quality – Air Quality Division (MDEQ-AQD) for their electrocoating (E-Coat) operations located at 43995 Plymouth Oaks Boulevard, Plymouth, Michigan 48170.

This Nuisance Minimization Plan for Odors (NMP) has been developed for the facility's E-Coat operation for the purpose of preventing objectionable odors, if any are present, from affecting off-site areas.

#### II. General Facility Description and Potential Sources of Odorous Emissions

The facility is a Tier I automotive supplier of frames and welded metal structures. Upon review of the plant operations and materials used, facility personnel have determined that the only potentially significant source of odors originating from the facility is the E-Coat line. The E-Coat process involves cleaning and coating metal parts using several wash and rinse tanks, a resin and paste bath tank, and a cure oven. The emissions from the cure oven are captured in an exhaust hood and routed to the stack exhausting vertically through the roof. E-Coat carriers are used to transport parts from tank to tank and into the oven. The E-Coat process takes approximately two hours to complete.

The facility has proposed and will be implementing the following changes to the E-Coat process to potentially mitigate odor concerns. These changes shall be implemented by October 28, 2016:

- Redesign and implementation of a new carrier system. The new design will reduce the amount of E-Coat that accumulates on the carriers and is taken through the cure oven.
- Move cure oven stack #2 (SVELECTROCOAT2) or install a new replacement stack that meets the existing PTI requirements. This action will eliminate a heat exchanger currently installed between the cure oven exit and the stack exhaust.
- Increase the blow-off capacity of the pre-oven air-knife to reduce the amount of excess E-Coat taken through the cure oven.

#### III. Maintenance Schedule

The permittee shall implement and maintain the following frame carrier cleaning program for the E-Coat process:

- All carriers shall be cleaned at least every six months.
- Upon notification from the AQD District Supervisor that odor problems have developed, the carrier cleaning frequency shall be increased to a frequency approved by the AQD District Supervisor.
- The permittee shall prevent excess paint from accumulating on the oven floor.

The permittee shall implement and maintain the following cure oven wall cleaning program for the E-Coat process:

- Vacuum oven walls, ceilings, and floors of the cure oven at least every 12 months.
- Remove any partially cured E-Coat or permeate residue. Any removed materials will be placed into sealed containers and disposed of in an acceptable manner in compliance with all applicable state rules and federal regulations.

The permittee shall implement and maintain the following E-Coat filter cleaning and replacement program for the E-Coat process:

- Replace E-Coat bag filter when the delta pressure reading is outside of acceptable limits.
- Clean the E-Coat ultra-filter at least every 3 weeks.
- Replace filter elements of the air knife filter at least every 60 days.

Inspect the E-Coat exhaust equipment at least every 60 days and take appropriate measures to fix any issues that are discovered.

#### **IV. Housekeeping Measures**

The permittee shall implement and maintain the following housekeeping procedures for the E-Coat process:

- Sweeping and mopping of floors and aisles in the E-Coat process area.
- Keep chemical storage containers closed and stored in their proper locations unless operator access is required.
- Ensure proper disposal of used materials

#### **V. Odor Incident Notification/Investigation/Response**

Upon becoming aware of an odor incident, the facility shall do the following:

- Document time and date of the odor incident on the odor concern log in Appendix B, or an alternate method approved by the AQD District Supervisor. Include wind direction and weather conditions at the time of the incident.
- Verify negative air pressure does not exist in the plant by contacting facility maintenance and determine if adequate amount of air make up units are in operation.
- Review carrier cleaning log to ensure they are up to date and on schedule.
- Ensure exhaust fans are on during curing oven operation.
- Take appropriate measures for any discovered inefficiencies
- Communicate any findings to the Plant Leadership Team
- Provide investigation findings to the AQD District Supervisor within 30 days of the odor incident.

