MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

May 31, 2024

PERMIT TO INSTALL
65-24

ISSUED TO
Dow Silicones Corporation

LOCATED AT
3901 South Saginaw Road
Midland, Michigan 48640

IN THE COUNTY OF
Midland

STATE REGISTRATION NUMBER
A4043

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. 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: **April 23, 2024**	
DATE PERMIT TO INSTALL APPROVED: **May 31, 2024**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

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 Environment, Great Lakes, and Energy, 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 Rule 210 (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 Rule 219 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 Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(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 condition 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 Rule 301, 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 Rule 303 (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 Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT 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 (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUBOILER12	103 MMBTU/hr natural gas fired boiler with low-NOx burners.	2006	FG432BOILERS
EUBOILER13	103 MMBTU/hr natural gas fired boiler with low-NOx burners.	2006	FG432BOILERS
EUBOILER14	103 MMBTU/hr natural gas fired boiler with low-NOx burners.	2006	FG432BOILERS

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 336.1291.

FLEXIBLE GROUP SPECIAL CONDITIONS

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
FG432BOILERS	Three natural gas-fired boilers: EUBOILER12, EUBOILER13, and EUBOILER14; each rated at 103 MMBTU/hr with low-NOx burners. This flexible group is subject to the requirements of 40 CFR Part 63, Subpart DDDDD. The most recent PTI for this emission unit is PTI No. 65-24.	EUBOILER12, EUBOILER13, EUBOILER14, FGBOILERMACT-NG

FG432BOILERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Three natural gas-fired boilers, EUBOILER12, EUBOILER13, and EUBOILER14; each rated at 103 MMBTU/hr with low-NOx burners. This flexible group is also subject to the requirements of 40 CFR Part 63, Subpart A (General Provisions) and Subpart DDDDD (National Emission Standard for Hazardous Air Pollutants: Industrial, Commercial and Institutional Boilers and Process Heaters – Major Sources).

The most recent PTI for this emission unit is PTI No. 65-24.

Emission Units: EUBOILER12, EUBOILER13, EUBOILER14

Flexible Group ID: FGBOILERMACT-NG

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NOx	0.041 lb/MMBTU	24-hour rolling average as determined each hour	Each boiler included in FG432BOILERS	SC VI.3 & VI.5, and measurements obtained by the certified PEM, as specified in VI.2	R 336.1205(1), 40 CFR 52.21(j), 40 CFR 60.44b(a)(1)
2. CO	81.2 tpy	12-month rolling time period as determined at the end of each calendar month	FG432BOILERS	SC V.1, VI.6, and See "Compliance Method" below	R 336.1205(3)
Compliance Method: Test results from the most recent test for CO shall be used to develop an emission factor in terms of pounds of pollutant per million cubic feet of natural gas for the three normal operating load scenarios for the boilers. The permittee shall use the worst-case emission factor from the most recent stack test. The emission factors shall be applied to the monthly fuel use to ensure compliance with the 12-month rolling average.					

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG432BOILERS unless a plan that describes how emissions will be minimized during startup(s), shutdown(s) and malfunction(s) has been approved by the AQD District Supervisor. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. Modifications to this plan may be made by the permittee and must be submitted to the AQD District Supervisor for approval. A copy of the current plan must also be maintained at the facility. Unless notified by the District Supervisor within 30 business days, the original plan and any future modified plans shall be deemed approved. **(R 336.1912)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each boiler included in FG432BOILERS with a low-NOx burner. **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(j))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the fuel usage for each of the three boilers included in FG432BOILERS on a continuous basis. **(R 336.1205(1))**

2. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the NOx emissions for each of the three boilers included in FG432BOILERS on a continuous basis and according to the procedures outlined in Appendix 3 attached and 40 CFR 60.48b(g)(2). **(R 336.1205(1), 40 CFR 52.21(j), 40 CFR 60.48b)**

3. The permittee shall keep, in a satisfactory manner the following records for each boiler included in FG432BOILERS, for each calendar day pursuant to the requirements of 40 CFR 60.49b:
   a) Calendar date.
   b) Average hourly NOx emission rate in lb/MMBTU heat input.
   c) 30-day average NOx emission rate in lb/MMBTU heat input, calculated at the end of each operating day from the hourly NOx emission rates for the preceding 30-days.
   d) Excess emissions, reasons for excess emissions, and description for corrective actions taken.
   e) Identification of the operating days for which NOx data has not been obtained, reasons for not obtaining the data and description of corrective actions taken.
   f) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding the data.
   g) Identification of the “F” factor used for calculations, method of determining the “F” factor and type of fuel combusted.
   h) Identification of the times when the NOx concentration exceeds full span of the continuous emission monitoring system.
   i) Description of any modifications to the continuous emission monitoring system that could affect the ability of the continuous emission monitor to comply with Performance Specification 2.

   All records shall be kept on file for a period of at least five years and made available to the Department upon request. Reports of the above information shall be submitted to the EPA Administrator and the AQD District Supervisor every six months in accordance with 40 CFR 60.49b(v) and (w). **(40 CFR 60.49b(g), (i), (o), (v), (w))**

4. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling average fuel use records and the annual capacity factor for each boiler included in FG432BOILERS. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each month. 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), 40 CFR 60.49b(d))**

5. The permittee shall keep, in a satisfactory manner, 24-hour rolling average NOx emission records for each boiler included in FG432BOILERS, as required by SC I.1. 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(1), 40 CFR 52.21(j), 40 CFR Part 60, Subpart Db)**

6. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling average CO calculation records for FG432BOILERS, as required by SC I.2. 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))**

7. The permittee shall keep, in a satisfactory manner, annual records of the normal operating range for each of the three boilers included in FG432BOILERS. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1205(3))**

See Appendix 3

VII. REPORTING

1. The permittee shall notify the Department if a change in land use occurs for property classified as industrial or as a public roadway, where this classification was relied upon to demonstrate compliance with Rule 225(1). The permittee shall submit the notification to the AQD District Supervisor, within 30 days of the actual land use change. Within 60 days of the land use change, the permittee shall submit to the AQD District Supervisor a plan for complying with the requirements of Rule 225(1). The plan shall require compliance with Rule 225(1) no later than one year after the due date of the plan submittal.[1] **(R 336.1225(4))**

VIII. STACK/VENT RESTRICTION(S)

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVBOILER12	42	50	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVBOILER13	42	50	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVBOILER14	42	50	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources for Industrial-Commercial-Institutional Steam Generating Units as specified in 40 CFR Part 60, Subparts A and Db, as they apply to the equipment in FG432BOILERS. (**40 CFR Part 60, Subparts A and Db)**

Appendix 3. Monitoring Requirements

Appendix 3.A:

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in FG432BOILERS.

FG432BOILERS
NOx and CO_2/O_2 Monitoring
Predictive Emission Monitoring System (PEMS) Requirements

1. Within 30 calendar days after commencement of trial operation, the permittee shall submit two copies of a Monitoring Plan to the AQD, for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required PEMS.

2. Within 150 calendar days after commencement of trial operation, the permittee shall submit two copies of a complete test plan for the PEMS to the AQD for approval.

3. Within 180 calendar days after commencement of trial operation, the permittee shall complete the installation and testing of the PEMS.

4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the PEMS complies with the requirements of the corresponding Performance Specifications (PS) 16.

5. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

6. The CEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 2 of Appendix B to 40 CFR Part 60. If a PEMS is installed in lieu of a CEMS, the PEMS shall be installed, maintained, and operated in accordance with PS 16 of Appendix B to 40 CFR Part 60, as proposed or promulgated.

7. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. If a PEMS is installed in lieu of a CEMS/CERMS, the permittee shall perform the Quality Assurance Procedures of the PEMS set forth in PS 16 of Appendix B to 40 CFR Part 60, as proposed or promulgated. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F).

8. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a) A report of each exceedance above limit specified in the conditions of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.b) A report of all periods of PEMS downtime and corrective action.
   c) A report of the total operating time of each boiler within FG432BOILERS during the reporting period.
   d) A report of any periods that the PEMS exceeds the instrument range.
   e) If no exceedances or PEMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep these records on file for a period of at least five years and make them available to the Department upon request.