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

April 17, 2024

PERMIT TO INSTALL
40-24

ISSUED TO
Northfield Manufacturing

LOCATED AT
38549 Webb Drive
Westland, Michigan 48185

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
N1019

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: **November 27, 2023**	
DATE PERMIT TO INSTALL APPROVED: **April 17, 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
EUINDUCT	An electric induction melting furnace rated at 3000 lbs per hour of iron charge. The emissions from EUINDUCT will be uncontrolled and vented to the general in-plant environment.	1994	FGFOUNDRY
EUPCS	Pouring and cooling of castings in the molds and mold cooling. Shakeout separates cooled castings from the sand molds. Emissions are uncontrolled and vented in the general in-plant environment.	1994	FGFOUNDRY
EURECLAIM	Thermal sand reclaim system fueled by 4 natural gas burners with a total heat rating of 3.0 MMBtu/hr. Emissions are controlled by the onsite 10,000 CFM baghouse.	2009	FGFOUNDRY
EUCORE	Phenolic Urethane Cold Box (PUCB) core making operation that utilizes N,N-Dimethylisopropylamine (DMIPA) as a catalyst. There are 4 cold box core makers in EUCORE, each rated at 350 pounds of sand per hour. The emissions from EUCORE are uncontrolled and vent to the general in-plant environment.	1981	FGFOUNDRY

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.

EUINDUCT
EMISSION UNIT CONDITIONS

DESCRIPTION

An electric induction melting furnace rated at 3000 lbs per hour of iron charged, with emissions exhausted to the general in-plant environment.

Flexible Group ID: FGFOUNDRY

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	1.26 tpy*	12-month rolling time period as determined at the end of each calendar month.	EUINDUCT	SC VI.2	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
2. PM10	1.26 tpy*	12-month rolling time period as determined at the end of each calendar month.	EUINDUCT	SC VI.2	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
3. PM2.5	1.26 tpy*	12-month rolling time period as determined at the end of each calendar month.	EUINDUCT	SC VI.2	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
*The annual PM, PM10, and PM2.5 limit is based on an emission factor of 2.0 pound per ton of metal.. The emission factor, along with the metal usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.					

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

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 complete all required calculations and records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

2. The permittee shall calculate monthly and 12-month rolling time period PM, PM10, and PM2.5 emissions for EUINDUCT, based on site specific emission factors or emission factors approved by the AQD District Supervisor for EUINDUCT, and the amount of metal charged per month. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

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

EUPCS
EMISSION UNIT CONDITIONS

DESCRIPTION

Pouring and Cooling - Pouring of castings in the molds, and mold cooling.
Shakeout - Separation of cooled castings from the sand molds

Flexible Group ID: FGFOUNDRY

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	3.3 tpy*	12-month rolling time period as determined at the end of each calendar month.	EUPCS	SC VI.3	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
2. PM10	1.2 tpy**	12-month rolling time period as determined at the end of each calendar month.	EUPCS	SC VI.3	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)
3. PM2.5	1.2 tpy***	12-month rolling time period as determined at the end of each calendar month.	EUPCS	SC VI.3	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)

*The annual PM limit is based on an emission factor of 2.2 pound per ton of metal as specified in Special Condition No. I.1. The emission factor, along with the metal usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.

**The annual PM10 limit is based on an emission factor of 0.8 pound per ton of metal as specified in Special Condition No. I.1. The emission factor, along with the metal usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.

***The annual PM2.5 limit is based on an emission factor of 0.8 pound per ton of metal as specified in Special Condition No. I.1. The emission factor, along with the metal usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

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 complete all required calculations and records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

2. The permittee shall maintain records of all information necessary to demonstrate compliance with the emission limits of this permit, SC I.1 through SC I.3. **(R 336.1205, R 336.1331(c),)**

3. The permittee shall calculate and keep records of monthly and 12-month rolling time period PM, PM10, and PM2.5 emissions for EUPCS, based on site specific emission factors or emission factors approved by the AQD District Supervisor for EUPCS. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

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

EURECLAIM
EMISSION UNIT CONDITIONS

DESCRIPTION

Gudgeon Thermfire 3000, a max capacity 3000 lb/hr thermal sand reclaim system fueled by 4 natural gas burners with a total heat rating of 3.0 MMBtu/hr.

Flexible Group ID: FGFOUNDRY, FGBAGHOUSE

POLLUTION CONTROL EQUIPMENT

EURECLAIM is controlled by:

- A 10,000-scfm baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	3.57 tpy*	12-month rolling time period as determined at the end of each calendar month.	EURECLAIM	SC V.1	R 336.1205(1) (a) & (3), 40 CFR 52.21(c) & (d)
2. PM10	3.65 tpy**	12-month rolling time period as determined at the end of each calendar month.	EURECLAIM	SC V.1	R 336.1205(1) (a) & (3), 40 CFR 52.21(c) & (d)
3. PM2.5	3.65 tpy***	12-month rolling time period as determined at the end of each calendar month.	EURECLAIM	SC V.1	R 336.1205(1) (a) & (3), 40 CFR 52.21(c) & (d)
4. PM	0.040 gr/dscf	At least 2 hours and 1.70 dscm per test run	EURECLAIM	SC V.2, VI.3, VI.4	40 CFR 60.732
5. Visible Emissions	10 percent opacity	6-minute average	EURECLAIM	SC V.2, VI.3, VI.4	40 CFR 60.732

*The annual PM limit is based on an emission factors of 1.9 pound per MMcf of natural gas fired and 0.54 pound per ton of sand as specified in Special Condition No. I.1. The emission factor, along with the sand usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.

**The annual PM10 limit is based on an emission factor of 7.6 pound per MMcf of natural gas fired and 0.54 pound per ton of sand as specified in Special Condition No. I.2. The emission factor, along with the sand usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.

***The annual PM2.5 limit is based on an emission factor of 7.6 pound per MMcf of natural gas fired and 0.54 pound per ton of sand as specified in Special Condition No. I.3. The emission factor, along with the sand usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.

Notes: The sand usage requirements are found in Special Condition II.1, II.2, and VI.4.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Sand usage	12,096 tpy	12-month rolling time period as determined at the end of each calendar month	EURECLAIM	SC VI.4	R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d)

2. The permittee shall burn only natural gas in the sand reclaim process unit in EURECLAIM. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The maximum total heat input rate of the natural gas fired fluidized bed sand reclaim process, EURECLAIM shall not exceed 3 MMBtu/hr. **(R 336.1205(1)(a))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EURECLAIM unless the baghouse is installed, maintained, and operated in a satisfactory manner. **(R 336.1331, R 336.1901, R 336.1910, 40 CFR 52.21(c) & (d))**

2. The baghouse for EURECLAIM shall be equipped with static pressure drop monitoring device and be operated to comply with permit allowable particulate emission. The magnitude of the static pressure drop across the baghouse shall be maintained according to its manufacturer's specifications. **(R 336.1224, R 336.1225, R 336.1331)**

V. TESTING/SAMPLING

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

1. Upon request from the AQD Supervisor, the permittee shall verify PM, PM10, PM2.5, emission rates from the Sand reclaim, in EURECLAIM, by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A
PM10 / PM2.5	40 CFR Part 51, Appendix M

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. Within 60 days after achieving the maximum production rate for EURECLAIM, but not later than 180 days of permit issuance, the permittee shall verify PM emission rates in regard to SC I.4 and visible emissions from EURECLAIM by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using Method 5 to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm. Method 9 and the procedures in §60.11 shall be used to determine opacity from stack emissions. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District

Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.736)**

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 and records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

2. The permittee shall monitor and record, the presence or absence of visible emissions from the bin vent filters during loading of sand into the silo as determined by an observer using EPA Method 22 for EURECLAIM~~.~~ The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21)**

3. The permittee shall monitor and record, the total hours of operation and fuel usage for EURECLAIM, on a monthly and 12-month rolling time period basis. 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(a), R 336.1910, 40 CFR 52.21)**

4. The permittee shall monitor and record the sand throughput rate for EURECLAIM, on a monthly and 12-month rolling time period basis. 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(a), R 336.1910, 40 CFR 52.21)**

5. The permittee shall keep, in a satisfactory manner, a record of all service, maintenance and equipment inspections for EURECLAIM, including a log of all maintenance activities conducted according to the MAP (pursuant to SC III.3). The record shall include the description, reason, date and time of the service, maintenance, or inspection. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331, R 336.1910)**

VII. REPORTING

NA

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 Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV10K_BK	34	28	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

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

EUCORE
EMISSION UNIT CONDITIONS

DESCRIPTION

Phenolic Urethane Cold Box (PUCB) core making operation that utilizes N,N-Dimethylisopropylamine (DMIPA) as a catalyst. There are 4 cold box core makers in EUCORE, each rated at 350 pounds of sand per hour. The emissions from EUCORE are uncontrolled and vent to the general in-plant environment.

Flexible Group ID: FGFOUNDRY

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Core Sand Usage	1,533 tpy	12-month rolling time period as determined at the end of each calendar month.	EUCORE	SC VI.2	R 336.1205(1)(a) & (3)
2. Resin Usage	23 tpy	12-month rolling time period as determined at the end of each calendar month.	EUCORE	SC VI.2	R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a)

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only use a Phenolic Urethane resin for EUCOREMAKING, unless the change in material is demonstrated to not involve a meaningful change pursuant to Rules R336.1285(2)(b).. **(R336.1224, R336.1225, R 336.1702(a))**

2. The permittee shall only use a N,N-Dimethylisopropylamine (DMIPA) a catalyst for EUCOREMAKING , unless the change in material is demonstrated to not involve a meaningful change pursuant to Rules R336.1285(2)(b).. **(R336.1224, R336.1225, R 336.1702(a))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

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 complete all required calculations and records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

2. The permittee shall monitor and record the core sand usage rate and catalyst usage rate for EUCORE on a monthly and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request.
(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))

3. The permittee shall monitor and record the Phenolic Urethane resin usage rate on a monthly, and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

4. The permittee shall maintain records of the Phenolic Urethane resin and catalyst composition used for EUCORE in the form of a SDS or equivalent. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

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

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
FGFOUNDRY	Source-wide process equipment including equipment covered by other permits, exempt equipment, and grand-fathered equipment.	EUINDUCT EUPCS EURECLAIM EUCORE
FGBAGHOUSE	All processing equipment at the facility equipment including equipment covered by other permits and grand-fathered equipment that is emitted through the 40,000 CFM Baghouse.	NA
FGMACTZZZZ	The affected source is a new or existing iron and steel foundry, that is (or is part of) an area source of hazardous air pollutant (HAP) emissions. The affected source is an existing small foundry as defined by 40 CFR Part 63 Subpart ZZZZZ.	EUINDUCT EUPCS EURECLAIM EUCORE

FGFOUNDRY
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Source-wide process equipment including equipment covered by other permits, permit exempt, and grand-fathered equipment.

POLLUTION CONTROL EQUIPMENT

10,000 scfm baghouse controls the onsite sand reclaim unit, EURECLAIM and a 40,000 scfm baghouse...

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Benzene	0.081 tpy*	12-month rolling time period as determined at the end of each calendar month	EUPCS and EURECLAIM combined	SC VI. 4	R 336.1225(3)
2. Chromium VI particulate	0.25 lbs/year**	12-month rolling time period as determined at the end of each calendar month	EUINDUCT, EUPCS and EURECLAIM combined	SC VI. 4	R 336.1225(3)

*The emissions are based off of the annual metal material limit and respective emission unit material limits

**The annual Chromium VI limit is based on an emission factors of:

- 0.01pound per ton of metal for EUINDUCT;
- 4.51E-4 pound per ton of metal for EUPCS; and
- 1.4E-3 pounds per million cubic feet of gas for EURECLAIM
- Chromium III and VI split based on EPA Chromium augmentation factors for secondary grey iron 97% CrIII; 3% CrVI applied to all EUs

as specified in Special Condition No. I.2. The emission factors, along with the chromium III/VI split, and sand usage monitoring requirement shall be applied to each day to ensure compliance with the 12-month rolling averages.

Notes: The metal throughput requirements are found in Special Condition II.1.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Metal charged to furnaces	2,520 tons per year	12-month rolling time period as determined at the end of each calendar month	FGFOUNDRY	SC VI.3	R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d)

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall conduct all necessary maintenance and make all necessary attempts to keep all components of the FGFOUNDRY manufacturing process equipment in proper operating condition at all times. The owner or operator of FGFOUNDRY shall maintain a log of all significant maintenance activities conducted

and all significant repairs made to the manufacturing process equipment. This information shall be kept on file for five years and made available to the Air Quality Division upon request. **(R 336.1205)**

2. The permittee shall not operate FGFOUNDRY unless a malfunction abatement plan (MAP) as described in Rule 911(2), is implemented and maintained. The MAP shall, at a minimum, specify the following:
   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

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 complete all required calculations and records in a format acceptable to the AQD District Supervisor shall make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1702)**

2. The permittee shall keep records, in a satisfactory manner, of each type of alloy that has been processed at the facility for each calendar year. **(R 336.1224, R 336.1225, 40 CFR 52.21(c) and (d))**

3. The permittee shall keep records, in a satisfactory manner, of the total amount of metal charged to the furnaces of FGFOUNDRY, on a monthly and 12-month rolling time period basis. The calculations shall be completed by the end of the month, for the previous month and 12-month rolling time period. 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 336.1224, R 336.1225, 40 CFR 52.21(c) and (d))**

4. The permittee shall calculate and keep records, in a satisfactory manner, of monthly and 12-month rolling time period of benzene, chromium VI emissions for FGFOUNDRY, based on site specific emission factors or emission factors approved by the AQD District Supervisor for FGFOUNDRY. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

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. **(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 Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV10K_BK	34	28	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVFAN_W	54	27	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVFAN_E	54	27	R 336.1225, 40 CFR 52.21(c) & (d)
4. SV40K_BK	42” X 59”	25	40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZZ for Iron and Steel Foundries by the initial compliance date. **(40 CFR Part 63 Subparts A and ZZZZZ)**

Footnotes:

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

FGBAGHOUSE
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

All processing equipment at the facility equipment including equipment covered by other permits that is emitted through the 40,000 CFM Baghouse.

POLLUTION CONTROL EQUIPMENT

40,000 scfm baghouse.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.1 lbs PM/1000 lbs exhaust gas	Hourly	FGBAGHOUSE	SC V.1	R 336.1331

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FGBAGHOUSE unless the baghouse is installed, maintained, and operated in accordance with the manufacturer's recommendations. **(R 336.1301, R 336.1331, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The baghouse for FGBAGHOUSE shall be equipped with static pressure drop monitoring device. The magnitude of the static pressure drop across the baghouse shall be maintained according to its manufacturer's specifications. **(, R 336.1331)**

V. TESTING/SAMPLING

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

1. Upon request of the AQD District Supervisor, the permittee shall verify PM emission rate from FGBAGHOUSE by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in Part 10 of the Michigan Air Pollution Control Rules. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1902, 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 records and calculations in a format acceptable to the AQD District Supervisor and make them available by the last day the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

2. The permittee shall monitor and record the pressure drop across the FGBAGHOUSE baghouse on a daily basis. **(R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

VII. REPORTING

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 Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV40K_BK	42” X 59”	25	, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

FGMACTZZZZZ
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

The affected source is a new or existing iron and steel foundry, that is (or is part of) an area source of hazardous air pollutant (HAP) emissions. The affected source is an existing small foundry as defined by 40 CFR Part 63 Subpart ZZZZZ.

Emission Unit: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. If furfuryl alcohol warm box mold or core making is used at the facility, the permittee shall not utilize a binder chemical formulation that uses methanol as a specific ingredient of the catalyst formulation for a warm box mold or core making line. This requirement does not apply to the resin portion of the binder system. **(40 CFR 63.10886)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall implement and maintain an approved plan to address the pollution prevention management practices for metallic scrap and mercury switches by the applicable compliance date specified in 40 CFR 63.10881. The plan shall include the following:
   a) Metallic scrap management program. **(40 CFR 63.10885(a))**
   b) Mercury requirements. **(40 CFR 63.10885(b))**

   The permittee shall revise the plan within 30 days after a change occurs. **(40 CFR 63.10890(a), 40 CFR 63.10885)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

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 keep records on a monthly basis as required by 40 CFR 63.10899(b)(1) through (13) as applicable. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(40 CFR 63.10899(b))**

VII. REPORTING

1. The permittee shall submit semiannual compliance reports to the Administrator according to the requirements in §63.10899(c). The reports must include, at a minimum, the following information as applicable:
   a) Summary information on the number, duration, and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective action taken.
   b) Summary information on the number, duration, and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other calibration checks, if applicable).
   c) Summary information on any deviation from the pollution prevention management practices in §63.10885 and 63.10886 and the operation and maintenance requirements §63.10896 and the corrective action taken. **(40 CFR 10899 (c))**

2. If applicable, the permittee shall submit semiannual reports of the number of mercury switches removed or the weight of mercury recovered from the switches and properly managed, the estimated number of vehicles processed, an estimate of the percent of mercury switches recovered, and a certification that the recovered mercury switches were recycled at RCRA-permitted facilities. The semiannual reports must include a certification that the facility has conducted periodic inspections or taken other means of corroboration as required under §63.10885(b)(1)(ii)(C). The permittee shall identify which option in §63.10885(b) applies to each scrap provider, contract, or shipment. **(R336.225, 63.10899(b)(2)(i))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZZ for Iron and Steel Foundries by the initial compliance date. **(40 CFR Part 63 Subparts A and ZZZZZ)**

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