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

April 28, 2022

PERMIT TO INSTALL
53-22

ISSUED TO
Martin Marietta Magnesia Specialties, LLC

LOCATED AT
1800 Eastlake Road
Manistee, Michigan 49660

IN THE COUNTY OF
Manistee

STATE REGISTRATION NUMBER
A3900

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: **March 10, 2022**	
DATE PERMIT TO INSTALL APPROVED: **April 28, 2022**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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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
EU-DRYMAG-D4DRYER	Material drying system with a maximum heat input capacity of 18 MMBTU/hr located in the D4 Dryer Building. A fabric filter baghouse is used to collect and separate dried product from conveying air. A heat recovery loop brings warm air from the mill back to the dryer.	TBD	FG-D4DRYMAG
EU-DRYMAG-D4MILL	Material milling system located in the D4 Dryer Building, with a cartridge-style fabric filter to collect and separate dried and milled product from conveying air. A heat recovery loop brings warm air from the mill back to the dryer, therefore during normal operation there is no exhaust from the mill fabric filter stack.	TBD	FG-D4DRYMAG

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
FG-D4DRYMAG	Magnesium hydroxide drying and milling system in the D4 Dryer Building.	EU-DRYMAG-D4DRYER, EU-DRYMAG-D4MILL

FG-D4DRYMAG
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Magnesium hydroxide drying and milling system.

Emission Unit: EU-DRYMAG-D4DRYER, EU-DRYMAG-D4MILL

POLLUTION CONTROL EQUIPMENT

The drying system and the milling system are each equipped with a fabric filter.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.01 pounds per 1,000 pounds of exhaust gas	Hourly	FG-D4DRYMAG (SVD4DRYER)	SC VI.2, VI.3, and VI.4	R 336.1331
2. Visible Emissions	5% opacity	6-minute average	FG-D4DRYMAG (SVD4DRYER)	SC VI.3 and VI.4	R 336.1301

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG-D4DRYMAG unless a malfunction abatement plan (MAP) as described in Rule 911(2), for the dryer and mill fabric filters, has been submitted within 60 days of initial startup, and 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 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))**

2. The permittee shall maintain the differential pressures across each baghouse within the parameters listed in the MAP. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

3. The permittee shall not allow exhaust to exit through the mill stack (SVD4MILL) under normal operating conditions. If a malfunction or failure requires exhaust to exit through the mill stack (SVD4MILL), then the permittee shall implement corrective actions as specified in the MAP or shut down FG-D4DRYMAG if the heat recovery loop operation cannot resume within one hour. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU-DRYMAG-D4DRYER unless the associated fabric filter collector with a gauge which measures the pressure drop across the fabric filter collector is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

2. The permittee shall install, maintain, and operate a bag leak detection system for the EU-DRYMAG-D4DRYER fabric filter in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

3. The permittee shall not operate EU-DRYMAG-D4MILL unless the associated fabric filter collector with a gauge which measures the pressure drop across the fabric filter collector is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

V. TESTING/SAMPLING

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 applicable records in a format acceptable to the AQD District Supervisor and make them available by the 15th day of the calendar month, for the previous calendar month. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

2. The permittee shall monitor and record, in a satisfactory manner, the differential pressure on each baghouse no less than once per shift when FG-D4DRYMAG is operating. If any readings are outside of the ranges listed in the MAP, permittee shall make necessary corrections pursuant to the MAP. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

3. The permittee shall perform and record the results of a 6-minute non-certified visible emission check on EU-DRYMAG-D4DRYER at least once per operating day. The visible emission check shall verify the presence of visible emissions and need not follow the procedures specified in USEPA Test Method 9. Therefore, multiple stacks may be observed simultaneously. Each visible emission check shall be taken during routine operating conditions. If visible emissions are observed, the permittee shall immediately implement one of the following procedures: **(R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c)&(d))**

   a) If visible emissions have been observed during the 6-minute non-certified visible emission check, the permittee shall perform and record the results of a 6-minute USEPA Test Method 9 visible emission observation. If the results of the USEPA Test Method 9 visible emission observation indicate a violation of the opacity standard, the permittee shall immediately initiate corrective actions and document the corrective actions taken.
   b) The permittee shall immediately initiate corrective actions and document the corrective actions taken based upon the initial non-certified visible emissions check that indicated the presence of visible emissions.

4. The permittee shall keep, in a satisfactory manner, records of all visible emission readings for EU-DRYMAG-D4DRYER. At a minimum, records shall include the date, time, name of observer/reader, whether the reader is certified, and status of visible emissions, and any corrective actions taken. **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) and (d))**

5. For each time a malfunction or failure requires exhaust to exit through the mill stack (SVD4MILL), the permittee shall keep a record of the date and duration of the occurrence, the reason for the occurrence, and any corrective actions taken. **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) and (d))**

6. The permittee shall keep a record of all inspections and maintenance, and any corrective actions performed, in accordance with the MAP. **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) and (d))**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FG-D4DRYMAG. **(R 336.1201(7)(a))**

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. SVD4DRYER	36	127	R 336.1225, 40 CFR 52.21(c) and (d)
2. SVD4MILL*	18	35	R 336.1225, 40 CFR 52.21(c) and (d)

*SVD4MILL exhausts horizontally

IX. OTHER REQUIREMENT(S)

NA

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