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

February 9, 2018

**PERMIT TO INSTALL**
182-17

**ISSUED TO**
Simonds International

**LOCATED AT**
120 E Pere Marquette Street
Big Rapids, Michigan 49307

**IN THE COUNTY OF**
Mecosta

**STATE REGISTRATION NUMBER**
N3060

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:<br>**January 26, 2018** | |
| DATE PERMIT TO INSTALL APPROVED:<br>**February 9, 2018** | SIGNATURE: |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

# PERMIT TO INSTALL

## Table of Contents

**Section** **Page**

## Common Abbreviations / Acronyms

| Common Acronyms | | Pollutant / Measurement Abbreviations | |
|---|---|---|---|
| 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 | $CO_2e$ | 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 |
| | | gr | Grains |
| EU | Emission Unit | HAP | Hazardous Air Pollutant |
| FG | Flexible Group | Hg | Mercury |
| GACS | Gallons of Applied Coating Solids | hr | Hour |
| GC | General Condition | HP | Horsepower |
| GHGs | Greenhouse Gases | $H_2S$ | Hydrogen Sulfide |
| HVLP | High Volume Low Pressure* | kW | Kilowatt |
| ID | Identification | lb | Pound |
| IRSL | Initial Risk Screening Level | m | Meter |
| ITSL | Initial Threshold Screening Level | mg | Milligram |
| LAER | Lowest Achievable Emission Rate | mm | Millimeter |
| MACT | Maximum Achievable Control Technology | MM | Million |
| MAERS | Michigan Air Emissions Reporting System | MW | Megawatts |
| MAP | Malfunction Abatement Plan | NMOC | Non-methane Organic Compounds |
| MDEQ | Michigan Department of Environmental Quality | $NO_x$ | Oxides of Nitrogen |
| | | ng | Nanogram |
| MSDS | Material Safety Data Sheet | PM | Particulate Matter |
| NA | Not Applicable | PM10 | Particulate Matter equal to or less than 10 microns in diameter |
| NAAQS | National Ambient Air Quality Standards | | |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | PM2.5 | Particulate Matter equal to or less than 2.5 microns in diameter |
| NSPS | New Source Performance Standards | pph | Pounds per hour |
| NSR | New Source Review | ppm | Parts per million |
| PS | Performance Specification | ppmv | Parts per million by volume |
| PSD | Prevention of Significant Deterioration | ppmw | Parts per million by weight |
| PTE | Permanent Total Enclosure | psia | Pounds per square inch absolute |
| PTI | Permit to Install | psig | Pounds per square inch gauge |
| RACT | Reasonable Available Control Technology | scf | Standard cubic feet |
| ROP | Renewable Operating Permit | sec | Seconds |
| SC | Special Condition | $SO_2$ | Sulfur Dioxide |
| SCR | Selective Catalytic Reduction | TAC | Toxic Air Contaminant |
| SNCR | Selective Non-Catalytic Reduction | Temp | Temperature |
| SRN | State Registration Number | THC | Total Hydrocarbons |
| TEQ | Toxicity Equivalence Quotient | tpy | Tons per year |
| USEPA/EPA | United States Environmental Protection Agency | µg | Microgram |
| | | µm | Micrometer or Micron |
| VE | Visible Emissions | 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.

| Emission Unit ID | Emission Unit Description (Process Equipment & Control Devices) | Installation Date / Modification Date | Flexible Group ID |
|---|---|---|---|
| EULDS | A heat treat process for the manufacture of large diameter saw (LDS) blades. The emission unit consists of a 4.0-MMBTU hardening oven, a quench station, and a water wash station. The quench station is controlled by an electrostatic precipitator (ESP). | March 2013 / February 9, 2018 | FGHEATTREAT |
| EULATHEKNIFE | A heat treat process for the manufacture of lathe knives. The emission unit consists of an electric hardening furnace and a quench station. The quench station is controlled by a fabric filter system. | May 2006 / February 9, 2018 | FGHEATTREAT |
| 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. | | | |

### 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 |
|---|---|---|
| FGHEATTREAT | Two metal heat treat processes. One for large diameter saw blades and one for lathe knives. | EULDS, EULATHEKNIFE |

**The following conditions apply to: FGHEATTREAT**

**DESCRIPTION:** Two metal heat treat processes. One for large diameter saw blades and one for lathe knives.

**Emission Units:** EULDS, EULATHEKNIFE

**POLLUTION CONTROL EQUIPMENT:** ESP controls EULDS, Fabric PM filters control EULATHEKNIFE. All control equipment exhausts to the in-plant environment.

## I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. VOCs | 513 lb/year | 12-month rolling time period as determined at the end of each calendar month | FGHEATTREAT | SC VI.3 | R 336.1702(a) |

## II. MATERIAL LIMITS

| Material | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Total Quench Oil Used in FGHEATTREAT | 750 gal/year | 12-month rolling time period as determined at the end of each calendar month | FGHEATTREAT | SC VI.3 | R 336.1225, R 336.1702(a) |
| 2. Quench Oil Used in EULATHEKNIFE | 150 gal/year | 12-month rolling time period as determined at the end of each calendar month | EULATHEKNIFE | SC VI.4 | R 336.1225 |

3. The permittee shall burn only natural gas in the furnace portions of FGHEATTREAT. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

## III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate the equipment in FGHEATTREAT unless the associated control equipment (ESP for EULDS, fabric filters for EULATHEKNIFE) systems are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of each control equipment system includes maintaining the equipment according to the approved preventative maintenance program. **(R 336.1225, R 336.1702, R 336.1910)**

2. No later than 60 days after issuance of Permit to Install No. 182-17, the permittee shall submit an approvable preventative maintenance program for the control equipment in FGHEATTREAT. **(R 336.1910)**

## IV. DESIGN/EQUIPMENT PARAMETERS

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 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, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1225, R336.1702(a))**

2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of the quench oil, 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 336.1225, R 336.1702(a))**

3. The permittee shall keep the following information on a monthly basis for FGHEATTREAT:
   a. Quench oil usage rate to replenish lost quench oil from each EU portion of FGHEATTREAT (Appendix A – Boxes A and B).
   b. VOC mass emission calculations in pounds per calendar month (Appendix A – Box F).
   c. VOC mass emission calculations in pounds per 12-month rolling time period as determined at the end of each calendar month (Appendix A – Box G).
   d. Total quench oil usage rate in gallons per calendar month (Appendix A – Box I).
   e. Total quench oil usage in gallons per 12-month rolling time period as determined at the end of each calendar month (Appendix A – Box J).

   The permittee shall keep the records using mass balance or an alternate 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(a))**

4. The permittee shall keep the following information on a monthly basis for EULATHEKNIFE:
   a. Quench oil usage rate to replenish lost quench oil (Appendix A – Box B).
   b. Total quench oil usage rate in gallons per calendar month (Appendix A – Box B).
   c. Total quench oil usage in gallons per 12-month rolling time period as determined at the end of each calendar month (Appendix E – Box H).

   The permittee shall keep the records using mass balance or an alternate 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(a))**

## 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:

| Stack & Vent ID | Maximum Exhaust Diameter/ Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|---|---|---|---|
| 1. SV-LDSHARDEN* | 16 | 24.5 | 40 CFR 52.21(c) & (d) |
| *-A rain cap is installed on this stack. | | | |

2. The permittee shall exhaust all emissions from the quench portions of FGHEATTREAT to the general in-plant environment.[1] **(R 336.1225)**

## IX. OTHER REQUIREMENTS

NA

**Footnotes:**

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

**APPENDIX A**
**MONTHLY QUENCH OIL USAGE**
**AND VOC EMISSION ESTIMATE**

| **Month** | **A** (1) **Oil Addition – EULDS** | | **B** (2) **Oil Addition – EULATHEKNIFE** | | **C** (3) **VOC Emitted – EULDS** | **D** (4) **VOC Emitted - EULATHKNIFE** | **E** (5) **VOC Emitted from Natural Gas** |
|---|---|---|---|---|---|---|---|
| | Gal. | lbs. | Gal. | lbs. | lbs. | lbs. | lbs. |
| | | | | | | | |
| **VOC Emitted** for Calendar Month (pounds), **F = C+D+E** **F:** | | | | | | | |
| **VOC Emitted** per 12-month rolling time period (pounds), **G = F + TOTAL OF 11 PREVIOUS MONTHS** **G:** | | | | | | | |
| **Quench Oil Used in EULATHEKNIFE per 12-month rolling time period (gallons), H = B + TOTAL OF 11 PREVIOUS MONTHS** | | | | | | | |
| **Quench Oil Used in FGHEATTREAT per calendar month (gallons), I = A + B** | | | | | | | |
| **Total Quench Oil Used per 12-month rolling time period (gallons) J = I + TOTAL OF 11 PREVIOUS MONTHS** | | | | | | | |

(1) New oil added/used to replenish lost quench oil in EULDS.
(2) New oil added/used to replenish lost quench oil in EULATHKNIFE.
(3) VOC Emitted from EULDS = A (lbs.) * (1-0.95)
(4) VOC Emitted from EULATHKNIFE = B (lbs.) * (1-0.90)
(5) VOC Emitted from Natural Gas Combustion = MMBTU/hr rating * 5.5 (VOC Emission Factor from AP-42 Table 1.4-2) * 1020 / 1,000,000 * 24 * Days in Month

Note: A and B are the amounts or volumes of liquid oil only and should not include any solid content or residues. "lbs." in A and B can be determined as follows: lbs. = Usage (gal.) x Density (lbs/gal)