

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

P060936813

FACILITY: Mold Masters Limited		SRN / ID: P0609
LOCATION: 29111 Stephenson Highway, MADISON HTS		DISTRICT: Southeast Michigan
CITY: MADISON HTS		COUNTY: OAKLAND
CONTACT: Brian Finkel , Manager		ACTIVITY DATE: 08/11/2016
STAFF: Kerry Kelly	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: Minor
SUBJECT: Targeted inspection. See report for details.		
RESOLVED COMPLAINTS:		

On August 11, 2016, Tyler Salamasick and I (Kerry Kelly) conducted a targeted inspection of Mold Masters Limited located at 29111 Stephenson Highway, Madison Heights, Michigan. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; and the conditions of PTI 99-15 issued.

PTI 99-15 was issued July 1, 2015. Equipment in PTI 99-15 includes a SEGHERS Fluid Clean Fluidized Bed Type D-1666/CEF/LIS natural gas-fired cleaning furnace (EUFLUIDCLEAN) and a SEGHERS Mini SMC350 cleaning furnace equipped with an electrically heated cleaning chamber (EUMINICLEAN). EUFLUIDCLEAN and EUMINICLEAN are used to remove plastic residues from plastic metal extrusion tooling.

Tyler Salamasick and I (Kerry Kelly) arrived at Mold Masters at approximately 2:30 PM on August 11, 2016. The building where Mold Masters is located is also occupied by DME. Mold Masters services and repairs steel manifolds. DME is involved in warehousing and parts distribution. I entered the office at Mold Masters, showed my DEQ photo credentials, explained the purpose of the inspection, and gave a copy of the pamphlet "Environmental Inspections: Rights and Responsibilities" to Mr. Gordie Davis, Warehouse Manager DME, Mr. Jarrod Madaus, Service Technician Mold Masters, and Mr. Brian Finkel, Manager Mold Masters - Milacron. Mr. Davis, Mr. Madaus, and Mr. Finkel answered questions, provided records, and accompanied us during the inspection. Mold Masters operates 6:00 AM to 4:30 PM Monday through Friday and sometimes 4 hours on Saturday with a staff of 85-90 employees including office staff. Non-permitted equipment at Mold Masters includes a small vertical mold machine, two enclosed sandblast machines, a heated parts washer, a CNC, a grinder, three saws, and a generator.

## **COMPLIANCE EVALUATION**

### **EUFLUIDCLEAN**

EUFLUIDCLEAN is a SEGHERS Fluid Clean Fluidized Bed Type D-1666/CEF/LIS used to clean plastic residues from plastic metal extrusion tooling. The emissions from EUFLUIDCLEAN are controlled using a natural gas fired after burner zone and a ceramic element filter equipped with lime injection. According to Mr. Madaus tubes under the sand in EUFLUIDCLEAN heat up sand to burn off plastics. The afterburner is a flame zone above the sand.

SC I.1. through 3. sets PM, PM10, and PM 2.5 emission limits for EUFLUIDCLEAN. The emission limits are displayed in the table below:

Pollutant	Limit
1. PM	0.016 lbs per 1000 lbs of dry exhaust gas
2. PM10	0.10 pph
3. PM2.5	0.10 pph

SC I.4. requires visible emissions from EUFLUIDCLEAN not exceed a six-minute average of 10 percent opacity. According to EUFLUIDCLEAN SC VI.5. visible emission readings for EUFLUIDCLEAN shall be taken a minimum of once per calendar month by either a certified or non-certified reader during routine operating conditions. Records of the visible emission readings are required per EUFLUIDCLEAN SC VI.6. According to Mr. Madaus he conducts visible emission readings when larger quantities of materials are processed but has no schedule. Mr. Madaus estimates he has conducted approximately 40 visible emission readings in the past year and has not observed any visible emissions from the stack for EUFLUIDCLEAN. Records of the visible emission readings are not being kept. This appears to be a violation of EUFLUIDCLEAN SC VI.6. I informed Mr. Finkel that records of visible emission readings are required.

SC III. 1. mandates that Mold Master not process any material in EUFLUIDCLEAN other than metal parts with small amounts of cured residues of the following approved types of plastics: polyethylene, polypropylene, polystyrene, polycarbonate, polyamide, acrylonitrile-butadiene-styrene (ABS), polysulfone, and polyethersulfone. The amount of plastic residue on each part shall be minimized by removing as much residue as possible using hand tools. Mr. Madaus stated that plastic residue is chipped off the steel manifolds being cleaned using hand tools prior to being placed in EUFLUIDCLEAN. Mold Masters provided a list from the customer of the chemical composition of each material being removed from the parts being processed as required per EUFLUIDCLEAN SC VI.2 and the weight of the material before it is placed in the oven and after it is taken out. (attachment 1).

The sand bed must be preheated to 850°F before parts are loaded into the sand bed for processing per SC III.2. Mr. Madaus said the sand bed is heated to 900°F before parts are put in EUFLUIDCLEAN. Records of the daily sand bed temperatures are required per EUFLUIDCLEAN SC VI.3. Mr. Finkel sent raw data from a temperature recorder, recorded each minute, between June/July 2015 and September/October 2015 (total data set on CD, example attachment 2). The temperatures in these records range from 72 °F to 1090.2 °F and average 233.1°F between September 22, 2016 and October 14, 2016. The June/July 2015 average temperatures and ranges are similar to those reported for September and October 2015. The emission unit is not identified on these records. In addition, the records do not indicate whether or not there are parts in the furnace. Compliance with the sand bed minimum temperature cannot be determined from the raw data provided. It appears Mold Masters is in violation of EUFLUIDCLEAN SC VI.3 for failing to keep daily records of the sand bed temperature for each batch.

According to EUFLUIDCLEAN SC IV.1. the fluidized bed cleaner shall not operate unless the natural gas-fired afterburner zone and the ceramic element filter equipped with lime injection are installed, maintained, and operated in a satisfactory manner. According to Mr. Madaus the sand and filters are changed and the pipes are cleaned once a year. Mr. Madaus stated EUFLUIDCLEAN is equipped with lime injection that is run only if PVC is in oven.

The pressure drop across the ceramic element filter control system for EUFLUIDCLEAN is continually monitored, according to Mr. Madaus, as required per EUFLUIDCLEAN SC IV.2. I inspected EUFLUIDCLEAN and observed a pressure drop monitor. Daily records of the pressure drop across the ceramic filter for each batch are required to be kept in EUFLUIDCLEAN SC VI.4. Records of the pressure drop were requested and not received. Mold Masters appears to be in violation of EUFLUIDCLEAN SC VI.4. for failure to keep daily records of the pressure drop across the ceramic filter for each batch.

EUFLUIDCLEAN SC IV. 3. states the permittee shall not operate EUFLUIDCLEAN unless the manufacturer's automatic temperature control system for the sand bed and afterburner zone are installed, maintained and operated in a satisfactory manner. I inspected EUFLUIDCLEAN and

observed a temperature monitor for the sand bed.

EUFLUIDCLEAN SC VI.7. requires records of the date, duration, and description of any malfunction of the cleaning furnace, any maintenance performed and any testing results for EUFLUIDCLEAN be kept. Mr. Finkel provided maintenance records for June 2015 through July 2016 (attachment 3).

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 per EUFLUIDCLEAN SC VII. 1. Notification of completion of relocation of the equipment in PTI 99-15 is not on file at the DEQ Southeast Michigan District Office. This appears to be a violation of EUFLUIDCLEAN SC VII. 1.

I inspected the stack for EUFLUIDCLEAN. The stack appears to meet the stack/vent restrictions listed in VIII.1.

### **EUMINICLEAN**

SEGHERS Mini SMC350 is a cleaning furnace equipped with an electrically heated cleaning chamber used for removal of plastic residues from plastic extrusion tooling. According to Mr. Madaus EUMINICLEAN has not operated for about a month to a month and a half because the thermocouples were bad. Due to the bad thermocouples, the furnace wouldn't maintain temperature and would shut down. The parts to fix the thermocouple have been ordered.

EUMINICLEAN SC III.1. mandates that Mold Masters not process any material in EUFLUIDCLEAN other than metal parts with small amounts of cured residues of the following approved types of plastics: polyethylene, polypropylene, polystyrene, polycarbonate, polyamide, acrylonitrile-butadiene-styrene (ABS), polysulfone, and polyethersulfone. The amount of plastic residue on each part shall be minimized by removing as much residue as possible using hand tools. Mr. Madaus stated that plastic residue is chipped off the steel manifolds being cleaned using hand tools prior to being placed in EUMINICLEAN. Mold Masters provided a list from the customer of the chemical composition of each material being removed from the parts being processed as required per EUMINICLEAN SC VI.2. (attachment 1).

The permittee shall not operate EUMINICLEAN for more than 880 hours per 12-month rolling time period as determined at the end of each calendar month according to EUMINICLEAN SC III.2. Records of the monthly and 12-month rolling hours of operation, required per EUMINICLEAN SC VI.4. were requested and not received. It appears Mold Masters is in violation of EUMINICLEAN SC VI.4. for not providing monthly and 12-month rolling records of the hours of operation for EUMINICLEAN.

EUMINICLEAN SC III.3. states the permittee shall not operate EUMINICLEAN unless the furnace operator preheats the afterburner chamber to 1560°F prior to charging parts to the cleaning chamber. Mr. Madaus stated the afterburner is preheated to 750°C (1382°F) prior to charging parts to the cleaning chamber. This is below the 1560°F minimum required in EUMINICLEAN SC III.3 and EUMINICLEAN IV.1. Records of the afterburner temperatures recorded every 15 minutes are required per EUMINICLEAN SC VI.4. Mr. Finkel sent raw data from a temperature recorder, recorded each minute, between June/July 2015 and September/October 2015 (stored on CD and example attachment 2). The temperatures in these records range from 72 °F to 1090.2 °F and average 233.1°F between September 22, 2016 and October 14, 2016. The June/July 2015 average temperatures and ranges are similar to those reported for September and October 2015. The emission unit is not identified on these records and the minimum afterburner temperature could not be determined. It appears Mold Masters is in violation of EUMINICLEAN III.3. and SC IV.1 for failure to ensure the afterburner temperature

is at least 1560°F before charging parts to EUMINICLEAN.

Satisfactory installation, calibration, maintenance and operation of a device to monitor the temperature in the afterburner chamber for EUMINICLEAN on a continuous basis is required per EUMINICLEAN SC IV.2. The thermocouple which monitors the temperature in the afterburner is defective and is in the process of being replaced. According to Mr. Madaus EUMINICLEAN has not operated for approximately a month or month and a half.

According to EUMINICLEAN SC IV.3. the permittee shall not operate EUMINICLEAN unless an interlock system is installed, maintained and operated in a satisfactory manner. The interlock system shall shut down the cleaning chamber heater when the afterburner chamber is not operating properly such as detection of a loss of afterburner flame or detection of low natural gas supply pressure to the afterburner. Mr. Madaus stated there is an interlock system installed on EUMINICLEAN which will not allow the operator to open the oven if the afterburner temperature is not at the minimum temperature. The thermocouple which monitors the temperature in the afterburner is defective and is in the process of being replaced. According to Mr. Madaus EUMINICLEAN has not operated for approximately a month or month and a half.

EUMINICLEAN SC VI.5. requires records of the date, duration, and description of any malfunction of the cleaning furnace, any maintenance performed and any testing results for EUMINICLEAN be kept. Mr. Finkel provided maintenance records for June 2015 through July 2016 (attachment 3).

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 per EUMINICLEAN SC VII. 1. Notification of completion of relocation of the equipment in PTI 99-15 is not on file at the DEQ Southeast Michigan District Office.

I inspected the stack for EUMINICLEAN. The stack appears to meet the stack/vent restrictions listed in VIII.1.

### **MOLD MACHINE**

The small vertical TPE mold machine is used to purge manifolds of polypropylene. The equipment is vented to the general in plant environment and appears to be exempt from the requirement in R336.1201 to obtain a permit to install per R336.1286(b).

### **SAND BLAST EQUIPMENT**

Mold Masters has two portable, fully enclosed sand blast units used to clean parts. The sand appears to be exempt from the requirement in R336.1201 to obtain a permit to install per R336.1281(d).

### **HEATED PARTS WASHER**

The heated parts washer at Mold Masters has two tanks. The cleaning tank contains what appears to be an aqueous solution and is heated to 160 °F. The rinse tank is heated to 130 °F and also appears to be aqueous. This equipment appears to be exempt from the requirement in R336.1201 to obtain a permit to install per R336.1285(l)(iii). To verify the solution is aqueous I asked Mr. Finkel to send me the SDS for the cleaning solution used in the parts washer. To date, I have not received the SDS.

### **GENERATOR**

The generator at Mold Masters is used to supply electricity in the event of a power outage. I inspected the generator and noted it is an Onan Model 12JC-3R31/1R, natural gas fired generator with a power rating of 30.1 bhp at 1800 RPM (attachment 4). According to Mr. Finkel

this engine was installed in the 1980's. This generator appears to exempt from the requirement of R336.1201 to obtain a permit to install per R336.1285(g) because the heat input is approximately 0.134 MMBtu/hr based on 25 percent thermal efficiency. The generator does not appear to be subject to the Standards of Performance for New Stationary Sources (40 CFR 60 Subpart JJJJ) because it was installed before June 12, 2006. Michigan Department of Environmental Quality, Air Quality Division(MDEQ, AQD) has not accepted delegation from the U.S. Environmental Protection Agency (USEPA) for enforcing the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63 Subpart ZZZZ) at area sources of hazardous air pollutants.

### **CNC, GRINDER and SAWS**

The CNC, grinders, and saws appear to be exempt from the requirement in R336.1201 to obtain a permit to install per R336.1285(l)(vi)(B) because they are used to cut and/or grind metal or wood and the emissions are released into the general in-plant environment.

### **CONCLUSION**

Based on this inspection, it appears Mold Masters is in violation of the following conditions in PTI 99-15:

- EUFLUIDCLEAN SC VI.6 for not keeping records of the visible emission readings
- EUFLUIDCLEAN SC VI.3 for failure to keep daily records of the sand bed temperature for each batch
- EUFLUIDCLEAN SC VI.4 for failure to keep daily records of the pressure drop across the ceramic filter for each batch
- EUFLUIDCLEAN and EUMINICLEAN SC VII. 1. for failing to submit notification of completion of relocation
- EUMINICLEAN SC VI.4. . for not providing monthly and 12-month rolling records of the hours of operation for EUMINICLEAN
- EUMINICLEAN III.3. and SC IV.1 for failure to ensure the afterburner temperature is at least 1560°F before charging parts to EUMINICLEAN

NAME K. Kelly

DATE 9/29/16

SUPERVISOR SK

