

U-63-14-2671

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

FY 2019 Insp-

U6314267147402

FACILITY: 3M Abrasive Systems Division		SRN / ID: U63142671
LOCATION: 30975 Century Dr, Wixom		DISTRICT: Southeast Michigan
CITY: Wixom		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 12/20/2018
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT: FY 2019 inspection of 3M Abrasive Systems Division ("3M"), fka Wendt USA Diacraft Division		
RESOLVED COMPLAINTS:		

3M Abrasive Systems Division (U-63-14-2671)
fka Wendt USA Diacraft Division
30975 Century Dr.
Wixom, Michigan 48393-2064

Rules: 285 and 287

Cold-cleaners: Both Safety-Kleen Model 91 Aquaous VAT parts-cleaner (March 2015) and Safety-Kleen solvent-based cold cleaner (2011 (Wendt)) have been permanently removed.

On December 20, 2018, I conducted a level 2 self-initiated **FY 2019 inspection** of 3M Abrasive Systems Division ("3M"), fka Wendt USA Diacraft Division, located at 30975 Century Dr., Wixom, Michigan 48393-2064. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; and Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules.

During the inspection, Mr. Dave J. Smoltz (Phone: 248-926-2500-ext NA or 248-668-3646-Direct; Cell: NA; Fax: 248-926-2525; E-mail: djSmoltz@mmm.com), Manufacturing Supervisor, assisted me.

Mr. James R. Peters (Phone: 248-926-2500-ext 230 Cell: NA; Fax: 248-926-2525; E-mail: jPeters@mmm.com), Production Manager, separated about December 2015. Mr. Roger Cassidy, Engineer, retired about February 2015.

Founded in 1999, Wendt USA Diacraft Division, which 3M purchased about December 2012, is in the business of development, manufacturing, distributing grinding machines for hard materials, precision steel, glass, etc.

3M (formerly German Wendt USA, a subsidiary of WENDT GmbH) facility at Wixom makes super abrasive grinding wheels. Recently (March 2018), 3M discontinued a business of servicing and rebuilding grinding machines. About 2012, rebuilding was outsourced to 3M, Germany

Grinding wheels of variety of sizes are made using synthetic diamonds: resin, vitrified, and metallic bond diamond wheels. Diamonds of variety particle sizes are mixed with binders

according to 3M's recipes in the lab. Wheels (1-20 inches diameter) are used. Diamond molds are baked at 180 °C in the presses (TMP: Technical Machine Products of Cleveland, Ohio); 14 presses in all are present. Most binders are based upon glass, phenolic resins, metals, epoxy (component A & B 3M products), etc. Mostly heat is exhausted.

Kilns – commercial

Molds after baking are sintered at > 1500 °F (SKUTT Automatic). Eight (8:1 sintering oven added in 2016) sintering ovens are present. In addition, five (5) ovens (Blue M Electric) for curing glue and dehydration of materials are present. No exhaust to outside ambient air. All ovens are electrically heated. Sintering is a powder metallurgy process that fuses particles (adhere to one another) via heat and compression. Sintering temperature is significantly lower than mostly glass melting temperature.

No exhaust to outside ambient air. The kilns are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

Glue application (Glue or Epoxy Room)

Glue application on diamond layer and aluminum and steel core. Glue is not sprayed but brushed. Glue is two-component epoxy. Upon mixing component A & B, glue usable time is about one hour. The glue usage is less than 2 (0.25) gallons per day and all emissions are released to in-plant environment. The glue application process is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(2)(a).

Machines

Raw material metals are cut per desired sizes. 5 CNC and 6 manual lathes are present. The metallic particulate laden exhaust from the machines ducted to either indoor dust collector or outdoor dust collector. Indoor dust collector is equipped with a dust control system consisting one cyclone and one cartridge filter and 55-gallon drum as hopper. Outdoor dust collector (Micro Air Dust Collector) consists of twelve (12) cartridges and two (2) 55-gallon drums as hoppers. From the outdoor (but not indoor) dust collector, air is further cleaned using two filters (one pre-filter and one HEPA filter located is inside the building within a muffler that reduces indoor noise [from 90 to 50 dB]) for worker safety and comfort. Pulse-jet air is used to clean the cartridges.

All cartridges are replaced once per year. In addition, while the pre-filter (\$3 each) is replaced once per week, the HEPA filter(\$140 each) is replaced once per year.

The machines are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

Mold release booths (2)

Only spray cans (about 48 cans per month - aggregate) are used in two booths (5 ft. W * 5 ft. H * 3 ft. D) for mold release application. The back-draft filters are present. The exhaust gases are discharged via two stacks; one stack for each booth. I asked 3M to install and inspect the filters such that they fit, at all times, snugly without gaps and holes.

The booth is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(2)(b).

Paint spray booth - idle

There is a paint booth (5 ft. W * 5 ft. H * 5 ft. D) which uses only spray cans. I asked 3M to install filters such that they fit, at all times, snugly without gaps and holes.

During FY 2014 inspection, I found some holes and gaps in the back-draft filter system. During the FY 2019 inspection, I asked 3M to install and inspect the filters such that they fit, at all times, snugly without gaps and holes. However, this booth is idled due to outsourcing rebuilding activities to 3M, Germany. Current usage: 0 can per month.

The booth is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(2)(b).

Laser etching machine

One laser etching machine (RS-Marker, S-line) is present to etch names, etc. The machine is equipped with a fume collection system (FUMEX: pre-filter plus HEPA filter).

The machine is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

Sandblasting machine

One sandblasting machine with Empire dust collector (cyclone plus filter) is present. Upon filtration, all emissions are released to in-plant environment. The sandblasting machine is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

Parts-cleaner

One Safety-Kleen Model 91 Aquaous VAT parts-cleaner is removed about March 2015 by Safety-Kleen due to high rent. Also, solvent-based Safety-Kleen cold cleaner was removed about 2011 (Wendt).

Conclusion

All process equipment are exempt from Rule 336.1201 as they, as stated above, satisfy the conditions of exemptions in the Rules 285 and 287.

NAME Bethannahell

DATE 12/28/2018 SUPERVISOR Joyce

