

N5145 - SAR - 20170620

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

N514540671

FACILITY: INDUSTRIAL METAL COATINGS INC		SRN / ID: N5145
LOCATION: 6070 18 MILE RD, STERLING HTS		DISTRICT: Southeast Michigan
CITY: STERLING HTS		COUNTY: MACOMB
CONTACT: Scott Roach , General Manager		ACTIVITY DATE: 06/20/2017
STAFF: Francis Lim	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Inspection		
RESOLVED COMPLAINTS:		

On June 20, 2017, Francis Lim and Robert Joseph conducted an inspection at Industrial Metal Coating ("IMC") located at 6070 18 Mile Road, Sterling Heights. 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; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) Administrative Rules; the conditions of Permit-To-Install (PTI) Nos. 106-94 and 25-16; and to investigate a recent complaint regarding strong odor from IMC's operations. Scott Roach, General Manager represented the facility during the inspection.

IMC is a Tier III automotive supplier. Primary activity is coating of metal parts. Light assembly which is done using manual labor is also conducted at the facility. This facility operates one long shift.

A primer is applied to a metallic part of varying sizes using a coating method called electrocoating (E-coat). E-coat uses an electric current to deposit paint on the metal substrate. The E-coat system applies a charge to a metal part which is dipped in a water based solution containing paint emulsion with oppositely charged paint particles. The paint particle is deposited on the metal part forming an even continuous film. The metal part can be painted wherever the paint emulsion is able to reach the metal surface. Voltage applied to the E-coat system dictates the thickness of the coating.

Prior to the primer application, the metal parts are cleaned with hot water and soap, dipped in the zinc phosphating line, and then rinsed before it goes to the E-coat dip tank. The parts are wet when it goes to the dip tank. As the metal part leaves the dip tank, residual coating clings to the part which has to be removed in a rinse tank. A natural gas fired bake oven operating at 350 °F cures the coating. Because of shorter flash off area, the bake oven is operated at a high temperature.

Accumulated coatings deposited on the paint hangers and racks are removed using four burn-off ovens.

Facility operates a water treatment system to process the E-coat rinse. According to Scott, sludge collected in the water treatment system is disposed as hazardous waste. Sludge is not processed in the burn-off ovens.

IMC operates a hot water parts washer. The water in the parts washer is reused. Over time, the water accumulates dirt and oil, and becomes odorous. The parts washer may emit a strong odor when used. Since the wash water is hot it may also release a steam plume. According to Scott, the hot water parts washer is rarely used – about once a month.

There is another facility in the building called Industrial Metal Finishing ("IMF"), a sister company of IMC. Primary activity is deburring of metal parts. Deburring is the process of removing jagged edges or protrusions from metal parts. In general, two types of deburring machines are used – tumbling (barrel) machines or vibratory machines. This facility uses vibratory machines with ceramic media stones to deburr the metal parts. Some machines do not use ceramic media – deburring is done by metal parts rubbing against one another. During the process, oil may be added for corrosion resistance. Excess oil is drained and disposed.

IMC and IMF do not use any solvent based washer and cleaner.

Industrial Metal Coating (IMC) has a permit (PTI No. 106-94) for an E-coat line with water wash/zinc phosphating line with post rinses, and a natural gas-fired bake oven. Previously, the cationic E-coat dip tank used a 2-component coating. The coating currently used is a Powercron Black Feed which is already premixed at the paint manufacturer. It is a water-based coating. The E-coat contains approximately 1 to 5% by weight of 2-butoxyethanol (also known as butyl cellosolve). Occasionally, 2-butoxyethanol is also added to the E-coat dip tank – about 5 gallons every week.

The butyl cellosolve gives off a strong moldy odor. Butyl cellosolve is a surfactant (wetting agent) that lowers the surface tension between two liquids. Strong moldy odor may come out of the E-coat oven or as fugitive emissions coming from the coated part itself or from the E-coat dip tank. Cross linking of the resins and chemicals during curing may emit odorous compounds.

Butyl cellosolve is a compound of ethylene glycol which is in the EPA original list of HAPs. In 2004, EPA removed butyl cellosolve from the HAPs list.

The permit has a limit of 21.5 tons per year based on a rolling 12-month time period. Staff verified that usage and emissions records are kept. VOC emissions are less than 5 tons per year. See attached 2016 and 2017 usage and emissions records.

The four burn-off ovens remove the coatings that adhere to the parts racks/hanger. Thick coatings that accumulate on the hanger reduce the flow of electricity to the E-coat process. The four burn-off ovens do not have any afterburner control device. The burn-off ovens are covered by PTI No. 25-16.

During the inspection, staff verified that Industrial Metal Coating was not keeping the following required records to operate the burn off ovens:

1. Records of the number of carts processed in each oven on a monthly basis and 12-month rolling time period basis as determined at the end of each calendar month. (Condition No. VI.3)
2. Records of visible emission readings (a minimum of once per calendar day) taken during operation of any oven. At a minimum, records shall include the date, time, name of observer/reader, whether the reader is certified, and status of visible emissions. Records of any action taken in response to readings of visible emissions (other than uncombined water vapor). (Condition Nos. VI.4 and VI.5)

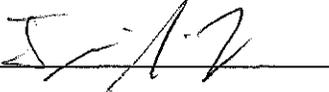
- Records of operating temperature of each oven taken at least once per batch cycle, including the date and time of each batch. (Condition No. VI.6)

Staff also noticed flappers (for rain protection) on the exhaust stacks of the four burn-off ovens. Staff explained to Scott that the flappers prevent any particulate and odor from being emitted unobstructed upwards and prevent better dispersion of emissions. On June 26, 2017 Scott sent an email stating that IMC has ordered new stacks and will inform AQD when the new stacks are installed.

Staff conducted an odor observation after the inspection. Staff noticed a strong odor from the E-coat line downwind and east of the facility on 18 Mile Road. On two more occasions, on June 23 and 30, 2017, staff verified a strong E-coat odor downwind of IMC on 18 Mile Road.

A Notice of violation (NOV) will be sent to IMC for a Rule 901 violation (odor violation) and permit conditions violations of PTI No. 25-16.

NAME



DATE

07-12-17

SUPERVISOR

