

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

N514533218

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: 02/03/2016
STAFF: Francis Lim	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On February 3, 2016, AQD staff conducted an inspection at Industrial Metal Coatings "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) No. 106-94; verify E-Coat recordkeeping; and discuss permitting for the four burn-off ovens. AQD was represented by Jeff Rathbun, permit engineer, Dave Thompson, permit engineer, and Francis Lim. Scott Roach, General Manager of the facility represented the facility during the inspection and meeting.

Industrial Metal Coatings is owned by Fricia Enterprises. 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 with approximately 80 employees operates one long shift, usually up to 4 PM.

A primer is applied to the 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, goes to a 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 are removed using burn off ovens.

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

There is another facility in the building called Industrial Metal Finishing ("IMF"), a sister company, under Fricia Enterprises. 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 debur 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 Coatings (IMC) has a permit (PTI 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 uses a 2-component coating. The E-coat used now, Powercron Black Feed 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 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.

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. During an inspection conducted July 7, 2015, staff verified that emissions records are not kept. A Notice of Violation dated July 14, 2015 was sent to the facility. Violation notices were also sent to the facility in 2006 and 2009 for the same recordkeeping violation. During this inspection, staff verified that usage and emissions records are now kept. VOC emissions are less than 5 tons per year. See attached records.

During the July 7, 2015 inspection, another violation was identified for installing four burn off ovens without a permit. As of the date of this inspection, facility has not sent a complete permit application. As a result, the permit application for the burn off ovens was denied by the Permit Section. A second notice of violation was sent to the facility on January 26, 2016. Jeff and Dave attended this meeting to explain to the facility the requirements and information necessary for a complete permit application.

The four burn off ovens are used to burn off the coatings that adhere to the parts hanger. Thick coatings that accumulate on the hanger reduces the flow of electricity to the e-coat process. Facility intends to burn off no more than 10 racks of hangers per day for each oven. To mitigate any complaints, facility tries to use only 1 oven at a time. The burn off ovens do not have any afterburner control device.

In the past, AQD has received odor complaints from the E-coat line (from butyl cellosolve) and burn off ovens. Strong moldy odor may come out of the E-coat oven or as fugitive emissions coming from the coated part itself or E-coat dip tank. Possible explanation is that cross linking of the resins and chemicals during baking emit some other odorous chemicals.

NAME

S. A. J.

DATE

02-14-16

SUPERVISOR

CJE