

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

B371845600

FACILITY: Uniband USA		SRN / ID: B3718
LOCATION: 2555 Oak Industrial Drive NE, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Milco Marchetti, President		ACTIVITY DATE: 08/14/2018
STAFF: David Morgan	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT:		
RESOLVED COMPLAINTS:		

At 9:00 A.M. on August 14, 2018, Air Quality Division (AQD) staff, Dave Morgan, conducted an unannounced unscheduled inspection of Uniband USA, LLC (Uniband) located at 2555 Oak Industrial Drive in Grand Rapids. The purpose of the inspection was to determine the facility's compliance with state and federal air quality rules and regulations. Accompanying AQD staff on the inspection was Milco Marchetti, the owner.

FACILITY DESCRIPTION

Uniband USA manufactures polyvinylchloride (PVC) conveyor belting in which woven polyester fabric is coated with a PVC compound (or plastisol). The facility primarily consists of a web-coating line and PVC compound mixing. Attached to this report is a detailed process description provided to AQD in 2009. The equipment at the facility was originally installed in 2010 under permit exemption Rule 290.

COMPLIANCE EVALUATION

Upon arriving at the facility white smoke was observed coming from the stacks located on the roof. It is noted that white smoke was also observed by AQD staff, April Lazzaro, on July 31, 2018. Further discussion of the smoke is below.

Coating Line:

In the web coating line, there are three knife-edge spreader stations used to apply varying thicknesses of plastisol to polyester fabric. After each spreader edge is a corresponding infrared (IR) curing oven. The coated fabric is heated in the IR oven from 120°C to 220°C depending on the line speed. At the time of the inspection the first oven was at 177°C, the second at 178°C and the third at 127°C. The coating is a mixture of PVC powder, an oil-like liquid plasticizer named diisononyl phthalate (DINP) and other additives that are combined and mixed together in a separate mixing room. According to Mr. Marchetti, the plastisol compound consists of approximately 60% PVC resin, 35% plasticizers, and 5% bonding agents, stabilizers, thinners and other additives. Safety Data Sheets were obtained of these materials, however, there was no emissions information.

According to company information from AQD files, "the plastisol is a solvent free compound...where the plastisol is coated on the fabric at room temperature, there are no emissions. The three points where there are emissions, are inside one of each of the three ovens, where the heated plastisol releases plasticizer aerosols that are sucked out by an extractor fan and ejected in the atmosphere through three different stacks located on the roof." AQD staff observed what looked like white smoke at the outlet of each IR oven where a hood captures exhaust gases and vents them to the ambient air. This "smoke" may have been plasticizer aerosol as described by company documentation. According to Mr. Marchetti, the smoke is normal for the operation of the oven. In addition, AQD staff questioned whether hydrogen chloride (HCl) emissions are generated due to the plastisol coating being exposed to high operating temperature in the oven. Mr. Marchetti believes that if HCl was generated, it would corrode the chrome rollers used on the coating web and this would result in replacement of the rollers at significant cost.

AQD staff made observations on the roof. Each oven exhaust stack has an approximate height of 36 feet from ground with a 90 degree elbow pointed to the northeast. Mr. Marchetti stated that these were designed this way to keep exhaust toward the adjacent highway. Staff observed white smoke coming from each oven stack with the second oven stack having the largest amount of visible emission. Although USEPA Method 9 readings were not conducted, in AQD staff's professional judgement, the visible emissions likely exceeded the 20% opacity limit in Rule 301. AQD staff expressed to Mr. Marchetti that this level of smoke was not acceptable.

In addition, staff observed significant brown/rust colored staining and oily residue on the stack and roof around each exhaust unit. According to Mr. Marchetti, the staining was from the phthalate oil (DINP) oxidizing when it exited the stack. The residue is likely phthalate oil condensing upon exiting the stack. Staff also observed pools of phthalate oil on the roof; it appeared that the company attempted to address it by using granulated absorbent

material. This is also a stormwater issue that will be forwarded to the MDEQ, Water Resources Division. Based on the above observations, it appears that an oil mist and/or smoke is being emitted from the stack. Mr. Marchetti indicated a willingness to install a filtration system to address the smoke and noted that while the line was installed in Italy, it had electrostatic filters for particulate control. Additional research by AQD staff found that there are industrial (electrostatic) oil mist collectors designed for exhaust from PVC conveyor belt manufacturing.

The coating line was originally installed under Rule 290 as volatile organic compound (VOC) emissions were expected to be low (less than 4.5 tons per year). However, the company is not maintaining monthly records to support a Rule 290 compliance demonstration. In addition, particulate emissions (in the form of oil mist/smoke) have not been quantified or evaluated relative to the Rule 290 thresholds. Because of this, a Rule 201 violation will be cited and the company will need to seek an air use permit.

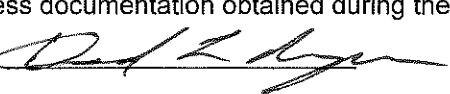
Mixing Room:

There are two vessels used to prepare the PVC material. Essentially PVC powder is mixed with the phthalate oil and additives to create the plastisol. The two vessels are used to mix noncarcinogenic, low vapor pressure materials and are therefore exempt from permitting under Rule 284(2)(i).

SUMMARY

Uniband USA will be cited for violations identified above. Attached to this report are Safety Data Sheets and process documentation obtained during the inspection.

NAME



DATE

8/28/18

SUPERVISOR

