

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

N305739189

FACILITY: STRUCTURAL CONCEPTS CORP		SRN / ID: N3057
LOCATION: 888 EAST PORTER RD, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Don Kent , Safety Coordinator		ACTIVITY DATE: 03/31/2017
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: The purpose of this inspection was to determine the facility's compliance status with PTI No. 296-83B and other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

AQD staff Chris Robinson (CR) was on-site to conduct a scheduled unannounced inspection on Friday March 31, 2017. CR arrived at Structural Concepts Corporation (Structural Concepts) located at 888 East Porter Road, Muskegon, MI, at approximately 9:30 am and met with Mr. Don Kent, Safety Director. No odors or visible emissions were detected. CR presented Mr. Kent with AQD identification and a business card informing him of AQD's intent to conduct an inspection of the facility to determine compliance status with respect to their Opt-out permit No. 296-83B and any other applicable air rules and regulations.

Mr. Kent informed AQD that there have not been any significant changes since the last inspection conducted on 5/16/2013. However, Structural Concepts has recently purchased the building located at 5566 Grand Haven Road, Norton Shores, MI, which Structural Concepts has been renting and operating out of for approximately the last seven years. This facility is known as Plant 2 and is located approximately 0.5 miles south of the East Porter Road location.

### FACILITY DESCRIPTION

Structural Concepts manufactures, assembles and tests merchandising display cases for food, beverage, floral and specialty products. With the exception of the heating and cooling components which are only assembled on-site, almost all components are manufactured and assembled on-site. Powder coating operations are conducted by a separate off-site facility.

### COMPLIANCE EVALUATION

Structural Concepts manufactures cases that contain some wood components which are manufactured on-site. According to Mr. Kent and observations made during this inspection, the various woodworking equipment necessary, which includes three (3) CNC machines, are vented to an external baghouse. The baghouse area is cleaned as necessary and the baghouse is serviced biannually (Spring & Fall). The equipment and baghouse appear to be well maintained and exempt under **Rule 285(2)(I)(vi)**.

Plant 1 also has four (4) metal cutting lasers with individual internally vented dust collectors which appear to be exempt under **Rule 285(2)(I)(vi)**. Several welding stations exist that are vented through adjustable hoods to an internal baghouse. Brazing, which is vented directly to the in-plant environment, is conducted for assembling refrigeration units. The welding and brazing equipment appears to be exempt under **Rule 285(2)(i)**.

Plant 2 operations consist of foam filling and lite cabinet assembly. Components are manufactured and shipped to this location from Plant 1. The assembly area consists of two (2) 300-foot long assembly lines used to construct small display cabinets. Components are framed and then filled with a two (2) part spray polyurethane foam, MSDS is attached in

**Attachment D.** This appears to be considered a Reaction Injection Molding (RIM) process, which is exempt under **Rule 286(2)(e)**. In general, most of the VOC emissions from RIM processes come from mold release compounds. Structural Concepts uses the foam as in insulation that remains in the cases. Therefore, mold release compound is not used at this facility. Solvents are stored, used and tracked in the same manner as they are in plant 1 and are included in the plant 1 calculations (**Attachment B**).

#### **PTI No. 296-83B**

This permit is a VOC Opt-out permit that includes two individual emission unit conditions for the adhesive and solvent used throughout the facility and facility-wide conditions for HAPs and VOCs.

Mr. Kent provided the following monthly records as required by Opt-Out Permit No. 296-83B special condition EUADHESIVE VI(1)(a-d), & EUSOLVENT VI(1)(a-c), which are included as **Attachments A & B** respectively.

- o Hours of operation
- o The amount of adhesive used and VOC content in lbs./gallon as applied.
- o The facility does not reclaim purge and/or cleanup solvent. Therefore, no reclaim records were provided.
- o VOC emission calculations

#### **- EUADHESIVE**

Portions of the display cases are coated with adhesive for the application of laminate. This adhesive, SDS provided in **Attachment D**, is applied by three adhesive spray booths covered under emission unit EUADHESIVE of their permit. Per discussions with Mr. Kent the booths are only operated when filters are in place, which they were at the time of this inspection. CR expressed concerns for the condition of the filters based on visual observations and recommended the implementation of a routine inspection process. Spent filters are disposed of in a way to minimize the introduction of air contaminants to the outer air as specified in Opt-Out Permit No. 296-83B special condition IX(1).

The facility's permit does not contain any conditions specifying how VOC content is determined other than stating that the department may require a test. AQD is not requiring testing at this time. For VOC content, the facility currently subtracts out the percentage of non-volatile material, specified in the attached SDS (Attachment D). A manufacturer specific spray gun usage rate of 1 gallon of adhesive per 27 minutes is used to calculate operating hours for the spray booths. The facility tracks material usage rates (**Attachment A**) to determine emissions. At the time of this inspection the equipment appeared to be operating properly. Based on records, the emissions rate for the time period of April 2016 through March 2017 was 12 lbs./hr. with a maximum 12-month rolling total of 12.37 tpy in April 2016. The facility is well below the limits specified in Opt-Out Permit No. 296-83B.

Pollutant	Limit	April 2016 - March 2017 Emissions	Time Period
VOC	26 lbs./hr.	12 lbs./hr.	Test Protocol
VOC	22.8 tpy	MAX 12.37 tpy (April 2016)	12-month rolling

CR did not specifically measure the height or diameter of the stacks for each spray booth. However, visual inspections appear to reflect the measurements specified in their permit.

**- EUSOLVENTWIPE**

The facility uses de-natured alcohol and lacquer thinner to clean various components and for smoothing caulk used for sealing case components. The facility stores 55 gallon drums of solvent in a separate locked room. A transaction ticket is used to transfer solvent from the drum storage room to fireproof storage cabinets located in each area of both plants. The transaction tickets are used to track solvent emissions. On an as needed basis labeled spray bottles and small containers located throughout both plants are filled using solvent from the fireproof storage cabinets.

Based on records, the maximum emission rate for the time period of April 2016 through March 2017 was 2.8 lbs./hr. in October 2016 and a maximum 12-month rolling total of 4.2 tpy in April 2016. The facility is well below the limits specified in Opt-Out Permit No. 296-83B. No stack test is required at this time.

Pollutant	Limit	Max April 2016 - March 2017 Emissions	Time Period
VOC	11.2 lbs./hr.	2.8 lbs./hr. (Oct. 2016)	Test Protocol
VOC	9.0 tpy	4.2 tpy (April 2016)	12-month rolling

**FGFACILITY**

Structural Concepts has a facility wide (FGFACILITY) emission and material limit. To demonstrate compliance with these limits and as required by Opt-Out Permit No. 296-83B sc VI(1), Mr. Kent provided the following records and calculations (**Attachment C**).

- o Gallons or pounds of each HAP containing material used.
- o HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used.
- o Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
- o Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time-period as determined at the end of each calendar month.

Based on these records, summarized in the tables below, the facility is well below the limits specified in Opt-Out Permit No. 296-83B.

**FGFACILITY Emission Limits and Calculated Emissions:**

Pollutant	Limit	MAX April 2016 - March 2017 Emissions	Time Period
Individual HAP	< 9.0	6.2 tpy hexane (April & May 2016)	12-month rolling
Aggregate HAPs	< 22.5	11.3 tpy (April 2016)	
VOCs	31.8	16.5 tpy (April 2016)	

**FGFACILITY Material Limits and Usages:**

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Pollutant	Limit	MAX April 2016 - March 2017 Usage	Time Period
Adhesive	8,000 gallons/year	4,565 gallons (April 2016)	12-month rolling
Solvents	2,600 gallons/year	1,228 gallons (April 2016)	

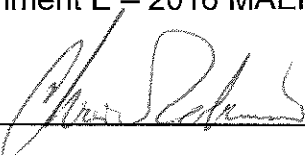
Per discussions with Mr. Kent and a records review, the facility uses manufacturer's data for calculating HAP content.

COMPLIANCE DETERMINATION

Based on observations and discussions made during the March 31, 2017 inspection, and a subsequent records review, Structural Concepts appears to be in compliance with Opt-Out Permit No. 296-83B and any other applicable air quality rules and regulations.

List of Attachments

- Attachment A – EUADHESIVE Records
- Attachment B – EUSOLVENTWIPE Records
- Attachment C – FGFACILITY Records
- Attachment D – Adhesive & Foam SDS
- Attachment E – 2016 MAERS Report

NAME 

DATE 4/20/2017

SUPERVISOR 