

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: On-site Inspection

N127668944

<b>FACILITY:</b> WEBASTO SUNROOFS INC		<b>SRN / ID:</b> N1276
<b>LOCATION:</b> 2700 PRODUCT DR, ROCHESTER HLS		<b>DISTRICT:</b> Warren
<b>CITY:</b> ROCHESTER HLS		<b>COUNTY:</b> OAKLAND
<b>CONTACT:</b> Bradley Lawrence , HSE Engineer		<b>ACTIVITY DATE:</b> 09/12/2023
<b>STAFF:</b> Sebastian Kallumkal	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> Scheduled inspection to verify compliance with PTI NO. 84-05B.		
<b>RESOLVED COMPLAINTS:</b>		

On Tuesday, September 12<sup>th</sup>, 2023, I, Michigan Department of Environment, Great Lakes & Energy – Air Quality Division (EGLE-AQD) staff, Sebastian Kallumkal conducted an onsite inspection at Webasto Sunroof Systems, Inc. located at 2700 Product Drive, Rochester Hills, Michigan. 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) Rules and conditions of Permit-to-Install (PTI) No. 84-05B (approved March 23, 2023). Previous AQD inspection at this facility was conducted on September 6, 2022.

Previous PTIs No. 84-05 (approved June 2, 2005) and 84-05A (approved December 19, 2019) were voided upon the approval of 84-05B. Webasto requested this new PTI, to remove the processes which were removed from the facility, and to add new processes, which could reflect the processes at the facility. This new PTI is also a synthetic minor permit to limit facility's HAP emissions.

Webasto is located in an industrial park location. Webasto is located in Oakland County which is classified as “attainment” for all criteria pollutants.

I arrived at the facility at about 10:30 AM. The inspection was announced due to the EGLE Covid pandemic protocol. At the facility, I met Mr. Lawrence Bradley, Health, Safety, Environment (HSE) Engineer. The records were requested prior to the inspection and were submitted on September 12<sup>th</sup> via emails.

Webasto is an OEM sunroof manufacturer for automotive vehicles such as Stellantis, Grand Wagoneer, Dodge RAM, Ford F-150 (all models), Lincoln Aviator, etc. Facility has about 327 employees, and operates 2 shifts (8-10 hours each), for 5-6 days (Mon-Friday with occasional Saturdays). The facility has no emergency generators, fire pumps or cold cleaners on site.

During the pre-inspection meeting we discussed the permit requirements and processes at the facility. There was no change in the processes since last inspection.

The facility had converted the manual application of black and clear primer to the glass to robotic in 2 of the 5 PU processes. Their intention was to convert all five PU processes to robotic, but due to technical issues this has not been occurred yet. Lawrence told me that they intend to make the change in the future. The robotic application involves purging the lines using methanol or MEK when the applicators are not used for more than 6 hours. Methanol is used to purge the clear primer line and MEK is used for the black primer line. The purge is a closed loop system. The

spent purge is collected in a closed container. About 20.6 gallons of MEK is used per unit per year and 6.9 gallons of methanol is used per year per unit. When the primers are added manually, no purge solvents are needed. In the manual application, the primers are applied from bottles using felt papers.

Webasto has five polyurethane encapsulation presses which are also called carriers. The PTI also includes 7 seven final assembly (FA) lines. Currently they only have 6 FAs and one service line.

He informed me that the proposed/intended production at the 2655 Product Drive has been moved to Kentucky.

He inquired about the addition of a lubricant spray in the final assembly process. I informed him that a PTI modification is not needed but requested to keep track of the lubricant usage and include the emission in the VOC calculations. He is already doing it.

FGFACILITY which has synthetic minor limits for individual and aggregate hazardous air pollutants (HAP).

The process at the facility includes applying black and clear primers to the glass (PU Process), encapsulating the laminated glass in a mold (CARRIER Process) using polyurethane (which is a polymer of Elastolit M50005T Isocyanate [liquid] and Elastosit M55310 R-01 Resin [liquid]. According to the manufacturer of these chemicals, BASF Corporation, the resin and the isocyanate are kept in closed systems before mixing. Their reaction together, to produce a urethane substrate, generates no off gassing or other emissions. So, there are no VOC emissions from this process. Mr. Bradley informed me that the polymer components are currently applied using robots. He also informed me that they use a water-based mold release agent and alcohol wipes to clean the inside of the mold (applied manually).

After the polyurethane encapsulation of the glass, it is cleaned with alcohol wipes and glass cleaner (Windex) and labelled. These are sent to final assembly lines in a cart.

The facility has 7 assembly lines and are assigned for different vehicles (3 lines for Ford 150 pickup trucks, 2 lines for Dodge RAM, 1 for Grand Wagoneer, one service line).

In the final assembly line, initially the metallic frame is assembled. Spray lubricant, sealant (TERSON RB 962 aka Tero Stat 962N) and grease (Klubersynth P 84-52 G) are applied to the front rails and the end caps of the roof assembly frame. The sealant is heated prior to application. An adhesion promoter (3M Adhesion Promotor 4298UV) is used to place the label on the glass and add rubber foam to frame for anti-vibration. All emissions are exhausted into in-plant environment.

The rest of the assembly process consists of putting together the glass, sunshade, motor, module and other components. Facility does not manufacture the sunshade and are imported from other countries.

Prior to packaging, the sunroofs are cleaned using ethanol dispensed from small bottles. Facility also use premoistened wipes for cleaning. This is included in the VOC/HAP emissions.

After the pre-inspection meeting, he accompanied me for an inspection of the facility. Initially we visited the final assembly lines. He showed me that spray lubricant applications. The lines were operating at that time.

Next, we visited the priming and encapsulation area. The facility has five such units. Each unit consists of priming booth (EU-PRIME), air dry station, and encapsulation station (EU-CARRIER)

Prior to the encapsulation process, clear (BETASEAL 43518 Glass Primer) and black primer (BETASEAL 43520 A Glass Primer) are applied either manually or robotically to the sunshade glass (brought from an outside vendor), using disposable felts. The used felts are collected and send out as hazardous waste. Mr. Bradley told me the facility is considered a small quantity generator for waste regulations.

From this station, it goes to a holding section prior to the encapsulation. Initially mold release agent (Chem-Trend MOC-10009) is manually sprayed to the sides of the mold where encapsulation take place. Next, inside of the mold which touches the glass is cleaned using alcohol wipes. Glass is placed in the mold and kept it closed. The resin and the isocyanate are combined and injected into the mold. The molding is formed. The mold is opened, and encapsulated glass is transferred to next station.

Here, the excess molding is cut off and the glass is wiped using alcohol wipes (SWC30048) and a commercial glass cleaner mixed with water using tissues. In the next station, the glass is labelled, racked and send to the assembly area.

The spent felt, wipe issues are hauled away as hazardous/non-hazardous waste by COVANTA Environmental Services. The facility is keeping records of the VOC emissions from the applications of primers, mold release agent, mold cleaner, glass cleaner, etc.

During the post-inspection meeting, we discussed shortly about submitting the required records.

#### **PTI No.84-05B**

**FG-PRIME:** Five automated priming stations where primers are robotically applied to glass panels. Methyl Ethyl Ketone and Methyl Alcohol are used to purge the primer lines

**FG-CARRIER:** Five booths where water-based mold release is robotically applied to sunroof assembly molds. Polyurethane (isocyanate and polyol mix) is injected into the molds, and the molds are manually cleaned using a solvent cleaner.

**FG-FA:** Seven assembly lines where parts are assembled to make the frames for sunroofs and the glass panels are attached. An adhesion promoter is used to help attach precut foam pads. Isopropyl Alcohol is used for cleaning.

**FGFACILITY:** Apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment and exempt equipment.

**FG-PRIME** includes five E Five automated priming stations, EU-PRIME1, EU-PRIME2, EU-PRIME3, EU-PRIME4 and EU-PRIME5, where primers are robotically applied to glass panels. Methyl Ethyl Ketone and Methyl Alcohol are used to purge the primer lines.

Prior to encapsulation (FG-CARRIER), the raw glass panels are cleaned and primed manually or robotically using disposable felts. The primed glass panels are then placed in a drying station to cure the primer.

SC I.1-VOC emissions are limited to 16.1 TPY based on a 12-month rolling time period as determined at the end of each calendar month. As noted earlier, each sunshade glass is primed (edges), mold release agent sprayed to the mold, mold cleaned, glass cleaned after molding using IPA wipes, etc. Facility submitted emission calculations for 2022 and up to August 2023 and 12-month rolling emissions calculations. 12 month rolling VOC emissions as of August 2023 were 4.49 tons. The highest monthly VOC emissions, 0.39 tons, were in July 2023

SC III.1- requires the permittee to capture all clean-up solvents and waste coatings and store them in closed containers. Also requires the permittee to dispose all waste materials in an acceptable manner. The facility collects all waste materials which are hauled offsite by COVANTA Environmental Services.

SC III.2- requires that the permittee handle all VOC and HAP containing materials in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times exempt when operator access is necessary. The facility keeps the containers for the spent felts (used in the application of primers) and the tissue papers (used in cleaning the glass) in closed containers.

SC IV.1- requires that all stations in FG-PRIME be equipped with manual applicators or comparable technology with equivalent transfer efficiency. The primers and applied manually or using robotic applicators. -

SC VI.1-requires the permittee to complete all required calculations in a format acceptable to the AQD Supervisor by the 15<sup>th</sup> day of the calendar month for the previous month. The permittee appears to be completing the calculations by this time.

SC VI.2-requires the permittee to main a current listing from the manufacturer of the chemical composition of each chemical including weight percent of each component. The facility is keeping SDS for each chemical they are using in production. Facility provided SDSs for 3M Adhesive Promotor 4298 UV, BETASEAL 43518 Glass primer, BETASEAL 43520A Glass primer, Chem-Tread MOC-10009 (mold cleaner), MEK, Methanol Alliance, Alcohol wipes, and TFL50 Dry Lube (aerosol lubricant). Facility is keeping SDS for all materials including Elastolit M50005T Isocyanate [liquid] and Elastosit M55310 R-01 Resin [liquid].

SC VI.3 requires the permittee to keep the gallons of each material used, VOC content of each material in pounds per gallon, VOC emission calculations in tons on a monthly and 12-month rolling time period as determined at the end of each calendar month.

**FG-CARRIER:** Five booths, EU-CARRIER1, EU-CARRIER2, EU-CARRIER3, EU-CARRIER4,

EU-CARRIER1-5, where water-based mold release is robotically applied to sunroof assembly molds. Polyurethane (isocyanate and polyol mix) is injected into the molds, and the molds are manually cleaned using a solvent cleaner.

**SC I.1-VOC emissions are limited to 1.5 TPY based on a 12-month rolling time period as determined at the end of each calendar month. As noted earlier, each sunshade glass is primed (edges), mold release agent sprayed to the mold, mold cleaned, glass cleaned after molding using IPA wipes, etc. The facility submitted emission calculations for 2022 and up to August 2023 and 12-month rolling emissions calculations. The VOC emissions for FG-CARRIER is included with the FG-PU. This is how the facility kept for the previous permit. I informed Mr. Bradley on September 18, 2023, that the facility needs to keep the emission calculations for each flexible group starting October 2023.**

**SC III.1- requires the permittee to capture all clean-up solvents and waste coatings and store them in closed containers. Also requires the permittee to dispose all waste materials in an acceptable manner. The facility collects all waste materials which are hauled offsite by Covanta Environmental Services.**

**SC III.2- requires that the permittee handle all VOC and HAP containing materials in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times exempt when operator access is necessary. The facility keeps the containers for the spent felts (used in the application of primers) and the tissue papers (used in cleaning the glass) in closed containers.**

**SC IV.1- requires that all stations in FG-CARRIER be equipped with manual applicators or comparable technology with equivalent transfer efficiency. The isocyanate and resin are applied robotically.**

**SC VI.1-requires the permittee to complete all required calculations in a format acceptable to the AQD Supervisor by the 15<sup>th</sup> day of the calendar month for the previous month. The VOC emissions for FG-CARRIER is included with the FG-PU. This is how the facility kept for the previous permit. I informed Mr. Bradley on September 18, 2023, that the facility needs to keep the emission calculations for each flexible group starting October 2023.**

**SC VI.2-requires the permittee to main a current listing from the manufacturer of the chemical composition of each chemical including weight percent of each component. The facility is keeping SDS for each chemical they are using in production. The facility is keeping SDS for all materials including Elastolit M50005T Isocyanate [liquid] and Elastosit M55310 R-01 Resin [liquid].**

**SC VI.3 requires the permittee to keep the gallons of each material used, VOC content of each material in pounds per gallon, VOC emission calculations in tons on a monthly and 12-month rolling time period as determined at the end of each calendar month.**

**FG-FA: Seven assembly lines: EU-FA1, EU-FA2, EU-FA3, EU-FA4, EU-FA5, EU-FA6, and EU-FA7, where parts are assembled to make the frames for sunroofs and the glass panels are attached. An adhesion promoter is used to help attach precut foam pads. Isopropyl Alcohol is used for cleaning.**

**SC I.1-VOC emissions are limited to 6.4 TPY based on a 12-month rolling time period as determined at the end of each calendar month. Facility submitted emission calculations for 2021, 2022 and up to August 2023 and 12-month rolling emissions calculations. 12 month rolling VOC emissions as of August 2023 were 2.43 tons. The**

highest monthly VOC emissions, 0.39 tons, were in July 2023. The highest rolling emissions were 3.08 TPY as of July 2022.

SC III.1- requires the permittee to capture all clean-up solvents and waste coatings and store them in closed containers. Also requires the permittee to dispose all waste materials in an acceptable manner. The facility collects all waste materials which are hauled offsite by Covanta Environmental Services.

SC III.2- requires that the permittee handle all VOC and HAP containing materials in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times exempt when operator access is necessary.

SC IV.1- requires that all stations in FG-FA be equipped with manual applicators or comparable technology with equivalent transfer efficiency. The primers and applied manually or using robotic applicators. The lubricant, promotor, IPA cleaner, etc. are applied manually.

SC VI.1-requires the permittee to complete all required calculations in a format acceptable to the AQD Supervisor by the 15<sup>th</sup> day of the calendar month for the previous month. The permittee appears to be completing the calculations by this time.

SC VI.2-requires the permittee to main a current listing from the manufacturer of the chemical composition of each chemical including weight percent of each component. The facility is keeping SDS for each chemical they are using in production.

SC VI.3 requires the permittee to keep the gallons of each material used, VOC content of each material in pounds per gallon, VOC emission calculations in tons on a monthly and 12-month rolling time period as determined at the end of each calendar month.

FG-FACILITY applies source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment and exempt equipment.

SC I.1a and SC I.1b: Facility-wide individual HAP limit is 9.0 TPY and facility-wide aggregate HAP limit is 22.5 TPY. Facility submitted emissions calculations for 2021, 2022 and up to August 2023. The aggregate HAP emissions for 2022 were 2.19 tons. From January to August 2023, the aggregate HAPs were 1.66 tons. These emissions are in compliance with both single and aggregate HAP limits.

SC V.1. HAP content is determined using formulation data, as allowed in permit.

SC VI.1-requires the permittee to complete all required calculations in a format acceptable to the AQD Supervisor by the 15<sup>th</sup> day of the calendar month for the previous month. The permittee appears to be completing the calculations by this time.

SC VI.2 requires the permittee to keep the gallons of each material used, VOC content of each material in pounds per gallon, VOC emission calculations in tons on a monthly and 12-month rolling time period as determined at the end of each calendar month.

**Conclusion:** Webasto Sunroof Systems appears to be in compliance with applicable requirements of PTI No.85-05B.

NAME Sebastien Kallermkal

DATE 09/25/2023

SUPERVISOR Joyce