



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Carlisle Construction Materials, Inc., Greenville, Illinois

FROM: Tess Russell, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Supervisor
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Carlisle Construction Materials, Inc.

Facility Location: 1825 E. US Route 40, Greenville, Illinois 62246

Date of Inspection: July 14, 2022

EPA Inspector(s):

1. Karyn Defranco, Physical Scientist
2. Tess Russell, Environmental Engineer

Other Attendees:

1. Dave Robison, Manager of Engineering and Maintenance, Carlisle
2. Lisa Niemeyer, Site Safety Administrator, Carlisle

Contact Email Address: dave.robison@carlisleccm.com

Purpose of Inspection: To determine Clean Air Act (CAA) compliance with facility's 2018 Federally Enforceable State Operating Permit (Application No. 14110024), as well as 40 C.F.R. Part 60, Subpart RR

Facility Type: Rubber manufacturing

Regulations Central to Inspection: 40 C.F.R. Part 60, Subpart RR: Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations

Arrival Time: 9:20 AM

Departure Time: 1:00 PM

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Provided Small Business Resource Information Sheet
- ☐ Small Business Resource Information Sheet not provided.
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Dave Robison or Lisa Niemeyer unless otherwise noted.

Process Description:

Carlisle Construction Materials, Inc. is a rubber manufacturing facility for rooftop applications. There are 5 main production lines: EPDM/rubber, TPO, PVC (newest line, since 2013), Tapeline, and molding.

To produce EPDM rubber, carbon black, kaolin clay, processing oil, curatives, and polymers are mixed in two mixers and processed through a calendar. After, thin rubber sheets are laminated together and seamed together using pressure and heptane to activate. EPDM is wound into large rolls, covered with plastic wrap, and cured in one of six autoclave vulcanizers at approximately 270 degrees Fahrenheit. The rolls are removed to cool in open room. One third of completed EPDM rubber is coated on the Factory Applied Tape (FAT) Adhesive Operation line by a low-VOC primer (used beginning in 2014-2015) to attach tape from the Tapeline. Almost all EPDM rubber made at the Facility is sulfur-cured.

To produce TPO, polyolefin pellets are first blended, melted, and mixed and then extruded through one of two extruders with a die head for a flat profile. Water-cooled cooling drums solidify the TPO before it is wound into rolls.

To produce PVC, PVC resin, calcium carbonate, and polymer supersacks are blended in a blending tower before being cooled in 2 aftercoolers and stored in 7 day bins/silos. Dry ingredients are mixed with oil-based plasticizer which creates a 2-ply PVC with “scrim” in between. Material is run through an extruder. Some finished PVC is run through an oven to attach fleece material. All emissions from the oven exhaust go to atmosphere.

The Tapeline takes in-house EPDM black stock, and imported white stock, through a granulator which controls for PM/dust with a filter. “PV float” and tackifiers, including polybutene (PIB),

hydrocarbon resin, and organic peroxide as the curative are mixed into a screw and are extruded out into strips. Rolls are cured in one of 6 ovens, confirmed to run on natural gas as required by the FESOP, and may or may not be modified before getting cured.

The molding line takes uncured EPDM stock through one of five presses to create walkway pads or EPDM pipe boots.

Staff Interview:

The two mixers on the EPDM line each has its own baghouse, while the calendar and six autoclave vulcanizers have no air pollution controls. Dave Robison estimated that approximately 150,000 lb rubber is cured in one day of operation; he estimated that the curing process takes approximately 8-hours per batch, with each batch weighing approximately 50,000 lbs.

The FAT Adhesive Operation is subject to 40 C.F.R. Part 60, Subparts A and RR, according to the FESOP. If the facility is below a certain VOC input threshold for the operation, the facility may not be subject to the emissions limits of Subpart RR. Documents were requested pertaining to Subpart RR and will be reviewed by EPA. The TPO and molding lines have no air pollution controls or dust collection. The raw material silos, mixers, and coolers for the PVC line are controlled by a baghouse. After the oil-based plasticizer is added, liquid volatiles are pulled out via vacuum and handled as hazardous waste; this reduces porosity in the PVC sheets. Air volatiles from the PVC line go to atmosphere.

The permit states that the facility has six pyrolysis furnaces, but the facility representatives stated there is only one pyrolysis furnace used to remove tape from metals. The furnace incinerates the tape, and then the attached afterburner processes the pyrolysis vapors.

The pressure differential is checked on each baghouse at least monthly. The FESOP requires the facility to operate air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. EPA requested and will review the facility's pressure differential records to assess compliance with the FESOP.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

Both baghouses for the EDPM line had pressure readings of ~ 4" water column. The vulcanizer roof top stack was emitting steam (see photo log). The FESOP includes an emissions limit for sulfur dioxide on the vulcanizers, which are erroneously labeled in the FESOP as additional "pyrolysis furnaces"; EPA will review emission calculations from the vulcanizers to check for SO₂ compliance.

Visible emissions were seen at the extruder die heads on both the TPO and Tapeline lines. Visible emissions were seen at 11:28am from the outside stack of the Tapeline's granulator which has a filter to control for PM/dust. EPA did not perform Method 9 readings but noted that the opacity observed was low. Pursuant to 35 Ill. Adm. Code 212.123(a), the Tapeline is subject

to a 30% opacity limit. Dave Robison was unsure how often this filter is replaced. A new granulator will soon be installed that performs dust collection better.

EPA did not observe the 6 pyrolysis furnaces mention in the facility's permit; instead, EPA observed only 1 pyrolysis furnace. Emissions vent to atmosphere with no air pollution control. Dave was unsure if there is an afterburner inside the pyrolysis furnace. The use-log had no entries since 2019, and Dave Robison confirmed it is only used sporadically. There was a temperature indicator as required by the FESOP but was not on as the equipment was not in use. EPA could therefore not observe whether the temperature aligned with the FESOP, which states the temperature is at least the manufacturer's recommended temperature but no less than the temperature at which compliance was demonstrated in the most recent compliance test, or 1400 degrees F in the absence of a compliance test.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Internal air emissions calculations and supporting documentation (including calculations for both VOCs and HAPs; include calculations per department) for 2019 – June 2022;
- Last performance test for each baghouse;
- Last 3 months of pressure differential readings for each baghouse, along with the manufacturer's specifications for each baghouse's proper pressure differential range;
- Material throughput (tons/month) for 2019 – June 2022 (including pertinent throughput information from SDS sheets);

The following pertain to the FAT line, which is subject to 40 C.F.R. Part 60, Subpart RR according to the 2018 FESOP:

- The last performance test, pursuant to § 60.8;
- The calendar month record of all coatings used, pursuant to 40 C.F.R. § 60.445(a), for January - June 2022;
- The calculations required by 40 C.F.R. § 60.443(a) and (b), for January – June 2022; and
- Last 4 quarterly reports, pursuant to 40 C.F.R. § 60.447(b), detailing exceedances of the VOC emission limits; if no quarterly reports, provide the last 2 semiannual reports.

DIGITAL SIGNATURES

Report Author: Russell, Tess Digitally signed by Russell, Tess
Date: 2022.09.06 16:19:50
-05'00'

Section Supervisor:

Brian Dickens

Digitally signed by Brian Dickens
Date: 2022.09.07 06:43:00
-05'00'

Facility Name: Carlisle Construction Materials, Inc.

Facility Location: 1825 E. US Route 40, Greenville, Illinois 62246

Date of Inspection: July 14, 2022

APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Image Log

Facility Name: Carlisle Construction Materials, Inc.
Facility Location: 1825 E. US Route 40, Greenville, Illinois 62246
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APPENDIX A: DIGITAL IMAGE LOG

Inspector Name: Karyn Defranco		Archival Record Location: ERC	
Image Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	IMG_0069.JPG	2022:07:14 12:22:53	Roof stack for vulcanizer line
2	IMG_0070.JPG	2022:07:14 12:23:22	Roof stack for vulcanizer line (2)
3	IMG_0071.JPG	2022:07:14 13:10:50	Label on pyrolysis oven