

Commonwealth of Kentucky  
Division for Air Quality  
***STATEMENT OF BASIS / SUMMARY***

Title V, Operating  
PERMIT ID: V-24-042  
Superior Composites CO., LLC  
294 Industrial Park, Vanceburg, KY 41179  
December 20, 2024  
Durga Patil, Permit Review Branch

Source ID: 21-135-00018  
Agency Interest #: 2701  
Activity ID: APE20220001

**Table of Contents**

**SECTION 1 - SOURCE DESCRIPTION** ..... 2  
**SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM**..... 3  
**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS** ..... 4  
**SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS** ..... 10  
**SECTION 5 - PERMITTING HISTORY** ..... 12  
**SECTION 6 – PERMIT APPLICATION HISTORY** ..... 12  
**APPENDIX A – ABBREVIATIONS AND ACRONYMS** ..... 12

## SECTION 1 - SOURCE DESCRIPTION

SIC Code and description: 3231, Glass Products Made of Purchased Glass.

Single Source Det.  Yes  No If Yes, Affiliated Source AI:

Source-wide Limit  Yes  No If Yes, See Section 4, Table A

28 Source Category  Yes  No If Yes, Category:

County: Lewis

Nonattainment Area  N/A  PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  Ozone  Lead  
If yes, list Classification:

PTE\* greater than 100 tpy for any criteria air pollutant  Yes  No  
If yes, for what pollutant(s)?  
 PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  VOC

PTE\* greater than 250 tpy for any criteria air pollutant  Yes  No  
If yes, for what pollutant(s)?  
 PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  VOC

PTE\* greater than 10 tpy for any single hazardous air pollutant (HAP)  Yes  No  
If yes, list which pollutant(s): styrene, xylenes

PTE\* greater than 25 tpy for combined HAP  Yes  No

\*PTE does not include self-imposed emission limitations.

### Description of Facility:

Superior Composites CO., L.L.C. manufactures polyester fiberglass mats. The source produces two types of fiberglass mats, using either a styrene resin or 176 resin (alcohol based). During the first step in the process, very fine glass strands and a polyester resin, are simultaneously applied to a 12-foot long rotating drum. The glass strands are applied from above the drums by a natural gas fired furnace that moves back and forth along the length of the drum. The binder is applied by a spray nozzle that moves with the glass-melting furnace. After the specified amount of binder and glass is applied to drum, the uncured mat is cut and manually removed from the drum. In the final stage of the process, the mat is cured in a natural gas fired oven.

**SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM**

Permit Number: V-24-042  
 Application Received: 5/23/2022

Activity: APE20220001  
 Application Complete: 12/23/2024

Permit Action:  Initial  Renewal  Significant Rev.  Minor Rev.  Administrative  
 Construction/Modification Requested?  Yes  No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action  Yes  No

**Description of Action:**

APE20220001: Renewal

An application for the renewal of the Title V permit for Superior Composites was received by the Division on May 23, 2022. The facility has stated that there have been no changes in equipment, processes or materials used at the facility since the last submittal. The Division has added emission from insignificant activity in the KYEIS and updated the description of forming drums in Emission Unit 002 (003). The facility also requested renumbering of the forming drums.

APE20170003: 502(b)(10) change

A 502(b)(10) change notification was received by the Division on November 8, 2017. The facility has stated that they have reformulated the 176 AC binder to change the solvent used from isopropyl alcohol to dimethyl carbonate (DMC). DMC is not VOC so the facility is requesting the emission factor for the forming drums be reduced appropriately.

V-24-042 Emission Summary				
Pollutant	2023 Actual (tpy)	Previous PTE V-17-028 (tpy)	Change (tpy)	Revised PTE V-24-042 (tpy)
CO	2.40	7.65	--	7.65
NO <sub>x</sub>	2.85	9.10	0.01	9.11
PT	34.20	195.40	--	223.33
PM <sub>10</sub>	34.20	195.40		223.33
PM <sub>2.5</sub>	34.20	195.40	--	223.33
SO <sub>2</sub>	0.017	0.055	--	0.055
VOC	106.29	736.95	-4.65	732.92
Lead				
Greenhouse Gases (GHGs)				
Carbon Dioxide	3,425	10,925	--	10,925
Methane	0.064	0.205	--	0.205
Nitrous Oxide	0.0064	0.0205	--	0.0205
CO <sub>2</sub> Equivalent (CO <sub>2</sub> e)	--	10,936	--	10,936
Hazardous Air Pollutants (HAPs)/Toxic Air Pollutants (TAPs)				
Ethyl Benzene	0.0016	2.83	0.11	2.94
Formaldehyde	N/A	0.0012	0.0001	0.0013
Isopropanol	N/A	N/A	--	155.72
Methanol	N/A	0.007	0.001	0.008
Styrene	0.017	126.60	5.13	131.73
Xylenes (Total)	0.0086	51.47	2.1	53.57
Combined HAPs:	-	180.91	7.34	188.25

**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS**

Emission Unit #1 - 001 (001): Forming Drums 1 through 22				
Emission Unit #2 - 002 (003): Forming Drums 023 through 044				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	387 lb/ton of regular binder and A Binder usage; 519.2 lb/ton of 176 AC Binder used, EF based on process knowledge	Compliance assumed based on emission factor and process enclosure
	20 % Opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly visual observation

**Initial Construction Date:** See below

**Process Description:**

**EMISSION UNIT 001 (001): Forming Drums 1 through 22** [\* Total for all 22 units]

Process: Each forming drum has a glass-melting furnace and binder spray applicator.  
 Construction Date: 1995 (forming drums 1 through 16) and 2005 (forming drums 17 through 22)

**Emission Point 001:** Process: 22 glass-melting furnaces rated at 3.30 MMBtu/hour\*  
 Glass Capacity: 0.52635 tons/hr\*; Fuel Capacity: 0.00324 mmscf/hr\*  
 Fuel: Natural gas; Control: None

**Emission Point 002:** Equipment: 22 spray applicators  
 Polyester Binder: Regular binder; Binder Capacity: 0.061 tons/hr binder\*  
 Control: Building Containment for PM<sub>10</sub>/PM<sub>2.5</sub> (50% control)

**Emission Point 003:** Equipment: 22 spray applicators  
 Polyester Binder: A binder; Binder Capacity: 0.061 tons/hr binder\*  
 Control: Building Containment for PM<sub>10</sub>/PM<sub>2.5</sub> (50% control)

**Emission Point 004:** Equipment: 22 spray applicators  
 Polyester Binder: 176 AC binder; Binder Capacity: 0.093 tons/hr binder\*  
 Control: Building Containment for PM<sub>10</sub>/PM<sub>2.5</sub> (50% control)

**EMISSION UNIT 002 (003): Forming Drums 023 through 044** [\* Total for all 22 units]

Construction Date: 1972 Ohio facility construction; 2015 Relocation to Kentucky facility

**Emission Point 001:** Process: 22 glass-melting furnaces rated at 3.30 MMBtu/hour\*  
 Glass Capacity: 0.50699 tons/hr\*; Fuel Capacity: 0.00324 mmscf/hr\*  
 Fuel: Natural gas; Control: None

**Emission Point 002:** Equipment: 22 spray applicators  
 Polyester Binder: Regular binder; Binder Capacity: 0.0623 tons/hr binder\*  
 Control: Building Containment for PM<sub>10</sub>/PM<sub>2.5</sub> (50% control)

**Emission Unit #1 - 001 (001): Forming Drums 1 through 22**  
**Emission Unit #2 - 002 (003): Forming Drums 023 through 044**

**Emission Point 003:** Equipment: 22 spray applicators  
Polyester Binder: A binder; Binder Capacity: 0.0623 tons/hr binder\*  
Control: Building Containment for PM<sub>10</sub>/PM<sub>2.5</sub> (50% control)

**Emission Point 004:** Equipment: 22 spray applicators  
Polyester Binder: 176 AC binder; Binder Capacity: 0.0854 tons/hr binder\*  
Control: Building Containment for PM<sub>10</sub>/PM<sub>2.5</sub> (50% control)

**Applicable Regulation:**

401 KAR 59:010, This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

**State Origin Requirements:**

401 KAR 63:020, Potentially hazardous matter or toxic substances, is applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provision of the administrative regulations of the Division for Air Quality.

**Non-applicable Regulation:**

401 KAR 60:005, Section 2(2)(mm), 40 C.F.R. 60.290 through 60.296 (Subpart CC), Standards of Performance for Glass Manufacturing Plants is non-applicable as the facility does not manufacture glass from raw materials but rather melts glass cullet.

401 KAR 60:005, Section 2(2)(rrr), 40 C.F.R. 60.680 through 60.685 (Subpart PPP), Standard of Performance for Wool Fiberglass Insulation Manufacturing Plant is non-applicable as the facility does not manufacture wool fiberglass.

401 KAR 63:002, Section 2(4)(qq), 40 C.F.R. 63.1175 through 63.1197, Tables 1 through 2, and Appendix A (Subpart DDD), National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production is non-applicable as the facility does not produce fiberglass from natural rock, blast furnace slag or other similar materials. It produces fiberglass from melting glass cullet.

401 KAR 63:002, Section 2(4)(yy), 40 C.F.R. 63.1380 through 63.11389, Tables 1 through 2, and Appendices A through C (Subpart NNN), National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing is non-applicable as the facility does not manufacture wool fiberglass using the spin process.

401 KAR 63:002, Section 2(4)(nnn), 40 C.F.R. 63.2980 through 63.3004, Tables 1 through 2, and Appendices A through B (Subpart HHHH), National Emission Standards for Hazardous Air Pollutants for Wet-Formed Fiberglass Mat Production. The facility does not produce mineral wool/fiberglass for roof products and does not use urea/formaldehyde resins.

401 KAR 63:002, Section 2(4)(bbbb), 40 C.F.R. 63.5780 through 63.35935, Tables 1 through 15, and Appendix A (Subpart WWWW), National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. The facility is not a reinforced plastic composites production facility. It does not engage in open molding, closed molding, centrifugal casting, continuous lamination, continuous

<b>Emission Unit #1 - 001 (001): Forming Drums 1 through 22</b> <b>Emission Unit #2 - 002 (003): Forming Drums 023 through 044</b>				
casting, polymer casting, pultrusion, sheet molding compound manufacturing and bulk molding compound manufacturing.				
<b>Precluded Regulations:</b> 401 KAR 51:017, Prevention of significant deterioration of air quality, is precluded as the facility has taken a limit of 240 tpy of VOC based on 12-month rolling total.				
<b>Comments:</b> See Section 4 for source wide limit on VOC emissions to preclude 401 KAR 51:017.				
The justification for non-applicable regulations was submitted in the Title V renewal application received May 2, 2006 and filed under APE20060001. Since the processes transferred in 2015 are the same as that of the Vanceburg facility, the new units have permit shield from applicability of various regulations shown.				
During the renewal permit V-24-042 process, the facility requested renumbering of the forming drums listed under EMISSION UNIT 002 (003) from Forming Drums 025 through 046 to Forming Drums 023 through 044.				

<b>Emission Unit #3 - 023 (023): Anderson #1 Fiberglass Curing Oven</b> <b>Emission Unit #4 - 024 (024): Anderson #2 Fiberglass Curing Oven</b>				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Particulate Matter	E=2.34 for (P ≤ 0.5 tph) E = 3.59×P <sup>0.62</sup> for (P > 0.5 tph)	401 KAR 59:010, Section 3(2)	AP-42 Chapter 1.4.	Compliance assumed based on emission factor and process enclosure, CAM
	20% opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly visual observation
<b>Initial Construction Date:</b> See below				
<b>EMISSION UNIT 023 (023): Anderson #1 Fiberglass Curing Oven</b> Production Capacity: 2 tons/hr uncured mat (condensed mat) Construction Date: 1995				
<b>Emission Point 001:</b> Equipment: 7.3 MMBtu/hr curing oven Fuel Capacity: 0.00716 mmcf/hr; Fuel: Natural gas; Control: None				
<b>Emission Point 002:</b> Polyester Binder: Regular binder Control: Wet scrubber with chevron mist eliminator for PM <sub>10</sub> /PM <sub>2.5</sub> (92.97% control)				
<b>Emission Point 003:</b> Polyester Binder: A binder Control: Wet scrubber with chevron mist eliminator for PM <sub>10</sub> /PM <sub>2.5</sub> (92.97% control)				

**Emission Unit #3 - 023 (023): Anderson #1 Fiberglass Curing Oven**  
**Emission Unit #4 - 024 (024): Anderson #2 Fiberglass Curing Oven**

**Emission Point 004:** Polyester Binder: 176 AC binder

Control: Wet scrubber with chevron mist eliminator for PM<sub>10</sub>/PM<sub>2.5</sub> (92.97% control)

**EMISSION UNIT 024 (024): Anderson #2 Fiberglass Curing Oven**

Production Capacity: 2 tons/hr uncured mat (condensed mat)

Construction Date: 2005

**Emission Point 001:** Equipment: 7.3 MMBtu/hr curing oven

Fuel Capacity: 0.00716 mmcf/hr; Fuel: Natural gas; Control: None

**Emission Point 002:** Polyester Binder: Regular binder

Control: Wet scrubber with chevron mist eliminator for PM<sub>10</sub>/PM<sub>2.5</sub> (92.97% control)

**Emission Point 003:** Polyester Binder: A binder

Control: Wet scrubber with chevron mist eliminator for PM<sub>10</sub>/PM<sub>2.5</sub> (92.97% control)

**Emission Point 004:** Polyester Binder: 76 AC binder

Control: Wet scrubber with chevron mist eliminator for PM<sub>10</sub>/PM<sub>2.5</sub> (92.97% control)

**Applicable Regulation:**

401 KAR 59:010, This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

40 CFR Part 64, Compliance Assurance Monitoring.

**State Origin Requirements:**

401 KAR 63:020, Potentially hazardous matter or toxic substances, is applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provision of the administrative regulations of the Division for Air Quality.

**Non-applicable Regulation:**

401 KAR 59:015, new indirect heat exchangers is not applicable as the curing ovens are not indirect heat exchangers.

**Precluded Regulations:**

401 KAR 51:017, Prevention of significant deterioration of air quality, is precluded as the facility has taken a limit of 240 tpy of VOC based on 12-month rolling total.

**Comments:**

See Section 4 for source wide limit on VOC emissions to preclude 401 KAR 51:017.

Facility submitted a revised CAM plan in the renewal application received 11/17/2011 and filed under APE20110001, for continuously monitor and recordkeeping of various parameters for each scrubber.

**Emission Unit #3 - 023 (023): Anderson #1 Fiberglass Curing Oven**  
**Emission Unit #4 - 024 (024): Anderson #2 Fiberglass Curing Oven**

The justification for non-applicable regulations was submitted in the Title V renewal application received May 2, 2006 and filed under APE20060001. Since the processes transferred in 2015 are the same as that of the Vanceburg facility, the new curing oven has a permit shield from applicability of 401 KAR 59:015.



**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)**

**Testing Requirements/Results**

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Freq.	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
24	Wet scrubber	PM			Method 5	4.01 lb/hr	0.013 lb/hr	1.198 tph	CMN2006 0001	1/26/2006
	None	Styrene			Method 18	N/A	1.61 lb/hr			
	None	VOC as C			Method 25	N/A	3.65 lb/hr			
23	Wet scrubber	PM			Method 5	5.52 lb/hr	0.475 lb/hr	1.99 tph	CMN2008 0002	5/13/2008 - 5/14/2008
24	Wet scrubber	PM			Method 5	5.52 lb/hr	1.67 lb/hr	1.99 tph		
23	Wet scrubber	PM			Method 5	3.21 lb/hr	0.74 lb/hr	1669 lb/hr	CMN2013 0001	1/15/2013
	None	Styrene			Method 25	N/A	3.1 lb/hr			
	None	VOC as C			Method 25	N/A	3.1 lb/hr			
24	Wet scrubber	PM			Method 5	4.01 lb/hr	2.07 lb/hr	1545 lb/hr		
	None	Styrene			Method 25	N/A	4.1 lb/hr			
	None	VOC as C			Method 25	N/A	4.1 lb/hr			
23	Wet scrubber	PM			Method 5	3.21 lb/hr	0.06 lb/hr	3354 lb/hr	CMN2016 0001	11/30/2016 - 12/2/2016
	None	TMVOC			Method 25	N/A	2.21 lb/ton			
	None	Styrene			Method 18	N/A	0.196 lb/ton			
	None	Xylene			Method 18	N/A	0.099 lb/ton			
24	Wet scrubber	PM			Method 5	3.21 lb/hr	1.83 lb/hr	3506 lb/hr		
	None	TMVOC			Method 25	N/A	4.9 lb/ton			
23	Wet scrubber	PM			Method 5	3.94 lb/hr	1.4 lb/hr	1.06 lb/hr	CMN2022 0001	11/8/2022 - 11/9/2022
24	Wet scrubber	PM			Method 5	4.73 lb/hr	2.1 lb/hr	1.56 lb/hr		

**Footnotes:**

**SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS**

**Table A - Group Requirements:**

<b>Emission and Operating Limit</b>	<b>Regulation</b>	<b>Emission Unit</b>
240 tpy of VOC emissions	To preclude 401 KAR 51:017, Prevention of significant deterioration of air quality	SOURCE WIDE

**Table B - Summary of Applicable Regulations:**

<b>Applicable Regulations</b>	<b>Emission Unit</b>
401 KAR 59:010, New process operations.	001, 002, 023, 024
401 KAR 63:020, Potentially hazardous matter or toxic substances.	001, 002, 023, 024 and insig activities
40 CFR Part 64, Compliance Assurance Monitoring.	023 and 024

**Table C - Summary of Precluded Regulations:**

<b>Precluded Regulations</b>	<b>Emission Unit</b>
401 KAR 51:017, Prevention of significant deterioration of air quality	SOURCE WIDE

**Table D - Summary of Non Applicable Regulations:**

<b>Non Applicable Regulations</b>	<b>Emission Unit</b>
401 KAR 59:015, New indirect heat exchangers	023, 024
401 KAR 60:005, Section 2(2)(mm), 40 C.F.R. 60.290 through 60.296 (Subpart CC), Standards of Performance for Glass Manufacturing Plants.	SOURCE WIDE
401 KAR 60:005, Section 2(2)(rrr), 40 C.F.R. 60.680 through 60.685 (Subpart PPP), Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants.	
401 KAR 63:002, Section 2(4)(qq), 40 C.F.R. 63.1175 through 63.1197, Tables 1 through 2, and Appendix A (Subpart DDD), National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production.	
401 KAR 63:002, Section 2(4)(yy), 40 C.F.R. 63.1380 through 63.11389, Tables 1 through 2, and Appendices A through C (Subpart NNN), National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing.	
401 KAR 63:002, Section 2(4)(nnn), 40 C.F.R. 63.2980 through 63.3004, Tables 1 through 2, and Appendices A through B (Subpart HHHH), National Emission Standards for Hazardous Air Pollutants for Wet-Formed Fiberglass Mat Production.	
401 KAR 63:002, Section 2(4)(bbbb), 40 C.F.R. 63.5780 through 63.35935, Tables 1 through 15, and Appendix A (Subpart WWWW), National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production.	

**Air Toxic Analysis**

**401 KAR 63:020, Potentially Hazardous Matter or Toxic Substances**

The Division for Air Quality (Division) has performed AERMOD on January 9, 2025 of potentially hazardous matter or toxic substances (Acetone Cyanohydrin, Methanol, Ethylbenzene, Styrene, Xylenes, Formaldehyde, Isopropanol and Manganese (Diet)) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

**Single Source Determination**

N/A

**SECTION 5 - PERMITTING HISTORY**

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
V-01-005	Initial	G579 (51359 & 53522)	3/1/2001	11/2/2001	Construction Permit	N/A
V-06-034	Renewal	APE20060001	9/15/2006	5/7/2007	Renewal	N/A
V-11-061	Renewal	APE20110001	1/20/2012	8/28/2012	Renewal	N/A
V-11-061 R1	Sign. Revision	APE20150002	8/25/2015	2/16/2016	New Construction	Yes
V-17-028	Renewal	APE20170001	8/8/2017	1/20/2018	Permit Renewal	N/A

**SECTION 6 – PERMIT APPLICATION HISTORY**

N/A

**APPENDIX A – ABBREVIATIONS AND ACRONYMS**

- AAQS – Ambient Air Quality Standards
- BACT – Best Available Control Technology
- Btu – British thermal unit
- CAM – Compliance Assurance Monitoring
- CO – Carbon Monoxide
- Division – Kentucky Division for Air Quality
- ESP – Electrostatic Precipitator
- GHG – Greenhouse Gas
- HAP – Hazardous Air Pollutant
- HF – Hydrogen Fluoride (Gaseous)
- MSDS – Material Safety Data Sheets
- mmHg – Millimeter of mercury column height
- NAAQS – National Ambient Air Quality Standards
- NESHAP – National Emissions Standards for Hazardous Air Pollutants
- NO<sub>x</sub> – Nitrogen Oxides
- NSR – New Source Review
- PM – Particulate Matter
- PM<sub>10</sub> – Particulate Matter equal to or smaller than 10 micrometers
- PM<sub>2.5</sub> – Particulate Matter equal to or smaller than 2.5 micrometers
- PSD – Prevention of Significant Deterioration
- PTE – Potential to Emit
- SO<sub>2</sub> – Sulfur Dioxide
- TF – Total Fluoride (Particulate & Gaseous)
- VOC – Volatile Organic Compounds