

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0747-AOP-R8 AFIN: 66-00294

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Owens Corning Non-Woven Technology, LLC
5520 Planters Road
Fort Smith, Arkansas 72916

3. PERMIT WRITER:

Jesse Smith

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Nonwoven Fabric Mills
NAICS Code: 313230

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
3/17/2023	Modification	Increased throughput on Line 2 during the transition period.

6. REVIEWER'S NOTES:

Owens Corning owns and operates a fiberglass mat manufacturing facility at 5520 Planters Road in Fort Smith, Arkansas 72916. The facility uses chopped fiberglass and a chemical binder to produce fiberglass mats primarily for use in the roofing products industry. With this Title V significant modification, the facility is increasing the throughput allowed for line #2 sources during the transition period from line #1 to line #2. This allows both lines to run simultaneously to ensure proper operation of line #2 before line #1 is decommissioned. Permitted emissions have increased as follows: 31.8 tpy PM/PM₁₀, 0.6 tpy SO₂, 103.4 tpy VOC, 115.5 tpy CO, 31.7 tpy NO_x, 21.68 tpy

acrylic acid, 16.66 tpy formaldehyde, 30.44 tpy methanol, 21.68 tpy ammonia, 0.89 tpy total other HAPs, and 4.57 tpy styrene and triethylamine.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The facility was last inspected on October 17, 2022. There were no areas of concern noted at this time or on EPA's Echo database.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

Emissions increases are below levels requiring PSD review.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-01, SN-11	Formaldehyde	40 CFR Part 63, Subpart HHHH
SN-23	HAP	40 CFR Part 63, Subpart JJJJ
SN-24	HAP	40 CFR Part 63, Subpart KK

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
SN-01	VOC	Thermal Oxidizer Temperatures > 1,385 °F on 15-minute and 3-hour block averages.
SN-11	VOC	Thermal Oxidizer Temperatures > 1,400 °F on 15-minute and 3-hour block averages.

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

Using the evaluation methods determined during the 2009 Risk Assessment for comparing model predicted long-term (annual) impacts to specific Screening Levels for long term impacts and comparing model predicted short-term (1-hour) impacts to specific acute impact thresholds indicates that there is less than 1% increase in total impacts at the maximum impact location for combined operation compared to Line #1 only and that there is less than a 5% increase in total impacts at the nearest off-site worker location and nearest residential location for combined operation compared to Line #1 only. Based on this information, the previously submitted risk assessment is still representative and presented below.

The following is from the R6 version of this permit. Line 1 (Existing) and Line 2 (Proposed) were evaluated separately. After Line 2 is built and begins the process of being commissioned, the facility will be limited to produce no more than 55,100 tons/yr (the currently permitted limit for Line 1) for 12 months or less.

Line 1 (Existing)

The non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Acrylic Acid	5.89	0.648	7.10	No
Formaldehyde	1.50	0.17	6.70	No
Methanol	262.08	28.83	9.10	Yes
Styrene	Emissions < 10 tpy and TLV > 1.0 mg/m^3			
Triethylamine	Emissions < 10 tpy and TLV > 1.0 mg/m^3			

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Acrylic Acid	58.9	28.66	Yes
Formaldehyde	15.0	39.72	No

Risk Assessment

Acute inhalation exposure guidelines are designed to protect a variety of exposure groups including occupational workers and the general public, and are intended to protect against a variety of toxicity endpoints ranging from discomfort to mild adverse health effects to

serious or potentially life threatening effects. The acute inhalation exposure analysis was performed by comparing the modeled 1-hr maximum air concentrations with the appropriate acute toxicity benchmark; in this case the Acute Exposure Guideline Levels (AEGLs) was used.

Pollutant	AEGL-1 ($\mu\text{g}/\text{m}^3$)	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Formaldehyde	1107.0	118.37	Yes

Line 2 (Proposed)

The non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
Acrylic Acid	5.89	0.648	6.16	No
Formaldehyde	1.50	0.17	4.73	No
Methanol	262.08	28.83	10.64	Yes

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Acrylic Acid	58.9	19.95	Yes
Formaldehyde	15.0	13.59	Yes

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards Y
 If exempt, explain: No H₂S emissions

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)		Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01, 03, 04, 05, 07	Testing		Various	Thermal Oxidizer at SN-01	96% for VOC	Stack Tests dates are from 2003, 2008, 2013 and 2018
11	Oven	Testing from sister facility	7.245 lbs VOC/hr 2.204 lbs CH ₂ O/hr 0.6412 lbs Methanol/hr	RTO	~98%	Factor of 2 applied to sister facility stack test results
		Testing from Existing Line 1 (Fort Smith)	Acrylic Acid is 1.20 x CH ₂ O Ammonia is 1.20 x CH ₂ O Styrene is 0.25 x CH ₂ O Triethylamine is 0.25 x CH ₂ O			Based on ratio of pollutant to formaldehyde emissions
	AP-42 Section 1.4 (7/98)		Various: AP-42 Sec. 1.4 for Criteria and HAP			OVEN NAT GAS combustion Max Heat Input 36.74 MW; Heat input based on 3.412 MMBtu/hr per MW; Heating Value 1,026 Btu/scf
	AP-42 Section 1.4 (7/98)		Various: AP-42 Sec. 1.4 for Criteria and HAP			RTO NAT GAS combustion

SN	Emission Factor Source (AP-42, testing, etc.)		Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
						Max Heat Input 4,800 kW; Heat input based on 0.003412 MMBtu/hr per kW; Heating Value 1,026 Btu/scf
	Former/ Saturator Vacuum System and Fugitive Emissions	Testing from Existing Line 1 (Fort Smith)	4.53 lbs PM/PM ₁₀ /hr 16.24 lbs VOC/hr 1.79 lbs CH ₂ O/hr 6.2478 lbs Methanol/hr			0.0023 gr/dscf; Factor of 2 applied to sister facility stack test results
			Acrylic Acid is 1.20 x CH ₂ O Ammonia is 1.20 x CH ₂ O Styrene is 0.25 x CH ₂ O Triethylamine is 0.25 x CH ₂ O			Based on ratio of pollutant to formaldehyde emissions
12	Testing from sister facility and existing Line 1 (Fort Smith)		0.48 lbs PM/PM ₁₀ /hr 9.25 lbs VOC/hr 0.39 lbs CH ₂ O/hr 1.9786 lbs Methanol/hr			0.0023 gr/dscf; Factor of 2 applied to sister facility stack test results
			Acrylic Acid is 1.20 x CH ₂ O Ammonia is 1.20 x CH ₂ O Styrene is 0.25 x CH ₂ O Triethylamine is 0.25 x CH ₂ O			Based on ratio of pollutant to formaldehyde emissions
13	Testing from sister facility and existing Line 1 (Fort Smith)		2.00 lbs VOC/hr 0.011 lbs CH ₂ O/hr 1.00 lbs Methanol/hr			Factor of 2 applied to sister facility stack test results
			Acrylic Acid is 1.20 x CH ₂ O Ammonia is 1.20 x CH ₂ O Styrene is 0.25 x CH ₂ O Triethylamine is 0.25 x CH ₂ O			Based on ratio of pollutant to formaldehyde emissions
14	Testing from sister facility and existing Line 1 (Fort Smith)		24.11 lbs PM/PM ₁₀ /hr 1.90 lbs VOC/hr 0.35 lbs CH ₂ O/hr 0.91 lbs Methanol/hr	Dust collector	99%	Factor of 2 applied to sister facility stack test results
			Acrylic Acid is 1.20 x CH ₂ O Ammonia is 1.20 x CH ₂ O Styrene is 0.25 x CH ₂ O Triethylamine is 0.25 x CH ₂ O			Based on ratio of pollutant to formaldehyde emissions

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
15	AP-42 Section 1.4 (7/98)	Various: AP-42 Sec. 1.4 for Criteria and HAP			NAT GAS combustion Max Heat Input 5.10 MMBtu/hr; 8760 hrs; Heating Value 1,026 Btu/scf
16	AP-42 Section 3.3 (10/96)	Various: AP-42 Sec. 3.3 for Criteria and HAP			NAT GAS combustion Max Heat Input 233 hp; 500 hrs; Diesel Heating Value 138,000 Btu/gal; 6,000 gal/yr
21A 21B 21C 25	Vendor Specifications	PM/PM ₁₀ /PM _{2.5} : 0.02 gr/CF	Baghouse and Bin Vent Filter	99.9%	
22	VOC Content	Varies			
23	AP-42 Section 1.4 (7/98)	Various: AP-42 Sec. 1.4 for Criteria and HAP			NAT GAS combustion Max Heat Input 49.13 MMBtu/hr; 8760 hrs; Heating Value 1,026 Btu/scf
24	VOC Content	5% by weight			

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01	Formaldehyde	Method 316, 318 or 320	Once every 5 years	§63.2993(e)
11	Formaldehyde	Method 316, 318 or 320	Once every 5 years	§63.2993(e)
11, 14	PM/PM ₁₀ VOC Acrylic Acid Formaldehyde Methanol Ammonia	Various	Initial	Verify permitted emission rates
12,13	VOC Acrylic Acid Formaldehyde Methanol Ammonia	Various	Initial	Verify permitted emission rates
11, 12, 13, 14	VOC Acrylic Acid Formaldehyde	Various	Once every 5 years	Verify permitted emission rates

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
01	Temperature of Oxidizer	Continuous recorder	15-min 3 hour	No
11	Temperature of Oxidizer	Continuous recorder	15-min 3 hour	No

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility (Line 1 only)	Fiberglass mat finished product	55,100 tpy	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility (12 Month Transition Period)	Fiberglass mat finished product	55,100 tpy line 1 106,400 tpy total	Monthly	Y
Facility (Line 2 only)	Fiberglass mat finished product	133,000 tpy	Monthly	Y
21A, 21B, 21C	Pressure Drop	3 inch H ₂ O min 4 inch H ₂ O max	Daily	N
24	Mass of materials applied	<5% VOC	Monthly	N
25	Pressure Drop	2 inch H ₂ O min 5 inch H ₂ O max	Daily	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01	20%	Rule 19.503	Weekly Observation
03, 04	5%	Rule 18.501	Weekly Observation
11	20%	Rule 19.503	Weekly Observation
12	5%	Rule 18.501	Weekly Observation
14	5%	Rule 18.501	Weekly Observation
15	20%	Rule 19.503	Annual Observation
16	20%	Rule 19.503	Annual Observation
21A, 21B, 21C	5%	Rule 19.503	Weekly Observation
23	5%	Rule 19.503	Combustion of natural gas
25	5%	Rule 19.503	Weekly Observation

20. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Thickener Tank, T-12	A-3			0.0356				

Source Name	Group A Category	Emissions (tpy)							
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs		
							Single	Total	
WWTP Reactors 1-4, T-16, T-17, T-18, T-19	A-3			0.0692					
WWTP Solids Holding Tank, T-20	A-3			0.0203					
WWTP Filtrate Tank, T-22	A-3			0.0173					
WWTP Coagulant Tank, T-23	A-3			0.0061					
WWTP Flocculant, T-24	A-3			0.0064					
Coating Mix Tank, T-25	A-3			0.0300					
Coating Storage Tank, T-26	A-3			0.0595					
Coating Storage Tank, T-27	A-3			0.0595					
Coating Working Tank, T-28	A-3			0.0158					
4 Binder A/B Tanks, T-01, T-02, T-03, T-04	A-13			0.243					
Dispersant Tank, T-05	A-13			0.0065					
Biocide Tank, T-06	A-13			0.0155					
5 Toner Tanks, T-07, T-08,	A-13			0.0360					

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
T-09, T-10, T-11								
Thickener Tank, T-12	A-13			0.0356				
Antifoam Tank, T-13	A-13			0.0123				
WWTP Tank, T-14	A-13			0.0985				
WWTP Equalizer Tank, T-15	A-13			0.1244				
WWTP Reactors 1-4, T-16, T-17, T-18, T-19	A-13			0.0692				
WWTP Solids Holding Tank, T-20	A-13			0.0203				
WWTP Pre-treatment Tank, T-21	A-13			0.0643				
WWTP Filtrate Tank, T-22	A-13			0.0173				
WWTP Coagulant Tank, T-23	A-13			0.0061				
WWTP Flocculant Tank, T-24	A-13			0.0064				
Coating Mix Tank, T-25	A-13			0.0300				
Coating Storage Tank, T-26	A-13			0.0595				
Coating Storage Tank, T-27	A-13			0.0595				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Coating Working Tank, T-28	A-13			0.0158				
Comfort Heaters	B-2							
Water Heaters (non-process)	B-73							
Laboratory Equipment	B-34							
Diesel Tank (55 gal) (mower & tractor fuel)	B-14							
Biocide Storage Tote (400 gal)(vented indoors)	B-21							
Ferric Chloride Storage Tank	B-21							
Lime Silo W4	Vented Indoors							
Lime Slurry Mix Tank W5	B-21							
Polymer Storage Tank W17	B-21							

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22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0747-AOP-R7

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Owens Corning Non-Woven Technology, LLC
 Permit #: 0747-AOP-R8
 AFIN: 66-00294

\$/ton factor	28.14	Annual Chargeable Emissions (tpy)	544.32
Permit Type	Modification	Permit Fee \$	5323.5252

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	189.18
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		57.7	89.5	31.8		
PM ₁₀		57.7	89.5	31.8	31.8	89.5
PM _{2.5}		53.4	53.4	0		
SO ₂		4.6	5.2	0.6	0.6	5.2
VOC		179.4	282.8	103.4	103.4	282.8
CO		236.7	352.2	115.5		
NO _x		81.9	113.6	31.7	31.7	113.6
Acrylic Acid	<input type="checkbox"/>	31.1	52.78	21.68		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Formaldehyde	<input type="checkbox"/>	29.37	46.03	16.66		
Methanol	<input type="checkbox"/>	47.21	77.65	30.44		
Ammonia	<input checked="" type="checkbox"/>	31.54	53.22	21.68	21.68	53.22
Total Other HAPs	<input type="checkbox"/>	8.29	9.18	0.89		
Styrene	<input type="checkbox"/>	0	4.57	4.57		
Triethylamine	<input type="checkbox"/>	0	4.57	4.57		