

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0747-AOP-R6 AFIN: 66-00294

1. PERMITTING AUTHORITY:

Arkansas Department 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:

Jeremy Antipolo

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
10/21/2019	Modification	A facility (Line 2) with similar, but not identical, operations is proposed to be built adjacent to the existing facility (Line1); new emission sources include a regenerative thermal oxidizer (SN-11), a wet end building exhaust (SN-12), a Binder Room (SN-13), a Waste Trim Dust Collector (SN-14), a Steam Generator/Boiler (SN-15) and a Diesel-Fired Emergency Fire Pump (SN-16)

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 has requested to construct and operate an additional fiberglass mat manufacturing facility (Line #2) adjacent to the existing Owens Corning facility (Line #1). The proposed facility will have similar, but not identical operations to Line #1. Owens Corning currently plans to eventually move all production to Line #2. After the construction of Line #2 is complete and the facility starts up, a transition period of 12 months will begin. Changes to the permit include the addition of the following:

1. Five new sources: Regenerative Thermal Oxidizer (SN-11), Former/Saturator and Fugitive Emissions and Wet End Building Exhaust (SN-12), Binder Room (SN-13), Waste Trim Dust Collector (SN-14), and a Diesel-Fired Emergency Fire Pump (SN-15);
2. Plantwide Conditions #10 through #14 (describing compliance during transition to Line #2);
3. Plantwide Condition #17 (describing initial stack testing of sources associated with Line #2 (SN-11, SN-12, SN-13 and SN-14);
4. Plantwide Condition #18 describes periodic stack testing for sources associated with Line #2 (SN-11, SN-12, SN-13 and SN-14).

Permitted emission increases associated with this permit modification are 39.6 tpy PM<sub>2.5</sub>, 31.5 tpy VOC, 17.1 tpy NO<sub>x</sub>, and 7.35 tpy Methanol.

Changes to the permit associated with building the proposed Line #2 include treating Line #1 and Line #2 separately to facilitate modifying the permit when all production is moved to Line #2. This includes separate process descriptions and emission summaries for Line #1 and Line #2.

Emission decreases were not included in the summary of permit activity because the decreases in emission limits will not take place until the facility moves all of the production from Line #1 to Line #2. However, this significant modification was evaluated with the transition actually taking place. The permitted emission rates found in the fee sheet are the highest emission rates from both Lines #1 and Lines #2 and do not represent a scenario of a combination of both lines operating. In addition, modeling in this modification only evaluated emissions from Line #2 only.

7. COMPLIANCE STATUS:

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

This facility was last inspected on March 11, 2019 and was found to be in compliance.

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? N  
 • *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. N/A

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

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N  
 (Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N/A  
 If not, explain why.

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. 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 ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

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.

1<sup>st</sup> 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 ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	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 $\text{mg}/\text{m}^3$			
Triethylamine	Emissions < 10 tpy and TLV > 1.0 $\text{mg}/\text{m}^3$			

2<sup>nd</sup> 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.

#### 1<sup>st</sup> 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 ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	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

#### 2<sup>nd</sup> 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	No

c) H<sub>2</sub>S 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 H<sub>2</sub>S Standards Y

If exempt, explain: \_\_\_\_\_

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H <sub>2</sub> S	20 parts per million (5-minute average*)	N/A	N/A
	80 parts per billion (8-hour average) residential area	N/A	N/A
	100 parts per billion (8-hour average) nonresidential area	N/A	N/A

\*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C<sub>p</sub> = 5-minute average concentration

C<sub>m</sub> = 1-hour average concentration

t<sub>m</sub> = 60 minutes

t<sub>p</sub> = 5 minutes

13. 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 <sub>2</sub> O/hr 0.6412 lbs Methanol/hr	RTO	~98%	Factor of 2 applied to sister facility stack test results
		Testing	Acrylic Acid is 1.20 x CH <sub>2</sub> O			

SN	Emission Factor Source (AP-42, testing, etc.)		Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		from Existing Line 1 (Fort Smith)	Ammonia is 1.20 x CH <sub>2</sub> O Styrene is 0.25 x CH <sub>2</sub> O Triethylamine is 0.25 x CH <sub>2</sub> O			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  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 <sub>10</sub> /hr 16.24 lbs VOC/hr 1.79 lbs CH <sub>2</sub> 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 <sub>2</sub> O Ammonia is 1.20 x CH <sub>2</sub> O Styrene is 0.25 x CH <sub>2</sub> O Triethylamine is 0.25 x CH <sub>2</sub> 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 <sub>10</sub> /hr 9.25 lbs VOC/hr 0.39 lbs CH <sub>2</sub> 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 <sub>2</sub> O			Based on ratio

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Ammonia is 1.20 x CH <sub>2</sub> O Styrene is 0.25 x CH <sub>2</sub> O Triethylamine is 0.25 x CH <sub>2</sub> O			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 <sub>2</sub> O/hr 1.00 lbs Methanol/hr			Factor of 2 applied to sister facility stack test results
		Acrylic Acid is 1.20 x CH <sub>2</sub> O Ammonia is 1.20 x CH <sub>2</sub> O Styrene is 0.25 x CH <sub>2</sub> O Triethylamine is 0.25 x CH <sub>2</sub> 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 <sub>10</sub> /hr 1.90 lbs VOC/hr 0.35 lbs CH <sub>2</sub> 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 <sub>2</sub> O Ammonia is 1.20 x CH <sub>2</sub> O Styrene is 0.25 x CH <sub>2</sub> O Triethylamine is 0.25 x CH <sub>2</sub> O			Based on ratio of pollutant to formaldehyde emissions
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



## 14. 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 <sub>10</sub> 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

## 15. 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

## 16. 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	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility (12 Month Transition Period)	Fiberglass mat finished product	55,100 tpy	Monthly	N
Facility (Line 2 only)	Fiberglass mat finished product	133,000 tpy	Monthly	N

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01	20%	Regulation 19, §19.503	Daily Observation
03, 04	5%	Regulation 18, §18.501	Weekly Observation
11	20%	Regulation 19, §19.503	Daily Observation
12	5%	Regulation 18, §18.501	Weekly Observation
14	5%	Regulation 18, §18.501	Weekly Observation
15	20%	Regulation 19, §19.503	Weekly Observation
16	20%	Regulation 19, §19.503	Annual Observation

18. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

19. GROUP A INSIGNIFICANT ACTIVITIES:

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

Status	Source Name	Group A Category	Emissions (tpy)							
			PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs		
								Single	Total	
Insignificant	Storage Tank (B1-B6)	A-13			0.002				0.002	0.002
	Small Cooling	A-13	2.0							

Status	Source Name	Group A Category	Emissions (tpy)						
			PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
								Single	Total
	Tower								
	Wastewater Treatment Plant	A-13			0.001			0.001	0.001
	Trim Drop-Out Box	A-13	0.44						
	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							
	Empty Storage Tank B1 (910 gal)	N/A							
	Empty Silo B7	N/A							
	Ferric Chloride Storage Tank	B-21							
	Lime Silo W4	Vented Indoors							
	Lime Slurry Mix Tank W5	B-21							
	Polymer Storage Tank W17	B-21							
	Soda Ash Bin W18	Vented Indoors							
Line 2 only Insignificant Activities	3 UF Resin Bulk Tanks T-01, 02, 03	A-13			0.41			0.2	0.4
	2 Latex Bulk Tanks T-04, 05	A-13			0.12				

Status	Source Name	Group A Category	Emissions (tpy)						HAPs	
			PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Single	Total	
	3 Acrylic Tanks T-17, 18, 19	A-13			0.33			0.1	0.1	
	Dispersant Tank T-06	A-3			0.025					
	Bleach Tank T-07	A-3			0.01					
	Antifoam Tank T-08	A-3			0.05					
	Viscosity Modifier Bulk Tank T-09	A-3			0.02					
	Viscosity Modifier Day Tank T-10	A-10			0.01					
	Polyacrylic Acid Tank T-11	A-13			0.11			0.01	0.01	
	Binder Mix Tank T-12	A-3			0.05			0.01	0.01	
	Binder Holding Tank T-13	A-13			0.09			0.02	0.02	
	Starch Handling Hopper T-14 (slurry)	A-3			0.002					
	Starch Handling Mix Tank T-15 (slurry)	A-3			0.003					
	Catalyst Tank T-16	A-13			0.01					
	Ammonia Storage Tank/Tote T-20	A-13			0.0001					
	DBNPA Tank/Tote T-21	A-13			0.02					
	Bromine Storage Tank/Tote T-22	A-13			0.02					
	Biocide Tank/Tote T-23	A-13			0.02					
	Antifoam Tank/Tote T-24	A-13			0.01					

Status	Source Name	Group A Category	Emissions (tpy)							
			PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs		
								Single	Total	
	Binder Wastewater EQ Tank T-25	A-13			0.12				0.1	0.1
	Binder Seal Tank T-26	A-13			0.13				0.1	0.1
	Binder Weir Tank T-27	A-13			0.13				0.1	0.1
	White Water EQ Tank T-28	A-13			1.7				0.2	0.4

20. 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-R5



## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Owens Corning Non-Woven Technology,  
 LLC  
 Permit Number: 0747-AOP-R6  
 AFIN: 66-00294

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	308.24
Permit Type	Modification	Permit Fee \$	1162.998

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)	48.6
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 condensable 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		43.9	43.9	0		
PM <sub>10</sub>		43.9	43.9	0	0	43.9
PM <sub>2.5</sub>		0	39.6	39.6		
SO <sub>2</sub>		4.4	4.4	0	0	4.4
VOC		136	167.5	31.5	31.5	167.5
CO		219	219	0		
NO <sub>x</sub>		43.8	60.9	17.1	17.1	60.9



Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Acrylic Acid	<input type="checkbox"/>	31.1	31.1	0		
Formaldehyde	<input type="checkbox"/>	29.35	29.35	0		
Methanol	<input type="checkbox"/>	39.86	47.21	7.35		
Ammonia	<input checked="" type="checkbox"/>	31.54	31.54	0	0	31.54
Total Other HAPs	<input type="checkbox"/>	7.89	7.89	0		