

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0747-AOP-R3 AFIN: 66-00294

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Owens Corning Composite Materials, LLC
5520 Planters Road
Fort Smith, Arkansas 72916

3. PERMIT WRITER:

Joseph Hurt

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Nonwoven Fabric Mills
NAICS Code: 313230

5. SUBMITTALS:

1/9/2009

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 mat primarily for use in the roofing products industry. This is the facility's first Title V Renewal. With this Title V Renewal, the facility has submitted updated information pertaining to emission limits based on recent stack tests results and updates to the Insignificant Activities list. The total permitted emission increases include 4.1 tpy of PM/PM₁₀, 6.45 tpy of Formaldehyde, 2.2 tpy of Styrene, and 2.2 tpy of Triethylamine. The total permitted emission decreases include 9.6 tpy of SO₂, 2.1 tpy of VOC, 5.33 tpy of Acrylic Acid, 5.45 tpy of Methanol, and 0.66 tpy of Ammonia.

7. COMPLIANCE STATUS:

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

Mat Line Fugitives (SN-07) was tested in October 2008, and it was discovered that the Formaldehyde emissions exceeded the current permit limits. The facility is revising the permitted Formaldehyde emission rates with this renewal. Enforcement is aware of this violation.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? 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, explain why this permit modification not PSD? N/A

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-01	VOC Acrylic Acid Formaldehyde Methanol	40 CFR Part 63, Subpart HHHH, effective April 11, 2005
SN-10A, SN-10B, SN-11	HAPs	40 CFR Part 63, Subpart KK
SN-10A, SN-10B, SN-11	HAPs	40 CFR 63, Subpart JJJJ

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	10.9	50	Annual	37.24466 ¹	74.5%
		150	24-Hour	141.79456 ¹	94.6%
SO ₂	1.2	80	Annual	0.07756	0.1%
		1300	3-Hour	3.96813	0.3%
		365	24-Hour	1.00493	0.3%
CO	52.3	10,000	8-Hour	111.22127	1.1%
		40,000	1-Hour	263.90512	0.7%
NO _x	12.7	100	Annual	0.80372	0.8%

1. Includes 2008 Little Rock background values.

Non-Criteria Pollutants:

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	5.894	0.64	4.10	NO
Formaldehyde	0.368	0.04	7.30	NO
Methanol	262	28.8	6.60	Yes
Styrene	85.2	9.37	1.60	Yes
Triethylamine	12.08	1.32	0.50	Yes
Ammonia	17.413	1.9	7.40	NO

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	58.94	39.46066	Yes
Formaldehyde	15.0	87.43149	NO
Ammonia	174.13	47.67016	Yes

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	325.5	Yes

Other Modeling:

Odor:

Odor modeling for sources emitting styrene.

Pollutant	Threshold value 1-hour average	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Styrene	1361 $\mu\text{g}/\text{m}^3$	50.04021	Y

H₂S Modeling: N/A

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01-07	testing	various	thermal oxidizer at SN-01, none on other sources	96%	
08	best guess	0.02 gr/ft ³	none	N/A	Emission factor based on large size of material transferred to this source.
10A & 10B	AP-42 Section 1.4 Testing	lb/MMft ³ 7.6 PM/PM ₁₀ 0.6 SO ₂ 84 CO 100 NO _x lb/lb slurry 0.0001 VOC	none	N/A	
11	AP-42 Section 1.4 MSDS	lb/MMft ³ 7.6 PM/PM ₁₀ 0.6 SO ₂ 84 CO 100 NO _x lb/gallon 0.5 VOC	none	N/A	
12-18	Best guess	0.02 gr/ft ³	Fabric Filter	99%	

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
03 – 05, & 07	All	Various	Once every 5 years	Verify emission rates used in permit.
07	Formaldehyde	Method 18, or a method approved by the Department	Within 180 days of issuance of Permit Renewal	Department Guidance

14. 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

15. 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	VOC and HAP usage	Various	Monthly	No
Facility	Coating Slurry usage	143,664,000 lb/yr	Monthly	No
Facility	VOC content of printing inks	0.5 lb/gal	Monthly	No

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01	20	Dept. Guidance	Daily Observation
03, 04, & 08	5	Dept. Guidance	Weekly Observation
10A	20	Dept. Guidance	Daily Observation

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SN	Opacity	Justification for limit	Compliance Mechanism
12-18	5	Dept. Guidance	Weekly Observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
SC 40 & 41	Wastewater Treatment Plant has been moved to the Insignificant Activity section of the permit.

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Storage Tanks (B1-B6)	13			0.040			0.04	0.04
Small Cooling Tower	13	1.997						
Wastewater Treatment Plant	13			0.001			0.001	0.001

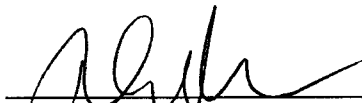
19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0747-AOP-R2

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.



Thomas Rheaume, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Facility Name: Owens Corning Composite Materials, LLC
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\$/ton factor	22.07	Annual Chargeable Emissions (tpy)	274.98
Permit Type	Renewal No Changes	Permit Fee \$	0

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	-8.26
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	<input checked="" type="checkbox"/>	42.5	46.6	4.1	4.1	46.6
PM ₁₀	<input type="checkbox"/>	42.5	46.6	4.1		
SO ₂	<input checked="" type="checkbox"/>	14.2	4.6	-9.6	-9.6	4.6
VOC	<input checked="" type="checkbox"/>	140.9	138.8	-2.1	-2.1	138.8
CO	<input type="checkbox"/>	228.5	228.5	0		
NO _x	<input checked="" type="checkbox"/>	55.1	55.1	0	0	55.1
Acrylic Acid*	<input type="checkbox"/>	17.6	12.27	-5.33		
Formaldehyde*	<input type="checkbox"/>	23.34	29.79	6.45		
Methanol*	<input type="checkbox"/>	25.6	20.15	-5.45		
Styrene*	<input type="checkbox"/>	4.38	6.58	2.2		
Triethylamine*	<input type="checkbox"/>	0	2.2	2.2		
Ammonia**	<input checked="" type="checkbox"/>	30.54	29.88	-0.66	-0.66	29.88