**NORTH CAROLINA DIVISION OF AIR QUALITY**

# Application Review

**Issue Date:** **Draft – March 21, 2018**

**Region:** Washington Regional Office
**County:** Greene
**NC Facility ID:** 4000041
**Inspector's Name:** Randall Jones
**Date of Last Inspection:** 05/18/2017
**Compliance Code:** 3 / Compliance - inspection

## Facility Data

**Applicant (Facility's Name):** Moore's Fiberglass, Inc.

**Facility Address:**
Moore's Fiberglass, Inc.
403 North Wilson St.
Walstonburg, NC 27888

**SIC:** 3089 / Plastics Products, Nec
**NAICS:** 326199 / All Other Plastics Product Manufacturing

**Facility Classification: Before:** Title V **After:** Title V
**Fee Classification: Before:** Title V **After:** Title V

## Permit Applicability (this application only)

**SIP:** 02D: .0515, .0521, .1111 and .1806
**NSPS:** N/A
**NESHAP:** Subpart WWWW
**PSD:** N/A
**PSD Avoidance:** N/A
**NC Toxics:** N/A
**112(r):** N/A
**Other:** 02D .0958

## Contact Data

| Facility Contact | Authorized Contact | Technical Contact |
|---|---|---|
| Hardy Moore, Jr.<br>President<br>(252) 753-2583<br>403 North Wilson Street<br>Walstonburg, NC 27888 | Hardy Moore, Jr.<br>President<br>(252) 753-2583<br>403 North Wilson Street<br>Walstonburg, NC 27888 | Hardy Moore, Jr.<br>President<br>(252) 753-2583<br>403 North Wilson Street<br>Walstonburg, NC 27888<br><br>W.F. Bulow, Consultant<br>(252)916-7391 |

## Application Data

**Application Number:** 4000041.17A later changed to 4000041.18A and 4000041.18B
**Date Received:** 09/19/2017 and 10/31/2017
**Application Type:** Modification and Renewal
**Application Schedule:** TV-1st Time and Renewal

**Existing Permit Data**
**Existing Permit Number:** 09913/R03
**Existing Permit Issue Date:** 01/21/2016
**Existing Permit Expiration Date:** 02/28/2018

**Total Actual emissions in TONS/YEAR:**

| CY | SO2 | NOX | VOC | CO | PM10 | Total HAP | Largest HAP |
|---|---|---|---|---|---|---|---|
| 2016 | --- | --- | 14.00 | --- | --- | 13.94 | 13.94 [Styrene] |

**Review Engineer:** Judy Lee

**Review Engineer's Signature:** **Date:**

**Comments / Recommendations:**
**Issue:** 09913T04
**Permit Issue Date:** XXXX, 2018
**Permit Expiration Date:** XXXX, 2023

## 1. Purpose of Application

On September 19, 2017, the North Carolina Department of Environmental Quality (NCDEQ), Raleigh Central Office (RCO) - Division of Air Quality (DAQ) received an Air Permit Application from Moore's Fiberglass, Inc. (Moore). The purpose of the application (Application No. 4000041.17A later changed to 4000041.18A) was to request an initial Title V Air Quality Permit. The application was received on September 19, 2017 in the Washington Regional Office (WaRO) and was considered incomplete. After a series of additional information requests, the application was deemed complete as of February 28, 2018. On October 31, 2017, WARO received a State/Renewal request from Moore's which was consolidated into this 1st Time Title

V Modification. The facility (Moore) currently holds Air Quality Permit No. 09913R03 with an expiration date of February 28, 2018 for a fiberglass boat parts facility in Walstonburg, Greene County, North Carolina (NC). Moore's Fiberglass, Inc. - Air Quality Title V Permit No. 09913R03[1] contains Specific Condition A.13 requiring that this facility submit a complete Title V permit application pursuant to 15A NCAC 2Q .0504 by January 21, 2017 (one year from the issuance of Permit No. 09913R03).

Application (No. 4000041.17A later changed to 4000041.18A) was submitted to fulfilled the above requirement; however, it was submitted late. No new emission sources or control devices were added as part of this application request. The full requirements of 40 CFR Part 63 - Subpart WWWW – National Emission Standards for Hazardous Air Pollutants for Reinforced Plastic Composites Production (40 CFR § 63.5780) will be placed in the revised permit along with the appropriate monitoring, recordkeeping and reporting requirements.

Renewal application (4000041.18B) was received on October 31, 2017 for Air Quality Permit No. 09913R03, which was at least nine months prior to the expiration date (February 28, 2018). Therefore, per 15A NCAC 2Q .0513, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewed permit has been issued or denied.

## 2. Facility Description

Moore manufactures fiberglass boat parts and other fiberglass products, such as; but not limited to large storm-water separator tanks and underground freezer junction boxes for grocery stores.[2] Products are custom made for clients, including the small parts for fiberglass boats (Grady-White Boats, Inc. – Facility ID No. 7400104 contract).

**List of Permitted Sources:**

| Emission Source ID | Emission Source Description | Control System ID | Control System Description |
|---|---|---|---|
| ES1 (**MACT WWWW**) | Gel coat and resin operation for small parts consisting of: | N/A | N/A |
| F1 through F4 | Four Gel coat resin lamination lines | | |
| FC5 and FC6 | Two Closed mold operations | | |
| TO | Trim operations of closed mold operations | | |
| HLU | Hand Layup operations | | |
| CG | Miscellaneous cutting and grinding operations | | |
| MCP | Mold cleaning and preparation process | | |
| SL-RTM2 | Resin transfer molding | | |

[1] Moore's Fiberglass, Inc. - Air Quality Title V Permit No. 09913R03 was issued on January 12, 2016 for reclassification of their existing small facility to a Major Title V facility.

[2] **NORTH CAROLINA DIVISION OF AIR QUALITY,** Inspection Report, Dated - 05/19/2017, Washington Regional Office (WaRO), Moore's Fiberglass, Inc., Facility ID 4000041, County/FIPS: Greene/079 The annual state compliance inspection was performed by Mr. Randall Jones, Environmental Engineer I on May 18, 2017.

**List of Insignificant / Exempt Activities:**
The facility has a building not contiguous to the property where storage and minor work occurs. This building is not included in the list of insignificant sources, but the inspector should be aware of it as it shows up on the resin tabulation sheets labeled as "other shop."[3]

Per Form B – Specific Emissions Source Information (Required for All Sources)[4], the emission source description provided is for an uncontrolled Fiberglass Lamination Operation for small parts (ID No. ES-1) manufactured in 2007.

Emission Source Process: Miscellaneous reinforced fiberglass operation. Products are custom made for clients including small parts for fiberglass boats. Open molding operations include 3 non-atomized resin spray/gel coat laminator guns.[5]

Expected schedule: 12 hours per day; 5 days per week; 52 weeks per year = 3,120 hours per year[6]

Per the memorandum from Mr. Charles Buckler, Meteorologist II, Air Quality Analysis Branch (AQAB) dated November 9, 2012[7], the modeling adequately demonstrates compliance with the AAL on a facility-wide basis for Styrene.

Table 1 – Maximum Modeled Impacts for Moore (ug/m$^3$)

| Pollutant | Average Period | Maximum allowable emissions (lb/hr) | Impact | AAL | 1992 | % of AAL |
|---|---|---|---|---|---|---|
| Styrene | 1-hour | 12.0 | 10034 | 10600 | 6276 | **94.6%** |

For more detail on the latest modeling please refer to the modeling Memorandum and supporting documentation.

Based on modeling data[8] air emission sources are currently:

[3] Ibid 2
[4] Application submittal received by DAQ-RCO on September 23, 2015 and September 19, 2017. All forms received on September 19, 2017 are identical to forms received on September 23, 2015 except Forms A1 – Facility (General Information) and Form E5 – Title V Compliance Certification (Required); which required new signatures from the facility's Responsible Official (RO). All supporting documentation was identical; with exception of Attachment – Calculations – SS-1 Summary VOC & PM Emissions. [Please see additional information responses for correct Calculations]
[5] Ibid 4
[6] Ibid 4
[7] Memorandum dated November 9, 2012 to Randall Jones, Environmental Engineer I, WaRO from Mr. Charles Buckler, Meteorologist II, Air Quality Analysis Branch (AQAB). Emission rates were based on maximum equipment design capacity and AP-42 emission factors for all combustion sources. Maximum allowable emissions (lb/hr) of styrene during a 1 hour averaging period resulted in a maximum allowable emissions rate of 12.0 lb/hr at 94.6 % of the Acceptable Ambient Levels; thus, no new modeling is necessary.
[8] Ibid 7

- 4 – Gelcoat Resin Lamination Lines (2.4 lb/hr per line); Modeling ID F1 – F4
- 2 – Closed Mold Operations (1.2 lb/hr per line); Modeling ID FC5 – FC6
- Expected annual hours of operation are 2007

Excerpt from Inspection Report:[9]
ES-1 consists of two buildings in what used to be a public school. The first building contains a room where both open and closed molding operations are conducted (divider curtain separates), a small woodworking operation (internally vented) and a trimming/finishing operation. The second building houses a closed molding operation producing small parts exclusively for Grady-White Boats (ID 7400104).

*"We walked through ES-1, which used to be a public high school. The source is two buildings, the main building where most operations take place, and a secondary building in the back where only closed molding takes place. We walked through the main building amongst all operations. There are no individual operations in the main building, they do some of everything in every room as the demand dictates. They will spray with the chop-gun, grind, and hand-roll, all in the same room, although they try and perform most of their grinding operations in a separate room. The areas where the open and closed molding operations occur vent externally and utilize dry filters over exhaust fans. Mr. Moore indicated that these filters are typically replaced every week or more depending on the work load.*

*There were no open drums of resin observed, as seen in previous inspections. When a drum or bucket containing product is emptied, the remaining material is allowed to dry before discarding the container. Mr. Moore indicated that the floors in the open molding areas are covered with paper. The overspray from the application is scraped mid-week and the paper is replaced at the end of the week. All waste-resin (from the overspray) is collected and placed in the dumpster and Waste Management picks it up once per week. Composite One delivers and reclaims all their 55-gallon drums.*

*In the closed molding area, several parts were being removed from their molds and prepped for trimming/finishing. In similar fashion, the floors in the open molding areas were also covered with paper and are replaced at the end of each week. There were no housekeeping issues observed during the inspection. No visible emissions were observed. No dust or odors were observed beyond the facility property boundary."*[10]

- **Facility name/address/legal name/responsible official check:**

- ✓ **IBEAM** compared with application submittal
- ✓ NC Department of the Secretary of State Corporation search: **https://www.sosnc.gov/** compared with **IBEAM** (See Attachment 1)

### 3. Application Chronology

Please see the attached Comprehensive Application Reports for 4000041.17A, 4000041.15A and email correspondence for more details.

[9] **NORTH CAROLINA DIVISION OF AIR QUALITY,** Inspection Report, Dated - 02/18/2015, Washington Regional Office, Moore's Fiberglass, Inc., NC Facility ID 4000041, County/FIPS: Greene/079
[10] Ibid 9

February 28, 2018 – Final response received from Buddy Bulow, Moore's consultant indicating that Table 3 to Subpart WWWW is the correct table, not Table 1. This was agreed upon by DAQ and Moore's after email correspondence and telephone conversations; however, DAQ-RCO is only referencing the final response (Please see discussions under Subpart WWWW – 40 CFR § 63.5805 below).

February 16, 2018 – Additional Technical Information Request sent to Moore's Fiberglass, Buddy Bulow, Moore's consultant and WARO via email regarding whether the use of Table 1 to Subpart WWWW is accurate. Attached to the email was a draft preliminary review for discussion purposes and to help evaluate which table is appropriate based on Moore's operations and original operation date. The review contains discussions regarding Tables 1 and 3 to Subpart WWWW and when each is applicable in an effort to facilitate in drafting and issuance of Moore's first Time Title V permit.

March 20, 2018 – Changed the application number (from 4000041.17A to 4000041.18A) and the type of application (1st Time Title V) listed in the DAQ IBEAM data base.

December 14, 2017 – Additional Technical Information Response received from Moore's Fiberglass.

December 1, 2017 – Additional Technical Information Request sent to Moore's Fiberglass.

October 31, 2017 – State/Renewal application (4000041.18B) received by WARO for processing.

October 6, 2017 – Application (4000041.17A) Initial Title V was received by NCDEQ – DAQ RCO for processing.

September 19, 2017 – Application (4000041.17A) Initial Title V was received by NCDEQ – DAQ Washington Regional Office (WARO).

January 21, 2016 – Permit No. 09913R03 issued to Moore's Fiberglass, Fee Class – Title V.

September 23, 2015 – Application (4000041.15A) to become Title V was received by NCDEQ – DAQ RCO for processing

September 18, 2015 – Application (4000041.15A) to become Title V was received by NCDEQ – DAQ Washington Regional Office (WARO)

## 4. New Equipment/Permit Changes and ESM Discussion/Change in Emissions

***Proposed Equipment Changes***

Per application submittal for this modification, the following changes were requested (see Form A2 for more details):

*Equipment to be ADDED:*

None

*Equipment to be MODIFIED:*

| Emission Source ID NO. | Emission Source Description | Control Device ID NO. | Control Device Description |
|---|---|---|---|
| Facility-wide | Reclassify Small facility to Title V. No changes to equipment or process. | | |

*Equipment to be REMOVED:*

None

***Permit Changes and ESM Discussion***

The following table represents the specific changes to the Moore's existing Permit No. 09913R03 as proposed to complete this permit modification:

| Page No. | Section | Description of Changes |
|---|---|---|
| Cover letter and throughout permit | Globally | Updated permit revision numbers, effective date and expiration date.<br>Updated permit application number, completeness date and permit issuance date.<br>Updated permit format from 300 to Title V format. |
| Pages 4 - 10 | Section 1 & 2 | Updated regulatory requirements in Title V format. |
| Pages 3 & 4 (Old pages) | A.8. (Removed) | Removed requirements for 15A NCAC 02D .0958, Work Practices Standards of Volatile Organic Compounds. This regulation has been repealed facility-wide. |
| Pages 11 - 23 | Section 3 - General Conditions | Added the latest version of General Conditions and List of Acronyms for Title V permits (Version 5.1, 08/03/2017) |

✓ ESM was updated as necessary (See pink sheet for approval).

Moore's Fiberglass submitted their original request for reclassification of their existing Small facility to become a Major Title V facility.[11] Moore's submitted the request due to the anticipation that their styrene emissions due to increased production would exceed the ten (10) tons individual Hazardous Air Pollutants (HAP) per year Title V permitting threshold.

Excerpt from January 21, 2006 Review:

*Based on a review of the application submittal, emission rates were based on maximum equipment design capacity and AP-42 emission factors (EF). In addition, facility-wide modeling for styrene was based on maximum operation and concentration at 95% of the AAL; thus, no further modeling is necessary for this modification. Due to increased production which resulted in Moore's styrene emissions exceeding the 10 tons per year (tpy) individual Hazardous Air*

[11] **North Carolina Division of Air Quality** Air Permit Review for issued Permit No. 09913R03 (Application No. 4000041.15A) signed on January 21, 2016.

*Pollutants (HAP) Title V permitting threshold.[12] Based on a review of their 1st and 2nd 2014 quarterly reports, WARO advised the facility that it had exceeded the threshold. However, Moore reviewed its operations and emissions calculations and presented information to WARO that indicates that no exceedance has occurred. WARO agrees with the determination.[13]*

Based on a review of the application submittal emission rates were based on maximum equipment design capacity and AP-42 emission factors (EF). In addition, facility-wide modeling was based on maximum operation and concentration at 95% of the AAL[14]; thus, no further modeling was deemed necessary (Please refer to Section 5 below for more information).

Expected Styrene emissions due to increased production utilizing a maximum allowable emissions rate of 12.0 pounds per hour (lb/hr) for styrene[15] are:

- Potential to emit (PTE)

12 lbs/hr * 8,760 hrs/yr * 1 ton/2000 lbs = 52.56 tons/yr

- Actual expected emissions

12 lbs/hr * 2,000 hrs/yr * 1 ton/2000 lbs = 12 tons per year (tpy)

✓ Thus, Styrene emissions greater than 10 tons per year (tpy) of any one individual HAP triggering this facility to become a Major Title V facility as defined in 15A NCAC 02Q:

Pursuant to **15A NCAC 02Q .0103 DEFINITIONS:**
For the purposes of this Subchapter, the definitions in G.S. 143-212 and G.S. 143-213 and the following definitions apply:
…
(20) "Insignificant activities" means activities defined as insignificant activities because of category or as insignificant activities because of size or production rate under Rule .0503 of this Subchapter.
(21) "Lesser quantity cutoff" means:
(a) for a source subject to the requirements of Section 112(d) or (j) of the federal Clean Air Act, the level of emissions of hazardous air pollutants below which the following are not required:
(i) maximum achievable control technology (MACT) or generally available control technology (GACT), including work practice standards, requirement under Section 112(d) of the federal Clean Air Act;
(ii) a MACT standard established under Section 112(j) of the federal Clean Air Act; or
(iii) substitute MACT or GACT adopted under Section 112(l) of the federal Clean Air Act.
(b) for modification of a source subject to, or that may be subject to, the requirements of Section 112(g) of the federal Clean Air Act, the level of emissions of hazardous air pollutants below which MACT is not required to be applied under Section 112(g) of the federal Clean Air Act; or

[12] Ibid 11
[13] Ibid 11
[14] Ibid 7
[15] Ibid 7

(c) for all other sources, potential emissions of each hazardous air pollutant below 10 tons per year and the aggregate potential emissions of all hazardous air pollutants below 25 tons per year.
(22) "Major facility" means a major source as defined under 40 CFR 70.2.
…

**40 CFR Part 70 - State Operating Permit Programs**
**§70.2 Definitions**
The following definitions apply to part 70. Except as specifically provided in this section, terms used in this part retain the meaning accorded them under the applicable requirements of the Act.
*Act* means the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.*
**…**
*Major source* means any stationary source (or any group of stationary sources that are located on one or more continuous or adjacent properties, and are under common control of the same person (or persons under common control)) belonging to a single major industrial grouping and that are described in paragraph (1), (2), or (3) of this definition. For the purposes of defining "major source," a stationary source or group of stationary sources shall be considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties belong to the same Major Group (*i.e.*, all have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987. State programs may adopt the following provision: For onshore activities belonging to Standard Industrial Classification (SIC) Major Group 13: Oil and Gas Extraction, pollutant emitting activities shall be considered adjacent if they are located on the same surface site; or if they are located on surface sites that are located within $^1/_4$ mile of one another (measured from the center of the equipment on the surface site) and they share equipment. Shared equipment includes, but is not limited to, produced fluids storage tanks, phase separators, natural gas dehydrators or emissions control devices. Surface site, as used in the introductory text of this definition, has the same meaning as in 40 CFR 63.761.

(1) A major source under section 112 of the Act, which is defined as:
(i) For pollutants other than radionuclides, any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, in the aggregate, 10 tons per year (tpy) or more of any hazardous air pollutant which has been listed pursuant to section 112(b) of the Act, 25 tpy or more of any combination of such hazardous air pollutants, or such lesser quantity as the Administrator may establish by rule. Notwithstanding the preceding sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources; or
(ii) For radionuclides, "major source" shall have the meaning specified by the Administrator by rule.

(2) A major stationary source of air pollutants, as defined in section 302 of the Act, that directly emits, or has the potential to emit, 100 tpy or more of any air pollutant subject to regulation (including any major source of fugitive emissions of any such pollutant, as determined by rule by the Administrator). The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the

purposes of section 302(j) of the Act, unless the source belongs to one of the following categories of stationary source: …

- Moore does not fall under the list as defined in Section 302 of the Act.

## 5. Regulatory Review

This facility is currently subject to the following regulations under Title 15A North Carolina Administrative Code (NCAC) per Air Quality Permit No. 09913R03:

- 15A NCAC 2D .0521, "Control of Visible Emissions"
- 15A NCAC 2D .0535, "Excess Emissions Reporting and Malfunctions"
- 15A NCAC 2D .0540, "Particulates from Fugitive Dust Emission Sources"
- 15A NCAC 2D .0958, "Work Practices for Sources of Volatile Organic Compounds" (Removed)
- 15A NCAC 2D .1100, "Control of Toxic Air Pollutants" & 2Q .0711 "Emission Rates Requiring a Permit"
- 15A NCAC 2D .1806, "Control and Prohibition of Odorous Emissions"

The only regulations that will be discussed in detail below are the regulations that will be affected by this application (4000041.18A) request. In addition to requirements listed above, regulations added, deleted, updated or modified as part of this Initial Title V process are:

✓ ***2D .1100 "Control of Toxic Air Pollutants"***

Memorandum dated November 9, 2012 (Attachment 2) to Randall Jones, Environmental Engineer I, Washington Regional Office (WARO) from Charles Buckler, Meteorologist II, Air Quality Analysis Branch (AQAB).[16] Modeled emission rates for styrene were based on maximum equipment design capacity and AP-42 emission factors for all combustion sources. Maximum allowable emissions pounds per hour (lb/hr) of styrene during a 1 hour averaging period resulted in a maximum allowable emissions rate of 12.0 lb/hr for styrene at 94.6 % of the Acceptable Ambient Levels (AALs) as previously discussed under Section 4 above.

❖ **IBEAM's Annual Facility's Emissions Report for 2016:**

Based on IBEAM's Emissions Inventory – <u>Facility Total Current Year (CY) 2016 Emission Summary Recorded in ED</u> (inserted below) for Moore's Fiberglass, Inc., speciated VOC data indicates that Styrene emissions for 2016 were 27,884.50 pounds per year (lbs/yr), which equates to 13.94 tpy Styrene emissions. As previously stated, the facility currently operates approximately 2,000 hours per year (hrs/yr). Based DAQ's emissions inventory data, Moore's Fiberglass operated 2,359 hours in 2016.

- Actual 2016 Styrene hourly emissions

27,884.50 lbs/yr divided by 2,359 hrs/yr 2016 = 11.82 lb/hr Styrene emitted

[16] Ibid 7

✓ Less than the 12 lb/hr AAL limit previously modeled; thus, compliance with the previously modeled maximum allowable limit is indicated.

**Facility Total CY 2016 Emission Summary Recorded in ED** **Facility ID #:** 4000041

**Facility Name:** Moore's Fiberglass, Inc. **Permit #(s):** 09913R03

| Green House Gases Pollutants (GHG) Pollutant | CAS | Actual Emissions Tons/Yr | | Demini-mus | % Change |
|---|---|---|---|---|---|
| | | Not Reported | Not Reported | | N/A |
| CO2 equivalent (sum of individual GHG pollutant emission times their 1995 IPCC Global Warming Potential (GWP), converted to metric tons) | | No GHGs Reported | | | |

| Criteria Pollutants Pollutant | CAS | Actual Emissions (Tons/Year) CY 2016 from ED | CY 2011 from Fees | Demini-mus | % Change |
|---|---|---|---|---|---|
| VOC | VOC | 14.00 | 8.89 | 0.5 | 57.5% |

| Hazardous Air Pollutants (HAPs) and/or Toxic Air Pollutants (TAPs) Pollutant | CAS | Actual Emissions (Pounds/Year) CY 2016 from ED | CY 2011 from Fees | Demini-mus | % Change |
|---|---|---|---|---|---|
| MEK (methyl ethyl ketone, 2-butanone) | 78-93-3 | 178.00 | 1,285.00 | 100.0 | -86.1% |
| Methyl methacrylate | 80-62-6 | Not Reported | Not Reported | 1,000.0 | N/A |
| Styrene | 100-42-5 | 27,884.50 | 16,272.00 | 100.0 | 71.4% |

| | | |
|---|---|---|
| **Largest Individual HAP** | **Styrene** | **27,884.50 lbs** |
| **Total HAP Emissions** | | **27,884.50 lbs** |
| **Largest Individual CAP** | **VOC** | **14.00 tons** |
| **Total CAP Emissions** | | **14.00 tons** |
| **Total TAP Emissions** | | **28,062.50 lbs** |
| **Total Aggregate Emissions** | | **14.00 tons** |

✓ 15A NCAC 2D .1111, "Maximum Achievable Control Technology"

**Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories**
**Subpart WWWW – National Emission Standards for Hazardous Air Pollutants for Reinforced Plastic Composites Production (40 CFR § 63.5780)**

## §63.5780 What is the purpose of this subpart?

This subpart establishes national emissions standards for hazardous air pollutants (NESHAP) for reinforced plastic composites production. This subpart also establishes requirements to demonstrate initial and continuous compliance with the hazardous air pollutants (HAP) emissions standards.

✓ The rule covers open molding, closed molding, mixing, and equipment cleaning operations, as well as the storage of HAP-containing materials. This MACT specifically regulates organic HAPs in the form of styrene from these facilities.

**§63.5780 What is the purpose of this subpart?**
This subpart establishes national emissions standards for hazardous air pollutants (NESHAP) for reinforced plastic composites production. This subpart also establishes requirements to demonstrate initial and continuous compliance with the hazardous air pollutants (HAP) emissions standards.

**§63.5785 Am I subject to this subpart?**
(a) You are subject to this subpart if you own or operate a reinforced plastic composites production facility that is located at a major source of HAP emissions. Reinforced plastic composites production is limited to operations in which reinforced and/or nonreinforced plastic composites or plastic molding compounds are manufactured using thermoset resins and/or gel coats that contain styrene to produce plastic composites. The resins and gel coats may also contain materials designed to enhance the chemical, physical, and/or thermal properties of the product. Reinforced plastic composites production also includes cleaning, mixing, HAP-containing materials storage, and repair operations associated with the production of plastic composites.
…

**§63.5787 What if I also manufacture fiberglass boats or boat parts?**
(a) If your source meets the applicability criteria in §63.5785, and is not subject to the Boat Manufacturing NESHAP (40 CFR part 63, subpart VVVV), you are subject to this subpart regardless of the final use of the parts you manufacture.

_____

**Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories**
**Subpart VVVV - National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing**
**§63.5680 What is the purpose of this subpart?**
(a) This subpart establishes national emission standards for hazardous air pollutants (HAP) for new and existing boat manufacturing facilities with resin and gel coat operations, carpet and fabric adhesive operations, or aluminum recreational boat surface coating operations. This

subpart also establishes requirements to demonstrate initial and continuous compliance with the emission standards.

**§63.5683 Does this subpart apply to me?**

(a) This subpart applies to you if you meet both of the criteria listed in paragraphs (a)(1) and (2) of this section.

(1) You are the owner or operator of a boat manufacturing facility that builds fiberglass boats or aluminum recreational boats.

(2) Your boat manufacturing facility is a major source of HAP either in and of itself, or because it is collocated with other sources of HAP, such that all sources combined constitute a major source.

✓ Per 40 CFR § 63.5683(a) this subpart does NOT apply to Moore Fiberglass.

✓ Thus, per 40 CFR § 63.5683 and 40 CFR § 63.5787(a) above, Subpart VVVV does NOT apply to Moore Fiberglass, only Subpart WWWW.

**§63.5790 What parts of my plant does this subpart cover?**

(a) This subpart applies to each new or existing affected source at reinforced plastic composites production facilities.

(b) The affected source consists of all parts of your facility engaged in the following operations: Open molding, closed molding, centrifugal casting, continuous lamination, continuous casting, polymer casting, pultrusion, sheet molding compound (SMC) manufacturing, bulk molding compound (BMC) manufacturing, mixing, cleaning of equipment used in reinforced plastic composites manufacture, HAP-containing materials storage, and repair operations on parts you also manufacture.

(c) The following operations are specifically excluded from any requirements in this subpart: application of mold sealing and release agents; mold stripping and cleaning; repair of parts that you did not manufacture, including non-routine manufacturing of parts; personal activities that are not part of the manufacturing operations (such as hobby shops on military bases); prepreg materials as defined in §63.5935; non-gel coat surface coatings; application of putties, polyputties, and adhesives; repair or production materials that do not contain resin or gel coat; research and development operations as defined in section 112(c)(7) of the CAA; polymer casting; and closed molding operations (except for compression/injection molding). Note that the exclusion of certain operations from any requirements applies only to operations specifically listed in this paragraph. The requirements for any co-located operations still apply.

(d) Production resins that must meet military specifications are allowed to meet the organic HAP limit contained in that specification. In order for this exemption to be used, you must supply to the permitting authority the specifications certified as accurate by the military procurement officer, and those specifications must state a requirement for a specific resin, or a specific resin HAP content. Production resins for which this exemption is used must be applied with non-atomizing resin application equipment unless you can demonstrate this is infeasible. You must keep a record of the resins for which you are using this exemption.

[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50124, Aug. 25, 2005]

**§63.5795 How do I know if my reinforced plastic composites production facility is a new affected source or an existing affected source?**

(a) A reinforced plastic composites production facility is a new affected source if it meets all the criteria in paragraphs (a)(1) and (2) of this section.

(1) You commence construction of the source after August 2, 2001.

(2) You commence construction, and no other reinforced plastic composites production source exists at that site.

(b) For the purposes of this subpart, an existing affected source is any affected source that is not a new affected source.

✓ Per Form B of the application submittal[17] ES-1 was manufactured in 2007; thus this is a new affected source.

Table 2 to Subpart WWWW of Part 63 — Compliance Dates for New and Existing Reinforced Plastic Composites Facilities

As required in 40 CFR § 63.5800 and 40 CFR § 63.5840 you must demonstrate compliance with the standards by the dates in the following table:

| If your facility is . . . | And. . . | Then you must comply by this date . . . |
|---|---|---|
| 5. A new source | Is an area source at startup and becomes a major source | Immediately upon becoming a major source. |

- Thus, immediately upon becoming a major source of HAP; Moore must be in compliance with the requirements of Subpart WWWW.

✓ Per Moore's application submittal, calculation of emissions from open molding Table 1 (See Attached) of Subpart WWWW is used. Attachment – Calculations – SS-3 Regulation WWWW Emission Factors[18] provides a detailed list of equations using the percent styrene to calculate the emission factors used in pounds per ton (lb/ton).

**§63.5796 What are the organic HAP emissions factor equations in Table 1 to this subpart, and how are they used in this subpart?**

Emissions factors are used in this subpart to determine compliance with certain organic HAP emissions limits in Tables 3 and 5 to this subpart. You may use the equations in Table 1 to this subpart to calculate your emissions factors. Equations are available for each open molding operation and centrifugal casting operation and have units of pounds of organic HAP emitted per ton (lb/ton) of resin or gel coat applied. These equations are intended to provide a method for you to demonstrate compliance without the need to conduct for a HAP emissions test. In lieu of these equations, you can elect to use site-specific organic HAP emissions factors to demonstrate compliance provided your site-specific organic HAP emissions factors are incorporated in the facility's air emissions permit and are based on actual facility HAP emissions test data. You may also use the organic HAP emissions factors calculated using the equations in Table 1 to this subpart, combined with resin and gel coat use data, to calculate your organic HAP emissions.

[17] Ibid 2
[18] Ibid 4

- Most Title V facilities subject to Subpart WWWW have a table (example shown below) with a list of emission limits, as was discussed in Moore's previous review, based on the facilities calculations and supporting documentation in accordance with Subpart WWWW:

| Affected Source(s) | Pollutant | Application Type | Emissions Limit |
|---|---|---|---|
| Open Molding – gel coat | Organic HAP | Clear production gel coat | 522 lb/ton |
| | | White/off-white pigmented gel coating | 267/ton |

Based on the activities and several HAP percentages used at Moore's, the facility uses the equations in Table 1 to Subpart WWWW (as mentioned above). However, after a more thorough review of Moore's operations and activities; and discussions between DAQ and Moore's consultant regarding Subpart WWWW applicability as discussed in the February 16, 2018 email[19] it was determined that the use of Table 1 to Subpart WWWW is not appropriate per 40 CFR § 63.5805(c) and Moore's is subject to the requirements of Table 3 and 4 to Subpart WWWWW (see discussion under §63.5805 below).

**§63.5797 How do I determine the organic HAP content of my resins and gel coats?**
In order to determine the organic HAP content of resins and gel coats, you may rely on information provided by the material manufacturer, such as manufacturer's formulation data and material safety data sheets (MSDS), using the procedures specified in paragraphs (a) through (c) of this section, as applicable.
(a) Include in the organic HAP total each organic HAP that is present at 0.1 percent by mass or more for Occupational Safety and Health Administration (OSHA)-defined carcinogens, as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other organic HAP compounds.
(b) If the organic HAP content is provided by the material supplier or manufacturer as a range, you must use the upper limit of the range for determining compliance. If a separate measurement of the total organic HAP content, such as an analysis of the material by EPA Method 311 of appendix A to 40 CFR part 63, exceeds the upper limit of the range of the total organic HAP content provided by the material supplier or manufacturer, then you must use the measured organic HAP content to determine compliance.
(c) If the organic HAP content is provided as a single value, you may use that value to determine compliance. If a separate measurement of the total organic HAP content is made and is less than 2 percentage points higher than the value for total organic HAP content provided by the material supplier or manufacturer, then you still may use the provided value to demonstrate compliance. If the measured total organic HAP content exceeds the provided value by 2 percentage points or more, then you must use the measured organic HAP content to determine compliance.

[19] Email correspondence to Moore's Fiberglass and Moore's consultant, Buddy Bulow, copying WARO regarding applicability of Table 1 to Subpart WWWW - Additional Technical Information Request.

- Moore's MSDS sheets were reviewed and calculations checked based on additional information submittals,[20] as well as information submitted as part of the original application submittals.

**§63.5800 When do I have to comply with this subpart?**
You must comply with the standards in this subpart by the dates specified in Table 2 to this subpart. Facilities meeting an organic HAP emissions standard based on a 12-month rolling average must begin collecting data on the compliance date in order to demonstrate compliance.

✓ As indicated above per **§63.5795** Moore Fiberglass is considered a new affected source and must be in compliance immediately upon becoming a Major source.

**§63.5805 What standards must I meet to comply with this subpart?**
You must meet the requirements of paragraphs (a) through (h) of this section that apply to you. You may elect to comply using any options to meet the standards described in §63.5810 through §63.5830. Use the procedures in §63.5799 to determine if you meet or exceed the 100 tpy threshold.
(a) If you have an existing facility that has any centrifugal casting or continuous casting/lamination operations, you must meet the requirements of paragraph (a)(1) or (2) of this section:

(1) If the combination of all centrifugal casting and continuous lamination/casting operations emit 100 tpy or more of HAP, …
(2) If the combination of all centrifugal casting and continuous lamination/casting operations emit less than 100 tpy of HAP, then centrifugal casting and continuous lamination/casting operations must meet the appropriate requirements in Table 3 (See Attached) to this subpart.

✓ As indicated above per **§63.5795** Moore Fiberglass is considered a new affected source.

(b) All operations at existing facilities not listed in paragraph (a) of this section must meet the organic HAP emissions limits in Table 3 to this subpart and the work practice standards in Table 4 (See Attached) to this subpart that apply, regardless of the quantity of HAP emitted.
(c) If you have a new facility that emits less than 100 tpy of HAP from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC manufacturing, mixing, and BMC manufacturing, you must meet the organic HAP emissions limits in Table 3 to this subpart and the work practice standards in Table 4 to this subpart that apply to you.

✓ Based on Moore's PTE the HAP emissions are less than 100 tpy of HAP from all operations.
✓ Per Table 4 - 1. a new or existing closed molding operation using compression/injection molding; Moore's will follow work practice standards for all closed molding operations.

[20] Additional information response received on December 14, 2017 and in response to additional information request sent via email on February 16, 2018 and final response received on February 28, 2018 from Buddy Bulow, Moore's Consultant.

- ✓ Per the application submittal all closed molding operations are calculated using 2 percent of available styrene.

- ❖ Based on the above, RCO sent an email to Moore's Fiberglass and their consultant, as well as, copied the WARO on February 16, 2018. Through various email correspondence and telephone conversations this matter was resolved. The final determination was that Moore's facility is subject to Table 3 to Subpart WWWW; thus, this will be placed in the revised permit issued for Moore's Fiberglass. Based on data provided by the manufacturer, Moore's Fiberglass is in compliance with the emission factors contained in Table 3.

**§63.5810 What are my options for meeting the standards for open molding and centrifugal casting operations at new and existing sources?**

You must use one of the following methods in paragraphs (a) through (d) of this section to meet the standards for open molding or centrifugal casting operations in Table 3 or 5 to this subpart. You may use any control method that reduces organic HAP emissions, including reducing resin and gel coat organic HAP content, changing to nonatomized mechanical application, using covered curing techniques, and routing part or all of your emissions to an add-on control. You may use different compliance options for the different operations listed in Table 3 or 5 to this subpart. The necessary calculations must be completed within 30 days after the end of each month. You may switch between the compliance options in paragraphs (a) through (d) of this section. When you change to an option based on a 12-month rolling average, you must base the average on the previous 12 months of data calculated using the compliance option you are changing to, unless you were previously using an option that did not require you to maintain records of resin and gel coat use. In this case, you must immediately begin collecting resin and gel coat use data and demonstrate compliance 12 months after changing options.

- ✓ Based on Moore's application submittal the available compliance options have been placed in the revised permit. There are currently no controls; thus, that option has been left out.

Per Form B9 – Emission Source (Other) for Fiberglass lamination operation for small parts (ID No. ES-1) the following materials enter the process on a continuous basis:

| Material Type | Units | Maximum Design Capacity * (Units/Year) |
|---|---|---|
| Resin – Nonatomized – Open Molding | Pounds (lbs) | 325,611 |
| Gel Coat Nonatomized – Open Molding | | 176,482 |
| Fiberglass | | 189,915 |
| Additive Monomer (MMA) | | 8,404 |
| Catalyst (MEKP) | | 13,704 |

*Maximum design is the estimated maximum potential operation at 50% above historical actual maximum operation (HAM method).

Per Application Submittal Attachment[21] – Calculations SS-1 Summary Maximum Potential Emissions – VOCs & HAPs

[21] Ibid 4

| Application | Styrene (tpy) | MMA (tpy) | MEK (tpy) | Total VOCs (tpy) | Total HAPs (tpy) |
|---|---|---|---|---|---|
| Closed Molding – Resin Transfer Molding Trim System | 1.19 | | | 1.19 | 1.19 |
| Open Molding – Hand Layup | 0.44 | | | 0.44 | 0.44 |
| Open Molding – Non-atomized Spray | 14.2 | 1 | | 15 | 15.00 |
| Open Molding – Additives, Catalysts, etc | | | 0.21 | 0.21 | 0.00 |
| **All Applications** | 15.8 | 0.8 | 0.21 | 16.8 | 16.6 |

**§63.5835 What are my general requirements for complying with this subpart?**
(a) You must be in compliance at all times with the work practice standards in Table 4 to this subpart, as well as the organic HAP emissions limits in Tables 3, or 5, or the organic HAP content limits in Table 7 to this subpart, as applicable, that you are meeting without the use of add-on controls.
(b) You must be in compliance with all organic HAP emissions limits in this subpart that you meet using add-on controls, except during periods of startup, shutdown, and malfunction.
(c) You must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in §63.6(e)(1)(i).
(d) You must develop a written startup, shutdown, and malfunction plan according to the provisions in §63.6(e)(3) for any organic HAP emissions limits you meet using an add-on control.
[68 FR 19402, Apr. 21, 2003, as amended at 71 FR 20466, Apr. 20, 2006]

- The appropriate monitoring, recordkeeping and reporting requirements were added to the revised permit for Moore's Initial Title V permit request.

## §63.5935 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in 40 CFR 63.2, and in this section as follows:
*Atomized mechanical application* means application of resin or gel coat with spray equipment that separates the liquid into a fine mist. This fine mist may be created by forcing the liquid under high pressure through an elliptical orifice, bombarding a liquid stream with directed air jets, or a combination of these techniques…
*Centrifugal casting* means a process for fabricating cylindrical composites, such as pipes, in which composite materials are positioned inside a rotating hollow mandrel and held in place by centrifugal forces until the part is sufficiently cured to maintain its physical shape…
*Cleaning* means removal of composite materials, such as cured and uncured resin from equipment, finished surfaces, floors, hands of employees, or any other surfaces.
*Clear production gel coat* means an unpigmented, quick-setting resin used to improve the surface appearance and/or performance of composites. It can be used to form the surface layer of any composites other than those used for molds in tooling operations…
*Closed molding* means a grouping of processes for fabricating composites in a way that HAP-containing materials are not exposed to the atmosphere except during the material loading stage (*e.g.*, compression molding, injection molding, and resin transfer molding). Processes where the

mold is covered with plastic (or equivalent material) prior to resin application, and the resin is injected into the covered mold are also considered closed molding.

*Composite* means a shaped and cured part produced by using composite materials.

*Composite materials* means the raw materials used to make composites. The raw materials include styrene containing resins. They may also include gel coat, monomer, catalyst, pigment, filler, and reinforcement.

*Continuous casting* means a continuous process for fabricating composites in which composite materials are placed on an in-line conveyor belt to produce cast sheets that are cured in an oven.

*Continuous lamination* means a continuous process for fabricating composites in which composite materials are typically sandwiched between plastic films, pulled through compaction rollers, and cured in an oven. This process is generally used to produce flat or corrugated products on an in-line conveyor.

*Continuous lamination/casting* means a grouping of processes that involves the use of continuous lamination and/or continuous casting.

*Corrosion-resistant gel coat* means a gel coat used on a product made with a corrosion-resistant resin that has a corrosion-resistant end-use application.

*Corrosion-resistant end-use applications* means applications where the product is manufactured specifically for an application that requires a level of chemical inertness or resistance to chemical attack above that required for typical reinforced plastic composites products. These applications include, but are not limited to, chemical processing and storage; pulp and paper production; sewer and wastewater treatment; power generation; potable water transfer and storage; food and drug processing; pollution or odor control; metals production and plating; semiconductor manufacturing; petroleum production, refining, and storage; mining; textile production; nuclear materials storage; swimming pools; and cosmetic production, as well as end-use applications that require high strength resins.

*Corrosion-resistant industry standard* includes the following standards: ASME RTP-1 or Sect. X; ASTM D5364, D3299, D4097, D2996, D2997, D3262, D3517, D3754, D3840, D4024, D4160, D4161, D4162, D4184, D3982, or D3839; ANSI/AWWA C950; UL 215, 1316 or 1746, IAPMO PS-199, or written customer requirements for resistance to specified chemical environments.

*Corrosion-resistant product* means a product made with a corrosion-resistant resin and is manufactured to a corrosion-resistant industry standard, or a food contact industry standard, or is manufactured for corrosion-resistant end-use applications involving continuous or temporary chemical exposures.

*Corrosion-resistant resin* means a resin that either:

(1) Displays substantial retention of mechanical properties when undergoing ASTM C-581 coupon testing, where the resin is exposed for 6 months or more to one of the following materials: Material with a pH ≥2.0 or ≤3.0, oxidizing or reducing agents, organic solvents, or fuels or additives as defined in 40 CFR 79.2. In the coupon testing, the exposed resin needs to demonstrate a minimum of 50 percent retention of the relevant mechanical property compared to the same resin in unexposed condition. In addition, the exposed resin needs to demonstrate an increased retention of the relevant mechanical property of at least 20 percentage points when compared to a similarly exposed general-purpose resin. For example, if the general-purpose resin retains 45 percent of the relevant property when tested as specified above, then a corrosion-resistant resin needs to retain at least 65 percent (45 percent plus 20 percent) of its property. The general-purpose resin

used in the test needs to have an average molecular weight of greater than 1,000, be formulated with a 1:2 ratio of maleic anhydride to phthalic anhydride and 100 percent diethylene glycol, and a styrene content between 43 to 48 percent; or
(2) Complies with industry standards that require specific exposure testing to corrosive media, such as UL 1316, UL 1746, or ASTM F-1216.

*Filament application* means an open molding process for fabricating composites in which reinforcements are fed through a resin bath and wound onto a rotating mandrel. The materials on the mandrel may be rolled out or worked by using nonmechanical tools prior to curing. Resin application to the reinforcement on the mandrel by means other than the resin bath, such as spray guns, pressure-fed rollers, flow coaters, or brushes is not considered filament application.

*Filled Resin* means that fillers have been added to a resin such that the amount of inert substances is at least 10 percent by weight of the total resin plus filler mixture. Filler putty made from a resin is considered a filled resin.

*Fillers* means inert substances dispersed throughout a resin, such as calcium carbonate, alumina trihydrate, hydrous aluminum silicate, mica, feldspar, wollastonite, silica, and talc. Materials that are not considered to be fillers are glass fibers or any type of reinforcement and microspheres.

*Fire retardant gel coat* means a gel coat used for products for which low-flame spread/low-smoke resin is used.

*Fluid impingement technology* means a spray gun that produces an expanding non-misting curtain of liquid by the impingement of low-pressure uninterrupted liquid streams.

*Gel Coat* means a quick-setting resin used to improve surface appearance and/or performance of composites. It can be used to form the surface layer of any composites other than those used for molds in tooling operations.

*Gel coat application* means a process where either clear production, pigmented production, white/off-white or tooling gel coat is applied.

*HAP-containing materials storage* means an ancillary process which involves keeping HAP-containing materials, such as resins, gel coats, catalysts, monomers, and cleaners, in containers or bulk storage tanks for any length of time. Containers may include small tanks, totes, vessels, and buckets.

*High Performance gel coat* means a gel coat used on products for which National Sanitation Foundation, United States Department of Agriculture, ASTM, durability, or other property testing is required.

*High strength gel coat* means a gel coat applied to a product that requires high strength resin.

*High strength resins* means polyester resins which have a casting tensile strength of 10,000 pounds per square inch or more and which are used for manufacturing products that have high strength requirements such as structural members and utility poles.

*Injection molding* means a closed molding process for fabricating composites in which composite materials are injected under pressure into a heated mold cavity that represents the exact shape of the product. The composite materials are cured in the heated mold cavity.

*Low Flame Spread/Low Smoke Products* means products that meet the following requirements. The products must meet both the applicable flame spread requirements and the applicable smoke requirements. Interior or exterior building application products must meet an ASTM E-84 Flame Spread Index of less than or equal to 25, and Smoke Developed Index of less than or equal to 450, or pass National Fire Protection Association 286 Room Corner Burn Test with no flash over and total smoke released not exceeding 1000 meters square. Mass transit application products must meet an ASTM E-162 Flame Spread Index of less than or equal to 35 and ASTM E662

Smoke Density Ds @ 1.5 minutes less than or equal to 100 and Ds @ 4 minutes less than to equal to 200. Duct application products must meet ASTM E084 Flame Spread Index less than or equal to 25 and Smoke Developed Index less than or equal to 50 on the interior and/or exterior of the duct.

*Manual resin application* means an open molding process for fabricating composites in which composite materials are applied to the mold by pouring or by using hands and nonmechanical tools, such as brushes and rollers. Materials are rolled out or worked by using nonmechanical tools prior to curing. The use of pressure-fed rollers and flow coaters to apply resin is not considered manual resin application.

*Mechanical resin application* means an open molding process for fabricating composites in which composite materials (except gel coat) are applied to the mold by using mechanical tools such as spray guns, pressure-fed rollers, and flow coaters. Materials are rolled out or worked by using nonmechanical tools prior to curing.

*Mixing* means the blending or agitation of any HAP-containing materials in vessels that are 5.00 gallons (18.9 liters) or larger, and includes the mixing of putties or polyputties. Mixing may involve the blending of resin, gel coat, filler, reinforcement, pigments, catalysts, monomers, and any other additives.

*Mold* means a cavity or matrix into or onto which the composite materials are placed and from which the product takes its form.

*Neat gel coat* means the resin as purchased for the supplier, but not including any inert fillers.

*Neat gel coat plus* means neat gel coat plus any organic HAP-containing materials that are added to the gel coat by the supplier or the facility, excluding catalysts and promoters. Neat gel coat plus does include any additions of styrene or methyl methacrylate monomer in any form, including in catalysts and promoters.

*Neat resin* means the resin as purchased from the supplier, but not including any inert fillers.

*Neat resin plus* means neat resin plus any organic HAP-containing materials that are added to the resin by the supplier or the facility. Neat resin plus does not include any added filler, reinforcements, catalysts, or promoters. Neat resin plus does include any additions of styrene or methyl methacrylate monomer in any form, including in catalysts and promoters.

*Nonatomized mechanical application* means the use of application tools other than brushes to apply resin and gel coat where the application tool has documentation provided by its manufacturer or user that this design of the application tool has been organic HAP emissions tested, and the test results showed that use of this application tool results in organic HAP emissions that are no greater than the organic HAP emissions predicted by the applicable nonatomized application equation(s) in Table 1 to this subpart. In addition, the device must be operated according to the manufacturer's directions, including instructions to prevent the operation of the device at excessive spray pressures. Examples of nonatomized application include flow coaters, pressure fed rollers, and fluid impingement spray guns.

*Noncorrosion-resistant resin* means any resin other than a corrosion-resistant resin or a tooling resin.

*Noncorrosion-resistant product* means any product other than a corrosion-resistant product or a mold.

*Non-routine manufacture* means that you manufacture parts to replace worn or damaged parts of a reinforced plastic composites product, or a product containing reinforced plastic composite parts, that was originally manufactured in another facility. For a part to qualify as non-routine manufacture, it must be used for repair or replacement, and the manufacturing schedule must be

based on the current or anticipated repair needs of the reinforced plastic composites product, or a product containing reinforced plastic composite parts.
*Operation* means a specific process typically found at a reinforced plastic composites facility. Examples of operations are noncorrosion-resistant manual resin application, corrosion-resistant mechanical resin application, pigmented gel coat application, mixing and HAP-containing materials storage.
*Operation group* means a grouping of individual operations based primarily on mold type. Examples are open molding, closed molding, and centrifugal casting.
*Open molding* means a process for fabricating composites in a way that HAP-containing materials are exposed to the atmosphere. Open molding includes processes such as manual resin application, mechanical resin application, filament application, and gel coat application. Open molding also includes application of resins and gel coats to parts that have been removed from the open mold.
*Pigmented gel coat* means a gel coat that has a color, but does not contain 10 percent of more titanium dioxide by weight. It can be used to form the surface layer of any composites other than those used for molds in tooling operations.
*Polymer casting* means a process for fabricating composites in which composite materials are ejected from a casting machine or poured into an open, partially open, or closed mold and cured. After the composite materials are poured into the mold, they are not rolled out or worked while the mold is open, except for smoothing the material and/or vibrating the mold to remove bubbles. The composite materials may or may not include reinforcements. Products produced by the polymer casting process include cultured marble products and polymer concrete.
*Preform Injection* means a form of pultrusion where liquid resin is injected to saturate reinforcements in an enclosed system containing one or more chambers with openings only large enough to admit reinforcements. Resin, which drips out of the chamber(s) during the process, is collected in closed piping or covered troughs and then into a covered reservoir for recycle. Resin storage vessels, reservoirs, transfer systems, and collection systems are covered or shielded from the ambient air. Preform injection differs from direct die injection in that the injection chambers are not directly attached to the die.
*Prepreg materials* means reinforcing fabric received precoated with resin which is usually cured through the addition of heat.
*Pultrusion* means a continuous process for manufacturing composites that have a uniform cross-sectional shape. The process consists of pulling a fiber-reinforcing material through a resin impregnation chamber or bath and through a shaping die, where the resin is subsequently cured. There are several types of pultrusion equipment, such as open bath, resin injection, and direct die injection equipment.
*Repair* means application of resin or gel coat to a part to correct a defect, where the resin or gel coat application occurs after the part has gone through all the steps of its typical production process, or the application occurs outside the normal production area. For purposes of this subpart, rerouting a part back through the normal production line, or part of the normal production line, is not considered repair.
*Resin transfer molding* means a process for manufacturing composites whereby catalyzed resin is transferred or injected into a closed mold in which fiberglass reinforcement has been placed.
*Sheet molding compound (SMC)* means a ready-to-mold putty-like molding compound that contains resin(s) processed into sheet form. The molding compound is sandwiched between a top and a bottom film. In addition to resin(s), it may also contain catalysts, fillers, chemical

thickeners, mold release agents, reinforcements, and other ingredients. Sheet molding compound can be used in compression molding to manufacture reinforced plastic composites products.
*Shrinkage controlled resin* means a resin that when promoted, catalyzed, and filled according to the resin manufacturer's recommendations demonstrates less than 0.3 percent linear shrinkage when tested according to ASTM D2566.
*SMC manufacturing* means a process which involves the preparation of SMC.
*Tooling gel coat* means a gel coat that is used to form the surface layer of molds. Tooling gel coats generally have high heat distortion temperatures, low shrinkage, high barcol hardness, and high dimensional stability.
*Tooling resin* means a resin that is used to produce molds. Tooling resins generally have high heat distortion temperatures, low shrinkage, high barcol hardness, and high dimensional stability.
*Uncontrolled oven organic HAP emissions* means those organic HAP emissions emitted from the oven through closed vent systems to the atmosphere and not to a control device. These organic HAP emissions do not include organic HAP emissions that may escape into the workplace through the opening of panels or doors on the ovens or other similar fugitive organic HAP emissions in the workplace.
*Uncontrolled wet-out area organic HAP emissions* means any or all of the following: Organic HAP emissions from wet-out areas that do not have any capture and control, organic HAP emissions that escape from wet-out area enclosures, and organic HAP emissions from wet-out areas that are captured by an enclosure but are vented to the atmosphere and not to an add-on control device.
*Unfilled* means that there has been no addition of fillers to a resin or that less than 10 percent of fillers by weight of the total resin plus filler mixture has been added.
*Vapor suppressant* means an additive, typically a wax, that migrates to the surface of the resin during curing and forms a barrier to seal in the styrene and reduce styrene emissions.
*Vapor-suppressed resin* means a resin containing a vapor suppressant added for the purpose of reducing styrene emissions during curing.
*White and off-white gel coat* means a gel coat that contains 10 percent of more titanium dioxide by weight.
[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50129, Aug. 25, 2005]

- ✓ 15A NCAC 2D.0515 PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

(a) The allowable emission rates for particulate matter from any stack, vent, or outlet, resulting from any industrial process for which no other emission control standards[1] are applicable, shall not exceed the level calculated with the equation $E = 4.10(P)^{0.67}$ calculated to three significant figures for process rates less than or equal to 30 tons per hour. For process rates greater than 30 tons per hour, the allowable emission rates for particulate matter shall not exceed the level calculated with the equation $E = 55.0(P)^{0.11} - 40$ calculated to three significant figures. For the purpose of these equations "E" equals the maximum allowable emission rate for particulate matter in pounds per hour and "P" equals the process rate in tons per hour.
(b) Process rate means the total weight of all materials introduced into any specific process that may cause any emission of particulate matter. Solid fuels charged are considered as part of the process weight, but liquid and gaseous fuels and combustion air are not. For a cyclical or batch operation, the process rate is derived by dividing the total process weight by the number of hours in one complete operation from the beginning of any given process to the completion thereof,

excluding any time during which the equipment is idle. For a continuous operation, the process rate is derived by dividing the process weight for a typical period of time by the number of hours in that typical period of time.

[1]Emission control standards means any particulate emission standard found in 15A NCAC 2D. It does not include limits taken to avoid the applicability of any federal or State rule, regardless of the averaging time of the limit.

Per application submittal:
Form D1[22] the potential PM emissions before controls and limitations are 1.3 tons per year. Per Form D4[23] particulates from overspray of guns spraying resin and gel coat at 502,000 pounds per hour maximum estimated uncontrolled PM is 1.4 lb/hr before filters.

P = 502,000 lb/hr * 1 ton/2000 lbs = 251 tph; > 30 therefore use the following equation:

$E = 55.0(P)^{0.11} - 40$
E = 61.0 lbs/hr

Form B[24] has no PM reported, Form D4 indicates PM is 1.4 lb/hr before filters and Attachment – Calculations SS-1 indicates PM and $PM_{10}$ emissions from all applications are 1.31 tpy and 0.65 tpy, respectively; thus, compliance is expected.

<u>15A NCAC 2D .0958 "Work Practices for Sources of Volatile Organic Compounds"</u>
On November 1, 2016, amendments to 15A NCAC 02D .0902 were finalized to narrow applicability of work practice standards in 15A NCAC 02D .0958 from statewide to the maintenance area for the 1997 8-hour ozone standard. This change is being made primarily because the abundance of biogenic VOC emissions in North Carolina results in ozone formation being limited by the amount of available nitrogen oxides (NOx) emissions. Provisions of the Clean Air Act (CAA) require that VOC requirements previously implemented in an ozone nonattainment area prior to re-designation remain in place. However, facilities outside the maintenance area counties for the 1997 8-hour ozone standard would no longer be required to comply with the work practice standards in 02D .0958. As discussed in Section 6 below, Greene County was not in nonattainment for the 1997 8-hr ozone standard and 02D .0958 is no longer applicable to facilities within Greene County.

- ✓ The permit condition for 02D .0958 will be removed during this Initial Title V permit modification per current guidance.

[22] Ibid 4
[23] Ibid 4
[24] Ibid 4

## 6. NSPS, NESHAPS/MACT, PSD/NSR/NAAQS/Attainment Status, RACT, CAM, 112(r), PE Requirements, and Zoning Consistency

**NSPS**

New Source Performance Standards (NSPS) **DO NOT** apply to this modification.

**NESHAP/MACT**

National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations or 15A NCAC 02D .1111 "Maximum Achievable Control Technology" **DO** apply to this modification.

Based on the facility's new potential to emit, this facility is NOW a Major source of HAPs as discussed under Section 5 above, which subjects them to 40 CFR Subpart WWWW.

***PSD/NSR/NAAQS***

The facility was classified as a Small facility for Title V purposes and was an existing Minor stationary source under the Federal Prevention of Significant Deterioration (PSD) program. The proposed Initial Title V request taken together with the facility's previous submittal for issued Permit No. 09913R03 results in facility-wide potential to emit (PTE) without limitations or restrictions exceeding Title V threshold values making them Major for Title V purposes.

The facility does not fall into one of the 28 PSD named categories that are limited to 100 tons per year; therefore, they are limited to 250 tons of VOCs per year. VOC potential emissions are 52.56 tons per year (please refer to Section 4 above) and PM potential emissions are 1.40 lb/hr before controls or particulate filters; or less than 5 tons per year potentials (based on Form D4 of the application submittal).[25] Therefore, the facility will continue to be minor for PSD purposes.

The minor source baseline dates have not been triggered for any criteria pollutants in Greene County (NOx, $PM_{10}$ or $SO_2$).

Although PM emissions associated with this modification are greater than 1 pound/hour (lb/hr); we do not track increment until after the first complete PSD permit application has been submitted in a specific county.

**Attainment Status**

Greene County is designated as either "unclassifiable/attainment," "better than national standards," or "Cannot be classified or better than national standards" for all pollutants per US EPA's:

- ✓ **The Green Book Nonattainment Areas for Criteria Pollutants – As of 8/30/2011**
  PART 81—DESIGNATION OF AREAS FOR AIR QUALITY PLANNING PURPOSES
  Subpart C—Section 107 Attainment Status Designations §81.334 – North Carolina.

Greene County is designated "Attainment/Unclassifiable" for Ozone as of August 26, 2015 per:

[25] Ibid 4

✓ **North Carolina's Current Ozone Designation Status**

Greene County is designated "Attainment/Unclassifiable" for $PM_{2.5}$ as of April 29, 2014 per:

✓ **North Carolina's Current Annual Fine Particulate Matter (PM2.5) Designation Status**

Greene County is designated "Attainment/Unclassifiable" for CO as of February 3, 2015 per:

✓ **North Carolina's Current 1994 Carbon Monoxide Designation Status**

Entire State Designation Deferred by EPA for $SO_2$ to a Later Date as of April 29, 2014 per:

✓ **North Carolina's Current Sulfur Dioxide (SO2) Designation Status**

**RACT**
RACT does not apply since the facility is not located in an attainment area.

***112(r)***
Per Form A3, 112(r) Applicability Information, this facility is not subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act (Act) requirements because:

No regulated substances stored in excess of thresholds that require a Risk Management Plan (RMP).

***CAM***
A Compliance Assurance Monitoring (CAM) (40 CFR Part 64) determination is not required for this modification because there are no active controls.

**PE Seal**
A professional engineer's seal (PE Seal) was not submitted with this modification, nor was it required pursuant to 15A NCAC 02Q .0112 "Application requiring a Professional Engineering Seal."

**Zoning**
A Zoning Consistency Determination per 02Q .0304(b) was not required with this modification.

## 7. Facility-Wide Air Toxics[26]

15A NCAC 02D .1100 "Control of Toxic Air Pollutants" & 02Q .0711 "Emission Rates Requiring a Permit" (See Section 5 above or modeling Memorandum[27] for more details)

[26] Ibid 7 and Section 5 under IBEAM Emissions
[27] Ibid 7

## 8. Compliance Status[28]

**FIVE YEAR COMPLIANCE HISTORY:**

A Notice of Violation (NOV) was issued on August 23, 2016 for failure to send in their semi-annual deviation report required for Subpart WWWW.

A NOV/NRE was issued on December 9, 2014 for exceeding the Title V emission thresholds. A resolution letter was sent on January 16, 2015 that rescinded the NOV/NRE as the facility responded saying they would be applying for Title V status. Their Title V permit was then issued shortly thereafter, on January 21, 2016.

**CONCLUSIONS, COMMENTS AND RECOMMENDATIONS**:

On 5/18/2017 Randall Jones, Environmental Engineer I, conducted an annual state compliance inspection of Moore's Fiberglass in Walstonburg, NC. I arrived at 1:45 PM and met with Mr. Chris Moore and Melaine Caraway. Chris Moore is the plant manager in conjunction with his father, Mr. Hardy Moore (authorized contact).

The facility appeared to operate in compliance with all applicable air quality regulations and permit conditions at the time of inspection.

- The main item of concern during inspection was the fact that they had not been able to contact their primary consultant, Buddy Bulow, for the past month. He performs all calculations for them once they send him the usage data. This could complicate their compliance status when it comes to running the emission numbers for Subpart WWWW. They said they may need some help until they get the situation remedied. I told him that I might be able to help them run the calculations for maybe a month, but not on a permanent basis. It's believed the spreadsheet that Mr. Bulow is using is the same one that WARO helped create a few years ago. The important thing is they are keeping their usage numbers monthly, which means it should be a relatively simple "plug and chug" using current numbers. It is my opinion that they should be able to perform the calculations themselves, but they simply do not feel comfortable using the spreadsheet.

## 9. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. There are no affected state/local programs within 50 miles of the facility.

[28] Ibid 2 & 9

## 10. Conclusions, Comments, and Recommendations

- ✓ WARO recommends issuance of the permit and does request a DRAFT permit prior to issuance.

- ✓ A draft copy of the permit and review were sent to WARO on XXXX, 2018 for comments. All appropriate comments were incorporated into the draft permit.

- ✓ A draft permit was sent to Moore Fiberglass on XXXX, 2018 and comments received on XXXX, 2018.

- ✓ All appropriate comments and changes were incorporated into the permit and review.

- ✓ DAQ-RCO concurs with DAQ-WARO's recommendation to issue Air Permit No. 09913T04.

- ✓ Comments received on DRAFT/PROPOSED permit during Public Notice/EPA and Affected State(s) Review:

  - ➢ No additional comments were received during the above comment periods.

**Attachment 1** to Title V Air Permit No. 09913T04 as obtained from NC Secretary of State's Corporation page https://www.sosnc.gov/online_services/search/Business_Registration_Results:

CD-479 (42)
10-22-13

# Business Corporation Annual Rep

SOSID: 0213632
Date Filed: 2/9/2015 9:08:00 AM
Elaine F. Marshall
North Carolina Secretary of State

CA2015 040 05796

Name of Business Corporation: MOORE'S FIBERGLASS, INC.

Secretary of State ID: 0213632 State of Formation: NC Fiscal Year Ending: 09 30 14

[X] I hereby certify that an annual report completed in its entirety has been submitted and the information requested below (required by NCGS 55-16-22) has not changed and is therefore complete.

**Section A: Registered Agent's Information**

1. Name of Registered Agent:
2. Signature of the New Registered Agent:
   (Signature constitutes consent to the appointment)
3. Registered Office Street Address & County
4. Registered Office Mailing Address

**Section B: Principal Office Information**

1. Description of Nature of Business:
2. Principal Office Phone Number:
3. Principal Office Email:
4. Principal Office Street Address & County
5. Principal Office Mailing Address

**Section C: Officers** (Enter additional Officers in Section E.)

| Name: | Name: | Name: |
|---|---|---|
| Title: | Title: | Title: |
| Address: | Address: | Address: |

**Section D: Certification of Annual Report** Section D must be completed in its entirety and signed by a person listed under Section C, or a person signing for an entity listed under Section C.

Hardy Moore Jr — 12-15-14

Signature (Form must be signed by an officer of corporation) — Date

HARDY MOORE, JR. — PRESIDENT

Print or Type Name of Officer — Title

**Attachment 2** to Title V Air Permit No. 09913T04

November 9, 2012

**MEMORANDUM**

TO: Randall Jones, Environmental Engineer I, Washington Regional Office

FROM: Charles Buckler, Meteorologist II, Air Quality Analysis Branch

THROUGH: William Willets, Acting AQAB Supervisor, Air Quality Analysis Branch

SUBJECT: Moore's Fiberglass, Inc. ( FAC 4000041.12)
Walstonburg, NC Greene County

I have reviewed the modeling analysis that was received October 5, 2012. This analysis is for the facility to increase styrene emissions at the Walstonburg, NC site. The rate changes will potentially affect the styrene emissions at the facility. The analysis shows compliance, on a facility wide basis, for all the pollutants Acceptable Ambient Levels (AALs).

The AERMOD air dispersion model (version 12060) was used to assess 47 point source at the facility (see attachment). Terrain and land use features were assessed and were incorporated with the latest Raleigh-Durham Surface and Greensboro upper-air meteorological data to determine the location and maximum impact. Structural effects for downwash impacts were determined using the PRIME algorithm in AERMOD. Emission rates were based on maximum equipment design capacity and AP-42 emission factors for all combustion sources (see attached Form A.4).

To determine the location and extent of the maximum impact, an extensive receptor grid was employed from the property around the facility and beyond out to 7500 meters. Receptors were placed at 25-meter intervals along the property boundary. In addition, receptors were placed at 100-meter spacing out to 1500 meters. The highest modeled impact was determined to be in simple terrain near the property boundary. Cavity did not exceed simple terrain impacts. The modeling assumes emission rates and source assumptions are correct.

**Table 1 Maximum Modeled Impacts (ug/m$^3$)**

| Pollutant | Avg. Period | Maximum allowable emissions (lb/hr) | Impact | AAL | % of AAL |
|---|---|---|---|---|---|
| Styrene | 1-hour | 12.0[1] | 10034 | 10600 | 94.6 |

1. Total emission rate was for 4 Gleacoat Resin Lamination lines (2.4 lb/hr per line) and 2 Closed Mold operations (1.2 lb/hr per line).

Cc: Permit coordinator, Washington Regional Office
Lori Cherry, Toxics Branch

**Table 1 to Subpart WWWW of Part 63--Equations to Calculate Organic HAP Emissions Factors for Specific Open Molding and Centrifugal Casting Process Streams[1]**

As specified in §63.5810, use the equations in the following table to calculate organic HAP emissions factors for specific open molding and centrifugal casting process streams:

| If your operation type is a new or existing... | And you use... | With... | Use this organic HAP Emissions Factor (EF) Equation for materials with less than 33 percent organic HAP (19 percent organic HAP for nonatomized gel coat)[2,3,4]... | Use this organic HAP emissions Factor (EF) Equation for materials with 33 percent or more organic HAP (19 percent for nonatomized gel coat)[2,3,4]... |
|---|---|---|---|---|
| 1. open molding operation | a. manual resin application | i. nonvapor-suppressed resin | EF = 0.126 x %HAP x 2000 | EF = ((0.286 x %HAP)-0.0529) x 2000 |
| | | ii. vapor-suppressed resin | EF = 0.126 x %HAP x 2000 x (1-(0.5 x VSE factor)) | EF = ((0.286 x %HAP)-0.0529) x 2000 x (1-(0.5 x VSE factor)) |
| | | iii. vacuum bagging/closed-mold curing with roll out | EF = 0.126 x %HAP x 2000 x 0.8 | EF = ((0.286 x %HAP)-0.0529) x 2000 x 0.8 |
| | | iv. vacuum bagging/closed-mold curing without roll-out | EF = (0.126 x %HAP x 2000 x 0.5 | EF = ((0.286 x %HAP)-0.0529) x 2000 x 0.5 |
| | b. atomized mechanical resin application | i. nonvapor-suppressed resin | EF = 0.169 x %HAP x 2000 | EF = ((0.714 x %HAP)-0.18) x 2000 |
| | | ii. vapor-suppressed resin | EF = 0.169 x %HAP x 2000 x (1-(0.45 x VSE factor)) | EF = ((0.714 x %HAP)-0.18) x 2000 x (1-(0.45 x VSE factor)) |
| | | iii. vacuum bagging/closed-mold curing with roll-out | EF = 0.169 x %HAP x 2000 x 0.85 | EF = ((0.714 x %HAP)-0.18) x 2000 x 0.85 |
| | | iv. vacuum bagging/closed-mold curing without roll-out | EF = 0.169 x %HAP x 2000 x 0.55 | EF = ((0.714 x %HAP)-0.18) x 2000 x 0.55 |
| | c. nonatomized mechanical resin application | i. nonvapor-suppressed resin | EF = 0.107 x %HAP x 2000 | EF = ((0.157 x %HAP)-0.0165) x 2000 |
| | | ii. vapor-suppressed resin | EF = 0.107 x %HAP x 2000 x (1-(0.45 x VSE factor)) | EF = ((0.157 x %HAP)-0.0165) x 2000 x (1-(0.45 x VSE factor)) |
| | | iii. closed-mold curing with roll-out | EF = 0.107 x %HAP x 2000 x 0.85 | EF = ((0.157 x %HAP)-0.0165) x 2000 x 0.85 |
| | | iv. vacuum bagging/closed-mold curing without roll-out | EF = 0.107 x %HAP x 2000 x 0.55 | EF = ((0.157 x %HAP)-0.0165) x 2000 x 0.55 |
| | d. atomized mechanical resin application with robotic or automated spray control[5] | nonvapor-suppressed resin | EF = 0.169 x %HAP x 2000 x 0.77 | EF = 0.77 x ((0.714 x %HAP)-0.18) x 2000 |
| | e. filament application[6] | i. nonvapor-suppressed resin | EF = 0.184 x %HAP x 2000 | EF = ((0.2746 x %HAP)-0.0298) x 2000 |
| | | ii. vapor-suppressed resin | EF = 0.12 x %HAP x 2000 | EF = ((0.2746 x %HAP)-0.0298) x 2000 x 0.65 |
| | f. atomized spray gel coat application | nonvapor-suppressed gel coat | EF = 0.445 x %HAP x 2000 | EF = ((1.03646 x %HAP)-0.195) x 2000 |

**Attachment 4** to Title V Air Permit No. 09913T04
**Table 3 to Subpart WWWW of Part 63 Organic Hap Emissions Limits for Existing Open Molding Sources, New Open Molding Sources Emitting Less Than 100 Tpy of Hap, and New and Existing Centrifugal ...**

As specified in §63.5805, you must meet the following organic HAP emissions limits that apply to you:

| If your operation type is . . . | And you use . . . | [1]Your organic HAP emissions limit is . . . |
|---|---|---|
| 1. open molding-corrosion-resistant and/or high strength (CR/HS) | a. mechanical resin application<br>b. filament application<br>c. manual resin application | 113 lb/ton.<br>171 lb/ton.<br>123 lb/ton. |
| 2. open molding-non-CR/HS | a. mechanical resin application<br>b. filament application<br>c. manual resin application | 88 lb/ton.<br>188 lb/ton.<br>87 lb/ton. |
| 3. open molding-tooling | a. mechanical resin application<br>b. manual resin application | 254 lb/ton.<br>157 lb/ton. |
| 4. open molding-low-flame spread/low-smoke products | a. mechanical resin application<br>b. filament application<br>c. manual resin application | 497 lb/ton.<br>270 lb/ton.<br>238 lb/ton. |
| 5. open molding-shrinkage controlled resins[2] | a. mechanical resin application<br>b. filament application<br>c. manual resin application | 354 lb/ton.<br>215 lb/ton.<br>180 lb/ton. |
| 6. open molding-gel coat[3] | a. tooling gel coating<br>b. white/off white pigmented gel coating<br>c. all other pigmented gel coating<br>d. CR/HS or high performance gel coat<br>e. fire retardant gel coat<br>f. clear production gel coat | 440 lb/ton.<br>267 lb/ton.<br>377 lb/ton.<br>605 lb/ton.<br>854 lb/ton.<br>522 lb/ton. |
| 7. centrifugal casting-CR/HS | a. resin application with the mold closed, and the mold is vented during spinning | 25 lb/ton.[4]<br>NA-this is considered to be a closed molding operation. |

| | | |
|---|---|---|
| | and cure<br>b. resin application with the mold closed, and the mold is not vented during spinning and cure<br>c. resin application with the mold open, and the mold is vented during spinning and cure<br>d. resin application with the mold open, and the mold is not vented during spinning and cure | 25 lb/ton.[4]<br>Use the appropriate open molding emission limit.[5] |
| 8. centrifugal casting-non-CR/HS | a. resin application with the mold closed, and the mold is vented during spinning and cure<br>b. resin application with the mold closed, and mold is not vented during the spinning and cure<br>c. resin application with the mold open, and the mold is vented during spinning and cure<br>d. resin application with the mold open, and the mold is not vented during spinning and cure | 20 lb/ton.[4]<br>NA-this is considered to be a closed molding operation.<br>20 lb/ton.[4]<br>Use the appropriate open molding emission limit.[5] |
| 9. pultrusion[6] | N/A | reduce total organic HAP emissions by at least 60 weight percent. |
| 10. continuous lamination/casting | N/A | reduce total organic HAP emissions by at least 58.5 weight percent or not exceed an organic HAP emissions limit of 15.7 lbs of organic HAP per ton of neat resin plus and neat gel coat plus. |

[1]Organic HAP emissions limits for open molding and centrifugal casting are expressed as lb/ton. You must be at or below these values based on a 12-month rolling average.
[2]This emission limit applies regardless of whether the shrinkage controlled resin is used as a production resin or a tooling resin.

[3]If you only apply gel coat with manual application, for compliance purposes treat the gel coat as if it were applied using atomized spray guns to determine both emission limits and emission factors. If you use multiple application methods and any portion of a specific gel coat is applied using nonatomized spray, you may use the nonatomized spray gel coat equation to calculate an emission factor for the manually applied portion of that gel coat. Otherwise, use the atomized spray gel coat application equation to calculate emission factors.
[4]For compliance purposes, calculate your emission factor using only the appropriate centrifugal casting equation in item 2 of Table 1 to this subpart, or a site specific emission factor for after the mold is closed as discussed in §63.5796.
[5]Calculate your emission factor using the appropriate open molding covered cure emission factor in item 1 of Table 1 to this subpart, or a site specific emission factor as discussed in §63.5796.
[6]Pultrusion machines that produce parts that meet the following criteria: 1,000 or more reinforcements or the glass equivalent of 1,000 ends of 113 yield roving or more; and have a cross sectional area of 60 square inches or more are not subject to this requirement. Their requirement is the work practice of air flow management which is described in Table 4 to this subpart.
[70 FR 50131, Aug. 25, 2005]

**Attachment 5** to Title V Air Permit No. 09913T04

## Table 4 to Subpart WWWW of Part 63 Work Practice Standards

As specified in §63.5805, you must meet the work practice standards in the following table that apply to you:

| For . . . | You must . . . |
|---|---|
| 1. a new or existing closed molding operation using compression/injection molding | uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting. |
| 2. a new or existing cleaning operation | not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems, and organic HAP containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin. |
| 3. a new or existing materials HAP-containing materials storage operation | keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety. |
| 4. an existing or new SMC manufacturing operation | close or cover the resin delivery system to the doctor box on each SMC manufacturing machine. The doctor box itself may be open. |
| 5. an existing or new SMC manufacturing operation | use a nylon containing film to enclose SMC. |
| 6. all mixing or BMC manufacturing operations[1] | use mixer covers with no visible gaps present in the mixer covers, except that gaps of up to 1 inch are permissible around mixer shafts and any required instrumentation. |
| 7. all mixing or BMC manufacturing operations[1] | close any mixer vents when actual mixing is occurring, except that venting is allowed during addition of materials, or as necessary prior to adding materials or opening the cover for safety. Vents routed to a 95 percent efficient control device are exempt from this requirement. |
| 8. all mixing or BMC manufacturing operations[1] | keep the mixer covers closed while actual mixing is occurring except when adding materials or changing covers to the mixing vessels. |

| For . . . | You must . . . |
|---|---|
| 9. a new or existing pultrusion operation manufacturing parts that meet the following criteria: 1,000 or more reinforcements or the glass equivalent of 1,000 ends of 113 yield roving or more; and have a cross sectional area of 60 square inches or more that is not subject to the 95 percent organic HAP emission reduction requirement | i. not allow vents from the building ventilation system, or local or portable fans to blow directly on or across the wet-out area(s),<br>ii. not permit point suction of ambient air in the wet-out area(s) unless that air is directed to a control device,<br>iii. use devices such as deflectors, baffles, and curtains when practical to reduce air flow velocity across the wet-out area(s),<br>iv. direct any compressed air exhausts away from resin and wet-out area(s), |
| | v. convey resin collected from drip-off pans or other devices to reservoirs, tanks, or sumps via covered troughs, pipes, or other covered conveyance that shields the resin from the ambient air,<br>vi. cover all reservoirs, tanks, sumps, or HAP-containing materials storage vessels except when they are being charged or filled, and<br>vii. cover or shield from ambient air resin delivery systems to the wet-out area(s) from reservoirs, tanks, or sumps where practical. |

[1]Containers of 5 gallons or less may be open when active mixing is taking place, or during periods when they are in process (i.e., they are actively being used to apply resin). For polymer casting mixing operations, containers with a surface area of 500 square inches or less may be open while active mixing is taking place. [70 FR 50133, Aug. 25, 2005]