

**Statement of Basis**  
Phifer Incorporated  
Fayette, Alabama  
Fayette County  
Facility No. 404-0020

**Introduction**

This proposed Title V Major Source Operating Permit (MSOP) renewal has been developed in accordance with the provisions of ADEM Admin. Code r. 335-3-16. The above-named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

An Air Permit for original construction of the site was issued on November 14, 2017. The initial MSOP was issued on October 7, 2019 and this is the first renewal. The initial application for this renewal was received on April 5, 2024.

The facility is located in Fayette County, which is currently listed as attainment/unclassifiable with all National Ambient Air Quality Standards (NAAQS).

There are no current or ongoing enforcement actions against Phifer necessitating additional requirements to achieve compliance with the proposed permit conditions. The enforcement and compliance history for the facility can be found at <https://echo.epa.gov/AL000000105700020>.

**Permit History**

<b>Permit No.</b>	<b>Description</b>	<b>Issuance Date</b>	<b>Limit(s) Established</b>	<b>Limit Basis</b>
Air Permit No. X001	Yarn Coating Lines	November 14, 2017	VOC emissions from each line shall not exceed 39 tons in any consecutive 12-month period.	Anti-PSD
Air Permit No. X002	Emergency Fire Pump	November 14, 2017	This unit is subject to the emission limits of 40 CFR 60.4205(c).	Part 60, Subpart IIII

Air Permit No. X003	Yarn Coating Lines 47 and 48 with Wet Scrubbers and Electrostatic Precipitators	November 14, 2018	VOC emissions from each line shall not exceed 39 tons in any consecutive 12-month period.	Anti-PSD
Air Permit No. X004	44 Heat Set Looms with Electrostatic Precipitators	November 14, 2018	N/A	N/A

### **Summary of Changes**

- Phifer has requested to incorporate Yarn Coating Line 47 from Air Permit 404-0020-X003 into the MSOP renewal.
- Emission Unit 3 – 44 Heat Set Looms will be renumbered to Emission Unit 4.

### **Facility Operations**

Phifer operates a yarn and wire coating and weaving facility which includes a plastisol mixing area, five yarn coating lines, 40 heat set looms, and an emergency generator. Plastisol mixing occurs on site and can formulate varying mixtures which include kerosene, mineral spirits, plasticizers, and variety of resins, stabilizers, and pigments. The mixtures are held in tanks until they are needed at one of the yarn coating lines.

Three of the yarn coating lines (Lines 41, 42, and 43) have three coating applicators, three curling ovens, and winders. The other two coating lines (44 and 47) include two coaters, two curling ovens, and winders. To coat yarn, plastisol and liquid polyvinyl chloride is applied to continuous strands of fiberglass yarn then travels through an oven to heat set. The strands of yarn are then wound into spools for further processing. Emissions from the coating lines are controlled using a wet scrubber (Lines 41, 42, 43, and 44) and an electrostatic precipitator (ESP) (Line 47).

The 40 heat set looms are used to weave the coated yarn and bond the yarn crosspoints. This process makes the coated yarn dimensionally stable. Emissions from the heat set looms are controlled by ESPs, with one ESP per every four looms.

Finally, Phifer operates a 274-brake-horsepower (bhp) emergency diesel-fired engine. The engine is used to power the firewater pump that supplies the fire suppression system for the facility.

### **Emission Unit 1: Yarn Coating Lines 41, 42, 43, and 44**

#### **Unit Specific Changes**

- There are no changes associated with this unit.

## Overview

Fiberglass yarns are coated with a mixture of plastisol and kerosene in flooded dies. Each line has three coaters and three drying ovens, except for Line 44 which has two coaters and two drying ovens. Emissions from the ovens are controlled by CECO filters. A vertical wet scrubber is used to cool to exhaust stream. The only significant pollutants from the yarn coating lines are volatile organic compounds (VOC) and particulate matter (PM). This unit is subject to an anti-PSD limit on VOCs and the state opacity and PM limits in ADEM Code r. 335-3-4. The unit is also subject to the reporting requirements of 40 CFR Subpart VVV – Standards of Performance for Polymeric Coating of Supporting Substrates Facilities because each line is limited to less than 95 megagrams in any 12-month period.

## Emission Standards

### *Opacity and Particulate Matter (PM)*

The Yarn Coating Lines 42, 42, 43, and 44 are subject to the requirements of ADEM Admin. Code r. 335-3-4-.01: Control of Particulate Emissions from Visible Emissions. The state opacity standard would apply at all times. Since the reformer would combust natural gas only, opacity is expected to be negligible during operation of the unit.

The Yarn Coating Lines 42, 42, 43, and 44 are subject to the requirements of ADEM Admin. Code r. 335-3-4-.04: Control of Particulate Emissions from Process Industries – General. Phifer is located in Fayette County, which is currently classified as a Class 2 County, as stated in Appendix A of ADEM Admin. Code r. 335-3, but was permitted under the Class 1 County equation. Therefore, the unit is subject to the process weight equation:

$$E = 3.59P^{0.62}$$

Where: E = Emissions in pounds per hour  
P = Process weight per hour in tons per hour

### *Volatile Organic Compounds (VOCs)*

VOC is emitted from the mixing and heat set looms. However, VOC emissions are only limited and tracked for the yarn coating lines because this is where most of the emissions occur, and it would be difficult to monitor VOC emissions from the other sources. Phifer has requested that the formula used to calculate VOC emissions at their Tuscaloosa facility be used at this facility. The following equation was used to calculate the amount of VOCs emitted:

$$\text{VOCs Emitted} = y - (xz + 0.20y)$$

Where: y = VOCs used  
x = Amount of coating used  
z = 0.00131, which is the factor for pounds VOC removed in tenter drip per pound of coating used

The control efficiency formula for the Tuscaloosa facility is based on an August 18, 2000 test of a yarn coating line controlled by electrostatic precipitators. Phifer has not tested any of their yarn coating lines with other control devices. The current permit only allows Phifer to deduct the VOC content of material shipped off site for disposal. Phifer calculates VOC emissions at the Fayette facility from material usage.

VOC emissions are limited to 39 tons per line in any twelve-month period. By limiting each line to 39 tons of VOC in any twelve-month period, the facility is limited to 198 tons per year of VOC with five yarn coating lines. These limits were established in Air Permit X001 issued on November 14, 2017, which was subsequently incorporated into the MSOP on October 7, 2019.

### Periodic Monitoring

#### *Opacity and Particulate Matter (PM)*

In order to indicate compliance with the opacity limitation, weekly visual emission observations are required.

#### *Volatile Organic Compounds (VOCs)*

In order to indicate compliance with the VOC limit, the pressure differential (measured from the manometer tube) across the filters shall be read weekly. If the pressure differential is greater than 10 in. H<sub>2</sub>O, then the filter needs to be replaced.

### Reporting

#### *Opacity and Particulate Matter (PM)*

Records of the weekly visible emission inspections shall be maintained along with any corrective action taken for a period of at least five years.

#### *Volatile Organic Compounds (VOCs)*

In order to indicate compliance with the requirements in 40 CFR 60 subpart VVV, VOC emissions will be reported quarterly.

### **Emission Unit 2: Emergency Fire Pump**

#### Unit Specific Changes

- There are no changes associated with this unit.

## Overview

Emission Unit 2 consists of a 247 bhp emergency fire pump with a model and manufacturing date of 2013. The emergency diesel fire pump is subject to 40 CFR 60 subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, and the opacity limits of ADEM Code r. 335-3-4-.01.

## Emission Standards

### *Opacity and Particulate Matter (PM)*

The emergency fire pump is subject to the requirements of ADEM Admin. Code r. 335-3-4-.01: Control of Particulate Emissions from Visible Emissions. The state opacity standard would apply at all times. Since the reformer would combust natural gas only, opacity is expected to be negligible during operation of the unit.

The emergency fire pump is subject to the requirements of ADEM Admin. Code r. 335-3-4-.04: Control of Particulate Emissions from Process Industries – General. Phifer is located in Fayette County, which is currently classified as a Class 2 County, as stated in Appendix A of ADEM Admin. Code r. 335-3, but was permitted under the Class 1 County equation. Therefore, the unit is subject to the process weight equation:

$$E = 3.59P^{0.62}$$

Where: E = Emissions in pounds per hour  
P = Process weight per hour in tons per hour

### *40 CFR Part 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

The emergency fire pump is subject to the requirements of 40 CFR Part 60, Subpart III. The emission standards shown in the table below are based on the size and model date of the engine:

	<b>NMHC + NO<sub>x</sub></b>	<b>CO</b>	<b>PM</b>
<b>Emission Standard (g/KW-hr)</b>	4.0	3.5	0.2

## Periodic Monitoring

### *40 CFR Part 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

In order to indicate compliance with the emission standards set in 40 CFR Part 60, Subpart III, the emergency engine shall be equipped with a non-resettable hour meter.

## Reporting

*40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

Phifer is required to comply with the recordkeeping and reporting requirements set in 40 CFR Part 60, Subpart IIII.

## **Emission Unit 3: Yarn Coating Line 47 with Wet Scrubber and ESP**

### Unit Specific Changes

- Added an emission monitoring proviso detailing the monitoring requirements for the wet scrubber.

### Overview

Authorization to Operate for the Yarn Coating Line 47 was issued on September 2, 2020, and was not included in the initial MSOP. Air Permit No, 404-0020-X003 also included Yarn Coating Line 48, but this unit was not constructed and will not be included in the MSOP renewal.

Fiberglass yarns are coated with a mixture of plastisol and kerosene in flooded dies. The line includes two applicators and two curing ovens. Emissions from the ovens are controlled by an electrostatic precipitator (ESP). A vertical wet scrubber is used to cool to exhaust stream. The only significant pollutants from the yarn coating line is volatile organic compounds (VOC) and particulate matter (PM). This unit is subject to an anti-PSD limit on VOCs and the state opacity and PM limits in ADEM Code r. 335-3-4. The unit is also subject to the reporting requirements of 40 CFR Subpart VVV – Standards of Performance for Polymeric Coating of Supporting Substrates Facilities because each line is limited to less than 95 megagrams in any 12-month period.

### Emission Standards

#### *Opacity and Particulate Matter (PM)*

The Yarn Coating Line 47 is subject to the requirements of ADEM Admin. Code r. 335-3-4-.01: Control of Particulate Emissions from Visible Emissions. The state opacity standard would apply at all times. Since the reformer would combust natural gas only, opacity is expected to be negligible during operation of the unit.

The Yarn Coating Line 47 is subject to the requirements of ADEM Admin. Code r. 335-3-4-.04: Control of Particulate Emissions from Process Industries – General. Phifer is located in Fayette County, which is currently classified as a Class 2 County, as stated in Appendix A of ADEM Admin. Code r. 335-3, but was permitted under the Class 1 County equation. Therefore, the unit is subject to the process weight equation:

$$E = 3.59P^{0.62}$$

Where: E = Emissions in pounds per hour  
P = Process weight per hour in tons per hour

### *Volatile Organic Compounds (VOCs)*

Yarn Coating Line 47 uses the same method and equation to calculate VOC emissions as Yarn Coating Lines 41, 42, 43, and 44. VOC emissions are limited to 39 tons per line in any twelve-month period. By limiting each line to 39 tons of VOC in any twelve-month period, the facility is limited to 198 tons per year of VOC with five yarn coating lines. This limit was established in Air Permit X003 issued on November 18, 2018, and will be incorporated into the MSOP with this renewal.

### Periodic Monitoring

#### *Opacity and Particulate Matter (PM)*

In order to indicate compliance with the opacity limitation, weekly visual emission observations are required.

In order to indicate compliance with the particulate matter limitation, the ESP operating status shall be monitored daily. When monitoring, a green light on each cell indicates that the ESP is operating at normal conditions. If more than 20%, or if two or more cells horizontally are not operating at optimal conditions, repairs are required.

### Reporting

#### *Opacity and Particulate Matter (PM)*

Records of the weekly visible emission inspections shall be maintained along with any corrective action taken for a period of at least five years.

#### *Volatile Organic Compounds (VOCs)*

In order to indicate compliance with the requirements in 40 CFR 60 subpart VVV, VOC emissions will be reported quarterly.

### **Emission Unit 4: 40 Heat Set Looms**

#### Unit Specific Changes

- There are no changes associated with this unit.

## Overview

The heat set looms weave the coated yarn and use heat to bond the warp and weft. Electrostatic precipitators (ESP) are used to control VOC and PM emissions. For every four heat set looms, there is an electrostatic precipitator used for control. VOC emissions are included in the potential facility emissions, as all VOC applied are considered to be emitted in the yarn coating ovens. The heat set looms are subject to the state opacity and PM limits in ADEM Code r. 335-3-4. The unit is also subject to the reporting requirements of 40 CFR Subpart VVV – Standards of Performance for Polymeric Coating of Supporting Substrates Facilities because each line is limited to less than 95 megagrams in any 12-month period.

## Emission Standards

### *Opacity and Particulate Matter (PM)*

The heat set looms are subject to the requirements of ADEM Admin. Code r. 335-3-4-.01: Control of Particulate Emissions from Visible Emissions. The state opacity standard would apply at all times. Since the reformer would combust natural gas only, opacity is expected to be negligible during operation of the unit.

The heat set looms are subject to the requirements of ADEM Admin. Code r. 335-3-4-.04: Control of Particulate Emissions from Process Industries – General. Phifer is located in Fayette County, which is currently classified as a Class 2 County, as stated in Appendix A of ADEM Admin. Code r. 335-3, but was permitted under the Class 1 County equation. Therefore, the unit is subject to the process weight equation:

$$E = 3.59P^{0.62}$$

Where: E = Emissions in pounds per hour  
P = Process weight per hour in tons per hour

## Periodic Monitoring

### *Opacity and Particulate Matter (PM)*

In order to indicate compliance with the opacity limitation, weekly visual emission observations are required.

In order to indicate compliance with the particulate matter limitation, the ESP operating status shall be monitored daily. When monitoring, a green light on each cell indicates that the ESP is operating at normal conditions. If more than 20%, or if two or more cells horizontally are not operating at optimal conditions, repairs are required.

## Reporting

### *Opacity and Particulate Matter (PM)*

Records of the weekly visible emission inspections shall be maintained along with any corrective action taken for a period of at least five years.

### *Volatile Organic Compounds (VOCs)*

In order to indicate compliance with the requirements in 40 CFR 60 subpart VVV, VOC emissions will be reported quarterly.

## **Compliance Assurance Monitoring (CAM)**

Compliance Assurance Monitoring (CAM) is not applicable for this facility because potential air emissions from each source are less than 100 tons per year.

## **Recommendations**

Based on the above analysis, I recommend that Phifer Inc. - Fayette's MSOP 404-0020 be issued/renewed with the requirements noted above, and pending the resolution of any comments received during the 30-day public comment period and the EPA 45-day review.

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Gabby Sautter  
Chemical Branch  
Air Division

March 4, 2026