

December 21, 2022

Regional Air Program Manager  
Department of Environmental Protection  
Air Quality Division  
208 West 3<sup>rd</sup> Street, Suite 101  
Williamsport, PA 17701-6448

RE: RACT III Applicability and Compliance Evaluation  
Foam Fabricators, Inc.  
17 Industrial Drive  
Bloomsburg, PA 17815  
TVOP – 19-00002

To Whom It May Concern:

Enclosed, please find the RACT III Applicability and Compliance Evaluation for Foam Fabricators, Inc. located in Bloomsburg, PA. This document is mean to serve as notification to the Department of the facility's applicability to RACT III as well as the compliance evaluation.

Should you have any questions or concerns, please do not hesitate to contact me via phone at 814-664-8103 ext. 231 or via email at [mspence@aegis-usa.com](mailto:mspence@aegis-usa.com).

Sincerely,



Mark A. Spence  
Director of Operations  
AG Aegis Company, Inc.

*Enclosure*

cc: *Mr. Dan McCracken*  
*Foam Fab*

# ***RACT III APPLICABILITY AND COMPLIANCE EVALUATION***

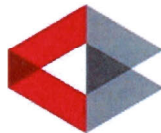
**FOR:**

**FOAM FABRICATORS, INC.  
BLOOMSBURG, PENNSYLVANIA**

**December 2022**

Prepared for:  
Foam Fabricators, Inc.  
17 Industrial Drive  
Bloomsburg, Pennsylvania 17815

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Project Number 22.044

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# RACT III APPLICABILITY AND COMPLIANCE EVALUATION

## FOAM FABRICATORS, INC. BLOOMSBURG, PENNSYLVANIA

### 1. INTRODUCTION

The Foam Fabricators, Inc. facility located in Bloomsburg, Columbia County, Pennsylvania, is classified as a major stationary source of volatile organic compounds (VOC) emissions. As such, the facility is subject to the Reasonably Available Control Technology (RACT III) rules enacted in Pennsylvania on November 12, 2022, outlined in 25 Pa. Code §§129.111 – 129.115. The RACT III rule requires all existing major facilities of NOx and VOC emissions to assess the need to install new or additional emission controls, or implement work practice measures to reduce emissions of those two pollutants. Foam Fabricators is not a major NOx source. Therefore, this document contains Foam Fabricators' RACT III evaluation of VOC-emitting sources, for submittal to the Pennsylvania Department of Environmental Protection (PADEP), Northcentral Regional Office.

Sections §129.111 and §129.115(a) of the RACT III rules also require that the owner/operator of an air contamination source subject to the RACT III regulations submit a notification to PADEP by December 31, 2022. The notification must describe how the owner/operator intends to comply with the RACT III requirements, and other information detailed in subsection §129.115(a). This evaluation serves as the required notification.

### 2. FACILITY DESCRIPTION

Foam Fabricators is a custom-shape molder of expandable polystyrene (EPS) into products for packaging, materials handling, and structural component uses. These polymeric resins are received in bead form, then expanded and fused into molded product through a series of production steps. The EPS resins utilize pentane, a volatile organic compound (VOC), as the expansion blowing agent.

The four phases that comprise the overall process are briefly described as follows:

| Source ID | Source Name            | Source Description   |
|-----------|------------------------|--|
| P101      | Pre-Expansion          | Partial expansion of raw beads in preparation for molding            |
| P103      | Pre-Puff Storage       | Stabilization and storage of the pre-expanded beads prior to molding |
| P104      | Molding                | Presses where the stabilized beads are fused into various shapes     |
| P105      | Finished Goods Storage | Warehousing of molded product  |

A Title V Operating Permit modification, incorporating RACT II requirements, was issued for this facility on December 20, 2017. The permit has an overall process emission limit of 85 tons of VOC per year. There are no individual limits for the four process phases.

### 3. RACT III SOURCE APPLICABILITY

Attached Table 1 lists all of the VOC sources at this facility, along with their potential to emit (PTE) and a determination of applicability to RACT III. If potential emissions from a VOC source are less than 1 ton per year (tpy), the source is exempt from RACT III requirements. Sources with potential VOC emissions of 1 tpy or greater are subject to assessment under RACT III, unless already subject to a VOC emissions requirement established in certain sections of 25 Pa. Code Chapter 129.

VOC sources that are not exempt from RACT III can comply via the methods outlined below:

- For sources with PTE less than 2.7 tpy, meet the limits or restrictions known as “presumptive RACT” requirements;
- For sources with PTE equal to or greater than 2.7 tpy, submit an “Alternative” RACT (case-by-case) analysis that contains technical and economic feasibility evaluations of available VOC reduction measures.

### 4. ALTERNATIVE RACT III ANALYSIS

Per attached Table 1, the four sources that comprise the foam molding operation are subject to the ‘Alternative RACT III’ requirements of §129.114. The compliance option provided in §129.114(i)(1)(i) allows for a ‘limited’ analysis for sources that had a RACT II cost effectiveness of equal to or greater than \$12,000 per ton of VOC reduced. An economic evaluation is not required under this provision of the rule. The required ‘limited’ analysis shall include the elements listed below in italics. Foam Fabricators’ response to each element is provided in bold type.

(A) *A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available. A search was conducted for VOC reduction technologies that may have been developed subsequent to the evaluation conducted under the RACT II requirements. It has been determined by the facility that no new pollutant specific air cleaning device, air pollution control technology or technique is available at the time of submittal of this analysis. Some of the research conducted for this evaluation includes:*

- A RACT/BACT/LAER Clearinghouse (RBLC) search was conducted for the timeframe from the RACT II evaluation to the present. No new VOC control technologies were found.
- Searched various USEPA, PADEP, and other websites and tools for new technologies. No new technologies were discovered. Some of the sources of research include:
  - USEPA’s Air Pollution Control Technology Fact Sheets
  - National Service Center for Environmental Publications
  - PADEP’s Control Technique Guidelines

(B) *A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously identified and evaluated under RACT II and approved by the Department or appropriate approved local air pollution control agency. A list of technically feasible control technologies evaluated by Foam Fabricators under RACT II is provided in attached Table 2. Per its **Application Review Memo** (dated October 17, 2017) associated with the 2017 Title V modification, PADEP*

concluded that the oxidation control options were the only technically feasible VOC reduction options for the operations at this facility.

- (C) *A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique listed in clause (B) and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II. A summary of the economic evaluation conducted under RACT II is provided in Table 2. As shown therein, the minimum cost effectiveness for that evaluation was over \$12,000 per ton of VOC reduced. Per the *Application Review Memo* mentioned in clause (B) above, PADEP concurred that none of the evaluated control options were economically feasible for the operations at this facility.*
- (D) *A statement that an evaluation of each economic feasibility analysis summarized in clause (C) demonstrates that the cost effectiveness remains equal to or greater than \$12,000 per ton of VOC emissions reduced. Due to the determination that there are no new VOC control technologies, and that equipment and operating costs have only increased since the time of the RACT II submittal, Foam Fabricators maintains that cost effectiveness for all technically feasible control options remains above \$12,000/ton for each of these sources.*
- (E) *Additional information requested by the Department or appropriate approved local air pollution control agency that may be necessary for the evaluation of the analysis. To be provided upon request.*

## 5. CONCLUSION AND PROPOSED RACT III

### 5.1. RACT III Analysis Conclusion

Due to the determination that there are no new VOC control technologies and that equipment and operating costs have only increased since the time of the RACT II submittal, Foam Fabricators maintains that cost effectiveness remains above \$12,000/ton for each of the sources subject to the 'limited' analysis. Therefore, Foam Fabricators concludes that it is not technically or economically feasible to implement VOC reduction measures on any of the Alternative RACT III sources.

### 5.2. RACT III Proposal

Foam Fabricators proposes that no physical, operational, or permit changes are needed in regard to the RACT III requirements, other than incorporating references to the applicable RACT III regulations into the Title V permit. Additionally, per the following passage from the DEP Response to Question 12 in their RACT III "Frequently Asked Questions" document, Foam Fabricators is not required to submit a plan approval or operating permit modification application.

"If a source was previously subject to RACT II case-by-case determinations, and that source has not been modified or changed, the owner or operator may, in lieu of doing another full case-by-case proposal for RACT III, submit a limited analysis, as specified in 25 Pa. Code Section 129.114(i). Unless otherwise required, this submission does not need to be part of a plan approval or operating permit modification and no fee would be charged."

## Tables

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**Table 1** Summary of Facility VOC Sources and RACT III Classification  
Foam Fabricators, Inc. - Bloomsburg PA

| Source ID | Source Description        | VOC PTE (TPY) | RACT III Classification <sup>1</sup> |
|-----------|---------------------------|---------------|--------------------------------------|
| 032       | Boiler 1, 350 hp          | 0.34          | Exempt                               |
| 033       | Natural gas space heaters | 0.03          | Exempt                               |
| 034       | Boiler 2, 250 hp          | 0.24          | Exempt                               |
| P101      | Pre-expansion             | 19.7          | Alternative (case-by-case)           |
| P103      | Pre-puff storage bags     | 25.2          | Alternative (case-by-case)           |
| P104      | Molding machines          | 10.4          | Alternative (case-by-case)           |
| P105      | Post-molding Warehouse    | 29.1          | Alternative (case-by-case)           |
| P109      | Parts Washer              | 0.01          | Not Applicable <sup>2</sup>          |

1. Sources are Exempt if emissions are less than 1 tpy; sources of 2.7 tpy or more are subject to Alternative (case-by-case) analysis.

2. The Parts Washer is not subject to RACT III due to already being subject to rule 129.63.



**Table 2 Summary of Cost Effectiveness Evaluation under RACT II  
Foam Fabricators, Inc. - Bloomsburg, PA**

**Ranking of Control Options by Overall Reduction Efficiency <sup>2</sup>**

| Ranking | Control Technology            | Phase(s) Controlled | Total VOC <sup>1</sup>  |                           | VOC Reduction (tons/year) | Reduction Efficiency (%) |
|---------|-------------------------------|---------------------|-------------------------|---------------------------|---------------------------|--------------------------|
|         |                               |                     | Pre-Control (tons/year) | After-Control (tons/year) |                           |                          |
| 1.      | Thermal Oxidation             | PE only             | 85.0                    | 65.9                      | 19.1                      | 22.5                     |
| 2.      | Regenerative Thermal Oxidizer | PE only             | 85.0                    | 65.9                      | 19.1                      | 22.5                     |
| 3.      | Catalytic Oxidation           | PE only             | 85.0                    | 65.9                      | 19.1                      | 22.5                     |
| 4.      | Thermal Oxidation             | PE/PPS              | 85.0                    | 43.3                      | 41.7                      | 49.0                     |
| 5.      | Regenerative Thermal Oxidizer | PE/PPS              | 85.0                    | 43.3                      | 41.7                      | 49.0                     |
| 6.      | Catalytic Oxidation           | PE/PPS              | 85.0                    | 43.3                      | 41.7                      | 49.0                     |
| 7.      | Regenerative Thermal Oxidizer | PE/PPS/MP           | 85.0                    | 36.5                      | 48.5                      | 57.0                     |
| 8.      | Thermal Oxidation             | PE/PPS/MP           | 85.0                    | 36.5                      | 48.5                      | 57.0                     |
| 9.      | Catalytic Oxidation           | PE/PPS/MP           | 85.0                    | 36.5                      | 48.5                      | 57.0                     |

PE -- pre-expansion emissions

PPS -- pre-puff storage emissions

MP -- molding press emissions

**Ranking by Annual Control Costs per Ton of VOC Reduced**

| Ranking | Control Technology            | Phase(s) Controlled | Capital Cost (\$) | Annualized Cost (\$/year) | VOC Reduction (tons/year) | Avg. Control Cost (\$/ton/yr) |
|---------|-------------------------------|---------------------|-------------------|---------------------------|---------------------------|-------------------------------|
|         |                               |                     |                   |                           |                           |                               |
| 2.      | Regenerative Thermal Oxidizer | PE only             | 792,327           | 265,181                   | 19.1                      | 13,849                        |
| 3.      | Thermal Oxidation             | PE only             | 512,092           | 278,207                   | 19.1                      | 14,529                        |
| 4.      | Regenerative Thermal Oxidizer | PE/PPS/MP           | 1,510,630         | 762,241                   | 48.5                      | 15,723                        |
| 5.      | Regenerative Thermal Oxidizer | PE/PPS              | 1,435,627         | 706,254                   | 41.7                      | 16,951                        |
| 6.      | Catalytic Oxidation           | PE/PPS              | 1,051,290         | 737,408                   | 41.7                      | 17,699                        |
| 7.      | Catalytic Oxidation           | PE/PPS/MP           | 1,559,749         | 896,337                   | 48.5                      | 18,489                        |
| 8.      | Thermal Oxidation             | PE/PPS/MP           | 1,306,143         | 1,149,888                 | 48.5                      | 23,720                        |
| 9.      | Thermal Oxidation             | PE/PPS              | 894,980           | 993,339                   | 41.7                      | 23,842                        |

<sup>1</sup> This represents requested plant-wide allowable emissions.

<sup>2</sup> This is the overall reduction from the plant-wide VOC emissions allowable.