



State of Idaho
Department of Environmental Quality
Air Quality Division

**AIR QUALITY PERMIT
STATEMENT OF BASIS**

**Permit to Construct No. P-2007.0228
Final**

**Foam Molders, Inc.
Post Falls, Idaho
Facility ID No. 055-00047**

**February 27, 2008
Carole Zundel *CZ*
Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

Table of Contents

| | |
|--|---|
| ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE | 3 |
| 1. FACILITY INFORMATION | 4 |
| 2. APPLICATION SCOPE | 4 |
| 3. TECHNICAL ANALYSIS | 5 |
| 4. REGULATORY REVIEW | 6 |
| 5. PERMIT FEES | 8 |
| 6. PUBLIC COMMENT | 8 |
| APPENDIX A | 9 |

STATEMENT OF BASIS

| | | |
|-------------------|--------------------|-----------------------------------|
| Permittee: | Foam Molders, Inc. | Permit No.: P-2007.0228 |
| Location: | Post Falls, Idaho | Facility ID No.: 055-00047 |

Acronyms, Units, and Chemical Nomenclature

| | |
|------------------|--|
| AFS | AIRS Facility Subsystem |
| AIRS | Aerometric Information Retrieval System |
| AQCR | Air Quality Control Region |
| BACT | Best Available Control Technology |
| CFR | Code of Federal Regulations |
| CO | carbon monoxide |
| DEQ | Department of Environmental Quality |
| EPA | Environmental Protection Agency |
| EPS | expandable polystyrene |
| HAPs | Hazardous Air Pollutants |
| IDAPA | A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act |
| lb/hr | pounds per hour |
| MACT | Maximum Available Control Technology |
| MMBtu/hr | Million British thermal units per hour |
| NESHAP | Nation Emission Standards for Hazardous Air Pollutants |
| NO _x | nitrogen oxides |
| NSPS | New Source Performance Standards |
| O ₃ | ozone |
| PM | Particulate Matter |
| PM ₁₀ | Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers |
| PSD | Prevention of Significant Deterioration |
| PTC | Permit to Construct |
| PTC/T2 | permit to construct and Tier II operating permit |
| Rules | Rules for the Control of Air Pollution in Idaho |
| SIC | Standard Industrial Classification |
| SIP | State Implementation Plan |
| SM | synthetic minor |
| SM80 | synthetic minor with emissions limited to 80% or more of major source threshold |
| SO ₂ | sulfur dioxide |
| T/yr | Tons per year |
| UTM | Universal Transverse Mercator |
| VOC | volatile organic compound |

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1. FACILITY INFORMATION

1.1 Facility Description

The Expandable Polystyrene (EPS) raw materials, or beads, come into the facility in 1,000-pound lined Gaylord boxes. The beads contain an encapsulated blowing agent, pentane, which is usually 3.5 to 6.5% of the material by weight. The emission rates at each phase of the operation vary according to such factors as the density of the expanded beads, the shape and size of the molded parts, and finished goods storage requirements. The beads are typically vacuum-fed from the Gaylord boxes to the pre-expanders where the beads are partially expanded to their desired density (referred to as pre-puff).

Approximately 25% of the encapsulated pentane is released in the expansion process. The expanded beads are then aged from 2 to 48 hours to allow the pre-puff to stabilize by diffusing air into the expanded beads. Approximately 20% of the initial pentane is released during this aging process. These materials are then transferred directly to the molds where, with use of steam, they are fused together into the desired shapes created by the mold forms. Approximately 15-25% of the initial pentane is released during the molding process. In the post-molding phase, approximately 15% of the initial pentane is released in the first 24 hours, and approximately 10% in the next 24 hours. The remaining 15% pentane diffuses out of the product over a long period of time.

1.2 Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

| | |
|--------------------|--|
| September 26, 2000 | Tier II Operating Permit No. 055-00047 issued to permit whole facility and limit emissions below major source levels. (S) |
| December 10, 2002 | Tier II/PTC No. 055-00047 issued for the installation of a pre-expander and block mold which increased the expandable polystyrene (EPS) throughput limit and the VOC emission rate limit. (S) |
| June 9, 2006 | Tier II/PTC No. P-060109 issued to remove specific equipment descriptions so as to maintain operational flexibility by allowing for the installation, replacement, and/or removal of the process equipment, while limiting total daily and total annual facility-wide VOC emissions from the facility. (S) |

2. APPLICATION SCOPE

The permit application was submitted to renew Tier II Operating Permit and Permit to Construct No. P-060109, issued June 9, 2006, without modifications. DEQ determined that the Tier II portion of the permit was no longer required because all of the permit conditions are PTC requirements, and there are no remaining Tier II operating permit conditions. The regional office requested that a requirement be added limiting the boiler to burning natural gas only.

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2.1 Application Chronology

| | |
|-------------------|--|
| December 7, 2007 | DEQ receives Tier II operating permit renewal application. |
| December 18, 2007 | DEQ issues completeness letter. |
| December 18, 2007 | DEQ receives e-mail from facility requesting a draft permit. |
| December 26, 2007 | DEQ issues facility draft permit. |
| December 26, 2007 | DEQ receives comment from facility. |
| December 28, 2007 | DEQ receives comments from Coeur d'Alene Regional Office. The region requested that a requirement be added to limit the boiler to combusting natural gas only, which was incorporated. |
| January 8, 2008 | DEQ issues permit for public comment. |
| January 16, 2008 | Public comment period starts. |
| February 14, 2009 | Public comment period ends, no comments were received. |
| February 15, 2008 | DEQ determines that the permitting action will be changed to a PTC action. |
| February 22, 2008 | DEQ receives the PTC application fee and the permit processing fee. |

3. TECHNICAL ANALYSIS

Table 3.1 EMISSION UNIT AND CONTROL DEVICE INFORMATION

| Emission Unit /ID No. | Description | Control Device |
|-----------------------|--|----------------|
| Boiler A | Manufacturer: Superior Model: 6-750 Rated heat capacity: 6.3 MMBtu/hr Construction Date: 1996 Burner type: Horizontally fired Stack diameter: 14 inches Stack height: 32 feet Fuel: Natural gas | None |
| Pre-expanders | Varies | None |
| Molds | Varies | None |

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3.2 Emissions Inventory

Table 3.2 EMISSIONS INVENTORY BASED ON PTE

| Foam Molders Inc., Post Falls | | | | | | | | | | |
|--|------------------|------|-----------------|------|-------|------|-------|-------|--------------------|------|
| Potential Emissions ^a – Hourly (lb/hr), and Annual (T/yr) | | | | | | | | | | |
| Source Description | PM ₁₀ | | NO _x | | CO | | VOC | | SO ₂ | |
| | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr ^b | T/yr |
| Boiler, Superior, 6.32 MMBtu/hr natural gas | 0.05 | 0.20 | 0.60 | 2.63 | 0.50 | 2.21 | 0.03 | 0.14 | 0.004 | 0.02 |
| Process Equipment | --- | --- | --- | --- | --- | --- | 119 | 95.2 | --- | --- |
| Total | 0.05 | 0.20 | 0.60 | 2.63 | 0.50 | 2.21 | 119 | 95.34 | 0.004 | 0.02 |

^a As determined by a pollutant-specific U.S. EPA reference method, a Department-approved alternative, or as determined by the Department's emissions estimation methods used in this permit analysis.

^b The permit renewal application shows that SO₂ emissions from the boiler are 0.01 lb/hr, but this is a rounded value. The more accurate estimate is 0.004 lb/hr based on AP-42 and the boiler rating.

3.3 Ambient Air Quality Impact Analysis

No modeling is required for this permit because there is no emissions increase.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Kootenai County, which is designated as attainment or unclassifiable for PM₁₀, PM_{2.5}, CO, NO₂, SO_x, and Ozone. Reference 40 CFR 81.313.

4.2 Permit to Construct (IDAPA 58.01.01.201)

A permit to construct is required because a requirement is added to limit the boiler to burning natural gas only. The PTC/Tier II operating permit that was scheduled for renewal is being replaced by this permit to construct.

4.3 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

The facility is limited to emissions less than the Title V threshold, so no Title V permit is required.

4.4 PSD Classification (40 CFR 52.21)

This facility is a minor source.

4.5 NSPS Applicability (40 CFR 60)

Foam Molder's steam boiler is 6.3 MMBtu/hr, which is less than the 10 MMBtu/hr or lower applicability limit for steam-generating units per 40 CFR 60 Subpart Dc.

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4.6 NESHAP Applicability (40 CFR 61)

There are no requirements in this section that apply to this facility.

4.7 MACT Applicability (40 CFR 63)

Because the EPS beads are used but not manufactured at Foam Molders, 40 CFR 63 Subpart JJJ does not apply.

4.8 CAM Applicability (40 CFR 64)

This facility is not subject to a Title V operating permit and does not use control equipment, so this section does not apply.

4.9 Permit Conditions Review

This section describes only those permit conditions (PC) that have been added, revised, modified or deleted as a result of this permitting action. All other permit conditions remain unchanged.

The following facility-wide permit conditions were relocated to the General Provisions section of the permit:

- Excess emissions
- Obligation to comply

New PC 3.6

As suggested by DEQ Coeur d'Alene Regional Office, a permit condition was added as follows in order to clarify that natural gas is the only fuel that is allowed to be used in the boiler:

“Natural gas exclusively shall be combusted in the boiler.”

This was written to prohibit burning fuels with higher emissions, which may require a permit modification.

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5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The facility is subject to a processing fee of \$250 because no engineering analysis was required. Refer to the chronology for fee receipt dates.

Table 5.1 PTC PROCESSING FEE TABLE

| Emissions Inventory | | | |
|----------------------------|----------------------------------|-----------------------------------|--------------------------------|
| Pollutant | Annual Emissions Increase (T/yr) | Annual Emissions Reduction (T/yr) | Annual Emissions Change (T/yr) |
| NO _x | 0.0 | 0 | 0.0 |
| SO ₂ | 0.0 | 0 | 0.0 |
| CO | 0.0 | 0 | 0.0 |
| PM ₁₀ | 0.0 | 0 | 0.0 |
| VOC | 0.0 | 0 | 0.0 |
| HAPS | 0.0 | 0 | 0.0 |
| Total: | 0.0 | 0 | 0.0 |
| Fee Due | \$250.00 | | |

6. PUBLIC COMMENT

A public comment period was made available to the public from January 16, 2008 to February 14, 2008 on the permit as a PTC/Tier II operating permit. During this time, no comments were submitted in response to DEQ's proposed action. Because a public comment period was provided, it was determined that the PTC requirement to provide an opportunity for public comment was satisfied, as there were no changes to the permit conditions of the permit that was issued for public comment.

APPENDIX A

AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

Facility Name: Foam Molders, Inc.
Facility Location: 9456 N. McGuire Road, Post Falls
AIRS Number: 055-00047

| AIR PROGRAM POLLUTANT | SIP | PSD | NSPS (Part 60) | NESHAP (Part 61) | MACT (Part 63) | SM80 | TITLE V | AREA CLASSIFICATION |
|--------------------------|-----|-----|---------------------------|---------------------|-------------------|------|---------|--|
| | | | | | | | | A-Attainment U-Unclassified N- Nonattainment |
| SO ₂ | B | | | | | | | U |
| NO _x | B | | | | | | | U |
| CO | B | | | | | | | U |
| PM ₁₀ | B | | | | | | | U |
| PT (Particulate) | B | | | | | | | |
| VOC | SM | | | | | SM80 | | |
| THAP (Total HAPs) | B | | | | | | | |
| | | | APPLICABLE SUBPART | | | | | |
| | | | | | | | | |

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).