



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Four Penn Center - 1600 John F Kennedy Blvd
Philadelphia, Pennsylvania 19103-2852

Report Title: Clean Air Act Inspection of Insul-Board, Incorporated
Inspection Date(s): September 26, 2023
Regulatory Program(s): State Implementation Plan
Company Name: Insul-Board, Incorporated
Facility Name: Insul-Board, Incorporated
Facility Location: 2120 Colonial Avenue
Erie, Pennsylvania, 16504
Latitude: 42.08222 **Longitude:** -80.1659
County/Parish: Erie
AFS/ICIS-Air Number: PA000512830
Permit Number: SOOP 25-00972
NAICS Code: 326140 **SIC:** 3086
Unique Project #: 3E23CA038A

Facility Representatives: **Point of Contact**
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State/Local Inspectors:
N/A

EPA Lead Inspector

Signature

Paul Arnold
1600 John F Kennedy Blvd
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Date

Supervisor

Signature

Kristen Hall

Date

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I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Insul-Board (IB or Facility) to verify compliance with applicable State and Federal regulations. The Pennsylvania Department of Environmental Protection (PADEP) was notified of the inspection on September 11, 2023, via email. On September 22, 2023, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Tom Estock, prior to the inspection (see Attachment 1). These records are listed in the Records Review section of the report.

The inspection included an evaluation of the Facility's processes and its compliance with the CAA. All information included in this report is the result of statements by the Facility representatives, materials shown to the inspectors by the Facility representatives, and/or documents provided by the Facility representatives to the inspectors at the time of, or subsequent to, the inspection. In addition, information gathered prior to the inspection from a review of EPA and State records may be included in Section A. Summary of the Facility, of this report.

A. Summary of the Facility

The Facility is located at 2102 Colonial Avenue, Erie, Pennsylvania 16505. Insul-Board makes foam blocks and boards, of various sizes, from expanded polystyrene (EPS) beads.

The Facility received a Synthetic Minor Operating Permit (25-00972) from PADEP issued on January 13, 2020.

Insul-Board is classified as a Synthetic Minor for volatile organic compounds.

B. Inspection Opening Conference

At 9:00 AM on September 26, 2023, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. Insul-Board was represented by, Tom Estock, Owner; Richard Estock, Founder; and Chris Nutter. EPA inspectors, Paul Arnold; Carly Joseph; and Alex Everhart, presented their credentials and explained the purpose of the visit was to conduct a CAA inspection to determine compliance with their permit and any applicable regulations. Additionally, EPA informed the facility representatives of their right to claim any confidential business information (CBI). At that time, Tom Estock made a CBI claim on two photographs (Photos 7 & 8) taken during the inspection.

II. Site Activity/Process Description

Insul-Board (IB) receives polystyrene beads as a raw material. IB heats and expands the polystyrene beads, forms the polystyrene beads into foam blocks and then cuts the blocks to customer specified size. Insul-Board is privately owned and began operation in 1987. Insul-Board has nine employees and operates Monday – Friday, from 8 am to 4 pm. At the time of the site visit, Insul-Board was operating at about 50% of the plants' capacity. Insul-Board does not own, or operate, other locations/facilities.

IB receives polystyrene beads (beads), by truck, in supersacs that each weigh about 2,000 pounds. The beads arrive fully manufactured, and are infused with liquid pentane, before the shipments of beads arrive at IB. IB does not inject, or handle, pentane at any time during the process. The pentane comprises about 6%, by weight, of the total polystyrene bead weight. The role of the liquid pentane is to expand the beads when the beads are heated during the foam block formation process. Pentane is classified, by the EPA, as a volatile organic compound (VOC).

The foam formation process is comprised of 3 steps, pre-expansion; molding; and cutting.

1. Pre-expansion. The beads arrive in supersacs. The beads are then fed to the pre-expander and steam, from the 5 MMBtu gas-fired boiler, is introduced. The beads are heated with steam, which causes the pentane to expand during the physical change of state from liquid to gas. This process takes approximately two minutes. The heated, and newly expanded beads are dropped into the fluid bed dryer. The expanded beads are then stored in a storage hopper, IB has five storage hoppers, where expansion and cooling can be completed.

2. Molding. The expanded beads are vacuumed, from the storage hoppers, into a block mold. The mold is 33 inches wide by 50 inches high and has an adjustable (from 10 to 24 feet) length. The beads are molded, via heat from the steam, into blocks that weigh from 180 to 560 pounds. The blocks are allowed to cool before being placed into storage prior to being sent to cutting.

3. Cutting. After the blocks have cooled, they are taken to the slabber/cutter table where they are cut to customer specifications. IB has two slabber/cutter tables which are functionally identical.

After cutting, the blocks are considered a finished product and they prepared to be shipped offsite. Finished products are, placed on pallets; or put into boxes; or shrink wrapped and trucked offsite.

IB has one natural gas-fired 5 MMBtu boiler. IB has no emergency generators, nor any other internal combustion engines onsite.

The opening conference concluded at 9:30 am.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 9:30 AM by Tom Estock, Richard Estock and Chris Nutter of Insul-Board. EPA inspectors noted photos would be taken during the Facility walkthrough and Photos 7 and 8, as requested by Tom Estock, would be handled in accordance with EPA's CBI Policy. (Attachment 2).

EPA observed all process areas, which includes the incoming bead loading area; the pre-expander; the fluid bed dryer; the boiler; the two cutter/slabber tables; and the final product staging area. No process or equipment, except for the boiler (which was on standby mode), was observed operating during the walkthrough. All sources of volatile organic compound (VOC) emissions, the pre-expander; the fluid bed dryer; the storage hoppers; the molders etc., emit VOC emissions if an individual bead ruptures during the process. If a bead is ruptured, the VOC is simply emitted to the area surrounding the process area. Most VOC emissions are emitted during the pre-expansion and molding processes. All VOC emissions vent indoors as fugitive emissions. No process area vents directly to the atmosphere via a stack.

The facility has only one stack, from the boiler, that exhausts to the atmosphere.

The walkthrough concluded at 10:04 AM.

IV. Records Review

The records review commenced immediately after the plant walkthrough at 10:05 AM. EPA inspectors reviewed documents requested in the September 22, 2023, email to Tom Estock (see Attachment 1). Insul-Board has operating permit limits on production throughput, 675 tons per year; and VOC emissions, 35 tons per year.

Records were provided at the time of the inspection by Tom Estock. Below are the records requested and what was provided:

YEAR	Reported Facility Throughput and Emissions		
	<i>Bead Throughput (tn/yr)</i>	<i>VOC (tn/yr)</i>	<i>NOx (tn/yr)</i>
2019	289	7.06	Not provided
2020	240	11.6	0.1
2021	313	15.9	0.15
2022	305	15.9	0.15

V. Closing Conference

After the records review, EPA inspectors, Tom Estock, Richard Estock and Chris Nutter had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final report do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. EPA also noted that they would issue an inspection report within in Unique Project #: 3E23CA038A

60 days, with a copy to the State. Because of the CBI Claim on pictures, EPA will not forward, to PADEP, copies of the pictures taken during the inspection. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 12:04 AM.

The following has been identified as a *potential* issue during the inspection. It is an issue that requires further investigation by EPA or additional information or explanation by Insul-Board.

- Records indicated that plant production decreased increased, from 2019 to 2020, but reported VOC emissions increased over the same period. Reported emissions of VOC, from 2019, are lower than those reported in years 2020, 2021 and 2022.

VI. List of Attachments

- Attachment 1: Email correspondence to Tom Estock requesting records to review during inspection.
- Attachment 2: Photo Log

Arnold, Paul

From: Arnold, Paul
Sent: Friday, September 22, 2023 2:20 PM
To: eps@insulboard.com
Cc: Everhart, Alex
Subject: EPA CAA Inspection of Insul-Board, located in Erie PA

Good afternoon,

As I discussed with you today, EPA plans to conduct a Clean Air Act (CAA) Inspection of the Insul-Board Facility located at 2120 Colonial Avenue, Erie, PA, on September 26, 2023 around 9 AM. PADEP has been notified and a representative(s) from that office may attend. To help expedite the inspection, please provide answers to the following questions upon our arrival. If you have any questions or concerns, please contact me.

Pre-inspection questions:

1. A process flow diagram or facility floorplan/layout.
2. A brief process description.
3. All stack test/emission test results for any/all pollutants and sources tested.
4. If Insul-Board has ever submitted an initial notification and/or compliance statements for any NESHAP or NSPS, please have a copy of these available for review.
5. Provide a copy of Insul-Board's current air operating permit.
6. Provide a record of the facility's actual annual air emissions, from January 1, 2019 through June 30, 2023, for all regulated air pollutants (NO_x, SO_x, CO, VOCs, HAPs, and PM).
 - a. VOC emissions shall be calculated monthly and totaled on a rolling consecutive 12-month period.
7. Provide the calculated quantity of raw material processed monthly, and totaled on a rolling consecutive 12-month period, from January 1, 2019 through June 30, 2023,
8. Provide a listing of all onsite boilers, emergency generators and all other internal combustion sources. Please include details such as fuel combustion type, installation dates, engine size, boiler rating and all NSPS and NESHAP regulations applicable to those engines, internal combustion units and boilers.
9. Provide annual fuel usage for any onsite internal combustion sources, including boilers and emergency generators. Exclude fuel combustion used for comfort heat.
10. Provide a copy of the sulfur content of all oil deliveries, if applicable, from January 1, 2019 through June 30, 2023.
11. Provide a listing of all air pollution sources and, if applicable, associated air pollution control devices. Please include make, model, control/removal efficiency and installation date(s).
12. Provide all records required by the current air operating permit, including, but not limited to, HAP emissions; VOC emissions; resin usage; shutdown and malfunction records; and incidents of excess emissions.

Thank you, Paul

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