

To: File
From: John Legg
Date: February 13, 2016



Subj: R13-2357G - Class II Administrative Update
SimEx Inc., St. Marys/Waverly, Pleasants County, WV
Company ID No.: 073-00021

Summary

The following equipment was to be installed by SimEx, Inc. in December 2015 at their Waverly, WV facility: 1) a router/milling machine served by a dust collector (96C), 2) a corner fold machine that requires the application of a two component glue/adhesive, and 3) an orbital wrapper/packing machine (having no emissions).

SimEx, Inc. submitted a permit determination (PD15-085) and the Class II Administrative Update (R13-2357G) under review here. These submissions are detailed in this evaluation under the section entitled "Regulatory Discussion."

PM emissions from the router/milling machine are controlled by dust collector 96C. The dust collector is required to be online anytime the router/milling machine is in use and must not exceed a 20% opacity limit which is checked on a monthly basis. No PM hourly or annual weight emission limitations were established in the updated permit.

Methyl methacrylate monomer (HAP) emission limitations for the two component glue/adhesive operation were established in the updated permit at 0.36 lb/hr and 1.57 ton/yr. The permittee must keep daily records and a 12-month rolling total of the amount of adhesive used. The HAP emission rate can be calculated directly from the adhesive usage rate.

Process Description

The following process description came from Attachment G of permit application R13-2357G:

Trim board is extruded on two (2) foam extruders identified as Emission Units EX-31 and EX-32 in the current permit. Approximately ten percent (10%) of the trim board may be subject to an additional process of creating "corners." Foam board corners are a "L" shaped seamless design that is used at 90° angles on a house exterior that is being retrofitted with siding. There are three (3) pieces of equipment associated with the corner manufacturing process:

- 1) Router/Milling Machine - The full width of a foam board is placed on the entry conveyor. As the foam board enters the machine, a "V" notch is routed/milled

lengthwise in the center of the board. The machine is fully enclosed with negative pressure exhaust capturing all particulate matter/dust and carrying it to the dust collector, which is located outside. The milled foam board is then placed on the corner fold machine feed table.

- 2) Corner Fold Machine - The two (2) part adhesive is applied to the “V” notch by using a hand-held applicator. The applicator is connected by hoses to closed containers of the adhesive components. The components mix at the applicator tip as material is dispensed. The foam board is then folded at the “V” notch to create the corner. The corner is subsequently heated with an electric radiant heater to approximately 250°F for a minute or two to allow the glue to soften and disperse in the corner joint. After the heat step, the corner proceeds on a roller table into the orbital wrapper.
- 3) Orbital Wrapper - The orbital wrapper rotates around the corner applying plastic stretch wrap to hold the corner at the desired 90° right angle while the glue cures. Following this process, the corner is then placed in a staging area for subsequent packaging for shipping and loading into a trailer for transportation to the customer.

Table 1: Emission Units Table					
Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed/Modified	Design Capacity	Control Device
RM1	NA	Router/Milling Machine	2015 (planned)	166 lb foam/hr	96C
GM1	GM1	Glue Machine	2015 (planned)	0.50 lb glue/hr	N/A
96C	96C	Dust Collector	2015 (planned)	99.0% min efficiency	N/A

MSDS Discussion

A 13-page MSDS is given in Attachment H of the permit application for the two (2) component glue/adhesive:

Bond & Fill Activator - pages 1 thru 6

Bond & Fill Adhesive Resin - pages 6 thru 13

Bond & Fill Activator (Component #1)

Methyl Methacrylate Monomer (CAVES#82-62-6) is the only HAP component. The mix proportion by weight is listed as being 60 - 100%. SimEx, Inc.'s estimated HAP emissions at an 80% by weight proportion.

Bond & Filler Adhesive Resin (Component #2)

Methyl Methacrylate Monomer is the only HAP component. The mix proportion by weight is listed as being 30 - 60%. SimEx, Inc.'s estimated HAP emissions at an 80% by weight proportion.

SimEx, Inc. in their calculates state:

Per MSDS: Methyl Methacrylate Monomer in both Components #1 and #2 at 50/50 weight ratio. HAP Content can vary between 45% and 80% by weight for Component Parts #1 and #2 total when combined. 80% chosen as worst case for PTE.

Emission Calculations

The writer reviewed SimEx, Inc.'s emission calculations given in Attachment N of the application. A discussion of these calculations follows:

Router/Milling Machine (RM1)

Particulate Matter (PM) emissions before controls (dust collector 96C) were estimated at 0.03 lb/hr and 0.013 ton/yr. An explanation as to how the emission rates were calculated follows:

- The maximum processing rate of foam boards through the router is 166 lb/hr (0.083 ton/hr).
- An emission factor of 0.35 lb of PM per ton of material processed (foam boards) was used to calculate a PM emission rate 0.029 lb/hr which was rounded up to 0.03 lb/hr.
- The source of the emission factor (0.35 lb/ton) is AP42, 4th Edition, Table 10.3-1, for Log Sawing Uncontrolled.
- Annual uncontrolled PM emissions were calculated by multiplying the hourly emission rate (0.029 lb/hr) by 8,760 hr/yr which equals 254.5 lb/yr (0.127 ton/yr).

Controlled PM emissions were calculated by using a 99% removal efficiency for the duct collector (96C). Hourly and annual emissions after controls were calculated to be 0.00029 lb/hr and 0.00127 ton/yr. No weight emission limits were established in the update permit (R13-2357G).

Glue Machine (GM1)

The writer calculated Methyl Methacrylate Monomer (both a HAP and a VOC) emissions from the two-part glue application at 0.40 lb/hr and 1.75 ton/yr. An explanation as to how the emission rates were calculated is given below.

Note: The company used the same factors and method of calculation but came up with the slightly lesser HAP emission rates of 0.36 lb/hr and 1.57 ton/yr.

Since the company, in their 12/16/15 legal advertisement, advertised the annual HAP emission rate as being 1.56 ton/yr, this lesser rate was used to update the permit (R13-2357G).

- The corner fold machine can process a maximum of 166 lbs of trim board per hour (166 lb/hr).
- A glue application rate of 0.003 lb of glue per lb of trim board was used based on usage rates for the same process at another facility.
- Per the MSDS for two-part glue/adhesive, Methyl Methacrylate Monomer (both a HAP and a VOC) in the two glue components is the same (50/50 weight ration) and between 45% and 80% by weight HAP for each component. 80% was used as the worst case for potential to emit (PTE).

- The hourly HAP Emission Rate (lb HAP/hr) =
$$166 \text{ lb trim board/hr} \times 0.003 \text{ lb glue/lb of trim board} \times 0.8 \text{ lb HAP/lb glue} =$$
$$0.40 \text{ lb HAP/hr}$$

- The annual HAP Emission Rate (ton HAP/yr) =
$$0.40 \text{ lb HAP/hr} \times 8,760 \text{ hr/yr} \times 1 \text{ ton}/2,000 \text{ lb} =$$
$$1.75 \text{ ton HAP/yr}$$

Orbital Wrapper

According to the application: There are no criteria pollutants associated with this machine or subsequent packaging.

Changes Made to Old Permit (R13-2357F)

Changes made to the old permit (R13-2357F) to arrive at the new permit (R13-2357G) are detailed in the comparison file which is given in Attachment A to this evaluation.

Demonstration of New Requirements

The requirement (in Section 4.1.13) that router/milling machine (RM1) only be operated when the dust collector (96C) is online and operating is demonstrated by Section 4.2.1 which requires a monthly visual emission observation that the dust collector outlet opacity does not exceed 20 percent.

The requirement (in Section 4.1.14) that HAP emissions from applying the two-part glue/adhesive not exceed 0.36 lb/hr and 1.56 ton/yr is demonstrated by Section 4.4.8 which requires the permittee to keep records of the amount of two-part adhesive used on a daily and 12-month rolling total bases.

Note: HAP emissions can be calculated from glue/adhesive usage by multiplying the amount of glue/adhesive consumed/applied by a factor of 0.8.

One (1) gallon of glue/adhesive mixture weighs 7.48 lb/per gal.

Regulatory Discussion

A detailed regulatory discussion is given in Attachment D to the permit application.

No new federal or state rules/regulations apply to the facility.

PSD/NSR is not triggered. The facility is not a Title V major source, i.e., Title V requirements do not apply.

Applicable state rules are: 45CSR7; 45CSR13; 45CSR21 (PTE < 100 TPY; Section 40 does not apply, i.e., no applicable requirements);

45CSR13 - "Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation."

On October 5, 2015, the DAQ received from SimEx, Inc. a Permit

Determination **PD15-085** for minor equipment additions to be located at their Waverly, Pleasants County, WV facility. The determination was assigned to William T. Rothwell II, Engineer out of DAQ's Charleston office, who determined on November 12, 2015 that a permit was not required under 45CSR13. Although the emission rates for the equipment were below the emission limits of six (6) lb/hr and ten (10) TPY; 2 lb/hr, or 5 TPY of HAPS as set forth in 45CSR13-2.7.a & b, there was an increase in emissions. Mr. Rothwell recommended in his determination letter that the company complete the forms necessary for a Class II Administrative Update to Permit R13-2357F in order to incorporate the equipment additions into their Rule 13 permit (R13-2357E).

On December 17, 2015, the DAQ received from SimEX, Inc. a Class II Administrative Update for minor equipment additions to their St. Marys' vinyl window component manufacturing facility located near Waverly, Pleasants County, WV. The \$300.00 application fee was paid on December 18, 2015 and the writer was assigned to the update that same day. The company's legal advertisement ran in *The Parkersburg News and Sentinel* on December 16, 2015 and the legal affidavit of publication was received at the DAQ on December 24, 2015 at which time the application was deemed to be complete.

Attachment A

Changes Made to the Old Permit (R13-2357F) to Generate the New Permit (R13-2357G).

WordPerfect Document Compare Summary

Original document: Q:\AIR_QUALITY\J_LEGG\SimEx

Inc\R13-2357F\073-00021_PERM_13-2357F.wpd

Revised document: @PFDesktop\MyComputer\Q:\AIR_QUALITY\J_LEGG\SimEx

Inc\R13-2357G\073-00021_PERM_13-2357G.wpd

Deletions are shown with the following attributes and color:

~~Strikeout~~, **Blue** RGB(0,0,255).

Deleted text is shown as full text.

Insertions are shown with the following attributes and color:

Double Underline, Redline, **Red** RGB(255,0,0).

The document was marked with 11 Deletions, 16 Insertions, 0 Moves.

West Virginia Department of Environmental Protection

Division of Air Quality

*Earl Ray Tomblin
Governor*

*Randy C. Huffman
Cabinet Secretary*

Permit to Update



R13-2357FG

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45 C.S.R. 13 — Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the facility listed below is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:
SimEx, Inc.
Waverly Facility
073-00021

*John A William F. Benedict Durham
Director*

Issued: February 13, 2012 ~~2012~~ Effective: February 13, 2012 2016

This permit will supercede and replace Permit R13-2357EF.

Facility Location: Waverly, Pleasants County, West Virginia

Mailing Address: P.O. Box 1646, Parkersburg, WV 26102

Facility Description: Vinyl compounding and extrusion facility

SIC Codes: 3089

UTM Coordinates: 469.0 Easting • 4354.9 Northing • Zone 17

Permit Type: Class II Administrative Update

Description

of Change: ~~1) the addition of:~~

~~- a blended vinyl compound box loading station ("Box Out Station");~~

~~- a pulverized vinyl compound box/bag Super Sack (reground vinyl resin) unloading station ("Pulverized Unloading Station"); and~~

~~2) the removal of the laminating process, and all references and condition contained in R13-2357E~~

The following equipment was to be installed in 2015: a router/milling machine (RM1/100C) serviced by dust collector (96C), a corner fold machine using a two part adhesive applied using a glue machine (GM1), and an orbital wrapper/packing machine (no emissions).

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

As a result of the granting of this permit, the source is not subject to 45CSR30.

1.0 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
PLV	N/A	Pulverized Unloading Station	2009	21,700 lb/hr	52C Central Filter
<u>RM1</u>	<u>N/A</u>	<u>Router/Milling Machine</u>	<u>2015</u>	<u>166 lb foam/hr</u>	<u>96C Dust Collector</u>
<u>GM1</u>	<u>GM1</u>	<u>Glue Machine</u>	<u>2015</u>	<u>0.5 lb glue/hr</u>	<u>None</u>
<u>96C</u>	<u>96C</u>	<u>Dust Collector</u>	<u>2015</u>	<u>99.0% Minimum Efficiency</u>	<u>None</u>

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Law W.Va. Code §§22-5-1 et seq. and the following Legislative Rules promulgated thereunder:

- 2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation;*

2.4. Term and Renewal

- 2.4.1. This permit supercedes and replaces previously issued Permit R13-2357~~EF~~F. This permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any applicable legislative rule.

2.5. Duty to Comply

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-2357, R13-2357A, R13-2357B, R13-2357D, R13-2357E, R13-2357F, R13-2357G, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and 13-10.3]
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses and/or approvals from other agencies; i.e., local, state and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

4.0. Source-Specific Requirements

4.1. Limitations and Standards

- 4.1.1. PVC resin shall be unloaded into the storage silos (Equipment ID Nos. S1 and S2) at rates not to exceed 18,000 pounds per hour (lb/hr) each and 146,292,000 pounds of rigid PVC per year (lb/yr). (1E & 2E)
- 4.1.2. The particulate matter emission rate from each primary ingredient storage silos, S1 and S2, shall not exceed 0.0072 pounds per hour (lb/hr) and 0.015 tons per year (tpy). (1E & 2E)
- 4.1.3. PVC resin shall be unloaded into the storage silos (Equipment ID Nos. S9 and S10) at rates not to exceed 10,000 pounds per hour (lb/hr) each and 43,800,000 lb of foam PVC per year (lb/yr). (7E & 8E)
- 4.1.4. The particulate matter emission rate from each primary ingredient storage silos, S9 and S10, shall not exceed 0.004 pounds per hour and 0.009 tons per year (tpy). (7E & 8E)
- 4.1.5. PVC blend throughput to the Main and Check Scales (SC-7, SC-8, SC-9, & SC-10) shall not exceed 21,700 pounds per hour (lb/hr) individually and aggregated. (3E, 4E, 5E, & 6E)
- 4.1.6. The controlled particulate matter emission rate from the Main and Check Scales (SC-7, SC-8, SC-9, & SC-10) shall not exceed 0.005 pounds per hour (lb/hr) and 0.019 tons per year (tpy) individually and aggregated. (3E, 4E, 5E, & 6E)
- 4.1.7. PVC resin through the Rigid PVC Extruders (EX-1 to EX-7, EX-8 to EX-10, EX-11 to EX-17, EX-18, EX-19 to EX-24, EX-25 to EX-30) shall not exceed a maximum throughput of 19,750 pounds per hour (lb/hr) and 146,292,000 pounds per year of rigid PVC (lb/yr).
- 4.1.8. Foam through the Foam Extruders (EX-31 & EX-32) shall not exceed a maximum throughput of 5,000 pounds per hour (lb/hr) and 43,800,000 pounds per year of foam (lb/yr).
- 4.1.9. The maximum emission rate of metallic HAPs (antimony, manganese, chromium, and nickel compounds) shall not exceed 0.10 tons per year per emissions source and 0.69 tons per year of metallic HAPs aggregated.
- 4.1.10. The maximum emission rate of styrene (VOC)(HAP) shall not exceed 1.6 pounds per hour (lb/hr) and 7.0 tons per year (tpy), facility-wide.
- 4.1.11. The amount of vinyl scrap and foam fed the Granulators (G1, G2, and G3) shall not exceed 15,000 pounds per hour (lb/hr) and 21,375,000 pounds per year (lb/yr).
- 4.1.12. The laminating process (Emissions Unit L-1) shall be disconnect from service and shall not be used.
- 4.1.13. ~~Reserved.~~
- ~~4.1.14. Reserved.~~

The foam board router/milling machine (RM1) shall no be operated unless dust collector 96C is online and operating.

4.1.14. The maximum emission rate of methyl methacrylate monomer (VOC)(HAP) from the two-part adhesive used to fold foam boards shall not exceed 0.36 lb/hr and 1.56 ton/yr.

4.1.15. Proposal of new ingredients containing different hazardous constituents other than those submitted in Permit Application R13-2357 through R13-2357F will require submittal of Material and Safety Data Sheets (MSDS) along with Potential to Emit (PTE) calculations to the Division of Air Quality via a permit determination by the permittee.

4.1.16. The permittee shall install and maintain all particulate matter control devices for the equipment listed in the following table. These control devices shall be operated and maintained in a manner consistent with good engineering practices and in accordance with manufacturer's specifications.

Emission Unit (Source)	Equipment ID No.	Control Device ID No.
Primary Ingredient Silos	S-1 and S-2 S-9 and S-10	1C and 2C 85C and 91C
Finished Resin Silos	S-3 through S-8	13C through 18C
Primary Ingredient Hopper	H-1 and H-2 H-49 and H-58	3C and 4C 86C and 92C
Secondary Ingredient Hopper	H-3 through H-12 H-50 through H-54	52C
Hand Add Station	H-13 and H-14	
Secondary Scale	SC-1 through SC-6 SC-11 and SC-12	
Blending Hopper	H-17 and H-18	
Railcar Loading	R1	
Box Out Loading	Box Out	
Box Loading Station	BX2	
Pulverized Unloading Station	PLV	
Extruder Hopper	H-19 through H-48 H-55 and H-56 H-59 and H-60	22C through 51C 87C and 88C 93C and 94C
Hot Mixer	HM-1 and HM-2	9C and 10C
Cooling Mixer	CM-1 and CM-2	11C and 12C
Day Bin	DB-1 through DB-3	19C through 21C
Main Scale	SC-7 and SC-8	6C and 5C
Check Scale	SC-9 and SC-10	8C and 7C

Emission Unit (Source)	Equipment ID No.	Control Device ID No.
Granulators	G-1 through G-3	53C, 54C, and 90C
Extruder Saws	EX-1 through EX-30 EX-31 and EX-32	55C through 84C 89C and 95C
<u>Router/Milling Machine</u>	<u>RM1</u>	<u>96C</u>

- 4.1.17. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except as noted in subsections 3.2, 3.3, 3.4, 3.5, 3.6, and 3.7. [45CSR7-3.1]
- 4.1.18. The provisions of subsection 3.1 shall not apply to smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period. [45CSR7-3.2]
- 4.1.19. No person shall cause, suffer, allow or permit particulate matter to be vented into the open air from any type source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity specified under the appropriate source operation type in Table 45-7A found at the end of this rule. [45CSR7-4.1]
- 4.1.20. No person shall cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable. [45CSR7-5.1]
- 4.1.21. The permitted facility shall comply with all applicable provisions of 45CSR27, provided, however, that compliance with any more stringent limitation set forth under Section 4.0 of this permit shall also be demonstrated.
- 4.1.22. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary. [45CSR§13-5.11.]

4.2. Monitoring Requirements

- 4.2.1. Opacity from Emission Points listed in Section 1.0 shall not exceed 20 percent. In order to determine compliance with this limit the permittee shall conduct monthly visual emission observations. These observations shall be conducted during periods of normal facility operation for a sufficient time interval to determine if the unit has visible emissions. If sources of visible emissions are identified

4.4.8. ~~Reserved:~~In order to demonstrate compliance with the methyl methacrylate monomer (VOC)(HAP) emission limits set forth in Sections 4.1.14, the permittee shall keep records of the amount of two-part adhesive used on a daily and 12-month rolling total bases . Certified copies of these records shall be made available to the Director or his duly authorized representative upon request.

4.4.9. In order to demonstrate compliance with the throughput and emission limits set forth in Section 4.1.5. and 4.1.6., the permittee shall keep monthly records of the amount of PVC blend fed to the Main Scales and Check Scales on a monthly and yearly basis and the hours of operation. Said records shall be certified upon request by a responsible official and shall be maintained on site for a period of five (5) years. Certified copies of these records shall be made available to the Director or his duly authorized representative upon request.

4.5. Reporting Requirements

N/A - Section 3.5 - Facility - Wide Reporting Requirements