



**STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT**

**NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE
A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator:	The Gilman Brothers Company
Address:	Gilman Road Gilman, Connecticut 06336
Equipment Location:	Gilman Road Gilman, Connecticut 06336
Equipment Description:	Polystyrene Foam Extrusion Line

Town-Permit Numbers:	013-0007
Town-Premises Numbers:	013-0001
Prior Permit Issue Dates:	12/14/1998 (Permit to Construct) 7/23/1999 (Permit to Operate)
Modification Issue Date:	1/7/2011
Expiration Date:	

/s/ Amey Marrella
Amey Marrella
Commissioner

1/7/2011
Date

PERMIT FOR PROCESS EQUIPMENT**STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
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This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

PART I. DESIGN SPECIFICATIONS**A. General Description**

The Gilman Brothers Company operates a polystyrene foam extrusion line. The primary product manufactured will be an extruded foam board for the graphic arts trades. Molten polystyrene and isopentane blowing agent are extruded through an annular die, drawn over a cooling mandrel, and slit to form a sheet. As the polymer cools, it may be laminated on both sides with a thin film of polystyrene using the laminators. The edges are trimmed and the product is cut to specification and bundled before being transported to the finish goods warehousing area. The edge trimmings and scrap or reject product is ground and fed pneumatically to the fluff silos for storage prior to processing in the reclaim extruder where the fluff is recycled into resin pellets to later reuse. The laminators may operate as sheet extruders independently of the foam extrusion line.

B. Equipment Design Specifications

The polystyrene foam extrusion line consists of the following equipment:

U1. Virgin Resin Pellet Silo 1	3050 ft ³
U2. Virgin Resin Pellet Silo 2	3050 ft ³
U3. Truck Unloading Pneumatic Conveying System	
U4. Foam Extruder E-1	1200 lb/hr
U5. Extruder/Laminators A&B	1600 lb/hr each
U6. Vacuum Transfer Blowing System	
U7. Edge Trimmers / Sheet Cutters	
U8. Central Scrap Processing Area	
U9. Fluff Conveying System	
U10. Fluff Storage Silo 1	2530 ft ³
U11. Fluff Storage Silo 2	2530 ft ³
U12. Reclaim Extruder Fluff Day Bin	
U13. Reclaim Extruder R-1	1500 lb/hr
U14. Reclaim Resin Pellet Silo 1	3050 ft ³
U15. Reclaim Pellet Pneumatic Conveying System	
U16. Blowing Agent Storage Tank	18,000 gallons

FIRM NAME: The Gilman Brothers Company

EQUIPMENT LOCATION: Gilman Road, Gilman, Connecticut 06336

EQUIPMENT DESCRIPTION (MODEL, I.D. #): Polystyrene Foam Extrusion Line

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BUREAU OF AIR MANAGEMENT****PART I. DESIGN SPECIFICATIONS, continued****C. Control Equipment Design Specifications**

1. Electrostatic Precipitator
Equipment served: Extruder/Laminators A & B, stack S5
Make & Model No: United Air Specialists, Smog Hog SH-10-CE
Collecting Electrode Area: 1,660 ft²
Voltage Across the Precipitator Plates: 6,000 Volts DC
Number of Fields in the Precipitator: 2 Stages - Parallel plates
2. Baghouse Filter on each silo
Equipment served: Fluff Storage Silo 1 & 2, stacks S10 & S11
Make & Model No: Flex-Kleen Corp. 100 WSBS-64
Bag Material: 16 oz/yard² Glazed Polyester Felt (64 Bags)
Air/Cloth Ratio: 8.86:1 maximum, 6.15 typical
Cleaning Method: Reverse air
3. Baghouse Filter
Equipment served: Reclaim Extruder Day Bin, no stack
Make & Model No: Sterling Systems 10
Bag Material: 10 oz/yard² Glazed Polyester Felt (6 Bags - scrim supported)
Air/Cloth Ratio: 6.63:1
Cleaning Method: Shaker
4. Baghouse Filter
Equipment served: Non-Reclaim Scrap Bin, no stack
Make & Model No: Sterling Systems 13
Bag Material: 10 oz/yard² Glazed Polyester Felt (9 Bags - scrim supported)
Air/Cloth Ratio: 3:1
Cleaning Method: Shaker
5. Blower Filters
Equipment served: Virgin Pellet Silos 1 & 2, Truck Unloading
Pneumatic Conveying System, Vacuum Transfer Blower System, Reclaim
Resin Pellet Silo 1, Reclaim Pellet Pneumatic Conveying System

D. Stack Parameters

1. Stack No.: S5
Minimum Stack Height (ft above grade): 25 ft
Stack Diameter: 0.5 ft
Stack Exit Temperature: 60-90°F
Design Exhaust Gas Flow Rate: 2,000 acfm
Minimum Distance from Stack to Property Line: 300 ft

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PART I. DESIGN SPECIFICATIONS, continued

2. Stack No.: S10
Minimum Stack Height (ft above grade): 6 ft
Stack Diameter: 1 ft x 2 ft rectangle
Stack Exit Temperature: 60-90°F
Design Exhaust Gas Flow Rate: 1,000 acfm
Minimum Distance from Stack to Property Line: 83 ft

3. Stack No.: S11
Minimum Stack Height (ft above grade): 6 ft
Stack Diameter: 1 ft x 2 ft rectangle
Stack Exit Temperature: 60-90°F
Design Exhaust Gas Flow Rate: 1,000 acfm
Minimum Distance from Stack to Property Line: 83 ft

PART II. OPERATIONAL CONDITIONS

A. Equipment

1. Isopentane blowing agent usage shall not exceed a consecutive 12 month average of 78 pounds per hour and 6.5% of total foam production.

2. Maximum Foam Board Production: 9,937,000 pounds/consecutive 12 months

3. Maximum Scrap Foam Board Produced: 1,987,400 pounds/consecutive 12 months

4. The scrap foam rate shall not exceed a consecutive 12 month average of 20% of the total foam board production for that period.

PART III. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Record Keeping Requirements

1. The Permittee shall record the monthly and consecutive 12 month polystyrene usage, isopentane usage, total foam board production, total scrap foam board produced, scrap foam board to reclaim and scrap foam board to dumpster in pounds. The consecutive 12 month material usage or production shall be determined by adding the current month's usage or production to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the previous month.

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**PART III. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS,
continued**

2. The Permittee shall calculate and record the monthly and consecutive 12 month isopentane percentage. The isopentane percentage shall be determined by dividing the isopentane usage by total foam board production. The Permittee shall make these calculations within 30 days of the previous month.
3. The Permittee shall calculate and record the monthly and consecutive 12 month scrap foam rate. The scrap foam rate shall be determined by dividing total scrap foam board produced by total foam board production. The Permittee shall make these calculations within 30 days of the previous month.
4. The Permittee shall record the monthly and consecutive 12 month VOC emissions. The consecutive 12 month VOC emissions shall be determined by adding the current month's VOC emissions to that of the previous 11 months. Such records shall include a sample calculation for each of the three stages of the process (extrusion, reclaim & warehouse). The Permittee shall make these calculations within 30 days of the previous month.
5. The Permittee shall keep detailed operation and maintenance records of the equipment. Operation records shall include the time and date of start and stop of operation of the extruder and ESP. Maintenance records shall include the time and date removed from service, the cause for removal from service, the date and description of each service performed, and the time and date put back into service.
6. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

B. Reporting Requirements

1. Should the scrap foam rate exceed the consecutive 12 month average of 20% of total foam board production, the Permittee shall submit a performance plan to the commissioner within 45 days of such exceedance. The performance plan shall include an explanation of the cause and remedy of the exceedance and a schedule for meeting the permit limits.

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PART IV. OPERATION AND MAINTENANCE REQUIREMENTS

- A. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.

PART V. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein:

A. Criteria Pollutants

Polystyrene Foam Extrusion Line, Reclaim Process and Warehouse

Pollutant	lb/hr	tons per 12 consecutive months
PM/PM-10/PM-2.5	0.24	1.1
VOC	20.52	89.9

Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:

1. PM/PM-10/PM-2.5: Manufacturer's data.
 - Fluff Silos: based on testing of fluff silos for a similar facility, Emission factor = 92 lbs particulate per million lbs of fluff.
 - Laminating Coextruders: based on mass balance for a similar facility of 20 gallons of waste captured annually.
2. VOC: Material Balance of the blowing agent.
 - Extruder E-1: 7% of the total blowing agent is emitted.
 - Reclaim Process: 100% blowing agent in the scrap is emitted.
 - Warehouse: 0.0018 lb of blowing agent is emitted per lb of foam in storage.

The above statement shall not preclude the commissioner from requiring other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

- B. **Hazardous Air Pollutants** - This unit shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA Section 22a-174-29. [**STATE ONLY REQUIREMENT**]

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PART VI. SPECIAL REQUIREMENTS

- A.** Under the authority of CGS §22a-6(a)(6), the Permittee shall continue to assess methods to reduce VOCs emitted by this equipment. The Permittee shall submit a report to the commissioner every three years starting from the date of issuance of this modified permit. This report shall include the controls reviewed, the non-VOC blowing agents researched, an evaluation of the commercial and technical viability with respect to this equipment and the annualized cost per ton of emission reductions. The Permittee may be required to modify this permit to incorporate the findings of the report into the operations of this equipment.
- B.** The Permittee shall continue to assess methods to reduce the rate that scrap foam board is produced. The Permittee shall submit a report to the commissioner every three years starting from the date of issuance of this modified permit. This report shall include an explanation of all measures taken to reduce the scrap foam rate, total foam production, total scrap foam produced and the scrap foam rate for each of the previous three years.
- C.** The Permittee shall continuously cover all open drums and vessels when not in use that contain solvents, cleaners, coatings, or cleaning rags so as to minimize the amounts of VOCs emitted to the atmosphere.
- D.** STATE ONLY REQUIREMENT: The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA §22a-174-23.
- F.** STATE ONLY REQUIREMENT: The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations as set forth in RCSA §§22a-69-1 through 22a-69-7.4, inclusive.

PART VII. ADDITIONAL TERMS AND CONDITIONS

- A.** This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

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PART VII. ADDITIONAL TERMS AND CONDITIONS, continued

- B.** Any representative of the DEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C.** This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D.** This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons of municipalities who are not parties to this permit.
- E.** Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F.** Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

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PART VII. ADDITIONAL TERMS AND CONDITIONS, continued

- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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