THIS FORM MUST BE PRINTED TO A STATIC PDF FOR DISTRIBUTION

Yellow highlighted text will not appear in the printed document.

SUBMITTAL REVIEW

CLIENT NAME: Vails Gate Fire Department

PROJECT TITLE: Vails Gate FD - New Firehouse

SUBMITTAL No.: 238318-4 **H2M PROJECT No.:** VGFD2001

SUBMITTAL NAME: Insulation Board PD

SUBMITTAL REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS.
NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS
OF DIMENSIONS OR DETAILS

- ☐ NO EXCEPTIONS TAKEN
- ☒ SUBMIT SPECIFIED ITEM
- ☒ MAKE CORRECTIONS NOTED (RESUBMISSION NOT REQUIRED)
- ☐ NO ACTION TAKEN (REVIEW IS THE RESPONSIBILITY OF ANOTHER PARTY)
- ☐ REVISE & RESUBMIT
- ☐ NO ACTION TAKEN (THIS SUBMITTAL IS NOT REQUIRED BY THE CONTRACT)
- ☐ REJECTED - SEE REMARKS
- ☐ RECEIVED FOR RECORD

Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating their work with that of all other trades; and performing the work in a safe and satisfactory manner.

H2M architects + engineers

Date: 06/18/2024 By: EJN

Rev.: 2020-05-20

Comments:

Different compressive strengths are required at the 2 heated slab conditions:
8" vehicle weight bearing slabs require 100psi, using 1.5" product and insultarp vapor retarder
6" slabs required 40psi product and insultarp vapor retarder
A submittal on the heated slab vapor retarder as per spec section 031000 2.09A is required-no resubmittal on info in this submittal is necessary

CONTRACTOR'S COMPANY NAME
ADDRESS

SUBMISSION TRANSMITTAL FORM
CLIENT NAME: Vails Gate Fire District
PROJECT TITLE: VGFD2001-New Firehouse

H2M PROJECT NO.: VGFD2001

Product, Item, or System Submitted:	Insulation Board Product Data for Radiant Floor Heating System (Phase 2)		
Submission Date:	5/20/24	Submission Log No.:	238318-4
Specification Section:	238318	Paragraph Reference:	2.05/B
Contract Drawing Reference(s):			
Manufacturer's Name:			
Manufacturer's Mailing Address:			
Manufacturer's Contact Information:	*Name*	( ) *Tel. no.*	*Email*
Supplier's Name:	Joseph Lombardo Plumbing & Heating		
Supplier's Mailing Address:			
Supplier's Contact Information:	*Name*	( ) *Tel. no.*	*Email*
This item is a substitution for the specified item:		☑ No	☐ Yes

KEY CONSTRUCTION SERVICES, LLC

Project No: VGFD2001

Reviewed for General Acceptance Only. This review does not relieve the Subcontractors or Suppliers of responsibility for making the work conform to the requirements of the contract. The Subcontractor and Suppliers are responsible for all dimensions, correct fabrication and accurate fit with the work of other trades.

SUBJECT TO ARCHITECT AND OR ENGINEER APPROVAL

Signed Joseph Manfredi(PM) **Date:** 5/20/24

Contractor's Approval Stamp with Signature & Date

Contractor's Brief Comments or Remarks (attach separate letter as needed):

By making this submission, we represent that we have determined and verified all field measurements and dimensions, field construction criteria, site and building constraints in terms of limitations in moving the item into the enclosed space, materials, catalog and model numbers and similar data and that we have checked and coordinated this submission with other work at or adjacent to the installed location in accordance with the requirements contained in the Contract Documents.

END OF SECTION 013300

Joe Lombardo

Plumbing & Heating of Rockland, Inc.

321 Spook Rock Road
Suffern, NY 10901
Ph. 845-357-6537 Fx 845-357-8529
E: info@josephlombardo.com
Website: www.josephlombardo.com

Rockland Cty. Plumbing #1000 *Rockland Cty. Cooling # 1468*
Westchester Cty. Plumbing #460 *New Jersey State Plumbing #12702*

LETTER OF TRANSMITTAL

DATE: 5.20.24	JOB NO.
ATTENTION: Joe Manfredi	
RE: Vails Gate Firehouse	

TO: Key Construction
4246 Albany Post Rd. Suite 1
Hyde Park, NY 12538

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

EMAIL	DATE	NO.	DESCRIPTION
1	5.20.24	238318	Snow melt system – styro foam board

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ No Exceptions Taken ☐ Resubmit _____ copies for review
☐ For your use ☐ Make Corrections Noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Rejected ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 20___ ☐ PRINTS RETURNED AFTER LOAN TO US

COPY TO: Joe Manfredi

SIGNED: Ronald J. Lombardo

FOAMULAR® 400/600/1000 Extruded Polystyrene (XPS) Rigid Foam Insulation

Description

Owens Corning® FOAMULAR® 400, 600 and 1000 are high strength Extruded Polystyrene (XPS) Insulation products designed for use in engineered applications requiring additional load-bearing capability such as under slab, concrete floors, foundations, roadways and rail beds, plaza and parking decks and cold storage installations.

Features

- Designed for use in high load bearing applications. High compressive strength helps resist damage from heavy loads. Available in 40, 60 and 100 psi compressive strengths
- Excellent long-term stable insulating performance at R-5 per inch
- Exceptional moisture resistance, long-term durability
- Lightweight, durable rigid foam panels are easy to handle and install
- Easy to saw, cut or score

Technical Information

FOAMULAR® XPS Insulation is a non-structural material and must be installed on framing which is independently braced and structurally adequate to meet required construction and service loading conditions.

FOAMULAR® XPS Insulation can be exposed to the exterior during normal construction cycles. During that time some fading of color may begin due to UV exposure, and, if exposed for extended periods of time, some degradation or "dusting" of the polystyrene surface may begin. It is best if the product is covered within 60 days to minimize degradation. Once covered, the deterioration stops, and damage is limited to the thin top surface layers of cells. Cells below are generally unharmed and still useful insulation.

FOAMULAR® Extruded Polystyrene Insulation has a maximum service temperature of 165°F. Taking simple precautions during construction can minimize the potential for heat related damage. Install only as much FOAMULAR® XPS Insulation as can be covered in the same day. For horizontal applications, always turn the print side down so the black print does not show to the sun which may at times act as a solar collector, raising the temperature of the foam under the print to an unacceptable level. Provide a final finish covering or temporary white opaque covering to avoid possible damage when dark (non-white) surfaces are used over FOAMULAR® XPS Insulation. Do not cover FOAMULAR® XPS Insulation either stored (factory wrapped or unwrapped), or partially installed, with dark colored (non-white), or clear (non-opaque) coverings and leave it exposed to the sun. If improperly covered, and exposed to the right combination of sun, time and temperature, FOAMULAR® XPS Insulation deformation damage may occur rapidly. See Owens Corning publication number 10015704, "Heat Build Up Due to Solar Exposure" for more information.

Physical Properties[1]

Property	Test Method[2]	400	600	1000
Thermal Resistance[3], R-Value (180 day) minimum, hr•ft²•°F/Btu (RSI, °C•m²/W) @ 75°F (24°C) mean temperature	ASTM C518			
1" Thickness		5.0 (0.88)	5.0 (0.88)	—
1½" Thickness		—	7.5 (1.32)	7.5 (1.32)
2" Thickness		10.0 (1.76)	10.0 (1.76)	10.0 (1.76)
3" Thickness		15.0 (2.64)	15.0 (2.64)	15.0 (2.64)
@ 40°F (4.4°C) mean temperature				
1" Thickness		5.4 (0.95)	5.4 (0.95)	—
1½" Thickness		—	8.1 (1.43)	8.1 (1.43)
2" Thickness		10.8 (1.90)	10.8 (1.90)	10.8 (1.90)
3" Thickness		16.2 (2.85)	16.2 (2.85)	16.2 (2.85)
Long Term Thermal Resistance, LTTR-Value[3], minimum hr•ft²•°F/Btu (RSI, °C•m²/W) @ 75°F (24°C) mean temperature	CAN/ULC S770-03			
1" Thickness		5.0 (0.88)	5.0 (0.88)	—
1½" Thickness		—	7.8 (1.37)	7.8 (1.37)
2" Thickness		10.6 (1.87)	10.6 (1.87)	10.6 (1.87)
3" Thickness		16.2 (2.85)	16.2 (2.85)	16.2 (2.85)
Compressive Strength[4], minimum psi (kPa)	ASTM D1621	40 (276)	60 (414)	100 (689)
Flexural Strength[5], minimum psi (kPa)	ASTM C203	115 (793)	140 (965)	140 (965)
Water Absorption[6], maximum % by volume	ASTM C272	0.05	0.05	0.05
Water Vapor Permeance[7], maximum perm (ng/Pa•s•m²)	ASTM E96	1.1 (63)	1.1 (63)	1.1 (63)
Dimensional Stability, maximum % linear change	ASTM D2126	2.0	2.0	2.0
Flame Spread[8, 9]	ASTM E84	5	5	5
Smoke Developed[8, 9, 10]	ASTM E84	45-175	45-175	45-175
Oxygen Index[8], minimum % by volume	ASTM D2863	24	24	24
Service Temperature, maximum °F (°C)	—	165 (74)	165 (74)	165 (74)
Linear Coefficient of Thermal Expansion, in/in/°F (m/m/°C)	ASTM E228	3.5×10^{-5} (6.3×10^{-5})		

1. Properties shown are representative values for 1" thick material, unless otherwise specified.
2. Modified as required to meet ASTM C578.
3. R means the resistance to heat flow; the higher the value, the greater the insulation power. This insulation must be installed properly to get the marked R-value. Follow the manufacturer's instructions carefully. If a manufacturer's fact sheet is not provided with the material shipment, request this and review it carefully. R-values vary depending on many factors including the mean temperature at which the test is conducted, and the age of the sample at the time of testing. Because rigid foam plastic insulation products are not all aged in accordance with the same standards, it is useful to publish comparison R-value data. The R-value for FOAMULAR® XPS Insulation is provided from testing at two mean temperatures, 40°F and 75°F, and from two aging (conditioning) techniques, 180 day real-time aged (as mandated by ASTM C578) and a method of accelerated aging sometimes called "Long Term Thermal Resistance" (LTTR) per CAN/ULC S770-03. The R-value at 180 day real-time age and 75°F mean temperature is commonly used to compare products and is the value printed on the product.
4. Values at yield or 10% deflection, whichever occurs first.
5. Value at yield or 5%, whichever occurs first.
6. Data ranges from 0.00 to value shown due to the level of precision of the test method.
7. Water vapor permeance decreases as thickness increases.
8. These laboratory tests are not intended to describe the hazards presented by this material under actual fire conditions.
9. Data from Underwriters Laboratories Inc.® classified. See Classification Certificate U-197.
10. ASTM E84 is thickness-dependent, therefore a range of values is given.

Product and Packaging Data

Material			Packaging					
Extruded polystyrene closed-cell foam panel with continuous skin on face and back surface.			Shipped in poly-wrapped units with individually wrapped or banded bundles.					
Thickness (in)	**Product Dimensions Thickness (in) x Width (in) x Length (in)**	**Pallet (Unit) Dimensions (typical) Width (ft) x Length (ft) x Height (ft)**	**Square feet per Pallet**	**Board feet per Pallet**	**Bundles per Pallet**	**Pieces per Bundle**	**Pieces per Pallet**	**Edges**
FOAMULAR® 400 XPS Insulation								
1	1 x 24 x 96	4 x 8 x 8	3,072	3,072	8	24	192	
2	2 x 24 x 96	4 x 8 x 8	1,536	3,072	8	12	96	
	2 x 48 x 96	4 x 8 x 8	1,536	3,072	8	6	48	Square Edge
3	3 x 24 x 96	4 x 8 x 8	1,024	3,072	8	8	64	
	3 x 48 x 96	4 x 8 x 8	1,024	3,072	8	4	32	
FOAMULAR® 600 XPS Insulation								
1	1 x 24 x 96	4 x 8 x 8	3,072	3,072	8	24	192	
1½	1.5 x 24 x 96	4 x 8 x 8	2,048	3,072	8	16	128	
2	2 x 24 x 96	4 x 8 x 8	1,536	3,072	8	12	96	Square Edge
	2 x 48 x 96	4 x 8 x 8	1,536	3,072	8	6	48	
3	3 x 24 x 96	4 x 8 x 8	1,024	3,072	8	8	64	
	3 x 48 x 96	4 x 8 x 8	1,024	3,072	8	4	32	
FOAMULAR® 1000 XPS Insulation								
1½	1.5 x 24 x 96 (Half unit)	4 x 8 x 4	1,024	1,536	4	16	64	Square Edge
2	2 x 24 x 96 (Half unit)	4 x 8 x 4	768	1,536	4	12	48	

1. Product availability and lead times vary by region and by product. Consult your local Owens Corning sales representative for availability and lead times.

This product is combustible. A protective barrier or thermal barrier is required as specified in the appropriate building code. For additional information, contact Owens Corning World Headquarters at 1-800-GET-PINK®.

All construction should be evaluated for the necessity to provide vapor retarders. See current ASHRAE Handbook of Fundamentals.

Standards, Codes Compliance

- Meets ASTM C578 Type VI (FOAMULAR® 400 XPS Insulation), Type VII (FOAMULAR® 600 XPS Insulation), or Type V (FOAMULAR® 1000 XPS Insulation)
- UL Classification Certificate U-197[12]
- Code Evaluation Report UL ER8811-01[12]
- ASTM E119 Fire Resistance Rated Wall Assemblies[12]
- Meets California Quality Standards; HUD UM #71a
- Compliance verification by RADCO (AA-650)

12. Visit www.owenscorning.com for more details.

Limited Warranty

FOAMULAR® XPS Insulation limited lifetime warranty maintains 90% of its R-value for the lifetime of the building and covers all ASTM C578 properties. See actual warranty for complete details, limitations and requirements at www.owenscorning.com.

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services.
Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at www.owenscorning.com.

Notes

For additional information, refer to the Safe Use Instruction Sheet (SUIS) found in the SDS Database via http://sds.owenscorning.com.

Certifications and Sustainable Features

- Certified by SCS Global Services to contain a minimum of 20% recycled content pre-consumer
- GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg
- Environmental Product Declaration (EPD) has been certified by UL Environment
- Utilizing FOAMULAR® XPS insulation can help builders achieve green building certifications including the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) certification

AVERAGE 20% RECYCLED CONTENT PRE-CONSUMER

Disclaimer of Liability

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1-800-GET-PINK®
www.owenscorning.com

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