



Graphite Polystyrene (GPS) Rigid Foam Insulation

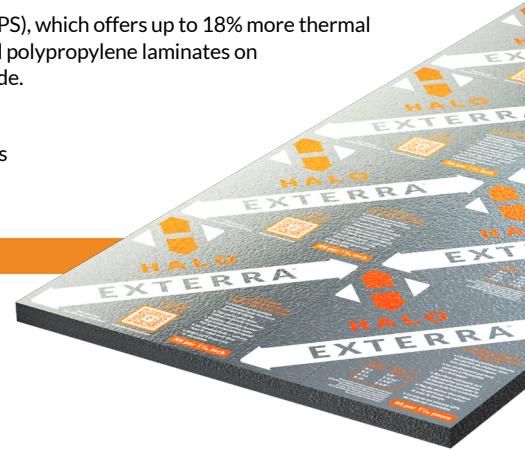
Halo® Exterra® is designed to insulate exterior above-grade walls in residential, commercial, and industrial buildings, resulting in energy efficient building enclosures. Halo® Exterra® can also function as the water resistant barrier for the building enclosure when the joints of the product are sealed with tape or a liquid applied membrane.

Halo® Exterra® products are rigid foam sheathing insulation boards made from graphite infused polystyrene (GPS), which offers up to 18% more thermal resistance than conventional expanded polystyrene insulation (EPS). Halo® Exterra® is coated with perforated polypropylene laminates on both sides of the insulation. Laminates are reflective or white on one side, and reflective or clear on the other side.

Laminates are perforated, which allows moisture to diffuse through Halo® Exterra® for thicknesses up to 2-1/8" (54mm).

BASIC USE

- Above-grade exterior walls
- Cavity walls
- Precast walls



Product Features



Stable long term
thermal resistance
(R4.7 per inch (25.4mm))



Environmentally
responsible



Most cost-efficient
exterior insulation



Water resistant



Vapor permeable

Environmental & Sustainability

- Produced without the use of chlorofluorocarbon (CFCs), hydrochlorofluorocarbon (HCFCs) or formaldehyde. As a result, Halo® Exterra® will not produce harmful emissions to the environment.

Performance Criteria

Performance Criteria			Halo® Exterra® Type I	Halo® Exterra® Type VIII	Halo® Exterra® Type 1
PROPERTIES		COMPLIANCE	ASTM C578 ^a		CAN/ULC S701 ^a
THERMAL RESISTANCE ^a	At 75°F (24°C)	ASTM C518 (CAN/ULC S701)	R4.7 (0.83 RSI)		
PHYSICAL	Compressive Resistance at 10% def., Min.	ASTM D1621	10 psi	14 psi	70 kPa
	Flexural Resistance Min.	ASTM C203	25 psi	30 psi	170 kPa
	Dimensional Stability Max.	ASTM D2126	2%		1.5%
MOISTURE	Water Vapor Permeance Max. ^b	ASTM E96	1.34 perms	> 1 perm	77 ng/Pa-s-m ²
	Water Absorption Max.	ASTM C272	4%	3%	6%
	Water Resistive Barrier	ASTM E331	Complies as a water resistive barrier ^c		
FIRE	Flame Spread Index, Max.	ASTM E84 (CAN/ULC S102.2)	<=25 (<230)		
	Smoke Developed Index, Max.		<=450 (>500)		
	Thickness		4" (102mm)		
	Density, Max.		2.2 pcf (35 kg/m ³)		
	Oxygen Index, Min.	ASTM D2863	24%		
	Fire Rated Exterior Wall System Steel Studs ^d	NFPA 285	System No. EWS0026 & EWS0025		
	Fire Rated Exterior Wall System Wood Studs ^d	UL Solutions	Design No. V306 & V332		

a. Unless noted otherwise, properties are based on 1" (25.4mm) thickness without laminate.

b. For Type I (Type 1): based on independent testing conducted by QAI. Water vapor permeance properties tested with perforated laminate and 1.5" (38 mm) thick Halo® Exterra®. The thinner the insulation the

higher the permeability. For Type VIII: estimated permeance at 1" thick Halo® Exterra®.

c. Does not require building wrap for thicknesses of 9/16" (14mm) or greater.

d. Applies to Halo Exterra manufactured with Neopor beads by BASF.



THE ADVANCED GRAPHITE INSULATION SYSTEM

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Technical Information

- Halo® products should be protected from reflective or direct UV exposure. Always keep stored Halo® products tarped or covered to protect from weather, and when possible store indoors. Do not use a clear plastic covering film.
- Until cladding is installed over Halo® Exterra® the following recommendations will help ensure installed products maintain manufactured dimensions.
 - Remove or cover the surface that is casting a reflection on installed Halo® products, or shield the affected Halo® products.
 - Cover Halo® Exterra® if left exposed for more than 30 days. Faded printing on Halo laminates is normal and will not degrade the products properties.
 - Ensure all butt joints are tightly fitted and apply sheathing tape or liquid sealant as soon as possible.
 - Immediately tape seal or temporarily cover all joints of inside corners until tape sealant is applied.
- Prior to use of adhesives, sealants or other similar products with GPS insulation please verify the compatibility with adhesive manufacturers.
- Halo® Exterra® products are made of combustible materials and may need to be protected from high heat sources. In addition, a thermal barrier may be required when used on the interior of a building. Refer to the local building code for appropriate protection and thermal barrier requirements.

Sizes

	BOARD THICKNESS	BOARD SIZE
Halo Exterra	5/8" (16mm), 1-1/16" (27mm), 1-5/8" (41mm), 2-1/8" (54mm)	4'x8'; 9'; 10' (1230mm x 2460mm, 2770mm, 3075mm)

Note: Custom sizes are available upon request. Please contact the local Logix Brands representative.

Packaging

Halo® packaging and bundle sizes vary. Please contact your local Halo® manufacturer or dealer to confirm your local packaging specifications and available bundle sizes.

Manufacturers

- AMC Foam Technologies Inc.
35 Headingley St.
Headingley Manitoba, R4H 0A8
877-789-7622
- Beaver Thermal Solutions Inc.
11581-272 St.
Acheson, Alberta, T7X 6E9
888-453-5961
- Beaver Thermal Solutions Inc.
#215-44393 Simpson Rd.
Chilliwack, BC V2R 5M3
888.453.5961
- Form Systems, Inc.
330 Cain Drive
Haysville, Kansas 67060
1-888.838.5038
- Perma R Products Inc.
2604 Sunset Dr.
Grenada, MS, 38901
800-647-6130
- Perma R Products Inc.
106 Perma R Rd.
Johnson City, TN, 37604
800-647-6130

Applicable Standards

ASTM C578	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
ASTM C518	Standard Test Method for Steady-state Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
ASTM D1621	Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
ASTM D2842	Standard Test Method for Water Absorption of Rigid Cellular Plastics.
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials.
ASTM E96	Standard Test Methods for Water Vapor Transmission of Materials.
ASTM C203	Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.
ASTM D2863	Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index).
ASTM E331	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
AATCC Test Method 127 ICC ES AC71	Acceptance Criteria for Foam Plastic Sheathing Panels Used as Weather Resistive Barriers.
CAN/ULC-S701	Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
CAN/ULC S102.2	Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.
NFPA 286	Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

Limited Warranty

Subject to the terms and conditions contained in the Limited Warranty, the Manufacturer (as defined herein) warrants that if the representative thermal insulation value Halo® insulation products Halo® Interra®, Halo® Exterra®, or Halo® Subterra® (the "Product" or "Products") varies from the published thermal resistance, the Manufacturer will, when a claim under the attached Limited Warranty is made within fifteen (15) years from the date of manufacture, refund the original purchase price to the first owner of a structure in which the Product has been installed (the "Owner"). For the purposes of the Limited Warranty, the original purchase price of the Product shall be exclusive of taxes and all other costs, including builder mark ups, labor costs and costs to remove the original Product and replace it with new Product.

For more information refer to the [Halo Zero Thermal Drift Guarantee](#).

Disclaimer of Liability

References to "Logix Brands" or the "Company" mean the manufacturer selling the Products to Owner (the "Manufacturer") unless otherwise expressly noted. NO EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR THE ATTACHED LIMITED WARRANTY. ALL OTHER WARRANTIES, EXPRESS, STATUTORY AND IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED. The Owner assumes all risks as to the use of the material. As the Manufacturer has no control over installation design and workmanship, accessory materials or application conditions, the Manufacturer does not warranty the performance or results of any installation containing the Products. The Products must be handled and installed according to the instructions outlined in the applicable Product installation guide and used only for the particular purposes recommended in the Halo Product literature available on [BuildWithHalo.com](#).

Technical Support

For North American technical inquiries please contact: techdept@logixbrands.com

Code Evaluation Approvals

- CCMC 14004-L
- QAI Listing B1031-2



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