

## PRODUCT NAME

Halo Exterra rigid EPS foam insulation

## MANUFACTURERS

- Beaver Plastics Ltd., 7-26318-TWP RD 531A, Acheson, Alberta, T7X 5A3 888-453-5961
- AMC Foam Technologies Inc., 35 Headingley St., Headingley Manitoba, R4H 0A8, 877-789-7622
- Form Solutions P.O. Box 358 Port Hope, ON, L1A 3W3 888-706-7709
- 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
- Progressive Foam Technologies 1 Southern Gateway Dr. Gnadenhutten, OH, 44629 800-860-3626

## PRODUCT DESCRIPTION

Halo Exterra products are rigid foam sheathing insulation made from BASF Neopor® 5300 Plus GPS (expanded polystyrene containing graphite), which offers up to 18% more R-value than conventional EPS.

Halo Exterra is coated with a reflective and clear laminate that is perforated to maintain breathability.

Halo Exterra provides a breathable, water-resistant barrier for building envelopes, while providing continuous insulation.

Halo Exterra is breathable up to 2" thick, and acts as a water-resistant barrier (does not require building wrap) for thicknesses of 9/16" or greater.

## BASIC USE

Halo Exterra is designed to completely seal and insulate exterior above-grade walls in residential, multi-residential, commercial, and industrial buildings, resulting in energy efficient building envelopes.

## 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 D1622 – Standard Test Method for Apparent Density 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 C303 – Standard Test Method for Dimensions and Density of Preformed Block and Board-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
- AC 71 Acceptance Criteria For Foam Plastic Sheathing Panels Used As Water-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".

## CODE EVALUATION APPROVALS

- CCMC 14004-L
- QAI Listing B1031-2
- UL ER5817-02
- QAI Listing 1055-1

## PHYSICAL PROPERTIES

Halo Exterra conforms to the physical properties shown in Tables 1, 2,3 and 4.

## ENVIRONMENTAL DATA

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

BASF Neopor 5300 Plus is recognized as a product that produces low chemical emissions by the Greenguard Environment Institute – Neopor 5300 Plus is Greenguard Indoor Air Quality Certified® and Greenguard Children & Schools<sup>SM</sup> Certified product.

## FIRE INFORMATION

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 in the interior of a building. Refer to your local building codes for appropriate protection and thermal barrier requirements.

## INSTALLATION

Halo Exterra products are light weight, which makes them easy to handle, cut, and install.

A minimal number of fasteners is required to tack Exterra sheets in place – the attachment of cladding, or strapping will fully secure Exterra sheets.

Fasten Exterra at the corner edges. The top of the fasteners should be flush to the surface of Exterra.

### Typical Fastener Types

- Plastic cap nails,
- roofing nails with at least ½" diameter washers,
- cap staples,
- or wood screws with metal roof washers.
- When fastening to metal studs use screws with at least 1" diameter metal washers.

For detailed installation instructions, fastening Exterra, including attachments of cladding or wood strapping refer to the Halo Installation Guide.

## PRODUCT SIZES

Halo Exterra sheathing are available in 4x8 sheets, 9/16", 5/8", 1", 1.5 and 2" thick. Custom sizes are available. Contact your local Halo representative for availability.

**Table 1: Thermal Insulation<sup>1</sup>**

Product	R-value @ 75°F (RSI @ 24°C) <sup>2</sup>	R-value @ 40°F (RSI @ 4.4°C) <sup>2</sup>
Halo Exterra	5 (0.88)	5.2 (0.92)

- In accordance with ASTM C578, "Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation", and CAN/ULC S701, "Standard For Thermal Insulation, Polystyrene, Boards and Pipe Covering", at 75°F (24°C), and at 40°F (4.4°C) from data provided by BASF.
- At 1" nominal thickness (actual thickness = 1.06").

**Table 2: Material Properties**

ASTM C578 <sup>1</sup>	Halo Exterra <sup>3</sup> Type I	Halo Exterra <sup>4</sup> Type VIII
Compressive Resistance at 10% def., Min., psi (ASTM D1621)	10	14
Flexural Resistance Min., psi (ASTM C203)	25	30
Water Vapor Permeance Max., perms (ASTM E96)	1.34 <sup>2</sup>	> 1
Water Absorption Max., % (ASTM C272)	1.1	1.1
Dimensional Stability Max., % (ASTM D2126)	2	2
Oxygen Index Min., % (ASTM D2863)	24	24

CAN/ULC S701 <sup>1</sup>	Halo Exterra <sup>3</sup> Type 1
Compressive Resistance at 10% def., Min., kPa (ASTM D1621)	70
Flexural Resistance Min., kPa (ASTM C203)	170
Water Vapor Permeance Max., ng/Pa-s-m <sup>2</sup> (ASTM E96)	77 <sup>2</sup>
Water Absorption Max., % (ASTM C272)	1.1
Dimensional Stability Max., % (ASTM D2126)	1.5
Oxygen Index Min., % (ASTM D2863)	24

- Unless noted otherwise, properties are based on 1" thickness without laminate. Data provided by BASF.
- Based on independent testing conducted by QAI. Water vapor permeance properties tested with perforated laminate and 1.5" thick Neopor® 5300 Plus. The thinner the insulation the higher the permeability.
- Halo Exterra is breathable up to 2" thick, and does not require building wrap for thicknesses of 9/16" or greater.
- Contact your local Halo representative for availability.

**Table 3: Surface Burning Characteristics**

	Flame Spread Index Max.	Smoke Developed Index Max.	Thickness Max.	Density
ASTM E84	5	25	5	2 pcf
CAN/ULC S102.2	230	> 500	102 mm	32 kg/m <sup>3</sup>

**Table 4: Additional Properties**

	Results
Water Resistive Barrier, per ASTM E331	Complies as a water resistive barrier at thicknesses of 9/16" or thicker.