

HALO® MATERIAL PROPERTY DATA SHEET

rev.060716

PRODUCT NAME

Halo® rigid EPS foam insulation

MANUFACTURER

- Beaver Plastics Ltd.
7-26318-TWP RD 531A
Acheson, Alberta
Canada T7X 5A3
- AMC Foam Technologies Inc.
35 Headingley St.
Headingley Manitoba Canada
R4H 0A8
- Form Solutions
P.O. Box 358
Port Hope, ON
L1A 3W3, Canada

PRODUCT DESCRIPTION

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

Halo® consists of three product lines:

- Halo® Exterra® - coated with a perforated clear polypropylene laminate on both sides of the rigid insulation.
- Halo® Interra® – coated with a reflective laminate on both sides of the rigid insulation.
- Halo® Subterra® – made with denser rigid Neopor® Plus to provide a compressive strength of minimum 16 and 30 psi (Subterra® 16 and Subterra® 30, respectively). Subterra® is coated with a woven fabric on both sides.

BASIC USE

Halo® products are suitable for use in residential, multi-residential, commercial, and industrial buildings.

Each Halo® product is designed to seal and insulate specific walls, ceilings and floors of a building, as shown in Table 1.

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

Table 1: Halo® Applications

Application	Exterra	Interra	Subterra	
			16	30
Roof		x		
Ceiling		x		
Exterior above-grade wall	x			
Interior above-grade wall		x		
Exterior foundation wall			x	x
Interior foundation wall		x		
Above slab		x		
Below slab			x	x

- 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).
- 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

PHYSICAL PROPERTIES

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

ENVIRONMENTAL DATA

Halo® is produced without the use of chlorofluorocarbon (CFCs), hydrochlorofluorocarbon (HCFCs) or

formaldehyde. As a result, Halo® will not produce harmful emissions to the environment.

BASF Neopor® Plus is recognized as a product that produces low chemical emissions by the Greenguard Environment Institute – Neopor® Plus is Greenguard Indoor Air Quality Certified® and Greenguard Children & SchoolsSM Certified product.

FIRE INFORMATION

Halo® 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® products are light weight, which makes them easy to handle, cut, and install. Installation is simple and quick, but will vary depending on the application (see Table 1).

For detailed installation instructions refer to the Halo® Installation Guide.

PRODUCT SIZES

Halo® sheathing are available in 4x8 sheets in varying thicknesses. Contact your local Halo representative for more information.

Table 2: Thermal Insulation¹

Product	R-value @ 75°F (RSI @ 24°C) ²	R-value @ 40°F (RSI @ 4.4°C) ²
Exterra®	5 (0.88)	5.2 (0.92)
Interra®	5 (0.88)	5.2 (0.92)
³ Subterra® 16	5 (0.88)	5.2 (0.92)
³ Subterra® 30	5 (0.88)	5.3 (0.93)

1. 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.
2. At 1" nominal thickness (actual thickness = 1.06").
3. Subterra also available in 40 psi, or greater, compressive strength.

Table 3: Material Properties

ASTM C578 ¹	Exterra®	Interra®	Subterra® ⁴ 16	Subterra® ⁴ 30
Compressive Resistance at 10% def., Min., psi	10	10	16	30
Flexural Resistance Min., psi	25	25	40	50
Water Vapor Permeance Max., perms	1.34 ²	0.03 ³	0.04 ³	0.05 ³
Water Absorption Max., %	1.1	1.1	1.1	1.1
Dimensional Stability Max., %	2	2	2	2
Oxygen Index Min., %	24	24	24	24

CAN/ULC S701 ¹	Exterra®	Interra®	Subterra® ⁴ 16	Subterra® ⁴ 30
Compressive Resistance at 10% def., Min., kPa	70	70	110	210
Flexural Resistance Min., kPa	170	170	275	345
Water Vapor Permeance Max., ng/Pa-s-m ²	77 ²	1.7 ³	2.1 ³	2.7 ³
Water Absorption Max., %	1.1	1.1	1.1	1.1
Dimensional Stability Max., %	2	2	2	2
Oxygen Index Min., %	24	24	24	24

1. Unless noted otherwise, properties are based on 1" thickness without laminate by data provided by BASF.
2. Based on independent testing conducted by QAI. Water vapor permeance properties tested with laminate and 1.5" thick Neopor® Plus.
3. Based on independent testing conducted by QAI. Water vapor permeance properties tested with laminate and 1" thick Neopor®.
4. Subterra® also available in 40 psi, or more, compressive strength.

Table 4: Surface Burning Characteristics

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