

Product Name

TERRAFOAM RIGID INSULATION (EPS): Type I, II, III & IX (HS-30)

Associated Specification Section

MasterFormat 2004 # 07 21 13

MasterFormat 1995 # 07213

Manufacturer's Name

Beaver Plastics Ltd.

PRODUCT DESCRIPTION

PRODUCT FEATURES

- DESCRIPTION / BASIC USES

- Closed cell expanded polystyrene (EPS) rigid insulation.
- Below grade applications:
 - Perimeter insulation for grade beams and foundation walls.
 - Insulation under concrete slabs and in crawlspaces.
 - Frost protected shallow foundations.
 - Ice arenas and snow melt systems.
 - Landscaping and geotechnical applications
- Above grade applications:
 - Continuous insulation for wall construction assemblies.
 - Cavity wall and masonry construction assemblies.
 - Exterior Insulation Finish Systems (EIFS)
 - Roofing insulation, including sloped, flat, and tapered applications.
 - Coolers, freezers, and ice arenas.

- PRODUCT ATTRIBUTES AND CHARACTERISTICS

- Excellent resistance to freeze/thaw cycles.
- Low moisture absorption.
- Contains no CFCs, HCFCs, or other refrigerant gases. Does not lose R-value over time.
- Biologically inert. Will not support mould, mildew or fungus growth.
- Contains a fire retardant additive to inhibit accidental ignition from a small fire source.
- Non-toxic and hypo-allergenic. Does not off-gas.
- The insulation value (R-Value) increases as temperature decreases.
- Can contribute to LEED Requirements for low-emitting materials (confirm with LEED requirement for Indoor Air Quality).

- SELECTION CRITERIA

- Suitable for both cold and hot climate applications.

- SUSTAINABILITY CRITERIA

- Manufactured in Acheson, AB and Chilliwack, BC, Canada.
- Contains no CFC or HCFC gasses; does not contribute to ozone depletion or global warming (contains only air).
- Non-toxic; does not irritate skin.

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● APPLICABLE STANDARDS, RELATED REFERENCES

- ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
- ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
- ASTM D1623 - Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
- ASTM C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
- 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.
- CAN/ULC-S701 – Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

● QUALITY STATEMENT, TESTS, CERTIFICATIONS, AND APPROVALS

- Performance tests certified by Intertek Testing Services Ltd.
- CCMC, Canadian Construction Materials Center, Evaluation 12982-L.

● PACKAGING, HANDLING, PROTECTION, AND DELIVERY INSTRUCTIONS

- Must be protected from damage during transit.
- Must be protected from UV degradation during storage and after erection.
- Do not expose to volatile hydrocarbons, such as fuel oils, gasoline, alcohols.

● LIMITATIONS

- Surface may degrade after lengthy exposure to direct or reflected ultra-violet rays.
- Excessive heat build up can damage insulation.
- Product will burn when exposed to large continuous flame.



April 25, 2019

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Page 3

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● SAFETY PRECAUTIONS

- Normal fire precautions and good housekeeping methods must be followed during storage and application.

● AVAILABILITY

- Available direct from Beaver Plastics or appointed distributors

● COST

- Varies with substrate condition and configuration, and relative size of building.
- Consult manufacturer or distributors for specific product costs or budget pricing.

PRODUCT PROPERTIES

● THERMAL INSULATION VALUES AND TECHNICAL PROPERTIES

- Rigid, closed cell, expanded polystyrene (EPS), to CAN/ULC-S701 for Type 1, 2 and 3.
- Flame Spread / Smoke Developed Index: Less than 25/450, to ASTM E84.

PHYSICAL PROPERTY	UNITS IMPERIAL R VALUE	UNITS SI (METRIC)	ASTM TEST PROCEDURE	TERRAFOAM TYPE 1		TERRAFOAM TYPE 2		TERRAFOAM TYPE 3		TERRAFOAM TYPE IX (HS-30)	
				Imperial	Metric	Imperial	Metric	Imperial	Metric	Imperial	Metric
Minimum thermal Resistance (R-Value)	hr. ft ² °F BTU /1 in.	m ² °C W/25mm	C-177-93 @ 0°C (32°F)	4.07	0.72	4.40	0.77	4.62	0.81	4.65	0.82
			C-177-93 @ 24°C (75°F)	3.75	0.65	4.04	0.70	4.27	0.74	4.3	0.75
Compressive Strength	psi	kPa	D 1621-73	10	70	16	110	20.4	140	30	210
Capillary Action	-----	-----	-----	none	none	none	none	none	none	none	none
Water vapor permeance (max)	perm - in	ng/Pa.s.m ²	E 96-80	5.25	300	3.5	200	2.25	130	2.5	143
Water absorption % (max)	%	%	D 2842-69	6.0	6.0	4.0	4.0	2.0	2.0	2.0	1.0

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● ACCESSORIES

- Adhesives, insulation fasteners.

● DIMENSIONS

- Thickness: Any thickness from 12 mm to 1220 mm (1/2" – 48"), square edges are standard.
- Standard board sizes:
 - 610 x 2440 mm (2' x 8') panels.
 - 1220 x 2440 mm (4' x 8') panels.
- Profiles: Shiplap edges, drainage or furring slots and other custom profiles can be provided at nominal cost.

PRODUCT PLACEMENT

● INSTALLATION

- Install products in accordance with the manufacturer's instructions for each specific application.
- Cover exposed insulation with a finish acceptable to local building authorities.

● MAINTENANCE INSTRUCTIONS AND PROCEDURES

- Product incompatible with aromatic, aliphatic hydrocarbons, esters, amines, or anhydrous acids, which could cause degradation.

Corporate Identification

Beaver Plastics Ltd.
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Acheson, AB, Canada T7X 6E9
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Internet web site: <http://www.beaverplastics.com>
E-mail: techsupport@beaverplastics.com

Technical Services Available

Phone toll free, fax or e-mail (see above)



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Page 5

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Classification and Filing

UniFormat 2010

A2010	Walls for Subgrade Enclosures
A2010.90	Subgrade Enclosure Wall Supplementary Components
A4090.10	Perimeter Insulation
B1010	Floor Construction
B1010.90	Floor Construction Supplementary Components
B1020	Roof Construction
B1020.90	Roof Construction Supplementary Components
B2010	Exterior Walls
B2010.10	Exterior Wall Veneer
B2010.20	Exterior Wall Construction
B2010.40	Fabricated Exterior Wall Assemblies
B2010.80	Exterior Wall Supplementary Components
B3010	Roofing
B3010.10	Steep Slope Roofing
B3010.50	Low-Slope Roofing
B3010.90	Roofing Supplementary Components
B3040	Traffic Bearing Horizontal Enclosures
B3040.30	Horizontal Waterproofing Membrane
B3040.90	Horizontal Enclosure Supplementary Components
B3080	Overhead Exterior Enclosures

OmniClass 2010 Table 23 - Products

23-13 25 19	Thermal Insulation
23-13 25 19 11	Slab and Board Thermal Insulation
23-13 25 19 11 11	Polystyrene Slab and Board Thermal Insulation
23-13 25 19 11 11 11	Expanded Polystyrene Slab and Board Thermal Insulation
23-13 39 31	Roof Membranes
23-35 20 21 11	Single Layer Roof Membranes
23-35 20 21 13	Multi Layer Roof Membranes
23-19 31 19 13	Insulated Rooms
23-19 31 19 13 11	Cold Storage Rooms

MasterFormat 2004:

07 21 13	– Board Insulation
07 21 13.13	– Foam Board Insulation
07 22 00	– Roof and Deck Insulation



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Page 6

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- 07 24 00 – Exterior Insulation and Finish Systems
- 07 50 00 – Membrane Roofing
- 07 51 00 – Built-Up Roofing
- 07 52 00 – Modified Bituminous Membrane Roofing
- 07 53 00 – Elastomeric Membrane Roofing
- 07 54 00 – Thermoplastic Membrane Roofing
- 07 55 00 – Protected Membrane Roofing
- 07 55 63 – Vegetated Protected Membrane Roofing

MasterFormat 1995:

07213 – Board Insulation

END