

**Product Name**

TERRAFOAM® EPS HS-40 and HS-60

**Associated Specification Section**

MasterFormat 07 21 13

**Manufacturer's Name**

Beaver Plastics

October 6, 2014

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## PRODUCT DESCRIPTION

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### PRODUCT FEATURES

- DESCRIPTION
  - Closed cell high density expanded polystyrene (HDEPS) insulation suitable for high load compressive strength applications.
- USES
  - Geotechnical and other below grade applications:
    - Building perimeter and under slab insulation.
    - Frost protected shallow foundations.
    - Highway and railroad bed construction.
    - Airport runways, taxiways, and aprons.
    - Large earth structures, ramps, and beams.
    - Isolating bearing pads under heavy process equipment and industrial traffic.
    - Ice arena and snow melt systems.
    - Freezers and coolers.
    - Buoyancy billets.
  - Above grade applications:
    - In conjunction with above grade construction.
    - Masonry and cavity wall assemblies.
    - Roof insulation, including tapered modules for slope-to-drain areas.
    - Exterior Insulated Finish Systems (EIFS).
- PRODUCT ATTRIBUTES AND CHARACTERISTICS
  - Excellent resistance to freeze/thaw cycles.
  - Low moisture absorption properties.
  - Breathable, allowing transmission of water vapour.
  - Contains no CFCs, HCFCs, or other refrigerant gases.
  - Biologically inert. Will not support mould, mildew or fungus growth. Not a pest food source.
  - Contains a chemical additive to inhibit accidental ignition from a small fire.
  - Non-toxic and hypo-allergenic. Does not off-gas.
  - The insulation value (R-Value) increases as temperature decreases. Does not lose insulation value over time.

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- **SELECTION CRITERIA**
  - Suitable for cold climate applications, where soil is prone to heaving.
  - Can be used for buoyancy in sea and fresh water.
  - HS-40: Available in two standard board sizes, in any thickness up to 610 mm (24 inches).
  - HS-60: Available in 610 x 1220 mm boards, in four standard thicknesses
  - Available in flat sheets or custom profiles.
- **SUSTAINABILITY CRITERIA**
  - Contains recycled content and can contribute to LEED Material and Resources Credit 4 – Recycled Content.
  - Manufactured in Edmonton and Vancouver, Canada and may contribute to LEED Material and Resources Credit 5 – Regional Materials depending on the location of the project site.
  - Contains no CFC or HCFC gasses; does not contribute to ozone depletion.
  - Non-toxic; does not irritate skin on exposure.
  - Biologically inert and will not support mould, mildew or fungus growth or pests.
- **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 D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics.
  - 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**
  - Canadian Construction Material Centre (CCMC): CCMC #12982-L (HS-40)
  - Performance tests certified by Intertek Testing Services Ltd.
- **PACKAGING, HANDLING, PROTECTION, AND DELIVERY INSTRUCTIONS**
  - Protect panels from damage during transit.
  - Protect panels from UV exposure during storage and after installation.
  - Do not expose to volatile hydrocarbons, such as fuel oils, gasoline, and alcohols.

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- **LIMITATIONS**
  - Degrades with lengthy exposure to ultra-violet light.
  - Will burn when exposed to large continuous flames.
- **SAFETY PRECAUTIONS**
  - Follow normal fire precautions and good housekeeping methods during storage and installation.
- **AVAILABILITY**
  - Available directly 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 relative costs.

**PRODUCT PROPERTIES**

- **MATERIALS, COMPOSITION, PROPERTIES**
  - Technical Properties: Rigid, closed cell, expanded polystyrene (EPS) board and as follows:
    - HS-40: Meeting ASTM C578 Type XIV, and exceeds CAN/ULC S701 Type 2.
    - HS-60: Meeting ASTM C578 Type XV, and exceeds CAN/ULC S701 Type 3.
    - **Flame Spread / Smoke Developed Index: Less than 25/450, to ASTM E84.**

<b>PHYSICAL PROPERTY</b>	<b>METRIC</b>		<b>IMPERIAL</b>	
	<b>HS-40</b>	<b>HS-60</b>	<b>HS-40</b>	<b>HS-60</b>
Compressive Strength (ASTM D1621)	276 kPa (min)	414 kPa (min)	40 psi (min)	60 psi (min)
Thermal Resistance (ASTM C578)	RSI 0.87 @ -10°C		R 5 @ 15°F	
	RSI 0.75 @ 24°C		R 4.3 @ 75°F	
Flexural Strength	414 kPa (min)	517 kPa (min)	60 psi (min)	75 psi (min)
Water Vapour Permeance (ASTM E96)	90 ng/Pa.s.m <sup>2</sup> (max)	143 ng/Pa.s.m <sup>2</sup> (max)	1.6 perm (max)	2.5 perm (max)
Water Absorption (ASTM D2842)	1% (max)		1% (max)	
Dimensional Stability, % linear change	1% (max)		1% (max)	

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**PRODUCT DESCRIPTION**

- ACCESSORIES
  - Adhesives and/or insulation fasteners.
- DIMENSIONS

	HS-40		HS-60	
	Metric	Imperial	Metric	Imperial
Thickness	610 mm (max)	24" (max)	25 mm, 50 mm, 75 mm, and 100 mm	1", 2", 3", and 4"
Length x Width	610 x 1220 mm	2' x 4'	610 x 1220 mm	2' x 4'
	1220 x 2440 mm	4' x 8'		
Edge Condition	Butt edges, shiplapped, or batten slots		Butt edges	
Notes	Custom profiles available			

**PRODUCT PLACEMENT**

- PREPARATION
  - Surfaces must be smooth, dry and ready to receive insulation.
- 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
  - Avoid exposing to volatile hydrocarbons and anhydrous acids, which may degrade the expanded polystyrene.

**Corporate Identification**

Beaver Plastics  
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 Acheson, Alberta, Canada T5X 5A3

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**Technical Services Available**

Phone toll free or e-mail

**Classification and Filing**

OmniClass, Table 23 - Products

23-20 50 24 11 11 11 Expanded Polystyrene Slab and Board Thermal Insulation

MasterFormat:

07 21 00 – Thermal Insulation

07 21 13 – Board Insulation

07 21 13.13 – Foam Board Insulation

07 24 00 – Exterior Insulation and Finish Insulations

07 50 00 – Membrane Roofing

31 23 00 – Subgrade Excavation and Fill

31 23 23 – Fill

**END**