



**Product Name**

TERRAFOAM® HS-80 and HS-100

**Associated Specification Section**

MasterFormat 2004 #07 21 13

MasterFormat 1995 # 07213

**Manufacturer's Name**

Beaver Plastics

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## PRODUCT DESCRIPTION

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### PRODUCT FEATURES

- DESCRIPTION / BASIC USES
  - Closed cell high density expanded polystyrene (HDEPS) insulation suitable for high load compressive strength applications.
  - Geotechnical and other below grade applications:
    - Building perimeter and under slab insulation.
    - Custom tapered or slope to drain profiles.
    - Frost protected shallow foundations.
    - Frost protection for buried utilities.
    - 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.
  - 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.
  - 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-80: Available in 610 x 1220 mm 2' x 4' boards, up to 150 mm (6 inches) thick.
  - HS-100: Available in 610 x 1220 mm 2' x 4' boards, up to 150 mm (6 inches) thick.
  - Available in flat sheets, sloped or custom profiles.
  
- SUSTAINABILITY CRITERIA
  - Manufactured in Edmonton, AB. and Chilliwack, B.C., Canada (contributes to LEED Credits)
  - Contains no CFC or HCFC gasses; does not contribute to ozone depletion.
  - Stable R-value – will not decrease over time.
  - 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 D1623 - Standard Test Method for Tensile and Tensile Adhesion 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.
  - CAN/ULC-S701 – Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
  - CCMC #12982-L (HS-40) Canadian Construction Material Centre
    - Performance tests certified by Intertek Testing Services Ltd.



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- **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.
- **LIMITATIONS**
  - Surface may degrade 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 application, configuration and relative size of project.
  - Consult manufacturer or distributors for specific product costs or budget pricing.

**PRODUCT PROPERTIES**

- **MATERIALS, COMPOSITION, PROPERTIES**
  - Technical Properties: Rigid, closed cell, expanded polystyrene (EPS) board and as follows:
    - HS-80: Exceeds ASTM C578 Type XV, and exceeds CAN/ULC S701 Type 3.
    - HS-100: Meets ASTM C578 Type V, and exceeds CAN/ULC S701 Type 3.
- **ACCESSORIES**
  - Adhesives and/or insulation fasteners.



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● **PROPERTIES**

PHYSICAL PROPERTY	METRIC		IMPERIAL	
	HS-80	HS-100	HS-80	HS-100
Compressive Strength (ASTM D1621)	552 kPa (min)	690 kPa (min)	80 psi (min)	100 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	880 kPa (min)	1035 kPa (min)	128 psi (min)	150 psi (min)
Water Vapour Permeance (ASTM E96)	143 ng/Pa.s.m <sup>2</sup> (max)	143 ng/Pa.s.m <sup>2</sup> (max)	2.5 perm (max)	2.5 perm (max)
Water Absorption (ASTM D2842)	1% (max)		1% (max)	
Dimensional Stability, % linear change	1% (max)		1% (max)	

● **DIMENSIONS**

	HS-80		HS-100	
	Metric	Imperial	Metric	Imperial
Thickness	25, 50, 75,100, 125 & 150 mm	1", 2", 3", 4", 5" & 6"	25, 50, 75,100, 125 & 150 mm	1", 2", 3", 4", 5" & 6"
Length x Width	610 x 1220 mm	2' x 4'	610 x 1220 mm	2' x 4'
Edge Condition	Butt edges		Butt edges	
Notes				



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**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**

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**Technical Services Available**

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



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**Classification and Filing**

OmniClass, Table 23 - Products

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

MasterFormat 2004:

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

MasterFormat 1995:

07213 – Board Insulation

**END.**