Product Name
INSULWORKS™ April 30, 2019
Associated Specification Section
MasterFormat 1995 # 03118
MasterFormat 2004 # 03 11 26
Manufacturer's Name
Beaver Plastics Ltd.

PRODUCT DESCRIPTION

PRODUCT FEATURES

- DESCRIPTION / BASIC USES
  - INSULWORKS is a unique EPS insulation panel designed specifically for hydronic heating applications incorporating tubing placement channels in the EPS rigid panels. INSULWORKS provides both increased energy efficiency for the building and labour cost savings during installation of the hydronic system.
  - INSULWORKS is manufactured from high-density EPS and is designed for hydronic heating applications, such as:
    - under basement slab and slab-on-grade
    - in sandwich slab applications
    - snow melt systems
    - available in both residential and commercial grades

- PRODUCT ATTRIBUTES AND CHARACTERISTICS
  - High compressive strength supports concrete structures, construction activity, machinery and heavy loading.
  - Efficient thermal barrier between the heated slab and underlying ground.
  - Moisture vapour permeable.
  - Contains no CFCs, HCFCs, or other refrigerant gases.
  - Biologically inert; will not support mould, mildew or fungus growth.
  - Contains a chemical additive to inhibit accidental ignition from a small fire source.
  - Non-toxic and hypo-allergenic.

- SELECTION CRITERIA
  - Reduces labour and costs by eliminating the need to tie tubing down to wire mesh.
  - Available in four standard thicknesses with additional thicknesses available on request.
  - Standard thermal resistance values range from 1.1 RSI (R-6) to 2.8 RSI (R-16.1) or over.
  - Available for both 13 mm (1/2"), 16MM (5/8") and 19 mm (3/4") ID tubing.
  - Material is easily cut.

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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 Centre, Evaluation 12892-L

- SAFETY PRECAUTIONS
    - INSULWORKS will burn when exposed to large continuous flame.
    - Normal fire precautions and good housekeeping methods must be followed during storage and application.

- AVAILABILITY
    - Available directly from Beaver Plastics or authorized distributors.

- COST
    - Consult manufacturer or distributors for specific product costs or budget pricing.

PRODUCT DESCRIPTION

- MATERIALS, COMPOSITION, PROPERTIES

PHYSICAL PROPERTY	UNITS IMPERIAL (R VALUE)	UNITS SI (METRICS)	ASTM TEST PROCEDURE	VALUES	
				Imperial	Metric
Minimum thermal Resistance (R-Value)	$Hr.ft^2$ °F BTU / 1 in.	hm^2 °C W / 25 mm	C-177-76 or C-518-76	4.04	0.70
Coefficient of Thermal Expansion (max)	In / in / °F	m / m°C	D-696-79	3.5×10^{-5}	6×10^{-5} c^{-1}
Compressive Strength	Psi	kPa	D-1621-73	16	110
Capillary Action	-----	-----	-----	none	none
Water vapor permeance (max)	Perm - in	ng / Pa.s.m.$^{-2}$	E96-80	3.5	200
Water absorption % (max)	%	%	D2842-69	4.0	4.0

  - Flame Spread/Smoke Developed Index: Less than 25/450 to ASTM E84.
  - Thermal resistance for standard thicknesses available:
    - 38 mm (1 1/2") thickness: 1.1 RSI (R-6)
    - 48 mm (1 7/8") thickness: 1.3 RSI(R-7.5)
    - 64 mm (2 1/2") thickness: 1.7 RSI (R-1O)
    - 76 mm (3") thickness: 2.1 RSI (R-12)
    - 83 mm (3 ¼") thickness: 2.3 RSI (R-13.2)
    - 102 mm (4") thickness: 2.8 RSI (R-16.1)

- DIMENSIONS
  - Standard board sizes: 1220 x 1220 mm (4' x 4') panels.
  - Standard board thickness:
  - 38 mm, 48 mm, 64 mm, 76mm, 83 mm and 102 mm (1 1/2", 1 7/8", 2 1/2", 3", 3 ¼" and 4").

PRODUCT PLACEMENT

- INSTALLATION
  - Verify surface is ready to receive insulation.
  - Surfaces must be smooth, dry and ready to receive insulation
  - Install products in accordance with the manufacturer's instructions.
  - Cover exposed insulation with a finish acceptable to local building authorities.

PRODUCT DESCRIPTION

Corporate Identification

Beaver Plastics Ltd.
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Classification and Filing
MasterFormat 2004:
07 21 11 – Hydronic Tubing Insulation
MasterFormat 1995:
07212 – Hydronic Tubing Insulation

Uniformat 1998:
A1030

END

PRODUCT DESCRIPTION