



Product Name

DYNAVOID™

May 1, 2019

Associated Specification Section

MasterFormat 2004 # 03 10 00

MasterFormat 1995 # 03115

Manufacturer's Name

Beaver Thermal Solutions Inc.

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PRODUCT DESCRIPTION

PRODUCT FEATURES

- DESCRIPTION / BASIC USES
 - Closed cell expanded polystyrene (EPS) insulation / void form.
 - Designed to be used as protective void form material under structural slabs to prevent damage caused by upward movement of the underlying ground.
 - Adds insulation value to improve project energy use design parameters.
- PRODUCT ATTRIBUTES AND CHARACTERISTICS
 - Dynavoid will support initial concrete placing and rebar loads until the slab it is self-supporting.
 - Protects structural slabs from 254 mm (10 inches) to 2.5 m (8.2 ft.).
 - Qualifies as a dynamic inclusion; mechanically responsive to expanding soils.
 - Uses thermoplastic creep to trigger programmed, timely collapse, permitting the subgrade to rise without producing undue stress against the bottom of the slab.
 - All weather applications – performance not affected by water, or freezing conditions.
 - Increases energy efficiency by serving as under-slab insulation, no loss in R value over time.
 - Contains no CFCs, HCFCs, or other refrigerant gases.
 - Biologically inert. Will not support mould, mildew or fungus growth. Not a food source for pests.
 - Contains a chemical additive to inhibit accidental ignition from a small fire source.
 - Non-toxic and hypo-allergenic. Does not off-gas.
- SELECTION CRITERIA
 - Product is available in two standard thicknesses.
 - Material is easily cut to fit around protuberances, column bases, etc.
 - Variations have been developed for high-stress applications. (E.g.; ultra-thick slabs).
 - Product can be manufactured to site specific requirements for different physical characteristics and performance.



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- Minimum and maximum slab thicknesses:

100 mm Thick Dynavoid	40144	40142	40244	40241	40341	40342	40441	40442	40447	40547
Max Slab Thickness (m)	.370	.460	.575	.710	.865	1.000	1.235	1.470	1.888	2.560
Min Slab Thickness (m)	.250	.325	.400	.500	.610	.705	.875	1.035	1.333	1.805
150 mm Thick Dynavoid	40166	40164	40167	40264	40267	40367	40365	40467	40465	40565
Max Slab Thickness (m)	.370	.450	.560	.655	.865	1.090	1.290	1.550	1.950	2.550
Min Slab Thickness (m)	.250	.315	.395	.465	.610	.770	.910	1.090	1.380	1.800

- **PERFORMANCE CRITERIA**
 - Proper selection of Dynavoid model based on slab thickness will ensure creep and collapse under the sustained stress from sub grade upward movement. Each type will collapse to approximately 45% of its original thickness before it becomes fully collapsed and then begins to compress during continued strain, as does ordinary “solid” void products.
 - The weight and soil friction of fully attached piles may be added to the weight of the slab for calculations purposes. If so, care must be taken to make sure that the slab has the needed flexural strength to withstand additional upward forces.
- **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.



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- 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.
- **QUALITY STATEMENT, TESTS, CERTIFICATIONS, AND APPROVALS**
 - CCMC, Canadian Construction Materials Centre, Evaluation 12982-L
 - Patents:
 - U.S. Patent 6,289,636.
 - Canadian Patent 2,282,109.
- **PACKAGING, HANDLING, PROTECTION, AND DELIVERY INSTRUCTIONS**
 - DYNAVOID panels come packaged and nested, two panels together.
 - DYNAVOID panels must be protected from damage during transit.
 - DYNAVOID panels must be protected from UV degradation during storage and after erection.
- **LIMITATIONS**
 - Product will burn when exposed to large continuous flame.
- **SAFETY PRECAUTIONS**
 - Normal fire precautions and good housekeeping methods must be followed during storage and application.
- **AVAILABILITY**
 - Available from Beaver Thermal Solutions directly or authorized distributors.
- **COST**
 - Varies with selected models.
 - Consult manufacturer for specific product costs or budget pricing.



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PRODUCT PROPERTIES

- MATERIALS, COMPOSITION, PROPERTIES
 - Material: Rigid closed cell, expanded polystyrene (EPS)
 - Technical Properties:
 - Flame Spread Index/ Smoke Developed Index: Less than 25/450 to ASTM E84.
 - Thermal Resistance: RSI-0.65 to 0.87 (R-3.7 to R-5), depending on model.
 - Water absorption (by volume): Maximum 4.0 percent, to ASTM D2842.
 - Water vapour permeance: Maximum 160 ng/Pa.s.q m (2.8 Perm-inch), to ASTM E96.
- DIMENSIONS
 - Standard board sizes available:
 - 100 x 1220 x 1220 mm (4" x 4' x 4') panels.
 - 150 x 1220 x 1220 mm (6" x 4' x 4') panels.

PRODUCT PLACEMENT

- PREPARATION
 - Ground must be prepared and level.
- INSTALLATION
 - Lay DYNAVOID panels on prepared, level ground, with joints tight.
 - Cut around protuberances, column bases, etc.
 - The use of Subterra Protection board, hardboard or fibreboard is required to distribute point loads.
- COVERAGE
 - Bundle size and coverage:

	PRODUCT SIZE	PCS/BUNDLE	AREA/BDLE	BUNDLE SIZE
Imperial	4" x 4' x 4'	10	160 sq. ft.	24" x 4' x 4'
Metric	100 x 1220 x 1220 mm	10	14.8 m ²	610 x 1220 x 1220 mm
Imperial	6" x 4' x 4'	6	96 sq. ft.	24" x 4' x 4'
Metric	150 x 1220 x 1220 mm	6	8.9 m ²	610 x 1220 x 1220 mm



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PRODUCT DESCRIPTION

- MAINTENANCE INSTRUCTIONS AND PROCEDURES
 - Product should not be exposed to volatile hydrocarbons, which may attack the expanded polystyrene.

Corporate Identification

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Classification and Filing

OmniClass Table 23 - Products
23-20 50 31 21 Products for Prevention of Subsoil Heaving

MasterFormat 2004:
03 10 00 - Concrete Forming and Accessories

MasterFormat 1995:
03115 – Under Slab Concrete Void Forms

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