

**Product Name**

DYNAVOID™

**Associated Specification Section**

MasterFormat 2004 # 31 11 23

MasterFormat 1995 # 03115

**Manufacturer's Name**

Beaver Plastics

May 19, 2006

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## PRODUCT DESCRIPTION

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### PRODUCT FEATURES

- BASIC USES / RELATED USES
  - Expanded polystyrene (EPS) void form material designed to be used under structural slabs to prevent heaving caused by upward movement of the underlying ground.
- PRODUCT ATTRIBUTES AND CHARACTERISTICS
  - All weather applications – performance not affected by water, or freezing conditions.
  - Conserves energy by serving as under-slab insulation.
  - Structural capacity to support concrete placing, finishing, and weight of the slab till self-supporting.
    - Supports concrete thickness from 350 mm (14 inches) to 3.35 m (11 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.
  - Contains no CFCs, HCFCs, or other refrigerant gases.
  - EPS is biologically inert and will not support mould, mildew or fungus growth.
  - Contains a chemical additive to inhibit accidental ignition from a small fire source.
  - Material is non-toxic and hypo-allergenic.
- 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:

<b>4 inch Model</b>	<b>40144</b>	<b>40142</b>	<b>40244</b>	<b>40241</b>	<b>40341</b>	<b>40342</b>	<b>40441</b>	<b>40442</b>		<b>40447</b>
Max. Slab Thickness (m (ft))	0.45 (1.50)	0.65 (2.15)	0.75 (2.40)	0.90 (2.90)	1.20 (3.90)	1.35 (4.40)	1.60 (5.20)	1.90 (6.20)		2.40 (7.90)
Min. Slab Thickness (m (ft))	0.35 (1.15)	0.45 (1.50)	0.55 (1.80)	0.65 (2.15)	0.85 (2.80)	1.00 (3.30)	1.15 (3.80)	1.35 (4.40)		1.65 (5.45)
<b>6 inch Model</b>	<b>40166</b>	<b>40164</b>	<b>40167</b>	<b>40264</b>	<b>40267</b>	<b>40367</b>	<b>40365</b>	<b>40467</b>	<b>40465</b>	<b>40565</b>
Max. Slab Thickness (m (ft))	0.45 (1.50)	0.50 (1.60)	0.70 (2.30)	0.85 (2.75)	1.15 (3.75)	1.40 (4.50)	1.60 (5.25)	1.90 (6.20)	2.45 (8.00)	3.35 (11.00)
Min. Slab Thickness (m (ft))	0.35 (1.15)	0.40 (1.35)	0.50 (1.60)	0.60 (2.00)	0.80 (2.70)	1.00 (3.30)	1.10 (3.65)	1.40 (4.60)	1.70 (5.60)	2.15 (7.05)

- **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 450 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.
- 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.

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- 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**
  - Product certified under Warnock Hershey Third Party Certification Program.
  - ISO 9001:2000 Registered Company (Quality Certification Bureau #94-41).
  - Canadian Construction Materials Centre, Evaluation 12982-L
  - International Code Council - Evaluation Service, Evaluation ER-6100
  - 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 Plastics' construction products distributors.
- **COST**
  - Varies with selected models.
  - Consult manufacturer for specific product costs or relative costs.

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**PRODUCT DESCRIPTION****PRODUCT PROPERTIES**

- MATERIALS, COMPOSITION, PROPERTIES
  - Material: Rigid closed cell, expanded polystyrene (EPS)
  - Performance:
    - 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.sq m (2.8 Perm-inch), to ASTM E96..
- DIMENSIONS
  - Standard board sizes available:
    - 100x1220x1220 mm (4" X 4' X 4') panels.
    - 150x1220x1220 mm (6" X 4' X 4') panels.

**PRODUCT PLACEMENT**

- PREPARATION
  - Ground must be prepared and level.
- INSTALLATION
  - Lay DYNVOID panels on prepared, level ground, with joints tight.
  - Cut around protuberances, column bases, etc.
  - The use of 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'	12	192 sq.ft.	30" x 4' x 4'
Metric	100 x 1220 x 1220 mm	12	17.8 m <sup>2</sup>	760 x 1220 x 1220 mm
Imperial	6" x 4' x 4'	8	128 sq.ft.	30" x 4' x 4'
Metric	150 x 1220 x 1220 mm	8	11.9 m <sup>2</sup>	760 x 1220 x 1220 mm

- MAINTENANCE INSTRUCTIONS AND PROCEDURES
  - Product should not be exposed to volatile hydrocarbons and anhydrous acids, which may attack

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the expanded polystyrene.

**Corporate Identification**

Beaver Plastics

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**Technical Services Available**

Phone toll free or e-mail

**Classification and Filing**

OmniClass Table 23 - Products

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

MasterFormat 2004:

31 11 23 - Under Slab Concrete Void Forms

MasterFormat 1995:

03115 – Under Slab Concrete Void Forms

**END**