G-Tec

Elasticized Expanded Polystyrene

G-Tec is an elasticized expanded polystyrene (EPS) board designed for geotechnical applications where controlled compressibility is required between soil and structural elements. Manufactured from inert, closed-cell EPS that has been elasticized to improve stress-strain behaviour, G-Tec provides controlled deformation and recovery during cyclical soil movement.

By allowing soil structures to mobilize shear strength while absorbing lateral loads, G-Tec helps reduce earth pressure on retaining walls, foundations, and other buried structures. G-Tec also provides thermal insulation, excellent resistance to freeze-thaw cycling, and low moisture absorption while remaining non-biodegradable and biologically inert.

APPLICATIONS

- Retaining walls
- Foundation walls
- Culverts
- Buried pipes and utilities
- Bridge abutments
- Structures exposed to earth pressure cycling

When installed between soil and a structural wall, G-Tec acts as a compressible inclusion that can help reduce lateral earth pressures and structural loading where project design permits.

PRODUCT ATTRIBUTES AND CHARACTERISTICS

- Closed cell expanded polystyrene (EPS) board that has been elasticized to produce improved stress/strain/time behavior for geotechnical applications.
- Provides an extended range of flexibility to help accommodate movement from seismic activity, freeze-thaw cycling, and earth pressure loading.
- Excellent insulating properties.
- Freeze/thaw resistant and low moisture absorption.
- Contains no CFCs, HCFCs, or other refrigerant gases.
- Biologically inert and 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.

ENGINEERING NOTE

G-Tec is an elasticized EPS compressible inclusion with linear-elastic stress-strain behaviour up to 10% strain and linear proportional stress-strain behaviour up to 30% strain. Compressive strength at 10% deformation is certified at ≤ 5.0 psi / ≤ 720 psf / ≤ 34.5 kPa when tested in accordance with ASTM D1621-16.

SIZES

Thickness	Width	Length
Varies by application	**48"** (1220 mm)	**48"** (1220 mm)

INSTALLATION

Install G-Tec in accordance with project specifications, approved drawings, and manufacturer recommendations, ensuring the receiving surface is properly prepared and that any required adhesives, drainage materials, separation fabrics, or protective layers are installed as specified.

PACKAGING, HANDLING AND PROTECTION

G-Tec panels should be protected from damage during transportation, storage, and installation. Store panels on raised platforms and protect from prolonged exposure to sunlight. Material damaged during handling or installation should be replaced.

Protect G-Tec from:

- Organic solvents such as acetone, benzene, and paint thinner
- Petroleum-based solvents such as gasoline and diesel fuel
- Open flames
- Prolonged UV exposure
- Heavy equipment traffic or concentrated loads placed directly on the material

G-TEC THICKNESS SELECTION EQUATION

G-Tec should be specified in a thickness that accommodates the required movement when compressed to 10% to 20% of its original thickness.

$$H \times M \div C = T$$

H = wall height in mm
M = desired equivalent movement, as a % of wall height
C = maximum compression of G-Tec, as a %
T = required G-Tec panel thickness in mm

Example:
To provide the equivalent of 0.5% movement capacity for a 2 m high wall: 2000 × 0.5% ÷ 10% = 100 mm
Therefore, use 100 mm thick G-Tec panels.

TECHNICAL DATA

Property	Units	Test Standard	Value / Requirement
Compressive Strength at 10% Deformation	psi / psf / kPa	ASTM D1621-16	≤ 5.0 psi / ≤ 720 psf / ≤ 34.5 kPa
Water Absorption by Volume	%	ASTM C272	≤ 3%
Oxygen Index	%	ASTM D2863	≥ 24%
Stress-Strain Behaviour	—	Certified Product Requirement	Linear-elastic up to 10% strain; linear proportional up to 30% strain
Dimensional Tolerance	in.	Manufacturer Certification	± 1/8" length, width, and thickness
Flame Spread Index	—	ASTM E84	≤ 25
Smoke Developed Index	—	ASTM E84	≤ 450
Freeze-Thaw Resistance	—	Manufacturer Certification	Resistant

TECHNICAL INFORMATION

DESIGN CONSIDERATIONS
G-Tec thickness should be selected based on the required design compression, anticipated movement, project-specific design requirements, and the governing specification. For DOT-style integral abutment applications, inclusion thickness should be determined according to the specified design compression requirements.

CHEMICAL / ENVIRONMENTAL CHARACTERISTICS
G-Tec is manufactured from inert expanded polystyrene and contains no CFCs, HCFCs, or harmful blowing agents. The material is non-toxic, hypo-allergenic, and biologically inert, meaning it will not support mould, mildew, or fungal growth.

FLAMMABILITY CHARACTERISTICS
G-Tec contains a chemical additive to inhibit accidental ignition from small fire sources. However, like other EPS materials, the product will burn when exposed to a large continuous flame and must be protected in accordance with applicable building codes.

QUALITY STATEMENT, TESTS, CERTIFICATIONS

Product performance is supported by manufacturer certification and applicable third-party testing. Project-specific documentation is available upon request.

TECHNICAL SUPPORT

For technical inquiries please contact:

- productsupport@bvrthermal.com
- (888) 453-5961 Toll Free

Website:
https://bvrthermal.com/

APPLICABLE STANDARDS

ASTM C177	Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
ASTM C272	Standard Test Method for Water Absorption of Core Materials for Sandwich Constructions.
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 D2863	Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of 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.

MANUFACTURER

Beaver Thermal Solutions Inc.
11581-272 Street, Acheson Alberta, Canada T7X 6E9

Beaver Thermal Solutions Inc.
#215-44393 Simpson Rd., Chilliwack B.C., Canada V2R 5M3

Phone: +1 (780) 962-4433 (International)
Email: productsupport@bvrthermal.com