Compressive Strength

Quik-Therm Sub-Grade Insulation's most important mechanical property is its resistance to compressive stresses. As reported by the National Research Council of Canada(1), "[w]hen tested in the lab … the compressive strength of the EPS samples were the same as those samples tested at the beginning of the test." In conclusion, there were no changes to the compression strength of EPS samples.

(1) In situ Performance of Expanded Molded Polystyrene in the Exterior Basement Insulation Systems (EIBS). Swinton, Bomberg, Kumaran & Maref, 1999, pp. 197.

Type 1
Compressive Strength
12.6 psi / 87 kPa

Basement and garage floors. Backfilled vertical foundations and walls.

Type 2
Compressive Strength
19.7 psi / 136 kPa

Structural slabs, warehouse floors, heavy vehicle traffic and heavy vehicle storage.

SGI 30
Compressive Strength
30 psi / 207 kPa

Load bearing floors, walls and footings.

Effective R-Value - Compulsory by Code

Nominal R-value - better known and understood as Labeled R-value, is the ability of insulation (by itself) to resist heat transfer. Effective R-value is the ability of building materials and insulation combined as a system, to resist heat transfer. Example: Concrete, insulation and poly combined. Canadian Building Codes mandate the use of Effective R-value. Test Method: ASTM C1363.

Common Effective R-Value Requirements

Quik-Therm SGI Thickness	Effective R-value
11/16" rolls (17mm)	R-5.2
1" (25mm)	R-5.9
1.5" (38mm)	R-7.5
2" (51mm)	R-10.9
2-5/16" (59mm)	R-12
2.5" (64mm)	R-12.9
2-9/16" (65mm)	R-13.2
3" (76mm)	R-15.1
3-1/4" (83mm)	R-16.1
3-1/2" (90mm)	R-17.1
4.25" (110 mm)	R-20.1

For increased thicknesses add nominal R-value by Type as listed in SGI Testing & Technical Data.

Over 6,000 successful below grade installations. Approximately 15 million sq. ft. installed.

SGI Testing & Technical Data

Property	Nominal Value			Test Method
Dimensional Stability - Maximum Linear Change, %	1.5			ASTM D2126
Length Tolerance, mm (in)	±3.2 (±0.125)			—
Width Tolerance, mm (in)	±1.6 (±.063)			—
	Type 1	Type 2	SGI 30	
Nominal R-Value	3.81	4.18	4.40	ASTM C518
Nominal Density, pcf (kg/m³)	1.0 (16)	1.4 (23)	1.8 (29)	ASTM D1622
Compressive Strength, psi (kPa)	12.6 (87)	19.7 (136)	30 (207)	ASTM 1621-04
Flexural Strength, psi (kPa)	29.3 (202)	37.3 (257)	54.5 (376)	ASTM C203-05
Water Vapour Transmission (perms)	<1.0			ASTM E96
Air Permeance (L/s·m²)	.0139			ASTM E2178-13
Effective R-Value Testing	See Table Above			ASTM C1363
Effect of Exposure to Environmental Cycling	Pass			ASTM C1512

Meets CAN/ULC S701-05 / CCMC #13393-L , #13457-L and #14062-L