



Quik-Therm SGI

Sub-Grade Insulation

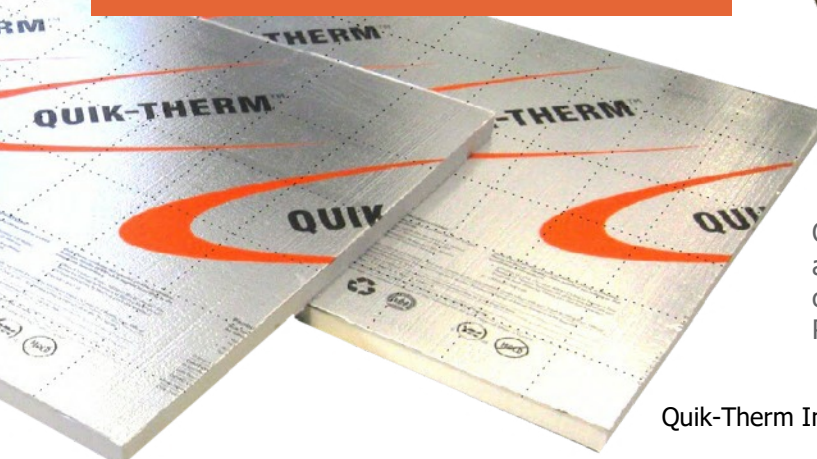
Quik-Therm Sub-Grade insulation (SGI) is Lean Construction insulation technology. It is designed, tested and engineered for below grade foundation walls and beneath concrete floors. SGI is multi-functional.

SGI does more for less!

Fast to Install - Rugged & Durable - No Poly Required

Quik-Therm SGI is a cost saving alternative to conventional rigid foam insulation and poly systems. It consists of a closed cell expanded polystyrene (EPS core), layered on both sides with advanced metallic polymer facers. SGI has been tested impermeable. It's dual facer technology repels moisture, blocks radon and methane gas and there is no loss in R-value or change in compressive strength even after long-term exposure in northern climates.

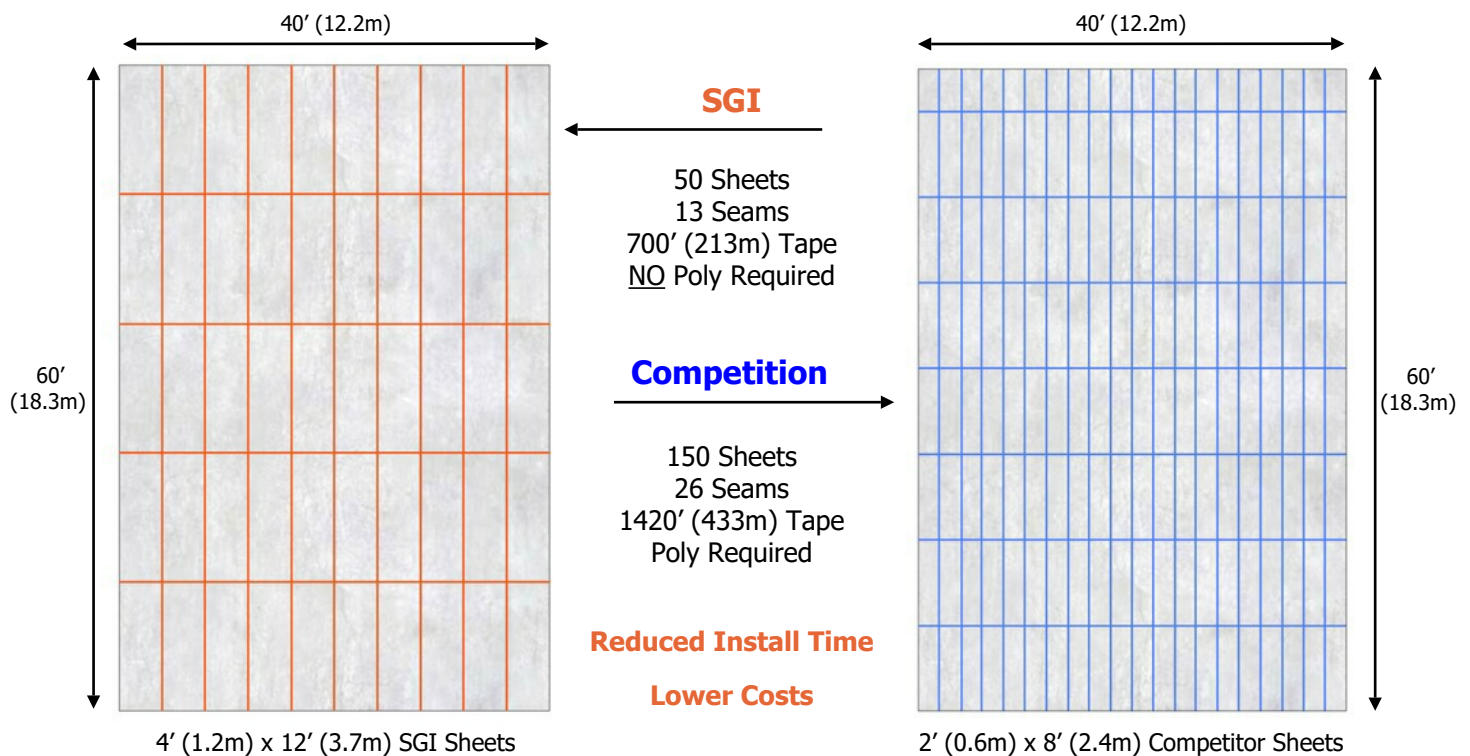
**4' Wide by 8' and 12' Lengths
Variety of Thicknesses and Densities**



**Ground Gas & Moisture
Protection Insulation System**

Quik-Therm Sub-Grade Insulation exceeds testing criteria for air, vapour and radon barrier products. SGI is a code compliant alternative to CAN/CGSB-51.34-M, "Vapour Barrier Polyethylene Sheet for use in Building Construction".

Fewer Sheets, Fewer Cracks, Fewer Leaks - Faster To Install



Radon Ground Gas

Radon is a natural odorless radioactive gas. It is the second leading cause of lung cancer in Canada*. Radon enters buildings through cracks in walls and foundations. Radon levels are generally highest in basements and crawl spaces. Test Methods: ASTM E 2178 Air Permeance of Building Materials and ASTM E96 Water Vapor Transmission of Materials. Quik-Therm SGI in conjunction with approved joint/penetration tapes has been tested as an approved Air and Vapour Barrier assembly - which is required to achieve code compliance as a Radon Barrier.

* Public Health Canada. (2014). Radon - Another Reason to Quit. (Pub. 140043).

Below Grade Barrier Tapes

Barrier tapes provide superior resistance to gas and moisture transmission. They are highly resilient and are designed to restrict naturally occurring gases, such as radon, methane and moisture from migrating through the ground and into the concrete slab. Test Methods: ASTM E96 Water Vapor Transmission and ASTM D3816 Water Penetration Rate. Manufacturer recommendation. Tuck Tape Sheathing Tape for PE (Polyethylene) Vapour Barrier.

Quik-Therm SGI Advantages

- Less costly than Extruded Polystyrene (XPS).
- Code compliant air, vapour and radon barrier product.
- 4' x 12' SGI panels install in 1/2 the time of 2' x 8' panels and 25% faster than 4' x 8' panels.
- Compared to 2' x 8' panels, 4' x 12' SGI has fewer cracks (seams) and requires significantly less sealing tape.
- Impermeable. No poly required when joints and penetrations are sealed with an approved vapour barrier tape.
- 8" O.C. Gridlines. Tubing alignment aide for radiant floors.
- Cuts faster and easier than XPS.
- Superior tape adhesion compared to conventional foam insulations.
- Rugged and durable. Does not easily chip, crack or break.
- No thermal drift (LTTR), formaldehyde or blowing agent residue. R-value will remain stable over its entire service life.
- May contain up to 15% recycled Expanded Polystyrene.



Made in Canada

Below Grade Studies & Engineering

- As tested by the National Research Council of Canada, EPS showed no loss of R-value or deterioration after being subjected to freeze thaw cycling. (*In situ Performance of Expanded Molded Polystyrene in the Exterior Basement Insulation Systems (EIBS)*). Swinton, Bomberg, Kumaran & Maref, 1999, pp. 197).
- US Department of Energy, Oak Ridge National Laboratory concludes that XPS below grade systems can experience a 10-44% loss of energy savings performance when subjected to moisture accumulation in the range of 8-16%. (*Measurement of Exterior Foundation Insulation to Assess Durability in Energy-Saving Performance*. Kehrner & Christian, 2012, pp.11).
- Morrison Hershfield concludes that Quik-Therm insulation, composed of expanded polystyrene (EPS) with polymer facers adhered to both sides of its EPS core is impermeable to air flow and has a vapour permeance well below the code definition of a vapour barrier. (*Letter September 24, 2014 by Mark Lawton, P. Eng. Morrison Hershfield to Mr. Bob Caravan, City of Richmond, B.C.*).

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.
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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)			—
Nominal R-Value	Type 1 3.81	Type 2 4.18	SGI 30 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

quiktherm.com



Innovative Insulation Solutions



Tested By Canadian Accredited Laboratories. Supported By Building Science Engineering



Quik-Therm Insulation Solutions Inc.

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