



ThermoSeal 2100
Product Specification

Product Name

ThermoSeal 2100 is the registered trademark of SprayFoamPolymers.com for its 2.0lb high density, closed cell foam insulation.

Product Description

ThermoSeal 2100 is an ICC approved (ESR-3225), semi-rigid, high density, closed cell 2.0lb polyurethane foam insulation system which insulates and air-seals your building structure. ThermoSeal 2100 is designed to make homes more energy efficient, stronger, healthier, quieter and more comfortable. ThermoSeal 2100 is applied as a liquid spray which expands approximately 15 times its initial mass and cures within seconds into a semi-rigid mass. ThermoSeal 2100 fills all building cavities completely sealing all cracks, crevices, and voids where air loss and infiltration are most common.

Technical Data

Thermal Performance

Thermal resistance (aged 180 days) R/in.
ASTM C518: R6.9hr.ft² °F/BTU

Average insulation contribution in stud wall:
2"x4"=R24.1 2"x6"=R37.8

ThermoSeal 2100 provides greater R value performance than other equivalent R value insulation materials which are air permeable such as fiberglass. ThermoSeal 2100 does not lose R value due to wind, ageing, convection, air infiltration or moisture. An R value fact sheet is available upon request.

Air Permeance/Air Barrier

ThermoSeal 2100 fills any shape cavity including all voids, cracks, and crevices adhering to multiple substrates such as wood, metal, and concrete creating a system with very little air permeance. With ThermoSeal 2100 no additional interior or exterior air infiltration protection is required.

ASTM E283 Air Leakage
Zero (0) ft³/s.ft² @ 75Pa (25mph wind)
Sustained Wind Load

60 minutes@1000 Pa (90mph wind)
TBD

Gust Wind Load Test
@3000 Pa (160 mph wind)
TBD

ThermoSeal™ 2.0 qualifies as an air barrier as defined by ICC.

Water Vapor Permeance

Thermoseal 2100 qualifies as a vapor retarder as defined by the ICC at a minimum thickness of 1 inch.

Water Vapor Transmission Properties:
ASTM E96 data
.8 @ 1"
.23 @3.5"

Water Absorption

ThermoSeal 2100 is water repellent, will not wick, and does not exhibit capillary properties. Water cannot be forced into the foam under pressure because of its high degree of closed cell content.

Acoustical Properties

Performance in a 2"x 6" wood stud wall.

ASTM E413 Class 43
ASTM E 90 STC 43
Noise Reduction Coeff. .2 (NRC)

Fungi Resistance

ASTM G -21 ZERO RATING

Burn Characteristics

ThermoSeal 2100 will be consumed by flame but will not sustain flame upon removal of the flame source. ThermoSeal 2100 will not melt or drip. ThermoSeal 2100 must be installed in accordance with all applicable building codes .

ASTM E84 Surface Burning Properties
Flame Spread @5" <= 25
Smoke Developed @ 5" <= 450
Class 1 rating
Fuel Contribution none
ASTM 2863 Oxygen Index TBD%

VOC TESTING
CAN/ULC-S774 Pass
SASKATCHEWAN RESEARCH
COUNCIL

Δ These flame-spread ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.

Compressive and Tensile Strength

ThermoSeal 2100 has favorable compressive and Tensile strength properties for high density foam.

ASTM D1623 Tensile Strength 60 psi
ASTM D1621 Compressive Strength 20psi

Physical Characteristics

DIMENSIONAL STABILITY
ASTM D - 2126
158⁰ F 100% Relative Humidity, 7 days
Volume Change <8%

PRODUCT DENSITY
ASTM D-1622 2.17lb @ 1"

Closed Cell Content

ThermoSeal 2100 is considered closed cell foam insulation:

ASTM D2856 >=90%

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Viscosity & Weights

ASTM D2196 Viscosity
A Side ISO @ 70^o F 215±35
B Side Resin @ 70^o F 700±100

ASTM D1475 Weight/Gallon
A Side ISO @ 77°F 10.2lbs
B Side Resin @ 77°F 9.8lbs

Mixing Ratio By Volume

ThermoSeal 2100 is a standard 1:1 mix product. Slightly off ratio can produce slightly heavier odors and foam characteristics. Typically a heavier A ratio will produce a crunchier foam result, and a heavier B Side ratio will produce a spongier result.

Electrical Wiring

ThermoSeal 2100 is chemically compatible with all 14/3, 12/2 and other similarly coated electrical wirings. For knob and tube wiring please seek the approval of your local building inspector.

Bacterial and Fungal Evaluation

ThermoSeal 2100 is not a source of food for mold, insects or rodents. It has no nutritional value. ThermoSeal 2100 reduces the introduction of moisture, food, and mold spores into the building envelope significantly more than traditional insulation such as fiberglass, cellulose and other non-sealants which do not provide an air barrier.

Environment/ Health/ Safety

ThermoSeal 2100 contains no CFC's, HCFC's, formaldehyde, or volatile organic compounds. Following installation there will be a 24-48 hour occupancy window before the odors, emissions and gasses have dissipated to a habitable level for individuals highly sensitive to the materials installed.

ThermoSeal 2100 is not to be installed within 2" of heat emitting surfaces where heat dissipated exceeds 185°F.

Suggested Preparation & Use

ThermoSeal 2100 will perform best when gradually climate controlled to 77°F the night before application. While recirculation of ThermoSeal 2100 without heat prior to each days spraying is suggested, recirculation of ThermoSeal 2100 in order to rapidly heat the product is not suggested and may result in a decrease in catalyst count, and product yield and an increase in frothing. We suggest starting with a temperature of 125°F and a working pressure of 1000 psi.

Product Availability

Contact Spray Foam Polymers at 1.800.853.1577 for sales and availability options.

Packaging

Products are shipped in 55 gallon open top steel drums.

Product Storage

Component A- 550 lbs of Isocyanate stored in a 55 gallon container outlined above. Component 'A' must be protected from freezing or deemed useless.

Component B- 500 lbs of ThermoSeal 2100 proprietary formulated resin Component 'B' must be stored between 55°F and 80°F never exceeding either extreme.

Both components temperatures should be at 75°F prior to mixing and use.

WARRANTY

When installed properly by a Spray Foam Polymers authorized representative who has completed all training offered by SFP, SFP warrants that the product will meet all product specifications outlined in this specification document.



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