



## ThermoSeal 1600 Product Specification

### Product Name

ThermoSeal 1600 is the registered trademark of SprayFoamPolymers.com for its 1.6lb density, closed cell foam insulation.

### Product Description

ThermoSeal 1600 is a semi-rigid, water blown, 1.6lb high density polyurethane foam insulation system which simultaneously insulates and air-seals your building structure. ThermoSeal 1600 is designed to make homes more energy efficient, quieter, healthier and more comfortable. ThermoSeal 1600 is applied as a liquid-spray which expands approximately 30 times its initial mass and cures within seconds into a semi-rigid mass. ThermoSeal 1600 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 R/in:

ASTM C518: R5.95hr.ft<sup>2</sup> °F/BTU

Average insulation contribution in stud wall:

2"x4"=R23

2"x6"=R36

ThermoSeal 1600 provides greater R-value performance than other equivalent R-value insulation materials which are air permeable such as fiberglass. ThermoSeal 1600 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 1600 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 1600, no additional interior or exterior air infiltration protection is required.

ASTM E283 Air Leakage  
Zero (0) ft<sup>3</sup>/s.ft<sup>2</sup> @ 75Pa (25mph wind)  
Sustained Wind Load

ThermoSeal 1600 qualifies as an air barrier as defined by ICC.

#### Water Vapor Permeance

ThermoSeal 1600 is minimally water vapor permeable at 2". For situations requiring a vapor retarder as defined by ICC, spraying a minimum of two (2) passes with a minimum total of 2" of ThermoSeal 1600 will accomplish this goal.

For situations requiring a vapor barrier using less than 2" of foam or one pass we recommend the use of ThermoSeal 2000.

Water Vapor Transmission Properties:  
ASTM E96 data

.97 @ 2" given 2 passes

#### Water Absorption

ThermoSeal 1600 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 STC Sound Transmission  
TBD

ASTM E 90  
Hz. Freq. 125 250 500 1000 2000 4000  
Trans. Loss TBD

ASTM C 423

NRC Noise Reduction Coefficient = .70  
Hz. Freq. 125 250 500 1000 2000 4000  
Absorption .TBD

Actual performance will likely be superior to the above results based on ThermoSeal's ability to control air permeation.

#### Burn Characteristics

ThermoSeal 1600 is a Class I insulation and shall be separated from its inhabitants by a 15minute approved thermal barrier. ThermoSeal 1600 shows less flame propagation than some Kraft-faced fiberglass insulation and may be left exposed in attics and crawl spaces in certain cases. ThermoSeal 1600 might be consumed by flame but will not sustain flame upon removal of the flame source. ThermoSeal 1600 will not melt or drip. ThermoSeal 1600 must be installed in accordance with all applicable building codes. Consult your code official for exact and current details.

ASTM E84 Surface Burning Properties  
Flame Spread @2" <= 25  
Smoke Developed @ 2" <= 450  
Class 1 rating  
Fuel Contribution none

#### Compressive and Tensile Strength

ThermoSeal 1600 has favorable compressive and Tensile strength properties for light density foam.

ASTM D1623 Tensile Strength 58 psi  
ASTM D1621 Compressive Strength 18 psi

#### Closed Cell Content

ThermoSeal 1600 is considered closed cell foam insulation, and to achieve a true vapor barrier should be installed with two (2) passes and a minimum of 2 inches.

ASTM D2856 <10% open cell content

E84, E283 tests results were conducted by Intertek a 3<sup>rd</sup> party testing laboratory. DISCLAIMER: Information contained herein is, true and accurate, but all recommendations or suggestions are made without guarantee. Spray Foam Polymers, LLC (SFP) products are intended for sale to industrial and commercial customers. Since SFP exercises no control over its customers appreciation or use of the product manufactured by SFP and since materials used with the products may vary, it is understood that SFP can warrant only that our products will meet our written specifications. Nothing herein shall constitute any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. Our products must be installed in accordance with all applicable building codes and a building inspector's approval should be requested prior to installation. All patent rights are reserved. SFP requests that customers inspect and test our products before use, and satisfy themselves as to contents and suitability. The exclusive remedy for all proven claims is replacement of our materials and in no event shall SFP be liable for any consequential, incidental, indirect, or special damages resulting in any manner from the furnishing of the material.

### Viscosity & Weights

ASTM D2196 Viscosity	
A Side ISO @ 25°C	250±20
B Side Resin @ 25°C	500±50

ASTM D1475 Weight/Gallon	
A Side ISO @ 77°F	10.2lbs
B Side Resin @ 77°F	10.1lbs

### Electrical Wiring

ThermoSeal 1600 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 1600 is not a source of food for mold, insects or rodents. It has no nutritional value. ThermoSeal 1600 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 1600 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 1600 is not to be installed within 3" of heat emitting surfaces where heat dissipated exceeds 185°F.

### Suggested Preparation & Agitation

ThermoSeal 1600 will perform best when gradually climate controlled to 77°F the night before application. 30 minutes of medium agitation before use and light agitation during use will result in best results and highest yield. Recirculation of ThermoSeal 1600 to rapidly heat the product is not suggested and may result in a decrease in catalyst count and

product yield. We suggest starting to spray with a temperature of 130°F, using a .01 spray tip and a working pressure of 1200 to 1500 psi. Your equipment should be monitored for accurate readings.

### Installation Requirements

#### **Mixing ratio by volume:**

It is required that the product be installed in a precise 1 part A to 1 part B ratio or in other words, an exact 1:1 ratio. As indicated in our training materials, the only way to ensure this is to continuously monitor the installer's proportioner to ensure the A and B pressures are even with no more variance than 50lbs differential from the A to the B pressure. Foams that are off ratio can produce permanent and biologically hazardous off gassing and odors that can only be removed by complete removal and remediation of the foam. Foams that are off ratio will also diminish foam properties and characteristics outlined in this data sheet. Typically a heavier A ratio will produce a crunchier foam result, and a heavier B Side ratio will produce a spongier and very odorous result.

#### **Installed thickness per pass:**

ThermoSeal 1600 performs best when installed in passes of 1.5 inches at a time, never to exceed a maximum of 2.5" total per pass. Installing foam thicker than recommended will diminish the foams properties as outlined, as well as insulation performance. Allow approximately 5 minutes between passes for the foam to cool below 80°F.

### Product Storage

#### **Component A:**

551 lbs of Isocyanate stored in a 55-gallon container should be stored between 50°F and 90°F, never exceeding either extreme. Component 'A' must be protected from freezing or deemed useless and likely will need to be disposed of.

#### **Component B:**

500 lbs of ThermoSeal 1600 proprietary formulated resin must be stored between 50°F and 90°F never exceeding either extreme. Component 'B' can separate during storage and must be thoroughly mixed before use.

Both components temperatures should be at 77°F prior to use with a minimum lower temperature of 65°F and a maximum upper temperature of 80°F.

### Packaging

Products are shipped in 55-gallon 3 bung steel drums. The A Drum is packaged with a NET weight of 551 lbs while the B Drum is packaged with a NET weight of 500 lbs.

### Shelf Life

If stored at the enclosed required temperatures, ThermoSeal has a shelf life of nine (9) months past its published manufactured date without loss of physical properties.

### WARRANTY

When installed properly by a Spray Foam Polymers authorized and certified installer who has successfully completed all training offered by SFP, SFP warrants that the product will meet all product specifications outlined in this specification document, and the published limited lifetime warranty is in effect. Installers must renew their training every two (2) years to maintain an authorized and certified status.

### Product Availability

Contact Spray Foam Polymers at 800.853.1577 for sales and availability options.



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