



ThermoSeal 500
Product Specification

Product Name

ThermoSeal 500 is the registered trademark of SprayFoamPolymers.com for its .5lb light density, open cell foam insulation.

Product Description

ThermoSeal 500 is a semi-rigid, totally water blown, .5lb light density polyurethane foam insulation system which simultaneously insulates and air-seals your building structure. ThermoSeal 500 is designed to make homes more energy efficient, quieter, healthier and more comfortable. ThermoSeal 500 is applied as a liquid spray which expands approximately 100 times its initial mass and cures within seconds into a semi-rigid mass. ThermoSeal 500 fills all building cavities completely sealing all cracks, crevices, and voids where air loss and infiltration are most common. If needed, excess material is easily trimmed off leaving a surface ready for drywall.

Technical Data

Thermal Performance

Thermal resistance R/in.

ASTM C518: R3.83hr.ft² °F/BTU

Average insulation contribution in stud wall:

2"x4"=R13.3 2"x6"=R20.9

ThermoSeal 500 provides greater R-value performance than other equivalent R-value insulation materials which are air permeable such as fiberglass. ThermoSeal 500 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 500 fills any shape cavity including all voids, cracks, and crevices adhering to multiple substrates such as wood, metal, and concrete, creating a system that is considered an air barrier at 2". With ThermoSeal 500, no additional interior or exterior air infiltration protection is required.

ASTM E283 Air Leakage
.00015 ft³/s.ft² @ 75Pa (25mph wind)

Sustained Wind Load
60 minutes @ 1000 Pa (90mph wind)
No Damage

Gust Wind Load Test
@ 3000 Pa (160 mph wind)
No Damage

Water Vapor Permeance

ThermoSeal 500 is water vapor permeable and will allow structural moisture to escape. For situations requiring a vapor barrier the use ThermoSeal 500 is not recommended, but the use of a vapor barrier foam such as ThermoSeal 1600 or ThermoSeal 2000 should be used.

Water Vapor Transmission Properties:
ASTM E96 data
9.34 perms @ 3.5"

Water Absorption

ThermoSeal 500 is water repellent, will not wick, and does not exhibit capillary properties. Water may be forced into the foam under pressure because of its open cell structure, and will self drain by gravity rather than travel horizontally or vertically as in closed celled foams. Once the foam has dried, its thermal performance is at full performance.

Acoustical Properties

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

ASTM E413 STC Sound Transmission
Class 38

ASTM E 90

Hz. Freq.	125	250	500	1000	2000	4000
Trans. Loss	18	29	34	45	46	49

ASTM C 423

NRC Noise Reduction Coefficient =	.75
Hz. Freq.	125 250 500 1000 2000 4000
Absorption	.23 .52 .87 .71 .77 .75

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

Burn Characteristics

ThermoSeal 500 is a Class I insulation and shall be separated from its inhabitants by a 15 minute approved thermal barrier. ThermoSeal 500 shows less flame propagation than some Kraft faced fiberglass insulation and may be left exposed in attics and crawl spaces. ThermoSeal 500 might be consumed by flame but will not sustain flame upon removal of the flame source. ThermoSeal 500 will not melt or drip. ThermoSeal 500 must be installed in accordance with all applicable building.

ASTM E84 Surface Burning Properties

Flame Spread @ 6"	<= 10
Smoke Developed @ 6"	<= 250
Class 1 rating	
Fuel Contribution	none
ASTM 2863 Oxygen Index	25%

Compressive and Tensile Strength

ThermoSeal 500 has favorable compressive and Tensile strength properties for light density foam.

ASTM D1623 Tensile Strength 4.3 psi
ASTM D1621 Compressive Strength 5.1psi

Open Cell Content

ThermosSeal 500 is considered an open cell foam insulation:

ASTM D2856 >=90%

E84, E283 tests results were conducted by Intertek a 3rd 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 350±50

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

Electrical Wiring

ThermoSeal 500 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 500 is not a source of food for mold, insects or rodents. It has no nutritional value. ThermoSeal 500 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 500 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 500 is not intended for exterior use or is not to be installed within 3” of heat emitting surfaces where heat dissipated exceeds 185°F.

Suggested Preparation & Agitation

ThermoSeal 500 will perform best when gradually climate controlled to 77°F the night before application. Thirty (30) minutes of medium agitation before use and light agitation during use will result in best results and highest yield. Recirculation of ThermoSeal 500 to rapidly heat the product is not suggested and may result in a

decrease in catalyst count and product yield. We suggest starting with a temperature of 129°F, using an .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 installers 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 500 performs best when installed in passes of 3 inches at a time, never to exceed a maximum of 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 500 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 85°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 five (5) 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 years to maintain an authorized and certified status.

Product Availability

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



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E84, E283 tests results were conducted by Intertek a 3rd 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.