

Nu-Seal Foam Insulation System

by Natural Polymers, LLC

Nu-Seal Foam: The Green Alternative

High in performance, Nu-Seal is a hybrid foam insulation system that contains high biological raw material and low embodied energy. These attributes make Nu-Seal one of the greenest foam insulation systems in the marketplace. Nu-Seal passes all ASTM testing for foam insulation products and is a Class 1 rated insulation product. Formulated exclusively for resale by Nu-Wool Co., Inc., the oldest cellulose insulation manufacturer in the world, Nu-Seal foam is the best product to complement cellulose insulation to cost-effectively seal a structure's thermal envelope.

NU-WOOL®
PREMIUM CELLULOSE INSULATION
GREEN Since 1949

Water Blown Hybrid Urethanes
Natural Polymers LLC
• Superior Green Building Performance •

The Nu-Seal Foam Insulation System, manufactured by Natural Polymers, LLC, is the recommended GREEN alternative to fiberglass batting and other petroleum based foam products for use to insulate rim joists, knee walls, cathedral ceilings, and other areas difficult to spray with cellulose insulation.

One of the GREENEST foam insulation products in the marketplace

Green Product and Green Development

Traditional chemistry used to make foam insulation is based solely on petroleum building blocks. Utilizing renewable content such as natural agricultural oils and sucrose, the amount of petroleum in Nu-Seal is reduced by 40-50% compared to most other foam systems.

As a result, Nu-Seal contains less embodied energy, but still maintains the performance and physical properties of 100% petroleum based systems- truly a GREEN product.

In addition to using less petroleum in the development process, Nu-Seal 0.50 and 1.0 pcf are water blown, instead of chemically blown. This results in yet another way Nu-Seal is better for the environment.

Nu-Seal's GREEN Product Family

Polyurethane Foam Insulation Systems:

Nu-Seal 0.50 pcf

- B-component of a two-component polyurethane foam insulation system
- Water blown
- 0.50 pcf spray in place density
- R-value of 3.81 per inch
- Open cell
- Contains 20% renewable content.

Nu-Seal 1.0 pcf

- B-component of a two-component polyurethane foam insulation system
- Water blown
- 1.0 pcf spray in place density
- R-value of 4.80 per inch
- Open cell
- Contains 20% renewable content.

Nu-Seal 2.0 pcf

- B-component of a two-component polyurethane foam insulation system
- EPA approved Zero ODP blowing agent
- 2.0 pcf spray in place density
- R-value of 6.50 per inch
- Closed cell
- Contains 15% renewable content.

Natural Polymers, LLC and Nu-Wool Co., Inc. are committed to environmental sustainablity and green building practices, including research and development to reduce the amount of petroleum in Nu-Seal Foam products.

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Nu-Seal Specifications

PRODUCT APPLICATION:

Nu-Seal 0.50 pcf should be applied in 1/2" to 4" lifts. Nu-Seal 1.0 pcf should be applied in 1/2" to 2" lifts. Nu-Seal 2.0 pcf should be applied in 1/2" to 2" lifts. Caution: When installing Nu-Seal 1.0 pcf and 2.0 pcf, do not exceed lifts greater than 2" between each pass or risk of fire could result. Complete application procedures and recommendations from the manufacturer are available in the application manual and should be referenced prior to use.

All Nu-Seal Foam products should only be applied to approved substrates recommended by the manufacturer. Nu-Seal Foam must be covered with an approved 15 minute thermal barrier equivalent to 1/2" Gypsum wall board or an approved ignition barrier where required by code.

The data presented here should only be used as a guide since the actual foam properties are influenced by the efficiency of the spray gun, component temperatures, foam thickness, and ambient conditions. Nu-Seal Foam should be sprayed in uniform lifts at above stated thicknesses. While the below technical information is based on results of actual tests conducted by Natural Polymers, LLC, it should only be used as a guideline for typical chemical and physical properties. The user must test and qualify the product. Final determination of suitability is the responsibility of the user.

PHYSICAL PROPERTIES:

	Nu-Seal 0.50 pcf	Nu-Seal 1.0 pcf	Nu-Seal 2.0 pcf
DENSITY:	ASTM D-1622 @ 2" 0.50 pcf	ASTM D-1622 @ 2" 1.0 pcf	ASTM D-1622 @ 2" 2.10 pcf ASTM D-1622 @ 4" 1.90 pcf
OPEN CELL CONTENT:	ASTM D-6226 > 92% R-Value: 3.81 per inch	ASTM D-6226 > 62% R-Value: 4.80 per inch	
CLOSED CELL CONTENT:			ASTM D-6226 > 92% R-Value: 6.50 per inch
DIMENSIONAL STABILITY:	ASTM D-2126 (% volume change at 28 days) -20°F -0.3 158°F -0.4 100% R.T. Humidity 158°F Dry -0.5	ASTM D-2126 (% volume change at 28 days) -20°F -0.2 158°F -0.5 100% R.T. Humidity 158°F Dry -1.1	ASTM D-2126 (% volume change at 28 days) -20°F -0.9 158°F -3 100% R.T. Humidity 158°F Dry 5.2
FIRE PERFORMANCE:	ASTM E-84 Flame Spread <15 Smoke Developed <300	ASTM E-84 Flame Spread <25 Smoke Developed <450	ASTM E-84 Flame Spread <25 Smoke Developed <450
PERMEANCE/PERMEABILITY:			ASTM E-96 0.96 @ 2"
AIR LEAKAGE:	ASTM E-283-91 0.000095 ft^3/sft^2	ASTM E-283-91 0.000065 ft^3/sft^2	ASTM E-283-91 0.000039 ft^3/sft^2
ACOUSTICS: (2 x 4 wood studs, 5/8" type X gypsum board each side)	ASTM E-90 39 STC ASTM C-423 .75 NRC		

FIRST AID:

Inhalation: Remove to fresh air and seek medical attention. See MSDS for more details.
Eye and Skin Contact: Wearing eye protection is required. Polyurethane foam vapors can enter the body through the lungs, eyes and skin. It is important to protect the lungs, eyes and skin from overspray and organic vapors emitted by the foam while it is being applied.
Ingestion: If liquid is swallowed seek medical attention immediately.

STORAGE:

The material is recommended to be stored between 50°F and 80°F. Store in a dry, well ventilated area protected from freezing temperatures, rain and direct sunlight. This material has a six-month shelf life under normal storage temperatures.

PERSONAL PROTECTION:

All users must wear approved chemical protection equipment. OSHA approved respirators are required. Please see training manual for more information.

THERMAL PERFORMANCE:

THICKNESS (")	Nu-Seal 0.50 pcf R-Value	Nu-Seal 1.0 pcf R-Value	Nu-Seal 2.0 pcf R-Value
1.0	3.81	4.80	6.50
1.5	5.71	7.20	9.75
2.0	7.63	9.60	13.00
2.5	9.50	12.00	16.25
3.0	11.43	14.40	19.50
3.5	13.33	16.80	22.75
4.0	15.25	19.20	26.00
4.5	17.14	21.60	29.25
5.0	19.00	24.00	32.50
5.5	21.00	26.40	35.75
6.0	22.86	28.80	39.00
6.5	24.75	31.20	42.25
7.0	26.67	33.60	45.50
7.5	28.57	36.00	48.75
8.0	30.50	38.40	52.00

Tested in accordance with ASTM C158 at 75°F (24°C) mean temperature.

All polyurethane foam burns at varying degrees which in turn liberates toxic gases and should be evaluated in its final form for compliance to existing standards in your industry. The information presented herein is based on our own research and that of others and is believed to be correct, however, no warranty is expressed or implied. No statement herein extends any license, either expressed or implied, in connection with any patents issued or pending which may be the property of Natural Polymers, LLC or others. Neither the manufacturer nor distributor shall be liable (regardless of fault) to the vendor's employees, or anyone for any direct, special or consequential damages arising out of or in connection with accuracy, completeness, adequacy or furnishings of such information.