



BioBased® 1701s Insulation

DESCRIPTION

BioBased® 1701s Insulation is a water blown, two part, closed cell, bio-based spray applied, polyurethane foam having a nominal density of 1.7 p.c.f.

When spray applied, *BioBased® 1701s Insulation* expands 30:1, filling voids, crevices, and building cavities, and can reduce energy consumption needed for climate control by reducing infiltration. Once installed, *BioBased® 1701s Insulation* offers increased thermal resistance, and can assist in reducing the risk of moisture accumulation within the building envelope.

INSTALLATION

BioBased® 1701s Insulation must be installed by certified dealers who have successfully completed a Bio-Based® Insulation approved training program or Bio-Based® Insulation approved field certification training which covers proper application techniques, environmental health and safety, building science, and building code standards. BioBased® Insulation does not recommend nor endorse open combustion appliances located in attic or crawl spaces.

BioBased® 1701s Insulation must be separated from occupied spaces by ½” gypsum or equivalent 15 minute thermal barrier.

RECOMMENDED USES

BioBased® 1701s Insulation can be used in residential, commercial and industrial applications.

GREENGUARD Certification Program®

BioBased® 1701s Insulation is a 3rd party certified product that meets the stringent low emission level requirements of the GREENGUARD Certification Program®, and has passed the GREENGUARD Certification Program for Children & Schools. View listing at WWW.GREENGUARD.ORG



	Indoor Air Quality Criteria	Product Measurement after 7 days	Product IAQ Compliance
TVOC	≤ 0.5 mg/m ³	<0.003 mg/m ³	YES
Formaldehyde	≤ 0.5 ppm	<0.002 ppm	YES
Total Aldehydes	≤ 0.1 ppm	0.002 ppm	YES
Individual VOC's	All ≤ 1/10 TLV	none	YES

Notice

The technical data contained herein is true and accurate to the best of the BioBased® Insulation's knowledge, information and belief on the date of publication. The technical data is subject to change, however, and the user should contact BioBased® Insulation prior to use or application to verify that the technical data is current. In addition, the technical data is provided for your guidance only. Because many factors can affect the processing or application of the product and/or its use, it is the user's responsibility to first test the product to determine its suitability for the user's intended use. The sale and use of this product is subject to all of the terms and conditions set forth in the BioBased® Insulation sales order, including the LIMITED WARRANTY, DISCLAIMER OF WARRANTY AND RELEASE, and EXCLUSION OF CONSEQUENTIAL AND OTHER DAMAGES. This technical data does not create an express warranty of any kind. The only warranty applicable to this product is the written, limited express warranty contained in the BioBased® Insulation sales order, which is extended to the purchaser only.

EVALUATION CRITERIA

For proper use of this material, refer to **BioBased® Insulation Certified Dealer Training Manual** and the following building codes and guides:

- IBC, International Building Code, Chapter 26
- IRC, International Residential Code, Section R314
- API publication Ax-230: Fire & Safety Guidelines for Use of Rigid Polyurethane and Polyisocyanurate Foam Insulation in Building Construction.

Physical Properties	Value	ASTM Test Method
Closed Cell Content	> 90 %	D 2856
Core Density (nominal)	1.7 lbs/ft ³	C 1622
Tensile Strength	19 p.s.i.	D 1623
Compressive Strength	23 p.s.i.	D 1621
Criteria for fungi resistance	Pass	C 1338
Surface Burn Characteristics*	1.625"	
Flame Spread	< 25	E 84-04
Smoke Development Index	< 450	E 84-04
Dimensional Stability		
82°C, Ambient Humidity	Less than 1%	D 2126-04
23°C, 50% Relative Humidity	Less than 1%	D 2126-04
-20°C, Ambient Humidity	Less than 1%	D 2126-04
Water Vapor Permeability†:		
1" Thick Foam	2.06 perms	E 96
2.5" Thick Foam	0.73 perms	E 96
Water Absorption	0.2%	D 2842-01

* This numerical flame spread and all other data presented is not intended to reflect the hazards presented by this or any other material under actual fire conditions.

† ASHRAE defines a Class II vapor retarder as having less than 1 perm. *BioBased® 1701s Insulation*, when installed at 2.5", qualifies under this definition as a Class II vapor retarder.

NFPA - 286 with 15 minute Thermal barrier
Wall: 2"x8" studs, 7" foam Ceiling: 2"x10" studs, 9" foam
PASS

Thermal Resistance, Initial R-values	
50% relative humidity	
Test Method C - 518 - 02	
Shown in °F·h·ft ² /BTU	
1" nominal	R - 5.9
2" nominal	R - 12
2.5" nominal	R - 15
3" nominal	R - 18
3.5" nominal	R - 19
5" nominal	R - 28
7" nominal	R - 39
8" nominal	R - 44
9" nominal	R - 50

TECHNICAL SUPPORT

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Applicator Technical Data Sheet

BioBased® 1701s Insulation

APPLICATION GUIDELINES*

***It is important that applicators review and understand BioBased® Insulation Certified Dealer Training Manual prior to use or application of BioBased® 1701s Insulation. Failure to follow the manufacturer's recommended guidelines may cause the warranty to become null and void.**

Always consult with local building code inspectors prior to installing *BioBased® 1701s Insulation*.

While prepping equipment, heating drums and recirculating for spray foam application, agitate the 'B' component mildly using a pneumatic or equivalent performing mixer. Agitate for approximately 1-2 hours with for a maximum of 4 hours each day to prevent frothing.

Depth per pass should be between ½" and 1-½". Thin passes (¼" or less) should be avoided and may result in reduced yield. Exceeding an overall depth of 4" in 24 hours can cause internal charring of the foam and spontaneous combustion. Do not exceed 4" in 24 hours at any depth per pass.

Allow a 4 to 6 second time interval between passes to allow foam to cure and reduce the likelihood of blowing the reacting material away from the substrate.

EFFECT OF ENVIRONMENT AND SUBSTRATE CONDITIONS ON APPLICATION

Applicators must be aware of substrate conditions and the effect of environmental conditions on foam quality and yield. It is advised that applicators check the substrate and ambient conditions for the following in order to ensure the highest quality of foam:

Ambient temperature
50°F to 120°F

Ambient moisture
Less than 85% Relative Humidity

Substrate temperature
50°F to 120°F

Moisture on Substrate
Substrate must be dry or indicate less than 12% wood moisture content

IN CASE OF CHEMICAL EMERGENCIES: Wind velocity
CALL CHEMTREC (800) 424-9300 OR <12 m.p.h.
(COLLECT) (703) 527-3887 (USA)

System settings will vary depending on environment and substrate conditions.
***Consult the BioBased® Certified Dealer Training Manual**
prior to installing any BioBased® Insulation Product.

	A Component	B Component	Hose
Drum Temperature	Approx. 70°F	Approx. 110°F	
Proportioner Temperature	140 to 145°F	150 to 155°F	140 to 145°F
Pressure	1200 to 1600 PSI	1200 to 1600 PSI	1200 to 1600 PSI

SAFETY AND HANDLING

Storage temperatures for both 'A' and 'B' components should be between 60° and 90°F out of direct sunlight. Conditioned trailers or storage areas may be necessary.

Use adequate ventilation to keep airborne particulates below the exposure level. Wear respiratory protection if material is heated, sprayed, or if the exposure limit is exceeded. Empty drums should be dry, punctured with a non-sparking tool and disposed of in a licensed facility, landfill or sent to a qualified drum re-conditioner. Liquid product should be incinerated in a licensed facility in accordance with local, state, and federal regulations. Do not discharge to waterways or sewer systems or dispose of on the ground.

Refer to Material Safety Data Sheet (MSDS) prior to application of *BioBased® 1701s Insulation*.

FLUSHING / PURGING

Chemical blown foams followed by BioBased® 1701s Insulation water blown foam:

When using *BioBased® 1701s Insulation* after a chemically blown spray polyurethane foam it is necessary to flush the entire system with a non-water based solvent in order to achieve maximum foam quality and yield.

Water blown foams followed by BioBased® 1701s Insulation:

Flushing the system with solvent may not be necessary when switching from one water blown foam system to the next, but it is imperative that any remaining product from the previous application is completely removed or flushed from applicator guns, lines and pumping system by a throughput of *BioBased® 1701s Insulation* product until test sprays indicate that no mixed foam is present in the system.

CONTAINERS:

Shipping weight per set: 1,032 pounds

A set of chemicals for *BioBased® 1701s Insulation* consists of the following:

- One (1) 55 gallon drum of 'A' component
- One (1) 55 gallon drum of 'B' component

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