



## BioBased<sup>®</sup> 501w Insulation

### DESCRIPTION

*BioBased<sup>®</sup> 501w Insulation* is a water blown, two part, open cell, bio-based spray applied, polyurethane foam having a nominal density of 0.5 p.c.f.

*BioBased<sup>®</sup> 501w Insulation* expands 100:1, filling voids, crevices, and building cavities, and reduces energy consumption needed for climate control by reducing infiltration. Once installed, *BioBased<sup>®</sup> 501w Insulation* assists in increasing thermal resistance, minimizes sound transfer, and can reduce the risk of moisture accumulation within the building envelope.

### RECOMMENDED USES

*BioBased<sup>®</sup> 501w Insulation* can be used in residential, commercial and industrial applications.

### EVALUATION CRITERIA

*BioBased<sup>®</sup> 501w Insulation* meets or exceeds the evaluation criteria for ICC (International Code Council) approval as a building insulation. Its ICC approval number is ESR-1383, and shall be installed in full compliance with the following codes:

- 2006 International Building Code<sup>®</sup> (IBC)
- 2006 International Residential Code<sup>®</sup> (IRC)
- 1997 Uniform Building Code<sup>®</sup> (UBC)

For proper use of this material, refer to *BioBased<sup>®</sup> 501w Insulation* application guide and the following codes and guides:

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

### ARCHITECTURAL REFERENCE

Architectural specifications in CSI three-part format are available upon request.

### Technical Support: BioBased<sup>®</sup> Insulation, LLC

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### Notice

The technical data contained herein is true and accurate to the best of the BioBased<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> Insulation sales order, which is extended to the purchaser only.

### INSTALLATION

*BioBased<sup>®</sup> 501w Insulation* must be installed by certified dealers who have successfully completed a BioBased<sup>®</sup> Insulation approved training program or BioBased<sup>®</sup> Insulation approved field certification training which covers proper application techniques, environmental health and safety, building science, and building code standards.

BioBased<sup>®</sup> Insulation does not recommend nor endorse open combustion appliances located in attic or crawl spaces. *BioBased<sup>®</sup> 501w Insulation* must be separated from occupied spaces by ½" gypsum or an equivalent 15 minute thermal barrier.

Physical Properties	Value	ASTM Test Method
Air Leakage <sup>Δ</sup> :		
2" x 4" wall cavity @ 75 PA	< 0.02 L/s/m <sup>2</sup>	E 283
2" x 6" wall cavity @ 75 PA	< 0.02 L/s/m <sup>2</sup>	E 283
Closed Cell Content	3.0 %	D 2856
Core Density (nominal)	0.5 lbs/ft <sup>3</sup>	C 1622
Criteria for fungi resistance	Pass	C 1338
Dimensional Stability	< -5.0%	D 2126
Surface Burning Characteristics*:	4" thickness	E 84
Flamespread Index	≤ 25	
Smoke Developed Index	≤ 450	
Tensile Strength	3.0 p.s.i.	D 1623
Water Vapor Permeability <sup>†</sup> :		E 96
3.5" Thick Foam	9.2 perms	
5.5" Thick Foam	6.1 perms	

<sup>Δ</sup> The International Residential Code defines air impermeable as having less than 0.02 L/m-s at 75 Pa. *BioBased<sup>®</sup> 501w Insulation* qualifies under this definition as an air barrier.

\* 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

<sup>†</sup> ASHRAE defines a Class III vapor retarder as having between 1 and 10 perms. *BioBased<sup>®</sup> 501w Insulation*, when installed at 3-½", qualifies under this definition as a Class III vapor retarder.

Thermal Resistance, Aged 90 days @ 72°F, 50% relative humidity		
C 518, 75°F, °F h ft <sup>2</sup> /BTU	1" nominal thickness	R - 3.8
C 518, 75°F, °F h ft <sup>2</sup> /BTU	3.5" nominal thickness	R - 13
C 518, 75°F, °F h ft <sup>2</sup> /BTU	5.5" nominal thickness	R - 20
C 518, 75°F, °F h ft <sup>2</sup> /BTU	7.5" nominal thickness	R - 28
C 518, 75°F, °F h ft <sup>2</sup> /BTU	10" nominal thickness	R - 37

Sound Transmission Class (STC) — 38 (2"x4" wood stud, ½" gypsum)						
Hz. Freq.	250	500	1000	2000	4000	5000
ASTM E 90	26	40	49	56	50	56



# Applicator Technical Data Sheet

## BioBased® 501w Insulation

### APPLICATION GUIDELINES\*

It is important that applicators review and understand BioBased® Insulation Certified Dealer Training Manual prior to use or application of *BioBased® 501w 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® 501w 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 the remainder of the spray period on a low setting to prevent frothing.

Allow a 3 to 5 second time interval between passes to allow foam to cure and reduce the likelihood of blowing the reacting material away from the substrate.

**CONTAINERS:** A set of chemicals for *BioBased® 501w Insulation* consists of the following:

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

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

Shipping weight of each set: 1032 lbs

### 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

**Wind velocity**  
<12 m.p.h.

**IN CASE OF CHEMICAL EMERGENCIES:**  
CALL CHEMTREC (800) 424-9300 OR (COLLECT) (703) 527-3887 (USA)

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

	A Component	B Component	Hose
<b>Drum Temperature</b>	75 to 85°F	75 to 85°F	
<b>Proportioner Temperature</b>	105 to 135°F	105 to 135°F	105 to 135°F
<b>Pressure</b>	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) for the *BioBased® 501w Insulation*.

### FLUSHING / PURGING

*Chemical blown foams followed by BioBased® 501w Insulation water blown foam:*

When using *BioBased® 501w Insulation* after a chemically blown spray polyurethane foam it is necessary to flush the entire B-side hoses and gun with a non-water based solvent in order to achieve maximum foam quality and yield.

*Water blown foams followed by BioBased® 501w Insulation:*

Flushing the B-side hoses and gun with solvent may not be necessary when switching from one water blown foam system to the next, but it is important that any remaining product from the previous application is completely removed & flushed from applicator guns, lines and pumps by a throughput of *BioBased® 501w Insulation* product until test sprays indicate that the previous system has been completely replaced with *BioBased® 501w Insulation*.

### TECHNICAL SUPPORT

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