

2001NB

Closed Cell Insulation Quick Reference



For additional technical data see 2001NB Technical Data Sheet.

Properties	Value		Test Method
Water Vapor Permeability†			
1" (25 mm)	1.9 perms		ASTM E96
Air Leakage^Δ			
1" (25 mm) thick foam @ 75 PA	< 0.02 L/s/m ²		ASTM E283
Closed Cell Content	> 90%		ASTM D2856
Core Density (nominal)	2.0 p.c.f. (32 kg/m ³)		ASTM D1622
Compressive Strength	25 to 30 p.s.i. (1.7 - 2.1 bar)		ASTM D1621
Tensile Strength	40 to 48 p.s.i. (2.8 - 3.3 bar)		ASTM D1623
Dimensional Stability			
160°F (71°C), 100% Humidity	< 4%		ASTM D2126
Surface Burning Characteristics *	4" (102 mm)		ASTM E84
Flame Spread Index	≤ 25		ASTM E84
Smoke Developed Index	≤ 450		ASTM E84
Full Scale Room Corner Test			
Test Method	Walls	Ceilings	Covering
NFPA 286	12" (304 mm)	12" (304 mm)	1/2" (12.7 mm) Gypsum
Aged R-Value	°F·h·ft²/BTU		(K·m²/W)
1" (25 mm) nominal thickness	R – 6.3		RSI – 1.04
2" (51 mm) nominal thickness	R – 12		RSI – 2.11
3" (76 mm) nominal thickness	R – 18		RSI – 3.17
4" (102 mm) nominal thickness	R – 24		RSI – 3.35
5" (127 mm) nominal thickness	R – 32		RSI – 4.93
7" (178 mm) nominal thickness	R – 44		RSI – 6.87
8" (203 mm) nominal thickness	R – 51		RSI – 7.75
9" (229 mm) nominal thickness	R – 57		RSI – 8.81

^Δ The International Residential Code defines air impermeable as having less than 0.02 L/m-s at 75 Pa.

* 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 a material having between 0.1 and 1 perms.

*** Calculated based on the K-Value at 4".

Read This Before You Buy - What You Should Know About R-Values

The chart shows the R-value of this insulation. R means resistance to heat flow. The higher the R-value, the greater the insulating power. Compare insulation R-values before you buy. There are other factors to consider. The amount of insulation you need depends mainly on the climate you live in. Also, your fuel savings from insulation will depend upon the climate, the type and size of your house, the amount of insulation already in your house, and your fuel use patterns and family size. If you buy too much insulation, it will cost you more than what you'll save on fuel. To get the marked R-value, it is essential that this insulation be installed properly.

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BioBased 1701s[®]

Closed Cell Insulation Quick Reference



For additional technical data see BioBased 1701s[®] Technical Data Sheet.

Properties	Value	Test Method
Water Vapor Permeability†		
1" (25 mm)	2.06 perms	ASTM E96
2.5" (63.5 mm)	0.73 perms	ASTM E96
Water Absorption	0.2%	ASTM D2842
Air Leakage^Δ		
1" (25 mm) thick foam @ 75 PA	< 0.02 L/s/m ²	ASTM E283
Closed Cell Content	> 90%	ASTM D2856
Core Density (nominal)	1.7 lbs./ft ³	ASTM D1622
Compressive Strength	23 p.s.i. (1.6 bar)	ASTM D1621
Tensile Strength	19 p.s.i. (1.3 bar)	ASTM D1623
Finished Foam Bio-Content	16%	ASTM D6866
Fungi Resistance	Pass	ASTM C1338
Dimensional Stability		
180°F (82°C), Ambient Humidity	< 1%	ASTM D2126
73°F (23°C), 50% Relative Humidity	< 1%	ASTM D2126
-4°F (-20°C), Ambient Humidity	< 1%	ASTM D2126
Surface Burning Characteristics	1.625" (41 mm)	ASTM E84
Flame Spread Index	≤ 25	ASTM E84
Smoke Developed Index	≤ 450	ASTM E84

Full Scale Room Corner Test

Test Method	Walls	Ceilings	Covering	Report Number
NFPA 286	7" (125 mm)	9" (228 mm)	1/2" (12.7 mm) Gypsum	01.13544.01.215
UL 1715	8" (203 mm)	8" (203 mm)	25 wet mils Flame Seal TB	3184159-SAT-003-B

Initial R-Value	°F·h·ft ² /BTU	(K·m ² /W)	
1" (25 mm) nominal thickness	R – 5.9	RSI – 1.04	ASTM C518
2" (51 mm) nominal thickness	R – 12	RSI – 2.11	***
3" (76 mm) nominal thickness	R – 18	RSI – 3.17	***
3.5" (89 mm) nominal thickness	R – 19	RSI – 3.35	***
5" (127 mm) nominal thickness	R – 28	RSI – 4.93	***
7" (178 mm) nominal thickness	R – 39	RSI – 6.87	***
8" (203 mm) nominal thickness	R – 44	RSI – 7.75	***
9" (229 mm) nominal thickness	R – 50	RSI – 8.81	***

- Δ The International Residential Code defines air impermeable as having less than 0.02 L/m-s at 75 Pa.
- * 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 a material having between 0.1 and 1 perms.
- ** Coating applied to vertical surfaces only.
- *** Calculated based on the K-Value at 3.5".

Read This Before You Buy - What You Should Know About R-Values

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