

# POLAR BARRIER™

Natural Fiber Cellulose Insulation



## The Better Performing Insulation.

### Benefits of Polar Barrier:

- Superior Thermal Performance (R-Value 3.9)
- Excellent Sound Control
- Environmentally Responsible (85% Recycled Paper)
- Low Dust / No Smell / No Itchy Fibers
- Low Toxicity / No Harmful Chemicals Used
- All Borate Formula

### SUPERIOR CELLULOSE INSULATION

- **Better Thermal Performance** Polar Barrier has a higher R-value per inch than other types of insulation.
- **Superior Fire Protection** Polar Barrier reduces the spread of fire by reducing flames and restricting oxygen flow and slowing fire progression.
- **Better Sound Control** Polar Barrier is 2-3 times more dense, compared to fiberglass insulation, reducing air flow and absorbing unwanted noise.
- **Safer** Polar Barrier is low toxicity and does not contain fiberglass, mineral fibers, formaldehyde or other hazardous materials.
- **Environmentally Responsible** Polar Barrier is manufactured with 85% recycled paper content. Uses up to 10 times less embodied energy to produce compared to fiberglass.
- **Multiple Sizes to Meet All of Your Needs** Polar Barrier is now available in 20lb, 25lb and 30lb bags so you can get the right amount for any project. Also available for retail or contractors depending on your needs.

### FIRE AND SAFETY REQUIREMENTS

Polar Barrier meets test requirements of Consumer Products Safety Commission HH1-151E (16 CFR Part 1209):

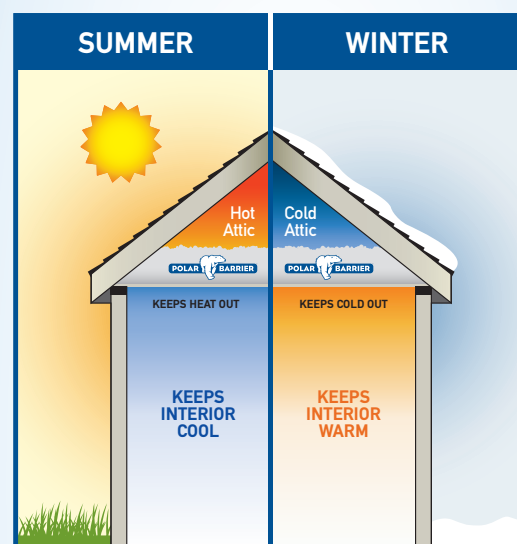
- ASTM C739-05b (US) For Loose-fill
- ASTM E84 (Class 1) Fire Rating For Building Materials
- CAN/ULC-S703-01 (Pending)
- FHA, VA, HUD and all state and local building codes.
- Polar Barrier has been treated with safe and permanent fire retardants required by CPSC.



R-value is thermal resistance to heat flow through a material or assembly of materials.

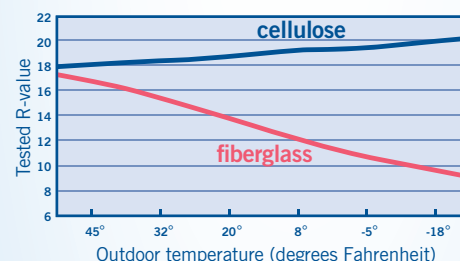
Higher R-value means higher savings.

Polar Barrier delivers higher thermal (R-value) performance and higher savings year-round.



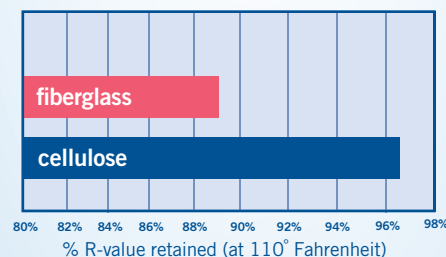
### Effective R-value in cold temperatures

Source: Oak Ridge National Laboratory



### Effective R-value in hot temperatures

Source: Brookhaven National Laboratory



## GREEN “BUILD” ALTERNATIVE

According to the EPA's Comprehensive Procurement Guidelines (CPG) 2007 revised edition, due to the higher recycled materials content, they suggest government procuring agencies use cellulose as a recycled-content building product when purchasing construction products.



- Polar Barrier Natural Fiber Cellulose is the right insulation choice for building green.
- Better thermal performance means lower energy cost.
- Uses 85% recycled newsprint and other paper materials, reducing landfill use, which creates a cleaner environment for the future.
- Low toxicity, no harmful chemicals used in production.

## MORE EFFECTIVE THAN FIBERGLASS

Due to higher density when compared to fiberglass:

- Higher energy savings due to better R-values.
- Better sound control by reducing noise transfer between rooms floors and outside.
- Reduces air movement.
- Creates a seamless blanket of thermal protection.
- Creating “Peace Of Mind” knowing that customer health, safety and comfort are being met.

## LOOSE FILL (ALL BORATE) COVERAGE CHART

Progressive density coverage chart with required information only.

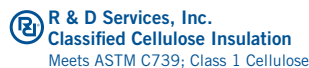
R-value (R/in.) = 3.90

Density (lb/ft<sup>3</sup>) = 1.45

Weight Per Bag = 30.0 lbs.

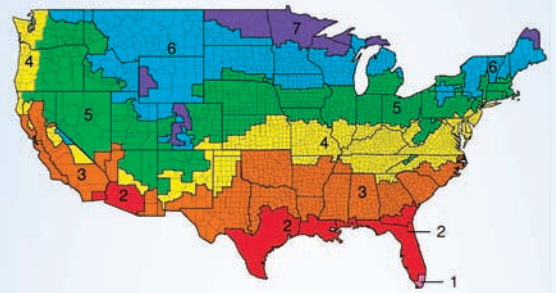
R-value at 75° F	Initial Installed Thickness (inches)	Minimum Settled Thickness (inches)	Bags Per 1000 Sq. Foot No joists	Net Coverage Sq. Foot/Bag No joists	Minimum Weight Per Sq. Foot
R-13	4.7	4.2	12.0	83.4	0.36
R-19	6.3	5.7	18.6	53.8	0.56
R-22	7.1	6.4	21.9	45.7	0.66
R-30	9.2	8.3	30.8	32.5	0.92
R-38	11.4	10.2	39.7	25.2	1.19
R-49	14.3	12.9	52.0	19.2	1.56
R-60	17.3	15.5	64.3	15.5	1.93

Source: R&D Services, Inc.  
Initial installed thickness determined according to ASTM C1374 using a Krendl 500 machine.  
Machine settings are not adjustable.



## R-value recommendations for retrofitting existing wood-framed buildings

Climate Zones 1 2 3 4 5 6 7 8



Zone 1 includes Hawaii, Guam, Puerto Rico, and the Virgin Islands.

Zone 7 includes all of Alaska, except for the following boroughs in Zone 8: Bethel, Dellingham, Fairbanks N. Star, Nome, North Slope, Northwest Arctic, Southeast Fairbanks, Wade Hampton, Yukon-Koyukuk.

## R-value Recommendations

Zone	Uninsulated Attic	Existing 3" to 4" Attic Insulation	Floor
1	R-30 to R-49	R-25 to R-30	R-13
2	R-30 to R-60	R-25 to R-38	R-13 to R-19
3	R-30 to R-60	R-25 to R-38	R-19 to R-25
4	R-38 to R-60	R-38	R-25 to R-30
5	R-49 to R-60	R-38 to R-49	R-25 to R-30
6	R-49 to R-60	R-38 to R-49	R-25 to R-30
7	R-49 to R-60	R-38 to R-49	R-25 to R-30
8	R-49 to R-60	R-38 to R-49	R-25 to R-30

## Wall Insulation

**Un-insulated wood-frame wall:** Whenever exterior siding is removed on an uninsulated wood-frame wall, drill holes in the sheathing and blow insulation into the empty wall cavity before installing the new siding.

- **Zones 3 and 4:** Add R-5 insulative wall sheathing beneath new siding.
- **Zones 5 to 8:** Add R-5 to R-6 insulative wall sheathing beneath new siding.

## Insulated wood-frame wall:

- **For Zones 4 to 8:** Add R-5 insulative sheathing before installing new siding.

Source: DOE Insulation Fact Sheet 2008

**Polar Barrier natural fiber cellulose insulation is exclusively produced by:**

Insolution Manufacturing LLC  
23230 West Thomess Blvd.  
Loretto, MN 55357

phone: 763-478-4540  
fax: 763-478-4538  
email: info@insolutionmfg.com

[www.insolutionmfg.com](http://www.insolutionmfg.com)

**INSOLUTION**  
MANUFACTURING LLC