



# Fiber Glass and Rock Wool and Slag Wool Loose-Fill Insulation

## For Weatherization Assistance Programs

**F**iber glass, rock wool and slag wool insulation products qualify for use in the Weatherization Assistance Program. While there are several types of insulations typically used for the weatherization market none has the many advantages of loose-fill fiber glass or rock wool and slag wool insulation. Fiber glass, rock wool and slag wool loose-fill insulation have proven to be a smart choice for the home owner and insulation contractor.

### THE ADVANTAGES

#### Recycled Content

Fiber glass, rock wool and slag wool insulation can meet the federal government's recycled content requirements.<sup>1</sup> Today's fiber glass insulation

products contain upwards of 40% recycled glass and are made from sand, a highly renewable resource. Slag wool insulation contains approximately 70-75% recycled blast furnace slag. Manufacturers of cellulose, a common insulating material, may claim their product is 100% recycled, but at least 20% (by weight) of the final product is fire-retardant chemicals.

#### R-value

Blown-in fiber glass, rock wool and slag wool insulation products can achieve up to an R-15 in a 2x4 cavity and an R-23 in a 2x6 cavity - more than any other traditional loose-fill insulation on the market today.



Loose-fill fiber glass, rock wool and slag wool insulation can be blown with most types of pneumatic machines and provide the R-value needed to meet the building codes. Once installed they work for the life of the building with negligible settling and no maintenance.

## Coverage

Loose-fill fiber glass, rock wool and slag wool insulation products can be blown with most types of pneumatic machines and provide the equivalent R-value with less material than cellulose.

## Air Infiltration

Research has shown that air infiltration is dependent on the overall sealing package, and not the insulation type installed in the wall cavity.<sup>2,3,4</sup> Recent testing indicates that loose fill fiber glass insulation performs as well, if not better, than other loose fill insulations under identical conditions.<sup>5</sup>

## Light Weight

Some loose fill insulations are heavier than others and their installed weight may not be safe for the application. Loose-fill fiber glass can be installed to an R-70 over ½ inch ceiling drywall with 24 inch on-center framing.<sup>6</sup> Based on U.S. Gypsum weight limit recommendations for back loaded standard drywall and the installed density of shredded newspaper insulations, cellulose insulation may cause ceiling drywall to sag at high R-values when installed over ½ inch ceiling drywall with framing spaced 24 inches on centers.<sup>7</sup>

## Settling

Fiber glass, rock wool and slag wool insulation products exhibit virtually no signs of settling or R-value loss over time.<sup>8</sup> On the other hand, another traditionally used loose-fill insulation, cellulose, settles up to 20%<sup>9</sup> and requires

compensation for settling during installation.<sup>10</sup>

## Sound Control

Fiber glass, rock wool and slag wool insulation reduce sound transmission in wall, ceiling, and floor assemblies by approximately 4 to 6 STC points.<sup>11</sup> Insulation thickness has a more significant effect on STC ratings than does density. According to the Institute for Research on Construction, wall systems containing sprayed-on and blown-in cellulose fiber demonstrated greater variation in performance than those with other types of insulation. These variations were attributed to differences in installation (which is difficult to control) rather than to differences in the acoustical properties of the materials.<sup>12</sup>

## Moisture Absorption

Under normal conditions, all insulation is exposed to humidity in the air. Fiber glass, rock wool and slag wool insulation products will not wick up and hold water, thus they resist permanent loss of R-value. This also lessens the chances of mold growth, mildew or rotting issues.

## Corrosiveness

Fiber glass, rock wool and slag wool insulation products contain no chemicals that can corrode pipes and wires and structural metal components.<sup>13</sup> When chemical fire retardants are used, such as those found in cellulose insulation, corrosion can occur.<sup>14</sup>

## Fire Performance

Fiber glass, rock wool and slag wool insulation products are naturally noncombustible since they are made primarily from sand, recycled glass, rock wool and blast furnace slag.<sup>15</sup>

Cellulose insulation is made of pulverized newspaper that is highly combustible.

Cellulose insulation is regulated as a fire hazard by the Consumer Product Safety Commission (CPSC).<sup>16</sup>

## Product Testing for Health Safety

Fiber glass, rock wool and slag wool insulation products are the most thoroughly tested building materials in use today. The great amount of medical scientific evidence compiled over more than 70 years by industry, government, and independent research organizations supports the conclusion that these insulation products are safe to use when manufacturers' recommended work practices are followed.

Other loose-fill insulations typically used for weatherization programs have limited health and safety testing.

## Recyclable

Fiber glass, rock wool and slag wool insulation can be recycled and reused.

**For information on additional fiber glass, rock wool and slag wool insulation products for residential & commercial building contact:**

**Aislantes Minerales, S.A. de C.V.**

Descartes #104  
Neuva Anzures  
11590 D.F., México  
52-55-1036-0640  
www.rolan.com

**Amerrock Products LP**

440 Jackrabbit Road  
P.O. Box C  
Nolanville, TX 76559  
800-762-9665  
www.amerrock.com

**CertainTeed Corp.**

P.O. Box 860  
Valley Forge, PA 19482  
800-233-8990  
www.certainteed.com

**FiberTEK Insulations, LLC**

925 South 4400 West  
Salt Lake City, UT 84104  
801-973-9423  
www.fibertekinsulation.com

**Fibrex Insulations Inc.**

561 Scott Road  
Sarnia, Ontario  
Canada N7T 7L4  
800-265-7514  
www.fibrexinsulations.com

**Industrial Insulation Group, LLC**

2100 Line Street  
Brunswick, GA 31520  
912-264-6372  
www.iig-llc.com

**Isolatek International**

41 Furnace Street  
Stanhope, NJ 07874  
973-347-1200  
www.isolatek.com

**Johns Manville**

P.O. Box 5108  
Denver, CO 80217  
00-654-3103  
www.jm.com

**Knauf Insulation**

One Knauf Drive  
Shelbyville, IN 46176  
800-825-4434  
www.knaufinsulation.us

**Owens Corning**

One Owens Corning Parkway  
Toledo, OH 43659  
800-GET-PINK  
www.owenscorning.com

**Rock Wool Manufacturing Co.**

203 7th Street, N.E.  
Leeds, AL 35094  
205-699-6121  
www.deltainsulation.com

**Roxul Inc.**

551 Harrop Drive  
Milton, Ontario  
Canada L9T 3H3  
800-265-6878  
www.roxul.com

**Thermafiber, Inc.**

3711 Mill Street  
Wabash, IN 46992  
888-834-2371  
www.thermafiber.com

**USG Interiors, Inc.**

550 West Adams Street  
Chicago, IL 60661  
312-436-4000  
www.usg.com



Fiber glass, rock wool and slag wool are made from a combination of natural and recycled ingredients such as basaltic rock, blast furnace slag, recycled glass cullet and sand. The natural ingredients, sand and rock, are readily available. The use of blast furnace slag and glass cullet are recycled materials that are transformed into a product that saves energy and reduces pollution.

## References:

- 1 5.3 PROCUREMENT OF BUILDING INSULATION PRODUCTS AND MATERIALS CONTAINING RECOVERED MATERIALS: Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), states that if a procuring agency using Federal funds purchases certain designated items, such items must be composed of the highest percentage of recovered materials practical. On February 17, 1989, the EPA promulgated the Final Rule containing the guidelines for the procurement of building insulation products. Policy guidance was issued by the DOE on February 16, 1990, providing further clarification on this issue.
- 2 *Field Demonstration of Alternative Wall Insulation Products*, prepared for the U.S. Environmental Protection Agency by NAHB Research Center, Inc., November 1997.
- 3 G.K. Yuill, Ph.D, *A Field Study of the Effect of Insulation Types on the Air Tightness of Houses*, Pennsylvania State University Department of Architectural Engineering, 1996.
- 4 William Conroy, Division Marketing Supervisor, Research and Development Project, "Maple Acres," Union Electric, St. Louis, MO, 1995.
- 5 NAHB Research Center, Inc, NAIMA, *Air Infiltration of Wood Frame Walls*, May 2009.
- 6 NAIMA, *Comparing Fiber Glass and Cellulose Insulation*, Pub. No. BI475, August 2009.
- 7 USG, Gypsum Construction Handbook, 2000 Centennial Edition, pp. 75, 353, 381; USG, *Gypsum Construction Handbook*, 1992 Edition, pp. 28, 102.
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- 9 Bengt Svennerstedt, "Field Data on Settling in Loose-Fill Thermal Insulation," *Insulation Materials, Testing and Application* (ASTM: Philadelphia, PA, 1990), pp. 231, 236.
- 10 16 C.F.R. 460.12(b)(2).
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- 12 A.C.C. Warnock and J.D. Girt, *Control of Sound Transmission through Gypsum Board Walls*, Institute for Research in Construction/National Research Council of Canada, January 1997.
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- 14 Sarfraz A. Siddiaqui, *A Handbook on Cellulose Insulation* (Malabar, Florida: Robert E. Krieger, 1989), p. 76; K. Sheppard, R. Weil, and A. Desjarlais, "Corrosiveness of Residential Thermal Insulation Materials Under Simulated Service Conditions," *Insulation Materials, Testing and Applications*, D.L. McElroy and J.F. Kimpflen, eds. (Philadelphia, PA: ASTM, 1990), pp. 634-654.
- 15 Richard T. Bynum, Jr., *Insulation Handbook* (New York: McGraw-Hill, 2001), p.131.
- 16 16 C.F.R. Part 1209 and Part 1404.

## About NAIMA

NAIMA is the association for North American manufacturers of fiber glass, rock wool and slag wool insulation products. Its role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool and slag wool insulation, and to encourage the safe production and use of these materials.

For more information, contact:

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