



==== FIBER GLASS & MINERAL WOOL ====

# ENGINEERED TO OUTPERFORM™





# Insulation Institute™

WE PROVIDE THE FACTS THAT HELP YOU CONFIDENTLY  
BUILD THE MOST COMFORTABLE, ENERGY-EFFICIENT  
AND SUSTAINABLE BUILDINGS, WHILE MAXIMIZING  
BUSINESS SUCCESS.

KNOWLEDGE.

LEADERSHIP.

CONFIDENCE.

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# DEFINING THE FUTURE

## OF BUILDING PERFORMANCE

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Fiber glass and mineral wool insulation are essential to building a high-performance insulation system in the most progressive builds – continually outperforming the market's ever-changing standards.

No matter what your building challenge, fiber glass and mineral wool have the remarkable product depth, application flexibility and value versatility that help you satisfy every job's demands. These are attributes you won't easily find with other insulation types, which is why there's no question fiber glass and mineral wool have proven themselves to be the industry's leading insulation solutions. Inside, you'll find the latest industry knowledge and confidence that show why they're **Engineered to Outperform.™**

INSTALLED IN  
**90%**  
OF HOMES  
NORTH AMERICA'S LEADING  
INSULATION CHOICE FOR A REASON<sup>1</sup>

## HOW FIBER GLASS & MINERAL WOOL HELP YOU SUCCEED

- ✓ Proven Performance
- ✓ Maximum Jobsite Productivity
- ✓ Unmatched Value Versatility
- ✓ Responsible for a Lifetime



# PROVEN LIFETIME PERFORMANCE

FIBER GLASS AND MINERAL WOOL INSULATION ARE KEY TO CREATING THE HIGHEST PERFORMING BUILDS POSSIBLE.

They are innovated through advanced building science to give your buildings one of the best combinations of thermal, acoustical, moisture and fire protection available in the industry.

## Thermal Performance

Create optimal comfort in every climate, letting your homeowners and occupants enjoy consistent temperatures year round. Fiber glass and mineral wool offer a comprehensive range of products and some of the highest thermal values possible, giving you the right thermal performance and comfort for every environment.

- ✓ Fiber glass and mineral wool consistently achieve high R-Values, exceeding many new energy code and green building program requirements.
- ✓ They can also achieve a RESNET Grade 1 wall, with a proper installation and air sealing solution.<sup>2</sup>
- ✓ According to the NAHB (National Association of Home Builders) Research Center and several other independent tests, when fiber glass is paired with standard air sealing practices, including taped house wrap or caulk, air infiltration is effectively reduced to near zero.<sup>3, 4, 5, 6</sup>
- ✓ It's easy to achieve a full cavity installation, and both batt and blow-in deliver consistent R-Value throughout the entire cavity.
- ✓ They maintain thermal performance for the life of the building, because fiber glass and mineral wool batts do not settle and loose-fill settles a negligible amount.<sup>7</sup>
- ✓ Fiber glass and mineral wool are also UV stable, meaning they do not experience shrinkage or thermal performance loss over time like spray foam.<sup>8</sup>

### R-Value Range

	2x4	2x6
FIBER GLASS BATT <sup>9</sup>	R13 to R15	R19 to R21
FIBER GLASS BLOW-IN	R13 to R16	R20 to R25
MINERAL WOOL BATT <sup>10</sup>	R13 to R15	R22 to R23
MINERAL WOOL BLOW-IN	R14.5	R23
CELLULOSE <sup>*11</sup>	R12 to R13	R19 to R20
SPRAY FOAM OPEN CELL <sup>**12</sup>	R12 to R13	R19 to R20
SPRAY FOAM CLOSED CELL <sup>**13</sup>	R19 to R22	R32 to R35

\* Cellulose R-Values can be overstated due to potential settling over time.

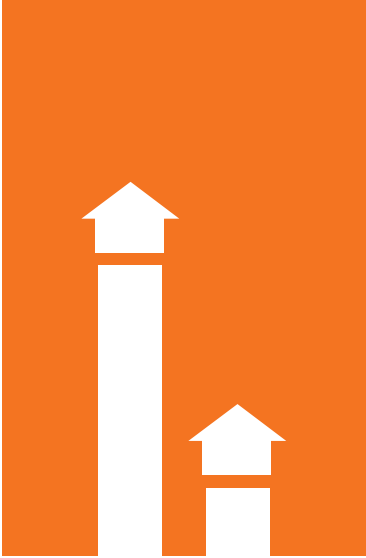
\*\* Spray foam R-Values assume full cavity installations, but full cavity installations with spray foam are difficult to achieve.





**0%**  
**R-VALUE LOSS**  
**OR SETTLING WITH BATTS<sup>14</sup>**

PERFORMS FOR THE LIFE OF THE BUILDING



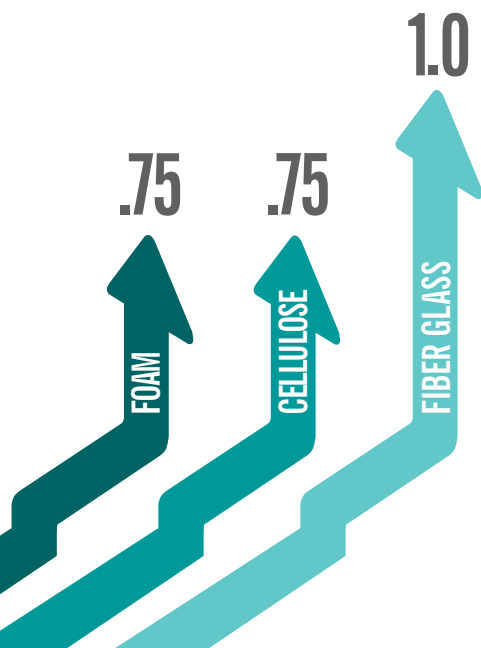
## Acoustical Control

Provide acoustically sound environments, where your customers can relax in a peaceful space or turn up the volume without disturbing others. Fiber glass and mineral wool give your builds an edge by achieving a high level of sound control, between interior rooms and floors and from outside sources.

- ✓ Fiber glass can achieve a Sound Transmission Class (STC) of 43 as part of a complete exterior 2"x4" wood framed wall system.<sup>15</sup>
- ✓ It can also absorb up to 25% more sound, with a Noise Reduction Coefficient (NRC) of up to 1.00, vs. spray foam and cellulose with a NRC of .75.<sup>16</sup>
- ✓ Fiber glass and mineral wool batts are an easy way to apply acoustical control to interior walls without changing build practices.

### NRC Ratings

#### Comparing Spray Foam, Cellulose and Fiber Glass



## Moisture and Mold Resistance

Give yourself and your customers the assurance that your builds are protected from expensive moisture damage. Fiber glass and mineral wool offer multiple layers of moisture resistance, helping defend your business from the 80% of residential construction defect litigation related to water and moisture issues.<sup>17</sup>

- ✓ Fiber glass and mineral wool require no drying or curing time during installation, and therefore do not introduce moisture into the cavity, unlike cellulose and spray foam, which are typically applied wet.
- ✓ Because unfaced fiber glass and mineral wool are inorganic, mold cannot feed on them like it can on other types of insulation.
- ✓ Fiber glass and mineral wool absorb less than 1% of their weight in moisture, whereas cellulose absorbs 5–20% of its weight.<sup>18</sup>
- ✓ Many batts include specialty facings and advanced smart vapor retarders that help moisture escape the cavity.

# Fire Protection

Give ultimate peace of mind with high fire ratings. Fiber glass and mineral wool are naturally noncombustible and outperform all other standard insulating materials.

- ✓ Fiber glass and mineral wool don't have to rely upon harsh chemical fire retardants.
- ✓ Mineral wool is an excellent choice for applications with especially stringent fire and smoke rating requirements, meeting NFPA 220, ASTM E 136 standards.
- ✓ Mineral wool will not melt until reaching 2150°F (1177°C), and fiber glass resists melting up to 1300°F (704°C).<sup>19, 20</sup>

<b>FIBER GLASS AND MINERAL WOOL</b>	Naturally fire resistant. <sup>21, 22</sup>
<b>CELLULOSE</b>	Naturally flammable. Cellulose insulation manufacturers must apply 20-23%, by weight, of fire retardants* to reduce flammability. <sup>23, 24</sup>
<b>SPRAY FOAM</b>	Can be consumed by flame. Exposed foam must be protected using a 15-minute thermal barrier when installed in a habitable area. <sup>25</sup>

\* Fire retardants degrade/leach out over time.





# MAXIMUM JOBSITE PRODUCTIVITY

FIBER GLASS AND MINERAL WOOL ENABLE YOU TO QUICKLY AND COMPLETELY INSULATE ALMOST ANY STRUCTURE, THROUGH UNRIVALED EFFICIENCY AND FLEXIBILITY.

They require minimal setup time, equipment and downtime. And they can be installed in any area of the building, making for a simple yet comprehensive insulating solution.

## Time Savings

The NAHB estimates the average jobsite builder's operating cost per day is \$291, with some builders saying that figure is up to \$500.<sup>27</sup> Every construction hour counts, and fiber glass and mineral wool help you achieve the most time and money savings.

“I was impressed by the speed of installation and the condition of the property once the insulation was installed. There was very little residue, making cleanup very quick.”

– Shawn Stolte,  
President of  
Stolte Construction

- ✓ A 3,500 square-foot home can be completely insulated in a day by one trained installer using fiber glass or mineral wool batts and does not require multiple passes like spray foam insulation.
- ✓ Fiber glass and mineral wool require nearly 0% downtime, compared to spray foam and cellulose which are applied wet and require at least 1–2 days to dry or cure before drywall installation can begin. In some cases, spray foam takes as long as a week or more to completely dry out.<sup>28</sup>
- ✓ Other trades can safely continue working during installation of fiber glass and mineral wool, whereas spray foam installation requires evacuation of the entire structure for 24 hours.
- ✓ Installing batts generally requires nothing more than a cutting tool, staple hammer and minimal personal protective equipment – no machine or power source needed.
- ✓ Fiber glass batts are available in pre-cut sizes that fit standard wall cavities and wall heights – increasing productivity and reducing cleanup requirements. They can also be easily cut to fit any size cavity and small spaces.
- ✓ Fiber glass is lightweight, flexible and compression packaged, speeding jobsite handling and installation, while minimizing warehouse requirements and transportation demands.





# THE COST OF DOWNTIME

INSULATION	INSTALL	DRY/CURE	COST
WET SPRAY CELLULOSE	1 DAY	2 DAYS	\$873
SPRAY FOAM	1 DAY	1 DAY	\$580
FIBER GLASS AND MINERAL WOOL	1 DAY	0 DAYS	\$291

## CYCLE TIME SAVINGS WITH FIBER GLASS MEANS TREMENDOUS COST SAVINGS.

(Assumes average builder operating cost of \$291 per day, based on NAHB data.<sup>29</sup>)

## Application Flexibility

No matter what kind of structure, application or climate region, fiber glass and mineral wool give you the ultimate flexibility to meet most building challenges. You have the choice to use them alone as the complete insulation solution or as part of advanced hybrid applications.

- ✓ Fiber glass is easily installed into an existing structure, making it a highly flexible retrofit solution.
- ✓ Fiber glass and mineral wool also don't require a specific temperature at installation to achieve maximum thermal performance, unlike some other insulation types.<sup>30</sup>
- ✓ Batts are the most viable, cost-effective option for adding acoustical insulation between rooms, because they deliver incredible acoustical performance and install easily into studs prior to drywall installation on either side.
- ✓ Fiber glass can achieve high R-Values in condensed cathedral batts, which fit tightly between cathedral rafters and leave ventilation space so baffles are not required.



# UNMATCHED VALUE VERSATILITY

## FIBER GLASS AND MINERAL WOOL HELP YOU BUILD A STRONGER BUSINESS.

They provide a wide array of high performance solutions at the greatest value – meeting the needs of any building challenge and creating the most commercially viable insulation solution.

## Commercially Viable

From starter home to custom home, fiber glass and mineral wool give you an array of versatile solutions to help you make money. They put you in control of choosing the best performance level and the right value for your business approach.

- ✓ Fiber glass and mineral wool deliver solutions for every insulation and application need.
- ✓ Offering great value for any performance level, fiber glass and mineral wool provide the same R-Values for as low as ¼ the installed cost of other insulation types.<sup>31</sup>
- ✓ Fiber glass and mineral wool offer the insulation industry's widest range of products and performance levels, allowing you to achieve optimal R-Value within any budget.
- ✓ No investment in expensive machinery or specialized personal protective equipment is required to install fiber glass and mineral wool batts.
- ✓ Fiber glass and mineral wool reduce installation times, resulting in tremendous labor savings.
- ✓ Fiber glass and mineral wool enable you to answer the market's current need for cost-effective housing.

# INSTALLED COST

FIBER GLASS ACHIEVES AN R13 AT UP TO \$1.42 LESS PER SQ. FT. THAN OTHER INSULATION TYPES<sup>32</sup>

FIBER GLASS  
**\$0.48** sq. ft.

← PROFIT OPPORTUNITY →

CELLULOSE  
**\$0.85** sq. ft.

SPRAY FOAM  
**\$1.90** sq. ft.



# RESPONSIBLE FOR A LIFETIME

## FIBER GLASS AND MINERAL WOOL INSTALL SAFELY AND HELP MAKE A LASTING, POSITIVE IMPACT.

They're a responsible choice for your crew and the environment – proven safe to manufacture and install and offering industry-leading complete lifecycle sustainability.

## Sustainable

Fiber glass and mineral wool, including rock and slag wool, offer among the highest renewable and recycled contents in the industry, and deliver ongoing energy savings that lower our carbon footprint for years.

“Sustainability is the future of design. We need to be selecting materials that are high-performance with a long, useful life, while being less impactful to the environment.”

– Loren Aiton,  
*LEED AP Architect*

- ✓ A typical pound of fiber glass, rock or slag wool insulation saves 12 times as much energy in its first year in place as the energy used to produce it, and continues saving for the life of the building.<sup>33</sup>
- ✓ Fiber glass is made from silica sand, one of the most abundant and renewable minerals on Earth, and an average of 50% (up to 70%) recycled post-consumer glass product.<sup>34</sup>
- ✓ Rock wool is made of natural rock and contains an average of 10–15% recycled blast furnace slag.
- ✓ Slag wool contains an average 70% recycled blast furnace slag.<sup>35</sup>
- ✓ Fiber glass and mineral wool are compression packaged, allowing for more product on each truck, reducing transportation demands and impact on the environment.
- ✓ Fiber glass and mineral wool batts can be removed from an existing building and re-installed, making them among the few reusable forms of insulation and demonstrating their lasting sustainable performance.
- ✓ Since 1992, NAIMA members' plants have diverted more than 41.5 billion pounds of recycled materials from the waste stream.<sup>36</sup>





OVER 20 YEARS, FIBER GLASS INSTALLED IN A SINGLE-FAMILY HOME

SAVES **100**<sup>X</sup> THE ENERGY  
IT TAKES TO  
MANUFACTURE<sup>37</sup>

## Proven Safe

As the most thoroughly tested insulation products on the market, fiber glass and mineral wool are proven safe to use when recommended work practices are followed. Most other insulation types have limited or no known health and safety testing.

- ✓ The majority of fiber glass products contain no added formaldehyde and can pass Environmental Specification 1350.
- ✓ Installing fiber glass and mineral wool requires minimal safety equipment, including gloves, protective eyewear and an optional dust mask.
- ✓ Many are also certified for low emissions by a third party program such as GREENGUARD Gold Certification or the Scientific Certifications System's (SCS) Indoor Advantage Gold Certification.
- ✓ They do not contain chemical fire retardants required in other insulation types.<sup>38</sup>



## POWERED BY NAIMA

NAIMA is the recognized voice of the insulation industry, bringing together North American manufacturers of fiber glass, rock wool, and slag wool insulation products. Through Insulation Institute, we leverage our combined insulation expertise to educate the industry with the knowledge to make more informed insulation choices. We are advocates for a more comfortable, energy efficient and sustainable future and are constantly working with building professionals, government agencies, public interest, energy and environmental groups and homeowners to realize that vision.



## Members

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

Armstrong Building Products

CertainTeed Corp.

Guardian Fiberglass, Inc

Industrial Insulation Group, LLC

Johns Manville

Knauf Insulation

Owens Corning

Rock Wool Manufacturing Co.

Roxul Inc.

Thermafiber, Inc.

USG Interiors, Inc.





# Endnotes

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- 1 "Since the development of fiber glass insulation in the 1930s it has been used in 90% of homes in the U.S. that contain insulation." Glen Wilkinson, "Beyond R-Value: Insulating for the Environment," Environmental Design and Construction Magazine (January-February 1999):28
  - 2 "Achieving Grade I Insulation With Fiber Glass Batts," prepared by Advanced Energy for Owens Corning. [www.owenscorning.com/literature/pdfs/GradeOneWithFiberGlassBatts.pdf](http://www.owenscorning.com/literature/pdfs/GradeOneWithFiberGlassBatts.pdf)
  - 3 "Air Infiltration of Wood Frame Walls," NAHB Research Center, May 2009
  - 4 "Field Demonstration of Alternative Wall Insulation Products," prepared for U.S. Environmental Protection Agency by NAHB Research Center, Inc., November 1997
  - 5 "A Field Study of the Effect of Insulation Types on the Air Tightness of Houses," G.K. Yuill, Ph.D., Pennsylvania State University Department of Architectural Engineering, 1996
  - 6 Research and Development Project, "Maple Acres," Union Electric, St. Louis, Missouri. William Conroy, division marketing supervisor, 1995
  - 7 NAHB Research Center, Inc., NAIMA Loose-Fill Settling Study, Study of the Thickness Settling of Dry-Applied Attic Open Blow Mineral Fiber Loose-Fill Insulations in Site-Built Test Home Attics, Fourth Year Report, August 2008
  - 8 Foams are not UV stable and can be biodegraded by sunlight. Richard T. Bynum, Jr., Insulation Handbook (New York: McGraw-Hill, 2001) p. 195. Elastomeric coating is required to stop the foam from degrading. Degradation compromises the thermal performance. Richard T. Bynum, Jr., Insulation Handbook (New York: McGraw-Hill, 2001), p. 195. Foams tend to shrink over time; Richard T. Bynum, Jr., Insulation Handbook (New York: McGraw-Hill, 2001), P. 199. Improper equipment use can cause shrinkage; Richard T. Bynum, Jr., Insulation Handbook (New York: McGraw-Hill, 2001), p. 200. Maximum shrinkage is 1/8 inch in a wall cavity; Richard T. Bynum, Jr., Insulation Handbook (New York: McGraw-Hill, 2001), p. 200
  - 9 Thermal performance ranges for fiber glass batt insulation in 2"x4" and 2"x6" walls found in manufacturers' data and submittal sheets (2008, 2009)
  - 10 Thermal performance ranges for rock wool and slag wool insulation in 2"x4" and 2"x6" walls found in manufacturers' data and submittal sheets. (2008, 2009)
  - 11 Thermal performance ranges for cellulose blown-in insulation. [www.southface.org/web/resources&services/publications/factsheets/12insulation.pdf](http://www.southface.org/web/resources&services/publications/factsheets/12insulation.pdf)
  - 12 Thermal performance ranges for open and closed cell foam spray-in insulation for 2"x4" and 2"x6" walls found in manufacturers' data and submittal sheets (2009). In addition, calculations made by taking the R-Value per inch value that is contained in the ASHRAE Handbook of Fundamentals, page 25.6 - 2005 edition. R-Value table from [www.coloradoenergy.org/procorner/stuff/r-values.htm](http://www.coloradoenergy.org/procorner/stuff/r-values.htm)
  - 13 Thermal performance ranges for open and closed cell foam spray-in insulation for 2"x4" and 2"x6" walls found in manufacturers' data and submittal sheets (2009). In addition, calculations made by taking the R-Value per inch value that is contained in the ASHRAE Handbook of Fundamentals, page 25.6 - 2005 edition. R-Value table from [www.coloradoenergy.org/procorner/stuff/r-values.htm](http://www.coloradoenergy.org/procorner/stuff/r-values.htm)
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- 14 NAHB Research Center, Inc., NAIMA Loose-Fill Settling Study, Study of the Thickness Settling of Dry-Applied Attic Open Blow Mineral Fiber Loose-Fill Insulations in Site-Built Test Home Attics, Fourth Year Report, August 2008. Johns Manville, Technical Bulletin FGBI 43, April 2005; National Research Council of Canada, Internal Report Internal Report IRC-IR-693, October 1995
- 15 Part of a complete exterior wall with 2x4 wood stud wall construction, 16" on center, lap siding, foil-faced sheathing, 1/2" gypsum board on the interior side. "Johns Manville Spider® Acoustical Performance Advantages," [http://www.specjm.com/files/pdf/jmspider\\_bid0080.pdf](http://www.specjm.com/files/pdf/jmspider_bid0080.pdf). December 2008
- 16 Complete wall system including 1/2" particle board siding, 1/8" pressed cardboard sheathing and 1/2" gypsum board. [http://www.oklahomafam.com/foam\\_insulation\\_faq.htm](http://www.oklahomafam.com/foam_insulation_faq.htm); Johns Manville, "Sound Control Frequently Asked Questions," January 2003
- 17 "Smart Moisture Management Keys to Reducing Mold, Moisture and Mildew," <http://www.buildingmedia.com/stock/moldandmoisture.html>
- 18 Richard T. Bynum, Jr., *Insulation Handbook* (New York: McGraw-Hill, 2001), p. 78
- 19 Roxul products are stone wool insulations made from basalt rock and slag. This combination results in a non-combustible product with a melting point of approximately 2150°F (1177°C), which gives it excellent fire resistance properties. "Technical Data Sheet," June 2013
- 20 "Knauf Fiber Glass GmbH Material Safety Data Sheet," March 2001
- 21 Fiber glass is naturally fire resistant but faced insulation will contribute to flame spread unless flame-resistant materials are used. Richard T. Bynum, Jr., *Insulation Handbook* (New York: McGraw-Hill, 2001), p. 131
- 22 Naturally fire resistant. "The fibers [rock and slag wool] are noncombustible." Richard T. Bynum, Jr., *Insulation Handbook* (New York: McGraw-Hill, 2001), p. 147. July 7th, 1997
- 23 Cellulose is naturally flammable. Cellulose insulation manufacturers must apply 20 to 23 percent, by weight, of fire retardants to reduce flammability. Sarfraz A. Siddiqui, "A Handbook on Cellulose Insulation (Malabar, Florida: Robert E. Krieger Publishing Company), 1989, pages 27, 57-61, 63-74.
- 24 After discovering a high rate of failure of cellulose insulation products to pass the U.S. Consumer Product Safety Commission ("CPSC") fire tests (70 to 80 percent of the manufacturers), the CPSC developed regulations requiring that cellulose insulation be labeled as a fire hazard. 16 C.F.R. part 1404. See 16 C.F.R § 1404.4
- 25 Spray foam can be consumed by flame. Building codes require a 15-minute thermal barrier when spray foam is installed in a habitable area. Exposed foam is a potential risk and should be protected from open flames during construction. Richard T. Bynum, Jr., *Insulation Handbook* (New York: McGraw-Hill, 2001), pp. 191, 195
- 26 Insulation melting and combustion temperatures found in various manufacturers' current product data sheets
- 27 "Cycle Time, What is a day worth?," NAHB Research Center, 1997
- 28 Sarfraz A. Siddiqui, *A Handbook on Cellulose Insulation* (Malabar, Florida: Robert E. Krieger, 1989), p. 34
- 29 Cycle Time, What is a day worth?," NAHB Research Center
- 30 Spray foams can't be installed within 5° of the dew point; None of the surfaces can exhibit frost or water or thermal performance will be reduced; Poor mixing of chemicals and erratic spraying pattern results in uneven thickness which delivers inferior thermal performance; Equipment may clog and deliver inadequate spray pattern. Spraying too thick in a single application may cause the foam to char or result in a fire; Fire restraint tools should be available on the jobsite; During installation, there is a potential for the foam spray to ignite due to static electricity or other electrical sources; If the foam is sprayed too thick in one pass, the heat generation can result in combustion; A complex combination of equipment is required for applying spray foam insulation: Transfer pump – this sometimes requires a pressure tank with Nitrogen; Proportioning pump – 4 cylinders – 2 of which must move in unison to feed the heater system. Any imbalance in pressure or fluctuation of temperature will result in poor mixing and a product that does not deliver; All equipment must be cleaned and recalibrated after each use to ensure quality installation of product. Truck hauling all this equipment must be partitioned in separate compartments with temperature controlled. SPFA Contractor Safety and Product Stewardship Program, Spray Polyurethane Foam Alliance, Fairfax, Virginia. Cited from NAIMA doc BI502.pdf, October 2010.
- 31 "Air Infiltration of Wood Frame Walls," NAHB Research Center, p. 10. May 2009.
- 32 Cost per ft. installed at 3.5" thickness based on NAHB report "Air Infiltration of Wood Frame Walls," NAHB Research Center, p. 10. May 2009
- 33 "Green and Competitive: The Energy, Environmental, and Economic Benefits of Fiber Glass and Mineral Wool Insulation Products," *Energy Conservation Management; The Alliance to Save Energy; and Barakat & Chamberlin, 1996*
- 34 "Fiber Glass and Rock and Slag Wool Insulation – Materials for a Sustainable Planet," NAIMA Pub. No. N012, December 2012
- 35 "Fiber Glass and Rock and Slag Wool Insulation – Materials for a Sustainable Planet," NAIMA. 11/17/2012 <http://www.naima.org/insulation-news/article.php?storyid=101>
- 36 Based on a 2012 survey of NAIMA members' use of pre- and post-consumer recycled materials in their insulation products during the years 2008 to 2011. Includes data from both U.S. and Canadian manufacturing facilities
- 37 "Green and Competitive: The Energy, Environmental, and Economic Benefits of Fiber Glass and Mineral Wool Insulation Products," *Energy Conservation Management; The Alliance to Save Energy; and Barakat & Chamberlin, 1996*
- 38 EPA, OSHA and NIOSH have recently elevated safety concerns with spray foam insulation related to worker and jobsite exposure, as well as ongoing chemical exposure to building occupants. Environmental News Service, April 16, 2011 "EPA Considers Ban on Dangerous Chemicals in Spray Foam Insulation"

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# THESE ARE THE FACTS

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## The Conclusion is Clear

Now that you've read the facts, you know there is simply no doubt that fiber glass and mineral wool are the insulation industry's proven leaders for a reason. You can confidently show your customers how this outstanding level of high performance, jobsite productivity, value versatility and sustainability helps you provide them a build that is Engineered to Outperform. And you can build a stronger business, demonstrating your leadership with the best insulation choices for today's building challenges.

**Discover more insulation knowledge  
at [InsulationInstitute.org/Outperform](https://InsulationInstitute.org/Outperform)**

### PERFORMANCE

- ✓ Can achieve a Grade 1 wall with proper air sealing
- ✓ Achieves consistent R-Value throughout cavity
- ✓ Thermal performance for the life of the building
- ✓ Absorbs 25% more sound than other insulation types
- ✓ Does not feed mold growth
- ✓ Resists melting at extreme fire temperatures without harsh fire retarders

### PRODUCTIVITY

- ✓ Can insulate a 3,500 square-foot home in a day
- ✓ Can be installed without evacuating other trades
- ✓ Requires minimal Personal Protection Equipment
- ✓ Does not require specific installation temperatures

### VALUE VERSATILITY

- ✓ Offers outstanding value for any performance level achieved
- ✓ Requires no expensive investment in machinery
- ✓ Installed costs up to ¼ that of spray foam
- ✓ The insulation industry's widest range of products

### RESPONSIBILITY

- ✓ Saves 12 times the energy used to produce it after a year in place
- ✓ Made from abundant, renewable minerals
- ✓ Among the few reusable forms of insulation
- ✓ Is proven safe to use and install
- ✓ Contains high recycled content