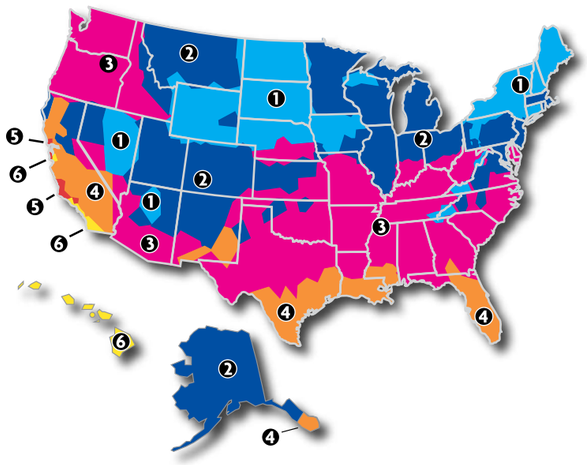
GUARDIAN BUILDING PRODUCTS

R-VALUE INFORMATION

Insulation is specified by its thermal resistance or R-value. “R” means resistance to heat flow. The higher the R-value, the greater the insulating power. The amount of insulation you need depends mainly on climate, type of heating (gas, oil, electricity) you use, and the area of the house you plan to insulate. The U.S. Dept. of Energy has established minimum recommended insulation R-values for six distinct parts of the country, or insulation zones.

FIND YOUR ZONE ON THE MAP



FIND THE R-VALUES FOR YOUR ZONE.
If you live on the border between two zones, choose the higher rather than the lower values.

Insulation Zone	Gas	Heat Pump	Fuel Oil	Electric Furnace	Attic	Wall[A]	Floor	Crawl Space[B]	Basement
1	✔	✔	✔		R-49	R-18	R-25	R-19	R-11
				✔	R-49	R-28	R-25	R-19	R-19
2	✔	✔	✔		R-49	R-18	R-25	R-19	R-11
				✔	R-49	R-22	R-25	R-19	R-19
3	✔	✔	✔	✔	R-49	R-18	R-25	R-19	R-11
4	✔	✔	✔		R-38	R-13	R-13	R-19	R-11
				✔	R-49	R-18	R-25	R-19	R-11
5	✔				R-38	R-13	R-11	R-13	R-11
		✔	✔		R-38	R-13	R-13	R-19	R-11
				✔	R-49	R-18	R-25	R-19	R-11
6	✔				R-22	R-11	R-11	R-11	R-11
		✔	✔		R-38	R-13	R-11	R-13	R-11
				✔	R-49	R-18	R-25	R-19	R-11

(A) R-18, R-22 and R-28 exterior wall systems can be achieved by either cavity insulation or cavity insulation with insulating sheathing. For 2 in.x 4 in.walls, use either R-15 or R-13 fiberglass with insulating sheathing. For 2 in.x 6 in.walls, use either R-21 or R-19 fiberglass insulation.

(B) Insulate crawlspace walls only if the crawlspace is dry all year, the floor above is not insulated, and all ventilation to the crawlspace is blocked. A vapor retarder (e.g., 4 - or 6 - mil polyethylene film) should be installed on the ground to reduce moisture migration into the crawlspace.

NOTE: For more information see: DOE Insulation Fact Sheet (DOE/CE-0180). Energy Efficiency and Renewable Energy Clearinghouse, P.O. Box 3048, Merrifield, VA 22116, www.ornl.gov

Guardian Fiberglass – for your health.
Indoor air quality is a growing concern with today’s tighter construction practices for homes and buildings. And most people spend about 90% of their time indoors where, according to the U.S. EPA, “thousands of chemicals and biological pollutants are found”, thus negatively affecting our health. That is why Guardian Fiberglass has made a point to achieve the highest possible product certification – Greenguard Certification. Greenguard Certified Products can significantly reduce the existence of hazardous emissions and promote a healthy home environment. AsureR® loose-fill as well as other Guardian building insulations are tested and certified to meet the tough Greenguard™ IAQ standards.

Children & Schools GREENGUARD Indoor Air Quality Certified

ENERGY STAR PARTNER

AsureR® fiberglass spray-on insulation is labeled as a part of ENERGY STAR® home sealing. When installed correctly, AsureR® helps ensure that a home stays comfortable and energy efficient during periods of extreme temperatures.

The U.S. Green Building Council’s LEED (Leadership in Energy and Environmental Design) Green Building Rating System is a voluntary standards and certification program that defines high-performance green buildings -- which are more environmentally responsible, healthier, and more profitable structures.

U.S. GREEN BUILDING COUNCIL MEMBER

AsureR® technology is covered by one or more of the following U.S. Patents:

5,641,368	5,921,055	5,952,418	6,012,263	6,262,164
5,666,780	5,947,646	5,984,590	6,045,298	

AsureR® technology is also covered by certain foreign patents.

AsureR® is not intended for use in exposed applications.

GUARDIAN BUILDING PRODUCTS
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GFM100 7M 12/06
Printed in U.S.A.

AsureR®

Dimensionally Stable Fiberglass Spray-On Insulation

Conforms to all shapes and sizes creating the perfect fit every time.

AsureR® IS DESIGNED FOR THESE USES:

- New Construction And Retrofit
- Residential Or Light Commercial - Non-Exposed Applications
- Sidewall Application
- Metal Framing Sidewalls In Residential
- Sound Control

Children & Schools GREENGUARD Indoor Air Quality Certified

GUARDIAN BUILDING PRODUCTS
FIBERGLASS INSULATION

AsureR®
Dimensionally Stable Fiberglass Spray-On Insulation

BENEFITS

Nearly 50% of all wall cavities in today's homes contain some type of obstruction (i.e. wiring, pipes, electrical boxes, etc.) along with non-standard framing in width and height. In response to these changes in construction, Guardian Building Products developed the AsureR® wall system which conforms to all shapes and sizes of wall cavities and fills in and around all wall obstructions. Each customized, one-piece batt is created on the job site for a perfect fit every time.

Typically 2-3 Times More Fiberglass In Your Walls
Most homes today utilize 3 1/2" blanket insulation in the walls which has significantly less fiberglass.

AsureR® Contains Water Activated Powered Adhesive
This inorganic powered adhesive, when water-activated, bonds the fibers together creating a monolithic blanket of insulation in side wall applications.

Reduced Air Infiltration
AsureR® systems' unique application and increased density of fiberglass, eliminates gaps and voids, significantly reducing air infiltration.

Improved R-Values
The increased density of fiberglass in the AsureR® system delivers higher R-values when compared to standard R-11, R-13 or R-19 batt insulation.

Excellent Sound Control
Small gaps or voids in the insulation can reduce its effectiveness as a sound control device. Due to the custom monolithic installation of the AsureR® system, it provides excellent noise control properties.

Non-Corrosive
AsureR® system does not contain any chemicals or additives that are conducive to corrosion of pipes or wires.

Non-Flammable And Non-Combustible
The AsureR® system using AsureR® fiberglass insulation meets Federal Specification testing criteria for smoldering combustion and ASTM E 136 for non-combustion.

APPLICATION

Any void area in conventional batt insulation can significantly reduce the R-value, resulting in heat loss. However, when the AsureR® fiberglass is sprayed into a wall cavity, it completely fills around pipes, wires, electrical outlets and other objects, significantly reducing voids and air gaps.

INSULATION

Only qualified installers approved by Guardian Building Products may install and market the AsureR® wall system. Any installation of fiberglass insulation using the AsureR® wall system must be done in accordance with all product label instructions, as set forth by Guardian Building Products as determined by its testing, to achieve the stated values listed in the coverage charts above.

COMPLIANCES

ICBO ES ER-5437 **ASTM E 119 1 Hour Fire Resistance** **ASTM E 119 1.5 Hour Fire Resistance**
ASTM E 119 2 Hour Fire Resistance **Type 1, ASTM C 1014 -03 And ASTM C 764**

- Non-combustible characteristics in accordance with ASTM E 84
- Non-corrosive
- Contains no asbestos

- Surface burning characteristics in accordance with ASTM E 84:
  Flame Spread index of 25 or less
  Smoke developed 50 or less

- Thermal resistance values determined in accordance with ASTM C 518
- Inorganic: Does not promote fungus growth in accordance with ASTM C 665

SIDEWALL COVERAGE INFORMATION

Nominal R-value	Thickness	Density	Bags per 1000 sq. ft.	Minimum weight per sq. ft.	Maximum coverage per bag
To obtain a thermal resistance (R) of:	Installed insulation should not be less than: (inches)	Pounds per cubic foot	Bags per 1000 sq. ft. of net area	Pounds per sq. ft.	Content of bag should not cover more than: (sq. ft.)
R-14	3.5" (2x4)	1.9	19.6	.55	51
R-22	5.5" (2x6)		31.2	.87	32
R-29	7.25" (2x8)		41.7	1.15	24
R-37	9.25" (2x10)		52.6	1.46	19
R-15	3.5" (2x4)	2.2	24.4	.64	41
R-23	5.5" (2x6)		38.5	1.01	26
R-31	7.25" (2x8)		50.0	1.33	20
R-39	9.25" (2x10)		66.7	1.70	15

Nominal bag weight 28 lbs. For pneumatic application only. Insulation should not be installed over eave vents. Thermal resistance values are determined in accordance with ASTM C 518. This product meets or exceeds the requirements of Type 1, ASTM C 1014 -03 and ASTM C 764.

VAPOR RETARDER

Guardian Building Products does not recommend the installation of a vapor retarder in conjunction with the application of AsureR® dimensionally stable fiberglass spray-on insulation.

AsureR® is installed at a typical density of 2.2 lb./ft^3; this is approximately 3 times the density of a typical fiberglass batt.

AsureR® is applied as a loose-fill wall spray at the job site, which conforms to the shape of the wall cavities, virtually eliminating gaps and voids where water vapor condensation can occur.

Independent laboratory testing of AsureR® shows a significant reduction in air infiltration through the wall cavity vs. typical fiberglass batts. Water vapor is carried by air, so a reduction in air movement into the wall cavity means there will be a reduction in water vapor movement into the wall cavity as well.

AsureR® is pure glass fiber; fiberglass does not absorb moisture.

In locations where local building codes require the installation of a vapor retarder, the installed AsureR® should set a minimum of 24 hours, and be dry to at least 15% moisture content before installing a vapor retarder. The use or creation of simultaneous interior and exterior (double) vapor retarders should be avoided. The placement of vapor retarders is highly dependent on geographical location and the type of climate. Local building officials should always be consulted and their recommendations followed on this issue.