



Knauf Data Sheet

BI-DS-7 4-09

# ECOBATT™

Thermal/Acoustical Insulation

with **ECOSE™**  
TECHNOLOGY



Knauf EcoBatt™ Insulation *with ECOSE™ Technology...*  
**Think of it as green...only browner.**



All Knauf products are sustainable. EcoBatt Glasswool Insulation with ECOSE Technology takes that standard to a whole new level. It is made from rapidly renewable bio-based materials instead of petroleum-based chemicals for greater sustainability— up to 70% less energy intensive than traditional binders. ECOSE Technology is a revolutionary new binder that contains no phenol, formaldehyde, acrylics or artificial colors.

Combine ECOSE Technology with sand—one of the world's most abundant resources—and a minimum 30% post-consumer recycled bottle glass and the result is Knauf's EcoBatt Insulation. EcoBatt products deliver the same exceptional quality, handling and durability that you have come to expect from Knauf, with an even higher level of sustainability.



**Lab-tested, Mother Nature approved.**

EcoBatt Insulation products are interior friendly. They are certified to the toughest indoor air quality certification in the industry, GREENGUARD for Children and Schools<sup>SM</sup>, and are certified to meet CHPS Low-Emitting Materials criteria section 01350. They also meet or exceed all applicable industry performance specifications and standards.

All Knauf Insulation products are inherently sustainable because of high recycled and renewable content. They save hundreds of times more energy in use than required to manufacture them, but EcoBatt Insulation is even more sustainable because its ECOSE Technology helps reduce our carbon footprint further by eliminating the traditional non-renewable petroleum-based binder chemistry.



**EcoBatt Insulation is naturally brown—** assures no phenol, formaldehyde, acrylics or artificial colors are used in the manufacturing process.



**EcoBatt insulation ensures the professional touch—**consistent quality, low dust and easy to cut—handling characteristics that you've come to expect from Knauf.



**Knauf manufactures a full line of EcoBatt insulation—**a variety of widths, R-values, densities and facings.

# Knauf EcoBatt™ Insulation with ECOSE™ Technology

## EcoBatt Description

Knauf EcoBatt Glasswool Insulation made with ECOSE Technology contains a high concentration of one of the world's most abundant renewable resources—sand—and at least 30% recycled bottle glass bonded with ECOSE Technology. The products are available unfaced or with kraft, foil or flame-rated FSK-25 (Foil-Scrim-Kraft) foil facings.

## ECOSE Technology Description

ECOSE Technology is a revolutionary new bio-based binder that contains no phenol, formaldehyde, acrylics or artificial colors. It is made from rapidly renewable bio-based materials instead of petroleum-based chemicals for greater sustainability.

## Application

Knauf EcoBatt batts and blankets are cost-effective thermal and acoustical barriers for energy-efficient construction. Their consistent quality, low dust, and easy-cutting resilient fibers make fabrication simple and installation fast. The products can be used in new and retrofit wood and metal frame applications in residential and commercial structures, as well as in manufactured housing applications. These applications include thermal and acoustical treatments to walls, ceilings and floors.

In addition, **High Density (HD)** EcoBatt batts are available where optimal thermal performance is required and space for insulation is limited. High Density EcoBatt Cathedral Ceiling Batt, for example, deliver greater R-value in less space, so builders can increase R-values and still maintain adequate space for ventilation.

Knauf **QuietTherm**® EcoBatt Insulation's excellent acoustical properties reduce sound transmission when properly installed in partition walls, ceilings and floor assemblies. It is primarily used in light commercial applications.

Knauf **Staple-Free** EcoBatt Batt are flangeless kraft-faced batts which friction fit between wood studs, eliminating the need to staple in place. These batts are designed for use in wood framed construction where the stud spacing is no more than 16" on center.

## Residential Applications

Knauf offers a full line of standard and high-density EcoBatt batts and blankets with a wide range of sizes and R-values. Available unfaced, or with kraft or flame-rated (FSK) foil facings, Knauf residential insulation can be used for cavity walls, floors, ceilings, attics, basements and crawlspaces. It is highly resilient, recovering quickly to full thickness. It also greatly reduces the transmission of noise in the house.

## Light Commercial Applications

This full line of standard and high-density EcoBatt batts and blankets for wood and metal frame construction is available unfaced or with kraft, foil or flame-rated (FSK) foils facings. Knauf QuietTherm® EcoBatt insulation can improve STC ratings in wood stud construction by 3 to 5 points and in metal stud construction by 8 to 10 points, depending on the complexity of the wall configuration and layers of insulation. Knauf's commercial building insulation can be used for exterior and partition walls, floors, crawlspaces and a variety of ceiling applications.

## Manufactured Housing Applications

Knauf Manufactured Housing Insulation has a full line of EcoBatt batts and blankets with a wide range of R-values, lengths and widths. It is designed to work efficiently with pre-manufactured structures of all widths. Available unfaced in widths up to 192" (4.88 m) or with kraft facing in widths up to 24" (610 mm), it can be used for cavity walls, partition walls, floors and ceiling applications.

## Acoustical Performance

Knauf's EcoBatt insulation provides excellent acoustical properties and will reduce sound transmission when properly installed in partition walls and acoustical ceiling and floor systems. Knauf acoustical/thermal insulation can improve STC ratings in wood stud construction by 3 to 5 points and metal stud construction by 8 to 10 points depending upon the complexity of the wall configurations, R-values and layers of insulation.

The STC Ratings table, right, illustrates the improved STC Ratings in a commercial application using Knauf acoustical/thermal insulation compared to no insulation.



### Fiber Glass and Mold

Fiber glass (glasswool) insulation will not sustain mold growth. However, mold can grow on almost any material when it becomes wet and contaminated. Carefully inspect any insulation that has been exposed to water. If it shows any sign of mold, it must be discarded. If the material is wet, but shows no evidence of mold, it should be dried rapidly and thoroughly. If it shows signs of facing degradation from wetting, it should be replaced.

### Technical Data

#### Surface Burning Characteristics

- Unfaced and flame-rated (FSK) foil faced products do not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84.
- Kraft facing will burn and should not be left exposed.

#### Thermal Value

- Thermal resistivity (R-value) is determined using industry standard test method ASTM C 518.

#### Water Vapor Permeance (ASTM E 96)

- Kraft faced products have a water vapor permeance of 1.0 or less.
- FSK foil faced products have ratings of .04.
- Foil faced products have ratings of .05.

#### Water Vapor Sorption (ASTM C 1104)

- Less than 5% by weight.

#### Corrosion (ASTM C 665)

- No greater than sterile cotton.

#### Microbial Growth (ASTM C 1338)

- Does not support microbial growth.

#### Noncombustible (ASTM E 136)

- Unfaced insulation is non-combustible.



### Specification Compliance

- ASTM C 665; Type I, Class A (unfaced)
- ASTM C 665; Type II, Class C (Kraft faced)
- ASTM C 665; Type III, Class A (FSK-25 foil faced)
- ASTM C 665; Type III, Class B (foil faced)
- GREENGUARD Certified
- GREENGUARD For Children and Schools<sup>SM</sup> Certified
- California Energy Commission
- MEA #498-90-M
- State of Minnesota

### Features and Benefits

#### Proven Performance

- Preferred by professional installers concerned with quality, appearance and productivity.
- Excellent acoustical properties reduce sound transmission in the home when properly installed in partition walls and ceiling and floor systems.

#### Superior Handling

- All Knauf faced products feature an extra wide stapling flange for faster and easier installation.
- Highly resilient insulation recovers quickly to full thickness for a snug fit and superior finished aesthetics.
- Consistent quality materials made of resilient fibers cut easily, install fast with low dust.
- Durable facing resists tears and is marked in one-foot increments for faster field fabrication.

*(Features and benefits continued on the back)*

STC Ratings				
	With insulation	No insulation	With insulation	No insulation
<b>Wood Frame, 2 x 4 (3½"- 4" Batt)</b>	<b>(with ½" gypsum wallboard both sides)</b>		<b>(with ⅝" gypsum wallboard both sides)</b>	
Single studs/Single layer gypsum	38	35	38	34
Single studs/Resilient channel	47	39	52	40
Staggered studs/Single layer gypsum	49	39	51	43
Double stud walls/Single layer gypsum	57	46	56	45
<b>Steel Frame (2½" studs) (3½"- 4" Batt)</b>	<b>(with ½" gypsum wallboard both sides)</b>		<b>(with ⅝" gypsum wallboard both sides)</b>	
Single layer gypsum	45	36	47	39
Double layer gypsum one side/ Single layer gypsum other side	50	39	52	44
Double layer both sides	56	45	57	48
<b>Steel Frame (3⅝" studs) (3½"- 4" Batt)</b>	<b>(with ½" gypsum wallboard both sides)</b>		<b>(with ⅝" gypsum wallboard both sides)</b>	
Single layer gypsum	47	39	50	39
Double layer gypsum one side/ Single layer gypsum other side	52	42	55	47
Double layer both sides	56	50	58	52

# Knauf EcoBatt™ Insulation with ECOSE™ Technology

## Forms Available

### Wood Frame Construction

R-Value	Thickness	Width	Unfaced	Kraft	Foil	FSK-Foil
R-11	3.5" (89 mm)	11", 15", 16", 19", 23", 24" (279, 381, 406, 483, 584, 610 mm)	•	•	•	•
R-13	3.5" (89 mm)	11", 15", 16", 19", 23", 24" (279, 381, 406, 483, 584, 610 mm)	•	•	•	•
R-15HD*	3.5" (89 mm)	11", 15", 19", 23" (279, 381, 483, 584 mm)	•	•		
R-19	6.25" (1599 mm)	11", 15", 16", 19", 23", 24" (279, 381, 406, 483, 584, 610 mm)	•	•	•	•
R-21HD*	5.5" (140 mm)	15", 23" (381, 584 mm)	•	•		
R-22	6.5" (165 mm)	15", 16", 19", 23" (381, 406, 483, 584 mm)	•	•		
R-25	8" (203 mm)	15", 23" (381, 584 mm)	•			
R-26	9" (229 mm)	16", 24" (406, 610 mm)	•	•		
R-30HD*	8.25" (210 mm)	15", 23" (381, 584 mm)	•	•		
R-30	10" (254 mm)	11", 16", 19", 24" (279, 406, 483, 610 mm)	•	•	•	•
R-38HD*	10.25" (261 mm)	15", 23" (381, 584 mm)	•	•		
R-38	12" (305 mm)	16", 24" (406, 610 mm)	•	•		•

### Metal Frame Construction

R-Value	Thickness	Width	Unfaced	Kraft	Foil	FSK-Foil
R-8QT**	2.5" (64 mm)	16", 24" (406, 610 mm)	•			
R-11QT**	3.5" (89 mm)	16", 24" (406, 610 mm)	•	•		
R-13QT**	3.5" (89 mm)	16", 24" (406, 610 mm)	•	•		
R-19QT**	6.25" (159 mm)	16", 24" (406, 610 mm)	•	•		

### Manufactured Housing Rolls

R-Value	Thickness	Width	Unfaced	Kraft	Foil	FSK-Foil
R-7	2.25" (64 mm)	15", 23", 48", 60", 72", 84", 90", 144", 164", 168" (381, 584, 1219, 1524, 1829, 2134, 2286, 3658, 4166, 4267 mm)	•			
R-11	3.5" (89 mm)	15", 23", 48", 60", 72", 84", 90", 144", 164", 168" (381, 584, 1219, 1524, 1829, 2134, 2286, 3658, 4166, 4267 mm)	•	•		
R-14	4.5" (114 mm)	15", 23" (381, 584 mm)	•			
R-19	6.25" (159 mm)	15", 23", 60" (381, 584, 1524 mm)	•	•		
R-30	10" (254 mm)	16", 24" (406, 610 mm)	•			

\*HD-High Density Insulation

\*\*QT-QuietTherm Insulation

This chart is meant as a quick reference guide. Please check with your sales representative for a full product offering.

## 2008 Department of Energy R-Value Recommendations



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

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

### New Wood-Framed Houses

Zone	Heating System	Attic	Cathedral Ceiling	Wall		Floor
				Cavity	Insulation Sheathing	
1	All	R-30 to R-49	R-22 to R-15	R-13 to R-15	None	R-13
2	Gas, oil, heat pump	R-30 to R-60	R-22 to R-38	R-13 to R-15	None	R-13, R-19, R-25
	Electric furnace					
3	Gas, oil, heat pump	R-30 to R-60	R-22 to R-38	R-13 to R-15	None	R-25
	Electric furnace				R-2.5 to R-5	
4	Gas, oil, heat pump	R-38 to R-60	R-30 to R-38	R-13 to R-15	R-2.5 to R-6	R-25 to R-30
	Electric furnace				R-5 to R-6	
5	Gas, oil, heat pump	R-38 to R-60	R-30 to R-38	R-13 to R-15	R-2.5 to R-6	R-25 to R-30
	Electric furnace		R-30 to R-60	R-13 to R-21	R-5 to R-6	
6	All	R-49 to R-60	R-30 to R-60	R-13 to R-21	R-5 to R-6	R-25 to R-30
7	All	R-49 to R-60	R-30 to R-60	R-13 to R-21	R-5 to R-6	R-25 to R-30
8	All	R-49 to R-60	R-30 to R-60	R-13 to R-21	R-5 to R-6	R-25 to R-30

### Existing Wood-Framed Houses

Zone	Add Insulation to Attic		Floor
	Uninsulated Attic	Existing 3-4 Inches of Insulation	
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-30 to R-60	R-38	R-25 to R-30
5-8	R-49 to R-60	R-38 to R-49	R-25 to R-30

**Wall Insulation:** 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, and
- Zones 3-4: Add R5 insulative wall sheathing beneath the new siding.
- Zones 5-8: Add R5 to R6 insulative wall sheathing beneath the new siding.

#### Insulated wood frame wall:

- For Zones 4-8: Add R5 insulative sheathing before installing the new siding

**Reference:** DOE/CE-0180 2008. Insulation Fact Sheet



### EcoBatt Insulation

- Combines sand, recycled post-consumer glass with ECOSE™ Technology for greater sustainability.
- Legendary handling characteristics.
- Saves hundreds of times more energy in use than required manufacturers.
- Natural brown color—assures no phenol, formaldehyde, acrylics or artificial colors are used to manufacture EcoBatt insulation.

### ECOSE Technology

- Up to 70% less embodied energy than traditional binders.
- Contains no phenol, formaldehyde, acrylics or artificial colors.
- No petroleum-based chemicals. Converts rapidly renewable bio-based materials into a totally inert polymer for superior environmental sustainability.

For more information call (800) 825-4434, ext. 8300

or visit us online at [www.knaufinsulation.us](http://www.knaufinsulation.us)

# KNAUF INSULATION

*it's time to save energy*



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### Convenient Packaging, Easier Handling

- Knauf EcoBatt insulation is packaged in a strong, white poly bag that offers excellent protection from abuse, dust and moisture.
- Our packages feature complete installation instructions and a highly visible R-value color-coded label which follows industry standards and makes Knauf product sizes and specifications easy to read.
- Knauf's unitized packaging saves time at the jobsite, saves space in the warehouse.
- Master bag batt units ensure reduced handling costs with greater compression—more square feet per bag, more square feet per truckload, fewer trips to the job site and less warehouse space for storage.

### Superior Service and Support

- Prompt, on-time delivery helps control inventory costs and meet customer expectations.
- Our committed network of distributors assures fast order fulfillment and faster inventory turns.
- 24/7 access to product submittals ensures product acceptance and helps meet quotation deadlines.

### Notes

The chemical and physical properties of Knauf EcoBatt Insulation represent typical average values determined in accordance with accepted test methods. The data is supplied as technical service and is subject to change without notice. References to numerical flame spread ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

Check with your Knauf Insulation sales representative to assure information is current.



Knauf EcoBatt Insulation is certified for indoor air quality as a low emitting product by The GREENGUARD Environmental Institute™ to both the GREENGUARD Certification Program™ and the more stringent GREENGUARD For Children and Schools™ standard. [www.greenguard.org](http://www.greenguard.org)



### LEED Eligible Product

Use of this product may help building projects meet green building standards as set by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. Credit 4.1 - 4.2 Recycled Content  
Credit 5.1 - 5.2 Regional Materials

