

Drywall Acoustical Products

BI-AC-BR 11-15

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

Lab-tested, Mother Nature approved.

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

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

EcoBatt Insulation products are interior friendly. They are certified to the toughest indoor air quality certification in the industry, GREENGUARD GOLD, 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 a hundred times more energy in use than is 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 oil-based binder chemistry.



THERMAL AND ACOUSTICAL INSULATION with ECOSE® Technology

PRODUCT OFFERINGS

EcoBatt® Batts and Blankets

- Unfaced
- Kraft facing
- Foil facing
- FSK foil facing

Insulation Board

- Plain
- FSK facing
- PSK facing
- ASJ facing

Wall and Ceiling Liner

Black Acoustical Board

ECOBATT INSULATION APPLICATION

Knauf Insulation 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 insulation is available where optimal thermal performance is required and space for insulation is limited. High Density EcoBatt Cathedral Ceiling

Batts, for example, deliver greater R-value in less space, so builders can increase R-values and still maintain adequate space for ventilation.

Knauf Insulation **StapleFree** EcoBatt insulation is flangeless, kraft-faced and friction fits 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.

Light Commercial Applications

The full line of standard and high-density EcoBatt insulation for wood and metal frame construction can be used for exterior and partition walls, floors, crawlspaces and a variety of ceiling applications.

TECHNICAL DATA

Surface Burning Characteristics

- Unfaced and 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 GOLD™ Certified
- California Energy Commission
- MEA #498-90-M
- State of Minnesota

SUSTAINABILITY

Knauf Insulation products used for thermal insulating purposes recover the energy that it took to make them in just hours or days depending on the application. Once installed, the product continues to save energy and reduce carbon generation as long as it is in place (carbon negative).

Glass mineral wool with ECOSE® Technology contains three primary ingredients:

- Over 50% recycled post-consumer glass content verified every 6 months by UL Environment.
- Sand, one of the world's most abundant resources.
- Our green chemistry initiative ECOSE Technology, which reduces binder embodied energy by up to 70%.
- It is anticipated to reduce its Global Warming Potential (GWP) by approximately 4%, a significant reduction in our carbon footprint.

Glass Mineral Wool and Mold

Glass mineral wool 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.





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 Insulation 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 and install fast with low dust.
- Durable facing resists tears and is marked in one-foot increments for faster field fabrication.

Convenient Packaging, Easier Handling

- Knauf Insulation 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 Insulation product sizes and specifications easy to read.
- Knauf Insulation's unitized packaging saves time at the jobsite, space in the warehouse and on the truck.
- 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 distribution assures fast order fulfillment and enhanced product availability.
- 24/7 access to product submittals ensures product acceptance and helps meet quotation deadlines.

Acoustical Performance

Knauf Insulation's batt insulation provides excellent acoustical properties and will reduce sound transmission when properly installed in

partition walls and acoustical ceiling and floor systems. Knauf Insulation's 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 below illustrates in a commercial application, the improved STC Ratings using Knauf Insulation acoustical/thermal insulation compared to no insulation.

Notes

The chemical and physical properties of Knauf Insulation batt 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.

STC Ratings				
	With insulation	No insulation	With insulation	No insulation
Wood Frame, 2 x 4 (3½" - 4" Batt)	(with ½" gypsum wallboard both sides)		(with ⅝" gypsum wallboard both sides)	
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
Steel Frame (2½" studs) (2½" - 2⅝" Batt)	(with ½" gypsum wallboard both sides)		(with ⅝" gypsum wallboard both sides)	
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
Steel Frame (3½" studs) (3½" - 4" Batt)	(with ½" gypsum wallboard both sides)		(with ⅝" gypsum wallboard both sides)	
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

ACOUSTICAL BOARDS AND LINER INSULATION with ECOSE® Technology

Wall and Ceiling Liner M with ECOSE Technology

DESCRIPTION

Knauf Insulation Wall and Ceiling Liner M with ECOSE Technology is a brown flexible glass mineral wool blanket with a black mat facing adhered to one surface. It provides thermal and acoustical insulation while a smooth, tough surface resists damage during installation.



APPLICATIONS

Knauf Insulation Wall and Ceiling Liner M with ECOSE Technology is designed for use as an acoustical and visual barrier for walls and ceilings where a black surface is required. It is primarily used in theaters, sound studios, public concourses and other areas where acoustical treatment is needed. It is intended to be mechanically fastened to walls and can be covered with fabric or draping, or suspended above linear metal and metal pan ceiling systems to serve as both a visual and acoustical treatment.

TECHNICAL DATA

Surface Burning (UL Classified)

Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84 and UL 723.

Indoor Air Quality Excellence

Certified for indoor air quality as a low emitting product by Underwriters Laboratories to both the GREENGUARD Certification ProgramSM and the more stringent GREENGUARD Gold standard.

Corrosiveness (ASTM C 665)

Does not accelerate corrosion on steel, copper or aluminum.

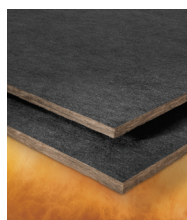
Corrosion (ASTM C 1617)

The corrosion rate in mils/yr will not exceed that of the 1 ppm chloride solution.

Black Acoustical Board with ECOSE Technology

DESCRIPTION

Knauf Insulation Black Acoustical Board with ECOSE Technology is a heavy density glass mineral wool board insulation made with ECOSE Technology. The base board is brown with a black mat applied to provide a smooth tough finish.



APPLICATIONS

Knauf Insulation Black Acoustical Board with ECOSE Technology is designed for use as acoustical insulation and/or visual barrier on walls and ceilings, where system design requires a rigid product and where additional strength and abuse resistance are required. The black surface provides a visual barrier with an aesthetic appearance, in both wall and ceiling applications. The product is typically used where framing members are not present.

TECHNICAL DATA

Surface Burning (UL Classified)

Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, NFPA 255 and UL 723.

Indoor Air Quality Excellence

Certified for indoor air quality as a low emitting product by Underwriters Laboratories to both the GREENGUARD Indoor Air Quality Certification ProgramSM and the more stringent GREENGUARD Gold standard.

Corrosiveness (ASTM C 665)

Does not accelerate corrosion on steel, copper or aluminum.

Corrosion (ASTM C 1617)

The corrosion rate in mils/yr will not exceed that of the 1 ppm chloride solution.

Insulation Board with ECOSE Technology

DESCRIPTION

Insulation Board with ECOSE Technology from Knauf Insulation is a thermal and acoustical insulation product made from inorganic glass fibers preformed into boards. The board is available plain, with a factory applied foil-scrim-kraft (FSK) facing, with a factory-applied all service jacket (ASJ) or with a factory applied metalized polypropylene-scrim-kraft jacket (PSK).



APPLICATIONS

Insulation Board with ECOSE Technology from Knauf Insulation is a versatile product for use on metal and masonry walls, wall and roof panel systems, curtain wall assemblies and cavity walls.

TECHNICAL DATA

Surface Burning (UL Classified)

Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with NFPA 90A and 90B, ASTM E 84, NFPA 255 and UL 723 and CAN/ULC S102-M88.

Indoor Air Quality Excellence

Certified for low chemical emissions by UL Environment to both the GREENGUARD Certification ProgramSM and the more stringent GREENGUARD Gold standard.

Corrosiveness (ASTM C 665)

Does not accelerate corrosion on steel, copper or aluminum.

Corrosion (ASTM C 1617)

The corrosion rate in mils/yr will not exceed that of the 1 ppm chloride solution.

Wall & Ceiling Liner Noise Reduction Coefficients
(ASTM C 423, Type A Mounting)

Density	Thickness	NRC
1.0 PCF (16 kg/m ³)	1" (25 mm)	.60
	1½" (38 mm)	.80
	2" (51 mm)	.85
1.5 PCF (24 kg/m ³)	½" (13 mm)	.50
	1" (25 mm)	.70
	1½" (38 mm)	.80
	2" (51 mm)	.90
2.0 PCF (32 kg/m ³)	½" (13 mm)	.45
	1" (25 mm)	.70

Available in 48" (1219 mm) wide rolls in lengths of 100' or 50' (30.48 or 15.24 m). Contact your Knauf Insulation sales representative for additional information.

Black Acoustical Board Sound Absorption Coefficients
(ASTM C 423, Type A Mounting)

Octave Band Center Frequency (cycles/sec.)								
Density	Thickness	125	250	500	1000	2000	4000	NRC
2.25 PCF (36 kg/m ³)	2" (51mm)	.26	.62	1.05	1.07	1.04	1.05	.95
3.0 PCF (48 kg/m ³)	1" (25 mm)	.13	.24	.56	.83	.92	.98	.65
	1½" (38 mm)	.19	.41	.89	1.02	1.03	1.04	.85
	2" (51 mm)	.33	.67	1.07	1.07	1.03	1.06	.95

Available 24" (610 mm) wide x 48" (1219 mm) long.

Insulation Board Sound Absorption Coefficients
(ASTM C 423, E 795, Type A Mounting)

Octave Band Center Frequency (cycles/sec.)									
Type	Surface	Thickness	125	250	500	1000	2000	4000	NRC
2.25 PCF (36 kg/m ³)	FSK	1" (25 mm)	.05	.24	.59	.86	.97	1.00	.65
		1½" (38 mm)	.17	.49	.93	1.03	1.03	.99	.85
		2" (51 mm)	.26	.62	1.05	1.07	1.04	1.05	.95
3.0 PCF (48 kg/m ³)	Plain	1" (25 mm)	.08	.23	.62	.88	.96	.99	.65
		1½" (38 mm)	.09	.39	.89	1.03	1.06	1.01	.85
		2" (51 mm)	.29	.65	1.11	1.13	1.06	1.03	1.00
		3" (76 mm)	.54	1.01	1.18	1.07	1.07	1.04	1.10
	FSK	4" (102 mm)	.95	1.11	1.17	1.07	1.07	1.06	1.10
		1" (25 mm)	.21	.63	.84	.93	.51	.22	.75
		1½" (38 mm)	.45	.60	.99	.73	.53	.27	.70
		2" (51 mm)	.67	.77	.93	.74	.47	.28	.75

Available in widths of 24" (610 mm) and 48" (1219 mm) and lengths of 36" (915 mm) to 120" (3048 mm).



KNAUF INSULATION

it's time to save energy



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UL Environment GREENGUARD GoldSM

Knauf Insulation building insulation achieved UL Environment GREENGUARD Gold and is UL Environment validated to be formaldehyde free

UL Environment GREENGUARD Certification ProgramSM

Products are certified to UL Environment GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg.

UL Environmental Product Declarations

EPD Certification is documentation fully disclosing a product's environmental impact as well as other information regarding human toxicity, risk, and social responsibility.



Versions of this product have surface burning characteristics that are classified by Underwriters Laboratories and therefore subject to auditing for fire performance compliance.



This product has been tested and is certified to meet the EUCB requirements.



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.

LEED v2009

MR Credit 4.1 - 4.2 Recycled Content
MR Credit 5.1 - 5.2 Regional Materials

LEED v4

Knauf Insulation offers several products for both envelope and mechanical systems that have ingredient disclosure and transparency. Please contact transparency@knaufinsulation.com for products that currently contribute to MR credits.

These products are covered by one or more U.S. and/or other patents. See patent www.knaufinsulation.us/patents.