



Knauf Data Sheet

OM-DS-1e 02-10

KN Series

with ECOSE® Technology



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Description

Knauf KN Series Insulation with ECOSE Technology is a brown blanket of glass fibers bonded with ECOSE Technology.

Applications

Knauf KN Series products with ECOSE Technology are used as thermal and/or acoustical insulation in the appliance, equipment, industrial, commercial and marine markets up to 650°F (271°C).

ECOSE Technology

ECOSE Technology is a revolutionary new binder chemistry that makes Knauf Insulation products even more sustainable than ever. It is based on rapidly renewable bio-based materials rather than non-renewable petroleum-based chemicals traditionally used in fiberglass insulation products. ECOSE Technology reduces binder embodied energy and does not contain phenol, formaldehyde, acrylics or artificial colors.

A More Sustainable Solution

KN Series Insulation with ECOSE Technology embodies several key characteristics that define a more sustainable fiber glass insulation product.

Use of renewable and abundant resources:

- Sand is sustainable and one of the world's renewable and most abundant natural resources.

High post-consumer recycled content:

- Knauf OEM insulation always contains a minimum of 40% post-consumer recycled glass.
- ALL the recycled glass we use is post-consumer glass collected at curbside—not pre-consumer or post-industrial cullet like most other insulation manufacturers¹.

Based on bio-based materials:

- Exceeds the proposed USDA BioPreferred Program label minimum bio-based content requirements².

Eliminates non-renewable petroleum-based chemicals:

- Significantly reduces or eliminates non-renewable petro-chemical binder ingredients, such as phenol, urea and formaldehyde commonly used as fiber glass insulation binder for over 30 years³.

Reduces our embodied energy and carbon footprint:

- Reduces binder embodied energy by up to 70% compared to the traditional binder it replaced.
- It is anticipated to reduce its Global Warming Potential (GWP) by approximately 4% which corroborates a similar reduction in OEM insulation total embodied energy by approximately 4%, a significant reduction in our carbon footprint.

Reduces workplace exposures and manufacturing emissions:

- By eliminating phenol and formaldehyde from our manufacturing process, workplace exposures and manufacturing emissions are consequently eliminated as well.

Indoor air quality excellence:

- Knauf insulation products with ECOSE Technology are certified to GREENGUARD for Children

& SchoolsSM, the industry's most stringent IAQ standard, as well as California CHPS Section 01350.

Technical Data

Surface Burning Characteristics (UL Classified)

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

Maximum Service Temperature (ASTM C 411)

- Designed for applications to a maximum operating temperature of 650°F (271°C).

Odor (ASTM C 1304)

- Not objectionable.

Mold Growth (ASTM C 1338)

- No growth.

Water Vapor Sorption (ASTM C 1104)

- Less than 3% by weight when exposed to air at 120°F (49°C) and 95% humidity for 96 hours.

Specification Compliance

Complies to the property requirements of the following specifications:

- ASTM C 553 Type I, Type II
- ASTM C 795
- MIL-I-22023D Type I and II, Class 2 through 5
- USCG 164.109/19/0
- Certified for indoor air quality as a low emitting product by The GREENGUARD Environmental Institute to both the GREENGUARD Certification ProgramSM and the more stringent GREENGUARD Children and SchoolsSM standard.

¹ OC certifies 10% post-consumer, 30% pre-consumer recycled content; JM certifies 20% post-consumer, 5% pre-consumer recycled content; CertainTeed reports 35% recycled content (CT 30-29-083 dated 9/08); Guardian reports 30% post-consumer, 5% post-industrial recycled content (GFM028 dated 2008)

² See Federal Register Vol. 73, No. 131/ Tuesday, July 8, 2008/Notices pg. 38968 for proposed minimums

³ Verified using carbon dating per using ASTM-D6866, (Report of Biobased Content Analysis Nov. 3, 2008)



**Thermal Conductivity (ASTM C 518)
@ 75°F Mean Temperature**

Density	Thermal Conductivity BTU-in. ft ² °F
.75 PCF (12 kg/m ³)	0.28
1.00 PCF (16 kg/m ³)	0.26
1.50 PCF (24 kg/m ³)	0.24
2.00 PCF (32 kg/m ³)	0.23
2.50 PCF (40 kg/m ³)	0.22

**Sound Absorption Coefficients
(ASTM C 423, Type A Mounting)**

Density	Thickness	Octave Band Center Frequency (cycles/sec.)						
		125	250	500	1000	2000	4000	NRC
.75 PCF (12 kg/m ³)	1½" (38 mm)	.20	.42	.82	.87	.94	.91	.75
1.00 PCF (16 kg/m ³)	1" (25 mm)	.17	.24	.62	.79	.88	.96	.65
	1½" (38 mm)	.31	.50	.89	.98	1.01	1.01	.85
1.50 PCF (24 kg/m ³)	1" (25 mm)	.03	.28	.56	.82	.90	.94	.65
	1½" (38 mm)	.21	.51	.97	1.08	1.07	1.06	.90
	2" (51 mm)	.38	.89	1.08	1.14	1.11	1.08	1.05
2.00 PCF (32 kg/m ³)	1" (25 mm)	.06	.29	.67	.86	.94	.95	.70
	1½" (38 mm)	.26	.57	.97	1.06	1.06	1.04	.90
	2" (51 mm)	.22	.78	1.19	1.08	1.11	1.06	1.05

Forms Available

Type	Thickness	Width	Length [†]	Layer
KN-75	1½" (38 mm)	36"-48", 72"-96" (914-1219 mm, 1829-2438 mm)	80' (24.38 m)	Double
	2" (51 mm)		115' (35.08 m)	Single
	2½" (64 mm)		95' (28.96 m)	Single
	3" (76 mm)		80' (24.38 m)	Single
	4" (102 mm)		60' (18.29 m)	Single
	5" (127 mm)		50' (15.24 m)	Single
KN-100	6" (152 mm)	36"-48", 72"-96" (914-1219 mm, 1829-2438 mm)	40' (12.19 m)	Single
	1" (25 mm)		95' (28.96 m)	Double
	1½" (38 mm)		125' (38.10 m)	Single
	2" (51 mm)		95' (28.96 m)	Single
	2½" (64 mm)		75' (22.86 m)	Single
	3" (76 mm)		60' (18.29 m)	Single
KN-150	4" (102 mm)	36"-48", 72"-96" (914-1219 mm, 1829-2438 mm)	45' (13.72 m)	Single
	5" (127 mm)		35' (10.67 m)	Single
	6" (152 mm)		30' (9.14 m)	Single
	1" (25 mm)		125' (38.10 m)	Single
KN-200	1½" (38 mm)	36"-48", 72"-96" (914-1219 mm, 1829-2438 mm)	85' (25.91 m)	Single
	2" (51 mm)		60' (18.29 m)	Single
	1" (25 mm)		95' (28.96 m)	Single
KN-250	1½" (38 mm)	36"-48", 72"-96" (914-1219 mm, 1829-2438 mm)	60' (18.29 m)	Single
	2" (51 mm)		45' (13.72 m)	Single
	1" (25 mm)		75' (22.86 m)	Single
KN-250	1½" (38 mm)	36"-48", 72"-96" (914-1219 mm, 1829-2438 mm)	50' (15.24 m)	Single

KN Series Insulation is made-to-order and is available in rolls.

For requirements not listed, contact your Knauf Insulation sales representative.

For more information call (800) 825-4434, ext. 8283

or visit us online at www.knaufinsulation.us



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Fiber Glass and Mold

Fiber glass 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.

Notes

The chemical and physical properties of Knauf KN Series with ECOSE Technology represent typical average values determined in accordance with accepted test methods. The data is subject to normal variations. The data is supplied as a 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 material under actual fire conditions.

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



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.

MR Credit 4.1 – 4.2

Recycled Content

MR Credit 5.1 – 5.2

Regional Materials



Knauf KN Series with ECOSE Technology products are certified for indoor air quality by The GREENGUARD Environmental Institute™, to both the GREENGUARD Certification Program™ and the more stringent GREENGUARD For Children and Schools™ Standard. www.greenguard.org

The GREENGUARD INDOOR AIR QUALITY CERTIFIED Mark is a registered certification mark used under license through the GREENGUARD Environmental Institute.

