KNAUF INSULATION
it's time to save energy

Data Sheet | OEM-KN-DS 02-15

# KN Series

*with ECOSE® Technology*

with ECOSE® TECHNOLOGY

# **KN Series** *with ECOSE® Technology*

**Description**
Knauf Insulation Type KN Series are flexible to semi-rigid blankets of glass fibers bonded with ECOSE® Technology. KN Series products are used as thermal and/or acoustical insulation in the appliance, equipment, industrial, commercial and marine markets up to 650°F (343°C).

**ECOSE® Technology**
ECOSE technology is a revolutionary binder chemistry that enhances the sustainability of our products. The "binder" is the bond that holds our glass mineral wool product together and gives the product its shape and brown color. ECOSE technology is a plant-based, sustainable chemistry that replaces the phenol/formaldehyde (PF) binder traditionally used in glass mineral wool products. Products using ECOSE technology are formaldehyde-free and have reduced global warming potential when compared to our products of the past.

**Sustainability**
- Carbon-negative: Knauf Insulation's 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.
- Glass mineral wool insulation with ECOSE Technology contains three key ingredients:
  - A minimum of 50% recycled 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%

**Packaging**
KN Series Insulation is placed in a poly bag and then stretch wrapped into units of 4 or 6 rolls.

**Specification Compliance**
- ASTM C 553: Type I, Type II
- MIL-I-22023D (except pH requirement) Type I and II, Class 2 through 5

**Product Features**
- UL Environment GREENGUARD Certified
- UL Environment GREENGUARD GOLD Certified
- UL Environment validated to be formaldehyde free.
- Tested and certified to meet all the requirements of EUCEB.

**Technical Data**
**Surface Burning Characteristics (UL Classified)**
- Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with UL 723 and ASTM E 84.

**Maximum Service Temperature (ASTM C 411)**
- Designed for applications to a maximum operating temperature of 650°F (343°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.

**Applications**
Knauf Insulation 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).

**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.

**Notes**
The chemical and physical properties of Knauf Insulation 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.

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

| Density | Thermal Conductivity BTU-in./hr ft² °F |
|---|---|
| .75 PCF (12 kg/m³) | 0.28 |
| 1.00 PCF (16 kg/m³) | 0.26 |
| 1.50 PCF (24 kg/m³) | 0.24 |
| 2.00 PCF (32 kg/m³) | 0.23 |
| 2.50 PCF (40 kg/m³) | 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/m³) | 1½" (38 mm) | .20 | .42 | .82 | .87 | .94 | .91 | .75 |
| 1.0 PCF (16 kg/m³) | 1" (25 mm) | .17 | .24 | .62 | .79 | .88 | .96 | .65 |
| | 1½" (38 mm) | .31 | .50 | .89 | .98 | 1.01 | 1.01 | .85 |
| 1.5 PCF (24 kg/m³) | 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 |
| 2.0 PCF (32 kg/m³) | 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", 60"-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 |
| | 6" (152 mm) | | 40' (12.19 m) | Single |
| KN-100 | 1" (25 mm) | 36"-48", 60"-96" (914-1219 mm, 1829-2438 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 |
| | 4" (102 mm) | | 45' (13.72 m) | Single |
| | 5" (127 mm) | | 35' (10.67 m) | Single |
| | 6" (152 mm) | | 30' (9.14 m) | Single |
| KN-150 | 1" (25 mm) | 36"-48", 60"-96" (914-1219 mm, 1829-2438 mm) | 125' (38.10 m) | Single |
| | 1½" (38 mm) | | 85' (25.91 m) | Single |
| | 2" (51 mm) | | 60' (18.29 m) | Single |
| KN-200 | 1" (25 mm) | 36"-48", 60"-96" (914-1219 mm, 1829-2438 mm) | 95' (28.96 m) | Single |
| | 1½" (38 mm) | | 60' (18.29 m) | Single |
| | 2" (51 mm) | | 45' (13.72 m) | Single |
| KN-250 | 1" (25 mm) | 36"-48", 60"-96" (914-1219 mm, 1829-2438 mm) | 75' (22.86 m) | Single |
| | 1½" (38 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.

KNAUF INSULATION
it's time to save energy


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| | |
|---|---|
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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 EUCEB 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.

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

**UL Environment GREENGUARD Certification Program℠**
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.