

Elevated Temperature Batt 1000° & HD Blanket 1000° with ECOSE® Technology

Submittal Date _____

KNAUF INSULATION
its time to save energy

Description

Knauf ET Batt 1000° and Knauf ET HD Blanket 1000° with ECOSE Technology are semi-rigid thermal insulations (1.6 pcf, 25.6 kg/m³), bonded with ECOSE Technology.

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.

Application

Knauf ET Batt 1000° and Knauf ET HD Blanket 1000° with ECOSE Technology are used in high-temperature marine applications, industrial furnaces, boilers, vessels and industrial ovens, where lighter-weight insulation is needed or flexible and/or semi-rigid high-temperature insulations are needed for irregular surfaces.

Features and Benefits

Excellent Thermal Properties

- Low thermal conductivity.
- Increase system efficiency and decrease fuel usage.

Low-Cost Installations

- Lightweight and easy to handle and fabricate.
- Flexibility makes them ideal for flat or irregular surfaces.

Damage Resistant

- More resistant to abuse than standard ET blankets.
- Tough and resilient.
- Resist damage in shipment and during and after installation.

Custom Sizes

- All items are available in made-to-order sizes.

Low Emitting

- 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.

Sustainability

- Carbon negative: meaning Knauf insulation products used for thermal insulating purposes recover the energy that it took to make them in just hours or a few days, depending on the application. Once installed, the product continues to save energy and reduce carbon generation as long as it is in place.
- Fiber glass insulation with ECOSE Technology contains three primary ingredients:
 - Sand, one of the world's most abundant and renewable resources
 - Post-consumer recycled bottle glass
 - ECOSE Technology which reduces binder embodied energy by up to 70%

Specification Compliance

In U.S.:

- GREENGUARD Indoor Air Quality Certified®
- GREENGUARD Children & SchoolsSM
- HH-I-558C; Form B, Type I, Class 7, 8
- USCG 164.109/18/0

In Canada:

- CAN/ULC S102-M88
- CCG F1-314
- CGSB 51-GP-11M

Technical Data

Surface Burning Characteristics

- Do not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, CAN/ULC S102-M88 and UL 723.

Water Vapor Sorption (ASTM C 1104)

- 0.1% or less by volume.

Temperature Limit (ASTM C 411)

- Up to 1000°F (538°C) at a maximum recommended thickness of 6".

Microbial Growth (ASTM C 1338)

- Does not promote or support the growth of mold, fungi or bacteria.

Corrosiveness (ASTM C 665)

- Will not accelerate corrosion of aluminum, steel or copper.

Corrosion (ASTM C 1617)

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

Application and Specification Guidelines

Precautions

- During initial heat-up to operating temperatures above 350°F (177°C), a slight odor and some smoke may be given off as a portion of the bonding material used in the insulation begins to undergo a controlled decomposition.
- If natural convection is not adequate in confined areas, forced ventilation should be provided in order to protect against any harmful fumes and vapors that might be generated.

Storage

- Protect material from water damage or other abuse. Protect from welding sparks and open flame. The material may be stored outside if the packaging is not damaged.

Preparation

- Apply the product on clean, dry surfaces.

Application

- There is no heat-up cycle required for Knauf ET Batt 1000° and Knauf ET HD Blanket 1000°.
- The product should be secured with welded pins or studs and covered with sheet metal. An alternate method entails covering the insulation with a metal mesh and insulating cement, canvassing and painting.
- Pins and studs shall be located a maximum of 4" (102 mm) from each edge and spaced no greater than 16" (406 mm) on center.
- Care should be taken to avoid over compressing the insulation with the retaining washer.
- For application of Knauf ET Batt 1000° and Knauf ET HD Blanket 1000° over 500°F (260°C), double layer application is recommended with staggered joints.
- When using the products at 1000°F (538°C), it is recommended that no more than 6" (152 mm) thickness should be used. For thicknesses in excess of 6", contact your Knauf sales representative.

Caution

Fiber glass may cause temporary skin irritation. Wear long-sleeved, loose-fitting clothing, head covering, gloves and eye protection when handling and applying material. Wash with soap and warm water after handling. Wash work clothes separately and rinse washer. A disposable mask designed for nuisance type dusts should be used where sensitivity to dust and airborne particles may cause irritation to the nose or throat.

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 ET Batt 1000° and Knauf ET HD Blanket 1000° with ECOSE Technology represent typical average values determined in accordance with accepted test methods. The data is subject to normal manufacturing 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 materials under actual fire conditions.

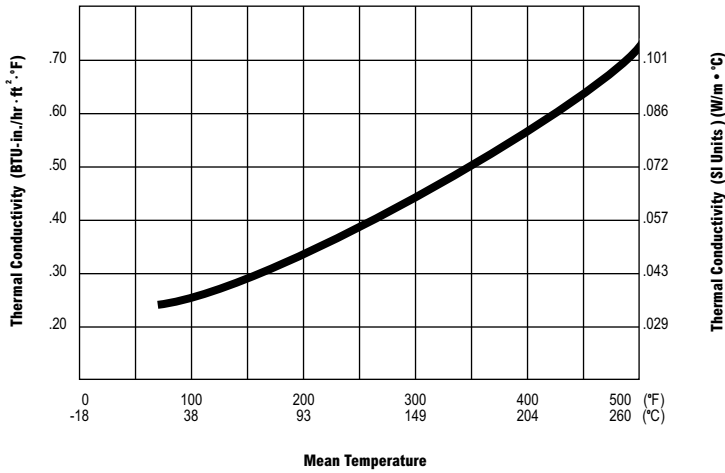
Check with your Knauf Insulation sales representative to assure information is current.

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Thermal Efficiency (ASTM C 177)



| Mean Temperature | k | k(SI) |
|------------------|-----|-------|
| 100°F (38°C) | .24 | .035 |
| 200°F (93°C) | .33 | .048 |
| 300°F (149°C) | .44 | .063 |
| 400°F (204°C) | .57 | .082 |
| 500°F (260°C) | .72 | .104 |

ET Batt 1000° Forms Available

| Thickness | Width | Length |
|-------------|--------------|---------------|
| 1½" (38 mm) | 24" (610 mm) | 48" (1219 mm) |
| 2" (51 mm) | | |
| 2½" (64 mm) | | |
| 3" (76 mm) | | |
| 3½" (89 mm) | | |
| 4" (102 mm) | | |

HD Blanket 1000° Forms Available

| Thickness | Width | Length |
|-------------|---------------|---------------|
| 1½" (38 mm) | 48" (1219 mm) | 120' (36.6 m) |
| 2" (51 mm) | | 80' (24.4 m) |
| 2½" (64 mm) | | 70' (21.3 m) |
| 3" (76 mm) | | 60' (18.3 m) |
| 3½" (89 mm) | | 50' (15.2 m) |
| 4" (102 mm) | | 40' (12.2 m) |