

Data Sheet

CI-EBT-DS 2-16

Elevated Temperature Batt 1000° and HD Blanket 1000°

with ECOSE® Technology



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Description

Knauf Insulation ET Batt 1000° and Knauf Insulation 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 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.

Application

Knauf Insulation ET Batt 1000° and Knauf Insulation 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

- Low thermal conductivity
- Increase system efficiency and decrease fuel usage
- Lightweight and easy to handle and fabricate
- Flexibility makes them ideal for flat or irregular surfaces
- More resistant to abuse than standard ET blankets
- Tough and resilient
- Resist damage in shipment and during and after installation
- All items are available in made-to-order sizes.
- Low emitting for indoor air quality considerations

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.

- Glass mineral wool insulation with ECOSE® Technology contains three key ingredients:
 - Sand, one of the world’s most abundant resources
 - A minimum of 50% recycled glass content and UL Environment verification every 6 months
 - ECOSE® Technology which reduces binder embodied energy by up to 70% and total product embodied energy by up to 4%.

Specification Compliance in U.S.:

- MIL-I-24244C
- NRC Reg. Guide 1.36. (Certification needs to be specified at time of order)
- HH-I-558C; Form B, Type I, Class 7, 8
- USCG 164/109/18/1
- ASTM C 1139 Type I Grade 3, Type 2 Grade 3
- Conforms to Marine Equipment European 1408/13

In Canada:

- CAN/ULC S102-M88
- CGSB 51-GP-11M

Product Features

- UL/ULC Classified (UL 723)
- UL Environment GREENGUARD Certified®
- UL Environment GREENGUARD GOLDSM
- UL Environment validated to be formaldehyde free
- Complies with Oregon Revised Statute 453.085 and contains less than 0.10% decabromdiphenyl ether (DecaBDE) by mass
- Tested and certified to meet all requirements of EUCEB

Technical Data

Surface Burning Characteristics

- Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with UL 723, ASTM E 84, CAN/ULC S103-M88, NFPA 90A and 90B and NFPA 255.

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”.

Resists Microbial Growth (ASTM C 1338)

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

Corrosiveness (ASTM C 665)

- Does not accelerate corrosion on aluminum, steel or copper.

Corrosion (ASTM C 1617)

- The corrosion rate in mills/yr will not exceed that of the 5 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 Insulation sales representative.

Caution

Glass mineral wool 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.

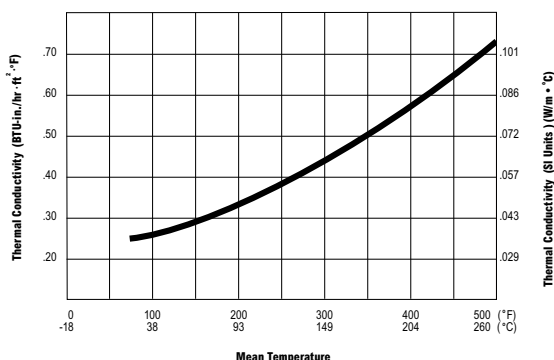
Glass Mineral Wool and Mold

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.

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.

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)

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

or visit us online at www.knaufinsulation.us

KNAUF INSULATION

it's time to save energy



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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.



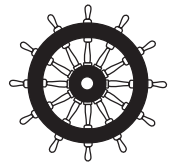
This product has been tested and is certified to meet the EUCEB requirements.



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 V 4 - Credit MR 3 - Regional Materials
LEED V 4 - Credit MR 4 - Recycled Content



This product has been tested and is certified to meet the US Coast Guard requirements.



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.