



Elevated Temperature Panel 1000°

with ECOSE® Technology



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Description

Knauf Insulation Elevated Temperature Panel 1000° with ECOSE® Technology is a semi-rigid thermal insulation board (2.4 pcf, 38.4 kg/m³) bonded with ECOSE Technology.

ECOSE Technology

ECOSE Technology is a revolutionary binder chemistry that makes Knauf Insulation products even more sustainable than ever. It features 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 Insulation Elevated Temperature Panel 1000° with ECOSE Technology is suitable for use in industrial heating applications to 1000°F (538°C), such as high-temperature panel systems for ducts and precipitators, boilers, vessels and industrial ovens. It is ideal for use in metal mesh blankets.

Features and Benefits

Excellent Thermal Properties

- Reduces operating cost.

Low Installed Cost

- Lightweight.
- Easy to fabricate.
- Sizes up to 4' x 10' available.

Poly Bag and Sleeve Packaging

- Damage resistant.
- Reduces storage space.

Resilient Fiber Glass

- Maintains integrity at elevated temperatures.

Indoor Air Quality Excellence

- Certified for indoor air quality as a low emitting product by The GREENGUARD Environmental Institute to both the GREENGUARD Indoor Air Quality Certification ProgramSM and the more stringent GREENGUARD Children & Schools standard and is verified to be formaldehyde free.

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
 - A minimum 60% recycled post-consumer 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.:

- UL Classified
- ASTM C 612; Type II and III
- MIL-I-24244C
- NRC Reg. Guide 1.36. (Certification needs to be specified at time of order)
- GREENGUARD Indoor Air Quality Certified®
- GREENGUARD Children & Schools CertifiedSM and verified to be formaldehyde free
- HH-I-558C; Form A, Class 1, 3
- This product complies with Oregon Revised Statute 453.085 and contains less than 0.10%

decabromodiphenyl ether (DecaBDE) by mass.

In Canada:

- UL/ULC Classified
- CAN/ULC S102-M88
- CGSB 51-GP-10M

Technical Data

Surface Burning Characteristics

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

Water Vapor Sorption (ASTM C 1104)

- 0.1% or less by volume.

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 1 ppm chloride solution.

Temperature Limit (ASTM C 411)

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

Resists Microbial Growth (ASTM C 1338, G21)

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

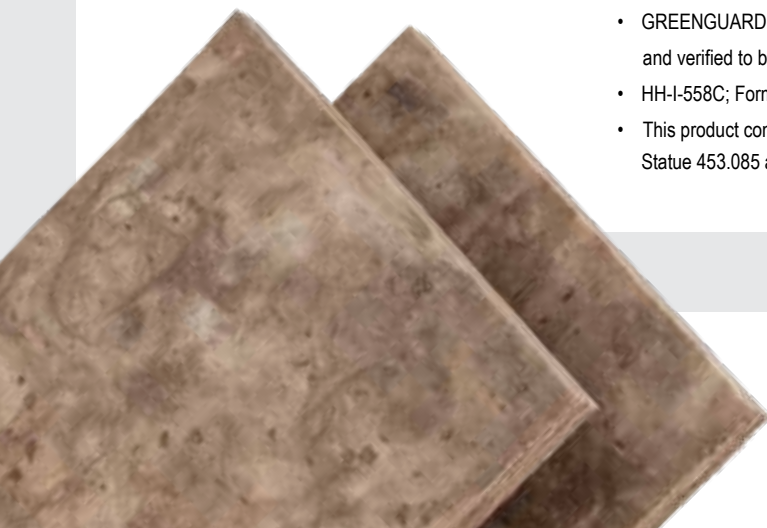
Application and Specification Guidelines

Precaution

- 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. Cartons are not designed for outside



storage. Vacuum packaged material can be stored outside if care is taken not to puncture the poly bag.

Preparation

- Apply the product on clean, dry surfaces.

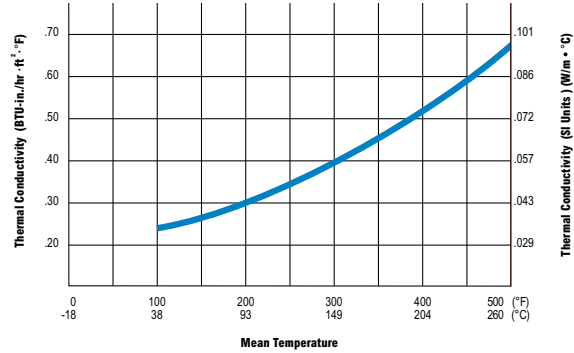
Application

- There is no heat-up cycle required for Knauf Insulation ET Panel 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 washers 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.
- In temperatures over 550°F (288°C) and designed thickness over 3" (76 mm) dual layer application with staggered joints is recommended.
- When using the products at 1000°F (538°C), it is recommended that no more than 6" (152 mm) thickness should be used.

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.

Thermal Efficiency (ASTM C 177)



Mean Temperature	k	k(SI)
100°F (38°C)	.25	.036
200°F (93°C)	.32	.046
300°F (149°C)	.40	.058
400°F (204°C)	.52	.075
500°F (260°C)	.68	.098

Forms Available

Thickness	Width	Length
1" (25 mm)	24" (610 mm) to 48" (1219 mm)	48" (1219 mm) to 120" (3048 mm)
1½" (38 mm)		
2" (51 mm)		
2½" (64 mm)		
3" (76 mm)		
3½" (89 mm)		
4" (102 mm)		

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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 Elevated Temperature Panel 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.



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

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



Knauf Elevated Temperature Panel 1000° with ECOSE® Technology products are certified for indoor air quality as a low emitting product by The GREENGUARD Environmental Institute to both the GREENGUARD Indoor Air Quality Certification ProgramSM and the more stringent GREENGUARD Children & Schools standard and are verified to be formaldehyde free. www.greenguard.org

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