KNAUF INSULATION

Data Sheet | CI-EPN-DS | 06-18

Elevated Temperature Panel 1000°

with ECOSE® Technology

with ECOSE® TECHNOLOGY

Elevated Temperature Panel 1000° *with ECOSE® Technology*

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 enhances the sustainability of our products. The "binder" is the bond that holds our fiberglass 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 fiberglass 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 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, H-Bar systems, vessels and industrial ovens. It is ideal for use in metal mesh blankets.

PRODUCT FEATURES

- Reduces operating cost
- Lightweight, easy to fabricate
- Sizes up to 4' x 10' available
- Damage resistant
- Reduces storage space
- Maintains integrity at elevated temperatures
- Low emitting for indoor air quality considerations

SUSTAINABILITY

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.

Fiberglass insulation with ECOSE Technology contains three key ingredients:

- Recycled glass content, verified annually by UL Environment
- Sand, one of the world's most abundant resources
- Our green chemistry initiative ECOSE Technology, which is validated to be formaldehyde-free

SPECIFICATION COMPLIANCE

In U.S.

- ASTM C612; Type IA, Type IB, Type II and III, Category I
- Conformity for Marine Equipment IMO 1408/13
- USCG 164.109/17/1
- ASTM C1139; Type I, Grade 5, Type II, Grade 5
- **ASTM C795**
- **MIL-I-24244**
- **NRC Reg. Guide1.36. (Certification needs to be specified at time of order)**

In Canada

- CAN/ULC S102

INDOOR AIR QUALITY

- UL Environment
  - GREENGUARD certified
  - GREENGUARD Gold certified
  - Validated to be formaldehyde-free
  - UL/ULC Classified (UL 723)
- Does not contain polybrominated diphenyl ethers (PBDE) such as: Penta–BDE, Octa–BDE or Deca–BDE
- EUCEB

APPLICATION & 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

Fiberglass 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.

FIBERGLASS AND MOLD

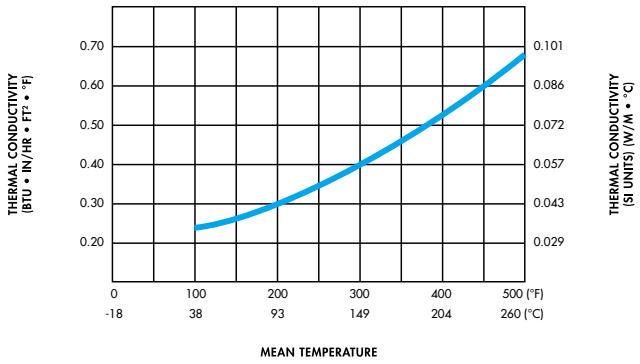
Fiberglass insulation will not sustain mold growth. However, mold can grow on almost any material when it becomes wet and contaminated. Carefully inspect any insulation that has been exposed to water. If it shows any sign of mold it must be discarded. If the material is wet but shows no evidence of mold, 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 Insulation 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 Territory Manager to ensure information is current.

Thermal Efficiency | ASTM C177



Mean Temperature	k	k (SI)
100° F (38° C)	0.25	0.036
200° F (93° C)	0.32	0.046
300° F (149° C)	0.40	0.058
400° F (204° C)	0.52	0.075
500° F (260° C)	0.68	0.098

Technical Data

Property (Unit)	Test	Performance
Corrosiveness	ASTM C665	Does not accelerate corrosion of steel
Corrosion	ASTM C1617	Pass
Maximum Service Temperature	ASTM C411, ASTM C447	1000 °F (538 °C) at a maximum recommended thickness of 6"
Mold Growth	ASTM C1338, ASTM G21	Pass
Water Vapor Sorption (by weight)	ASTM C1104	Less than 5%
Surface Burning Characteristics (flame spread/smoke developed)	ASTM E84, CAN/ULC S102, NFPA 90A and 90B, and UL 723	25/50

Forms Available

Thickness	Width	Length
1" (25 mm)	24" (610 mm) to 48" (1,219 mm)	48" (1,219 mm) to 120" (3,048 mm)
1½" (38 mm)		
2" (51 mm)		
2½" (64 mm)		
3" (76 mm)		
3½" (89 mm)		
4" (102 mm)		

KNAUF INSULATION

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UL Environment GREENGUARD Certification Program
Elevated Temperature Panel 1000° is certified to UL Environment GREENGUARD standards for low chemical emissions into indoor air during product usage.

UL Environment GREENGUARD Gold Certification Program
Knauf Insulation has achieved UL Environment GREENGUARD Gold Certification for Elevated Temperature Panel 1000°.

UL Environment Validated Formaldehyde Free
Knauf Insulation has achieved UL Environment validation that Elevated Temperature Panel 1000° is formaldehyde free.

For more information, visit ul.com/spot

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.

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.

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

This product is covered by one or more U.S. and/or other patents. See patent www.knaufinsulation.us/patents