MANSON INSULATION

CONTRACTOR

JOB NAME

DATE

# HIGH TEMPERATURE BOARD

Temperature Limit: 1000° F (538° C)

## DESCRIPTION

High Temperature Board is a lightweight insulation (2.8 PCF, 44.9 kg/m$^3$) product made from inorganic glass fibers bonded with a high-temperature thermosetting resin.

## 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.

## SUSTAINABILITY

Manson 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

## APPLICATION

Manson Insulation High Temperature Board is used for boiler walls, hot precipitators, hot ductwork, cylindrical tanks, towers, stacks, and industrial ovens.

## PRODUCT FEATURES

**UL Environment**

- GREENGUARD certified
- GREENGUARD Gold certified
- Validated to be formaldehyde-free

**EUCEB**

- Tested and certified to meet EUCEB requirements

## SPECIFICATION COMPLIANCE

- ASTM C612; Type IA, IB, II - Category I, III
- ASTM C1139 replaces MIL-I-22023D; Type III
- MIL-DTL-32585; Type I, Form I, Facing A
- ASTM C795
- MIL-I-24244
- NRC Reg. Guide 1.36
  (Certification needs to be specified at the time of the order)

## 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 Manson Insulation High Temperature Board represent 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 Manson Insulation Area Manager to ensure information is current.

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## 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 polybag.

### Preparation

- Apply the product on clean, dry surfaces.

### Application

- All insulation joints must be firmly butted. Mount flush against surfaces up to 1000° F (538° C) or use in panels mounted away from operating surface.
- Manson Insulation High Temperature Board is designed to be applied over welded pins and/or studs up to ½" (13 mm) in diameter. The board is to be held in place by speed washers, tension clips or metal mesh reinforcement.
- Installation method should not compress material beyond maximum of 5% at any point.
- 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.
- In temperatures over 550° F (288° C) and designed thickness over 3" (76 mm) dual layer application with staggered joints is recommended. Install thickness recommended by Manson Insulation or NAIMA 3E Plus program.
- Finish surface with metal cover, or with insulating cement and canvas.

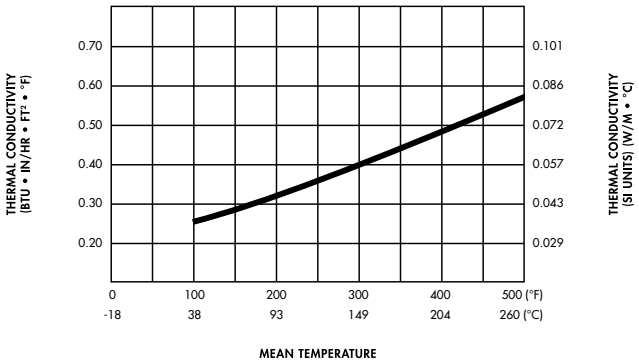
## TECHNICAL DATA

| PROPERTY (UNIT) | TEST | PERFORMANCE |
|---|---|---|
| Corrosiveness | ASTM C665 | Does not accelerate corrosion of steel |
| Maximum Service Temperature | ASTM C411 | 1000° F (538° C) |
| Mold Growth | ASTM C1338 | Pass |
| Surface Burning Characteristics (flame spread/smoke developed) | ASTM E84, UL 723, CAN/ULC S102 | UL/ULC Classified FHC 25/50 |

## FORMS AVAILABLE

| THICKNESS | WIDTH | LENGTH |
|---|---|---|
| 1" (25 mm) | 24" (610 mm) and 48" (1,219 mm) | 48" (1,219 mm) and 96" (2,438 mm) |
| 1½" (38 mm) | | |
| 2" (51 mm) | | |
| 2½" (64 mm) | | |
| 3" (76 mm) | | |
| 3½" (89 mm) | | |
| 4" (102 mm) | | |

## THERMAL EFFICIENCY | ASTM C177




| MEAN TEMPERATURE | K | K(SI) |
|---|---|---|
| 100° F (38° C) | 0.25 | 0.036 |
| 200° F (93° C) | 0.33 | 0.048 |
| 300° F (149° C) | 0.40 | 0.058 |
| 400° F (204° C) | 0.49 | 0.071 |
| 500° F (260° C) | 0.57 | 0.082 |

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M-CI-HBD-DS | 04-18