FIBERGLAS™ THERMAL INSULATING WOOL (TIW) TYPES I-HP AND II-HP INSULATIONS

Features

- Excellent thermal performance contributes to lower fuel costs due to reduced heat loss
- Easy to handle and install
- The insulation is easily impaled over welded studs or pins, or may be held in place with wire ties, metal lath or lagging.
- There is no tendency for pin-hole elongation under vibration situations, a frequent source of heat leaks in heavy products
- Large batts or blankets cover greater areas quickly, eliminating tedious block-by-block hand layup and drilling for studs in hard insulations
- Can be used in direct contact with steel, copper and aluminum without corrosive effects

Description

Fiberglas™ Thermal Insulating Wool (TIW) Types I-HP and II-HP Insulations are off-white, noncombustible wool with resilient, inorganic glass fibers bonded with a thermosetting resin. TIW Type I-HP Insulation is available in rolls; TIW Type II-HP Insulation comes in batts.

Physical Properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST METHOD</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Operating Temperature Range</td>
<td>ASTM C411</td>
<td>Up to 1,000°F (538°C)</td>
</tr>
</tbody>
</table>
| Density | ASTM C167 | Type I-HP = 1.0 pcf (16 kg/m³)  
Type II-HP = 2.5 pcf (40 kg/m³) |
| Water Vapor Sorption | ASTM C1104 | < 5.0% by weight at 120°F (49°C), 95% R.H. |
| Composite Surface Burning Characteristics | UL 723, ASTM E84 or CAN/ULC-S102 | Flame Spread 25  
Smoke Developed 50 |

1. Maximum allowable thickness at 1,000°F (538°C): Type I-HP - 8.5" (216mm); Type II-HP - 6" (152mm).
2. The surface burning characteristics of these products have been determined in accordance with UL 723, ASTM E84 or CAN/ULC-S102. Values are reported to the nearest 5 rating.

Standards, Codes Compliance

- ASTM C553, Mineral Fiber Blanket Thermal Insulation, Types I, II, V – TIW Type I-HP; all types – TIW Type II-HP when specification Type VII is limited to 1,000°F maximum use temperature
- ASTM C612, Mineral Fiber Block & Board Thermal Insulation, Types IA, II, III – TIW Type II-HP
- ASTM C795, Thermal Insulation for Use Over Austenitic Stainless Steel
- Nuclear Regulatory Commission Guide 1.36, Non-Metallic Thermal Insulation
- Mil. Spec. MIL-DTL-32585, Insulation, Thermal and Acoustic, Fibrous Glass; Type I and II; Form 1 and 2
- Mil. Spec. MIL-I-22023D (Ships), Insulation Felt, Thermal and Sound Absorbing Felt, Fibrous Glass, Flexible, Types 1 & 2, Class 3 – TIW Type I-HP
- U.S. Coast Guard Approval No. 164.109, Noncombustible Materials
- CAN/CGSB-51.11 – Type 1, Class 4 – Fiberglas™ TIW Types I-HP & II-HP Insulation

Availability

<table>
<thead>
<tr>
<th>SIZE (IN. (M))</th>
<th>TIW, TYPE I-HP (ROLLS)</th>
<th>TIW, TYPE II-HP (BATTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIDTHS, IN. (M)</td>
<td>THICKNESS, IN. (MM)</td>
<td>LENGTH, FT. (M)</td>
</tr>
<tr>
<td>24 (0.6)</td>
<td>1.0 (25)</td>
<td>87 (26.5)</td>
</tr>
<tr>
<td>36 (0.9)</td>
<td>1.5 (38)</td>
<td>58 (26.5)</td>
</tr>
<tr>
<td>48 (1.2)</td>
<td>2.0 (51)</td>
<td>87 (26.5)</td>
</tr>
<tr>
<td>3.0 (76)</td>
<td>58 (17.7)</td>
<td>1 layer</td>
</tr>
<tr>
<td>4.0 (102)</td>
<td>44 (13.4)</td>
<td>1 layer</td>
</tr>
</tbody>
</table>

Thickness, in. (mm)

- Widths, in. (m) x length, in. (m)
- Thickness increments in 1/8 inch (1/16 inch)
Fiberglas™ TIW Types I-HP and II-HP Insulations can be installed directly on heated flat and curved surfaces by attaching with welded pins or studs and finishing with sheet metal or metal mesh and insulating cement, then canvassed and painted. Pins with speed washers or studs and nuts should be installed on 16" (400mm) (maximum) spacing and not more than 4" (100mm) from the edge of the insulation. The insulation is normally impaled over the pins or studs and the enclosing sheet metal or metal mesh secured to the same fasteners. Joints of the sheet metal finish are offset from joints of the insulation.

For temperatures over 400°F (204°C), good insulation practice suggests double layer application, with overlapping the layers regardless of insulation type. Single layer installation of any type of insulation material requires good workmanship to minimize heat loss and hot spots at insulation joints. Fiberglas™ TIW Types I-HP and II-HP Insulations may be installed in either single or multiple layers at all temperatures up to 1,000°F (538°C). Maximum allowable thicknesses at that temperature: TIW Type I-HP, 81/2″ (216mm); TIW Type II-HP, 6″ (152mm).

Environmental and Sustainability
Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at www.owenscorning.com.

Certifications and Sustainable Features

- Certified by SCS Global Services to contain an average of 53% recycled glass content, 31% pre-consumer and 22% post-consumer
- Environmental Product Declaration (EPD) has been certified by UL Environment
- For unfaced products only: Material Health Certificate from Cradle to Cradle Products Innovation Institute
- Health Product Declaration™ (HPD)

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Applications

- Fiberglas™ TIW Type I-HP Insulation is used in applications up to 1,000°F (538°C) at maximum recommended thickness requiring a lightweight insulation, such as that used in panel systems, flexible wrap, industrial ovens or surfaces having irregularities. Its low compressive strength does not make it suitable for use as a base wool for metal mesh blankets
- Fiberglas™ TIW Type II-HP Insulation is especially suitable for use in metal mesh blankets and for use on boilers, vessels and many other types of industrial equipment operating at temperatures up to 1,000°F (538°C) at maximum recommended thickness. It may also be used in panel systems for precipitators, ducts and breechings where more compressive resistance than Fiberglas™ TIW Type I-HP Insulation is needed