700 Series FIBERGLAS™ Insulation

Product Data Sheet

Type 701 ❌ Type 705
Type 703 ❌ Type 707
Type 704

Description

700 Series Insulations are made of inorganic glass fibers with a thermosetting resin binder and formed into flexible, semi-rigid or rigid rectangular boards of varying densities. Types 703, 704 and 705 are available with factory-applied FRK or ASJ facings. Both facings are vapor retarders and provide a neat, finished appearance in mechanical applications.

Key Features

- Fiberglas™ 700 Series Insulations save energy and reduce heat transfer, lowering operating costs.
- Available in five densities, providing a selection of products to meet specific performance, appearance and economic requirements.
- Resists damage and maintains structural integrity and efficiency.
- Efficiently reduces sound transmission.
- Lightweight and resilient, 700 Series products are easy to handle, fabricate on the job site and install.
- Fiberglas™ 700 Series Insulations are available in:
  - 24"x48" (610mm x 1219mm) in thicknesses from 1" (25mm) to 4" (102mm) in ½" (13mm) increments
  - Maximum thickness, Type 705, is 3" (76mm)
  - Type 704 is made-to-order

Product Applications

701 – Lightweight, resilient, flexible insulation in sheet form, used on vessels with irregular surfaces where an exterior finish will be supported mechanically.
703, 704 – Semi-rigid boards for use on equipment, vessels and air conditioning ductwork.
705 – A high strength rigid board for use on chillers, hot and cold equipment, and heating and air conditioning ductwork where high abuse resistance and good appearance are required.
707 – For use in acoustical wall panels and specialized ceiling applications.

Physical Property Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Operating Temperature Limitation</td>
<td>ASTM C411</td>
<td>0 to 450°F (-18°C to 232°C)</td>
</tr>
<tr>
<td>Insulation Jacket Temperature Limitation</td>
<td>ASTM C1136</td>
<td>-20°F to 150°F (-29°C to 66°C)</td>
</tr>
<tr>
<td>Jacket Permeance</td>
<td>ASTM E96, Proc. A</td>
<td>0.02 perm</td>
</tr>
<tr>
<td>Jacket Burst Strength</td>
<td>ASTM D274</td>
<td>FRK: 35 psi; ASJ: 55 psi</td>
</tr>
</tbody>
</table>
| Compressive Strength (minimum)    | ASTM C165  | Type 703: 25 lb/ft² (1197 Pa)
| at 10% deformation                |             | Type 704: 60 lb/ft² (2873 Pa)
|                                    |             | Type 705: 200 lb/ft² (9576 Pa) |
| at 25% deformation                |             |                        |
| Water Vapor Sorption              | ASTM C1104 | <2% by weight at 120°F (49°C), 95% R.H. |
| Nominal Density                   | ASTM C167  | Type 701: 1.5 pcf (24 kg/m³) |
|                                    | ASTM C303  | Type 703: 3.0 pcf (48 kg/m³) |
| Surface Burning Characteristics   | UL 723, ASTM E84 or CAN/ULC-S102 | Flame Spread: 25 |
| Flame Spread                      |             | Smoke Developed: 50 |

1. Maximum thickness at 450°F (232°C): Type 701: 6" (152mm); Type 703, 704, 705: 4" (102mm).
2. The surface burning characteristics of these products have been determined in accordance with UL 723, ASTM E84 or CAN/ULC-S102. This standard should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest 5 rating.
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**Installation**

700 Series Insulation can be easily cut with a knife and fit neatly into irregularly shaped areas.

ASJ- or FRK-faced insulation boards shall be applied using mechanical fasteners such as weld pins or speed clips. Fasteners shall be located not less than 3" (75mm) from each edge or corner of the board.

Pin spacing along the equipment should be no greater than 12" (300mm) on centers. Additional pins or clips may be required to hold the insulation tightly against the surface where cross breaking is used for stiffening. Weld pin lengths must be selected to ensure tight fit but avoid “oil-canning.”

In multiple layer applications, faced material on outer layer only. Where a vapor retarder is required, cover pins and clips with vapor sealing, pressure-sensitive patches matching insulation facing. Rub hard with a plastic sealing tool to ensure a tight bond.

All insulation joints should be sealed with pressure-sensitive joint sealing tape to match the insulation facing. Rub hard with a plastic sealing tool to effect a tight bond. Recommended practice suggests 3" (76mm) wide tape on flat surfaces or where edges are shiplapped and stapled. Use 5" (102mm) wide tape in lieu of shiplapping. If insulation is being applied to sheet metal duct work, all sheet metal joints must be sealed prior to insulating. Glass fabric and mastic may be used in lieu of pressure-sensitive tape.

**For Vertical Applications**

700 Series Insulation can be installed between furring strips.
Product Data Sheet

700 Series
FIBERGLAS™ Insulation

Thermal Conductivity

<table>
<thead>
<tr>
<th>Mean Temp. °F</th>
<th>k, Btu/in/hr•ft²•°F</th>
<th>Mean Temp. °C</th>
<th>λ, W/m•°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.22 0.21 0.22 0.22</td>
<td>10 0.032 0.030 0.032</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>0.24 0.23 0.23 0.22</td>
<td>25 0.035 0.033 0.034</td>
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<tr>
<td>100</td>
<td>0.26 0.24 0.25 0.25</td>
<td>50 0.040 0.036 0.038 0.037</td>
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</tr>
<tr>
<td>150</td>
<td>0.30 0.27 0.28 0.27</td>
<td>75 0.045 0.040 0.042 0.041</td>
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</tr>
<tr>
<td>200</td>
<td>0.35 0.30 0.31 0.30</td>
<td>100 0.052 0.045 0.046 0.045</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>0.40 0.34 0.35 0.33</td>
<td>125 0.059 0.050 0.051 0.049</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>0.46 0.38 0.39 0.37</td>
<td>150 0.067 0.055 0.056 0.053</td>
<td></td>
</tr>
</tbody>
</table>

Thermal Conductivity

Apparent thermal conductivity curve determined in accordance with ASTM Practice C1045 with data obtained by ASTM Test Method C177. Values are nominal, subject to normal testing and manufacturing tolerances.

Maintaining the integrity of the vapor retarder is important for effective moisture/humidity control. Repair any punctures or tears in the facing by taping with a pressure sensitive foil tape.

Product should be kept dry during shipping, storage and installation.

Standards, Codes Compliance

- ASTM C553, Mineral Fiber Blanket Thermal Insulation, Type III – Type 701
- ASTM C612, Mineral Fiber Block & Board Thermal Insulation, Types IA, IB – Types 703, 704, 705, 707
- ASTM C795, Thermal Insulation For Use Over Austenitic Stainless Steel³
- ASTM C1136, Flexible Low Permeance Vapor Retarders for Thermal Insulation, Type I: ASJ; Type II: FRK
- Nuclear Regulatory Commission Guide 1.36, Non-Metallic Thermal Insulation³
- Doesn’t contain the fire retardant decabrominated diphenyl ether (decaBDE)
- CAN/CGSB-51.10 – Type I, Class I – Types 703, 704
- NFPA 90A and 90B
- California Insulation Quality Standards CA-T052

³ Preproduction qualification testing complete and on file. Chemical analysis of each production lot required for total conformance.

that channels and Z-shaped furring where a finish will be applied. For exposed applications, the product can be impaled on impaling pins or adhered with adhesive.

For Horizontal Applications
700 Series Insulation can be installed on horizontal surfaces by using impaling pins.

On Curtainwalls
700 Series Insulation is easily installed by mounting on impaling pins or holding in place with supporting clips designed for the application. Follow curtainwall manufacturer’s instructions for clearance.

On Masonry Construction
700 Series Insulation can be installed between wythes, on the interior face with stick pins, or by using appropriate adhesives.

On Precast Concrete
700 Series Insulation can be installed using impaling pins or appropriate adhesives.

When using adhesive, follow adhesive manufacturer’s recommendations for surface preparation and adhesive pattern.

When using impaling pins, follow pin manufacturer’s recommendations for surface preparation. Lengths should be selected to ensure tight fit. Protect pin tips where subject to contact. Pins should be located 3”-8” from the edge(s) of the board.
Certifications and Sustainable Features of 700 Series Fiberglas™ Insulation

- Certified by Scientific Certification Systems to contain a minimum of 57% recycled glass content

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 http://sustainability.owenscorning.com.