**THERMO-1200™**

Thermo-1200™ is a water resistant, Type I calcium silicate pipe and block insulation, designed for applications that operate at temperatures up to 1200°F (650°C).

**BENEFITS**

*Water Resistant*: Thermo-1200™ is the only North American calcium silicate insulation available that is water resistant. The insulation is engineered to withstand a heavy rainfall (1 1/4” of rain/hour) for up to 20 minutes without absorbing more than 15% of its weight in water. This will allow contractors to install the insulation without immediately applying the jacketing afterward, offering more time and flexibility in the installation process than has traditionally been available.

*Inhibits Corrosion*: A proprietary corrosion inhibitor, called XOX Corrosion Inhibitor®, is integral to the chemical makeup of Thermo-1200™. XOX Corrosion Inhibitor helps protect against corrosion under insulation (CUI) and makes Thermo-1200™ one of the least corrosive thermal insulations available.

*Durable*: Thermo-1200™ is a cementitious insulation with exceptional compressive strength (>100 psi/690kPa), making it ideal for applications where mechanical abuse is likely. The inorganic binder will hold its shape and maintain the physical integrity of the insulation, even past 450°F, the point at which most organic binders burn off.

*Extended Life Cycle*: When properly installed and maintained, Thermo-1200’s superior physical strength and inorganic binders can provide an insulation lifespan of up to 25 years or more.

**FEATURES**

- Non-combustible, cementitious insulation
- Temperature range: Ambient to 1200°F
- Asbestos, lead, and mercury-free

**APPLICATIONS**

In addition to water resistance, Thermo-1200™ offers superior durability and compressive strength. This is coupled with high-temperature, corrosion-inhibiting performance, making it ideal for the following applications:

*Pipe and Equipment:*
  - Chemical Processing
  - Power Generation
  - Petroleum Refining

**QUALITY STATEMENT**

Johns Manville industrial products are designed, manufactured and tested to strict quality standards in our own facilities. This, along with third party auditing is your assurance that this product delivers consistently high quality.

*Thermo-1200™ water resistant calcium silicate is not hydrophobic. Thermo-1200™ is designed to be able to withstand short periods of rainfall without absorbing water in excess. The volume of water absorption depends on the duration of exposure and the amount of rainfall. The insulation is not meant to withstand extreme weather conditions without jacketing. While this new water resistant feature can be helpful during prolonged field installations, it is nevertheless recommended that an installer weatherproof and jacket the thermal insulation as soon as it is feasibly possible. Should water enter the system, the corrosion inhibitors will still activate to continue to help combat corrosion at a chemical level, and once the system reaches operating temperatures, the water will vaporize and leave the system.*
THERMAL CONDUCTIVITY

<table>
<thead>
<tr>
<th>Temperature °F</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>38</td>
<td>93</td>
<td>149</td>
<td>204</td>
<td>260</td>
<td>316</td>
<td>371</td>
</tr>
<tr>
<td>ASTM C335 (Pipe) Btu • in/(hr • ft² • °F)</td>
<td>.344</td>
<td>.389</td>
<td>.437</td>
<td>.486</td>
<td>.538</td>
<td>.591</td>
<td>.647</td>
</tr>
<tr>
<td>W/m • °C</td>
<td>.050</td>
<td>.056</td>
<td>.063</td>
<td>.070</td>
<td>.078</td>
<td>.085</td>
<td>.093</td>
</tr>
<tr>
<td>ASTM C518 (Flat) Btu • in/(hr • ft² • °F)</td>
<td>.355</td>
<td>.373</td>
<td>.397</td>
<td>.428</td>
<td>.465</td>
<td>.509</td>
<td>.559</td>
</tr>
<tr>
<td>W/m • °C</td>
<td>.051</td>
<td>.054</td>
<td>.057</td>
<td>.062</td>
<td>.067</td>
<td>.073</td>
<td>.081</td>
</tr>
</tbody>
</table>

* Thermo-1200 Insulation is tested in accordance with ASTM C518 and ASTM C335.

SPECIFICATION COMPLIANCE

- ASTM C165 Compressive Strength: >100psi (690kPa) 5% compression
- ASTM C203 Flexural Strength: >50psi (450kPa)
- ASTM C302 Density (Dry) Average: >14pcf (230kg/m³)
- ASTM C356 Linear Shrinkage: <2.0% after 24hr Soaking period at 1200°F (650°C)
- ASTM C421 Abrasion Resistance: Weight Loss by Tumbling: After the first 10min <20% After the second 10min <40%
- ASTM C447 Maximum Service Temperature: 1200°F (650°C)
- ASTM C533, Type I Material Specification: Passes
- ASTM C665 Corrosivity to Steel: Passes
- ASTM C795/C871/C692 Corrosion: Austenitic Stainless Steel: Passes
- ASTM C1338 Fungi Resistant: Passes
- ASTM C1617 Corrosion: Passes (<DI Water)
- ASTM E84 Surface Burning Characteristics: Flame Spread: 0 Smoke Developed: 0
- ASTM E136 Non-Combustible: Passes
- NRC Reg. Guide 1.36: Passes

3-V SCORED BLOCK APPLICATION GUIDE

<table>
<thead>
<tr>
<th>Minimum Diameter</th>
<th>Insulation Thickness</th>
<th>Triple Scored</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>½</td>
<td>38</td>
<td>30</td>
</tr>
<tr>
<td>⅞</td>
<td>51</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>64</td>
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<td>152</td>
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<tr>
<td>3200</td>
<td>305</td>
<td>914</td>
</tr>
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</table>

INDUSTRIAL INSULATION

THERMO-1200™

CALCIUM SILICATE PIPE & BLOCK INSULATION

DATA SHEET

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