MONOKOTE® MK-1000 HB

Product data and application instructions

Product Description

MONOKOTE® MK-1000 HB is a single component, spray applied, mill-mixed fire resistive plaster. It has approval for use on structural steel members and fluted decking to provide up to four hours of fire protection, and on flat plate cellular decking for up to three hours with SPATTERKOTE® SK-3.

The product has been designed to obtain bond strengths in excess of 1,000 psf making it an attractive material for meeting the 2009 IBC building requirements for bond strength for buildings in excess of 420 feet tall. The capability of meeting the bond strength requirements with a high yielding spray applied fire resistant material makes MONOKOTE® MK-1000 HB fire resistive plasters a cost effective option.

Features & Benefits

MONOKOTE® cementitious fireproofing offers many significant advantages to the architect, owner, applicator and building occupant. These include:

- Proven in-place performance
- Low in-place cost
- Fast, efficient application
- UL fire tested and factory inspected
- Building Code compliant

Delivery & Storage

- All material to be used for fireproofing shall be delivered in original unopened packages bearing the name of the manufacturer, the brand and proper UL labels for fire hazard and fire resistance classifications.
- The material shall be kept dry until ready for use. Packages of material shall be kept off of the ground, under cover and away from sweating walls and other damp surfaces. All bags that have been exposed to water before use shall be discarded. Stock of material is to be rotated and used before its expiration date.

Steel & Concrete Surfaces
Performance Characteristics

<table>
<thead>
<tr>
<th>PHYSICAL PROPERTIES</th>
<th>RECOMMENDED SPECIFICATION</th>
<th>TYPICAL VALUES</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry density, minimum average</td>
<td>18 pcf (240 kg/m³)</td>
<td>18 pcf (240 kg/m³)</td>
<td>ASTM E605</td>
</tr>
<tr>
<td>Bond strength</td>
<td>1,000 psf (28.7 KPa)</td>
<td>1,528 psf (46.3 KPa)</td>
<td>ASTM E736</td>
</tr>
<tr>
<td>Compression, 10% deformation</td>
<td>50 psi (344 KPa)</td>
<td>53 psi (385.0 KPa)</td>
<td>ASTM E761</td>
</tr>
<tr>
<td>Air erosion</td>
<td>Max 0.000 g/ft² (0.00 g/m²)</td>
<td>0.000 g/ft² (0.00 g/m²)</td>
<td>ASTM E859</td>
</tr>
<tr>
<td>Corrosion</td>
<td>Does not contribute to corrosion</td>
<td>Does not contribute to corrosion</td>
<td>ASTM E937</td>
</tr>
<tr>
<td>Bond impact</td>
<td>No cracking, spalling or delamination</td>
<td>No cracking, spalling or delamination</td>
<td>ASTM E760</td>
</tr>
<tr>
<td>Deflection</td>
<td>No cracking, spalling or delamination</td>
<td>No cracking, spalling or delamination</td>
<td>ASTM E759</td>
</tr>
<tr>
<td>Resistance to mold growth</td>
<td>No growth after 28 days</td>
<td>No growth after 28 days</td>
<td>ASTM G21</td>
</tr>
<tr>
<td>Surface burning characteristics</td>
<td>Flame spread = 0 Smoke developed = 0</td>
<td>Flame spread = 0 Smoke developed = 0</td>
<td>ASTM E84</td>
</tr>
<tr>
<td>Combustibility</td>
<td>Less than 5 MJ/m² total, 20 kw/m² peak heat release</td>
<td>Less than 5 MJ/m² total, 20 kw/m² peak heat release</td>
<td>ASTM E1354</td>
</tr>
</tbody>
</table>

*Actual laboratory tested values meet or exceed GCP’s recommended value. Test reports are available on request from your GCP sales representative.
Mixing

- MONOKOTE® fireproofing shall be mixed by machine in a conventional, plaster-type mixer or a continuous mixer specifically modified for cementitious fireproofing. The mixer shall be kept clean and free of all previously mixed material. The mixer speed in a conventional mixer shall be adjusted to the lowest speed which gives adequate blending of the material and a mixer density of 43–53 pcf (690–850 kg/m³) of material.
- Using a suitable metering device and a conventional mixer, all water shall be first added to the mixer as the blades turn. Mixing shall continue until the mix is lump-free, with a creamy texture. All material is to be thoroughly wet. Target density of 48 ± 1 pcf (770 ± 16 kg/m³) is most desirable. Overmixing MONOKOTE® will reduce pumping rate.

Application

- Application of MONOKOTE® Fireproofing can be made in the following sequence:
  1. For thicknesses of approximately 1/2 in. (13 mm) or less, apply in one pass.
  2. For thicknesses of 5/8 in. (16 mm) or greater, apply subsequent passes after the first coat has set.
- SPATTERKOTE® SK-3 shall be applied to all cellular steel floor units with flat plate on the bottom and to roof decking where required prior to application of MONOKOTE®. SPATTERKOTE® shall be applied in accordance with manufacturer’s application instructions.
- MONOKOTE® Fireproofing material shall not be used if it contains partially set, frozen or caked material.
- The minimum average density shall be that required by the manufacturer, listed in the UL Fire Resistance Directory for each rating indicated, ICBO Evaluation Report, as required by the authority having jurisdiction, or minimum average 18 lbs/ft³ (288 kg/m³), whichever is greater.
- MONOKOTE® shall be mixed with water at the job site.
- MONOKOTE® Accelerator is to be used with MONOKOTE® Fireproofing to enhance set characteristics and product yield. The MONOKOTE® Accelerator is injected into the MONOKOTE® Fireproofing at the spray gun. MONOKOTE® Accelerator shall be mixed and used according to manufacturer’s recommendations.
- MONOKOTE® is applied directly to the steel, at various rates of application which will be job dependent, using standard plastering type equipment or continuous mixer/pump units. A spray gun, with a properly sized orifice and spray shield and air pressure at the nozzle of approximately 20 psi (38 KPa), will provide the correct hangability, density and appearance. NOTE: If freshly sprayed MONOKOTE® does not adhere properly, it is probably due to a too wet mix, poor thickness control, or an improperly cleaned substrate.

Temperature & Ventilation

- The substrate temperature shall be a minimum of 40°F (4.5°C) for at least 1-hour prior to the application of the MONOKOTE®. Additionally, the air and substrate temperature during application and for a minimum of 24 hours after application shall be no less than 40°F (4.5°C).
- Provisions shall be made for ventilation to properly dry the fireproofing after application. In enclosed areas lacking natural ventilation, air circulation and ventilation must be provided to achieve a minimum total fresh air exchange rate of 4 times per hour until the material is substantially dry.
Field Tests

- The architect will select an independent testing laboratory (for which the owner will pay) to sample and verify the thickness and density of the fireproofing in accordance with the applicable building code.
- The architect will select an independent testing laboratory (for which the owner will pay) to randomly sample and verify the bond strength of the fireproofing in accordance with the provisions of ASTM E736.
- Results of the above tests will be made available to all parties at the completion of pre-designated areas which shall have been determined at a pre-job conference.

Safety

- MONOKOTE® is slippery when wet. The general contractor and applicator shall be responsible for posting appropriate cautionary “SLIPPERY WHEN WET” signs. Signs should be posted in all areas in contact with wet fireproofing material. Anti-slip surfaces should be used on all working surfaces.
- Safety Data Sheets (SDS) for MONOKOTE® MK-1000 HB fire resistive plasters are available on our web site or by calling 866-333-3SBM.