

Monokote Type MK-6/HY

Product Data and Application Instruction

Product Information

Monokote® Type MK-6/HY is a single component, millmixed fireproofing plaster which requires only the addition of water on the job site to form a consistent, pumpable slurry. Type MK-6/HY is designed for use on structural steel columns, beams, joists, trusses and floor and roof decking.



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 tested and factory inspected
- Universal Building code compliance (ICBO, SBCCI, BOCA, NBCC)

Delivery and Storage

- a. All material to be used for fireproofing shall be delivered in original unopened packages bearing the name of the manufacturer, the brand, the name of the manufacturer, the brand and proper

Underwriters Laboratories Inc. labels for fire hazard and fire resistance classifications.

- b. The material shall be kept dry until ready for use. Packages of material shall be kept off 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 and Concrete Surfaces

- a) Prior to the application Monokote® Type MK-6/HY fireproofing, an inspection shall be made to determine that all steel and concrete surfaces are acceptable to receive fireproofing. The steel to be fireproofed shall be free of oil, grease, excess rolling compounds or lubricants, loose mill scale, excess rust, non-compatible primer, lock down agent or any other substance that will impair proper adhesion. Where necessary, the cleaning of steel surfaces to receive fireproofing shall be the responsibility of the general contractor.
- b) The project architect shall determine if the painted/primed structural steel to receive fireproofing has been tested in accordance with ASTM E-119, to provide the required fire resistance rating.
- c) Many Fire Resistance Designs allow the use of painted metal floor or roof deck in place of galvanized decking. Painted decking must be UL listed in the specific fire resistance designs and must carry the UL classification marking.
- d) Prior to application of Monokote® Type MK-6/HY, a bonding agent, approved by the fireproofing manufacturer, shall be applied to all concrete substrates to receive Type MK-6/HY.
- e) Fireproofing to the underside of roof deck assemblies shall be done only after roofing application is complete and roof traffic has ceased.
- f) No fireproofing shall be applied prior to completion of concrete work on steel decking

Recommended Specifications

Physical Properties	Values	Test Method
Dry Density, minimum average	240 kg/m ³ (15 pcf)	ASTM E 605, UBC STD 7-6
Bond Strength	16.2 KPa (339 psf)	ASTM E 736
Compressive Strength @ 10% Deformation	68.9 KPa (1,440 psf)	ASTM E 761
Air Erosion	0.000 g/m ² (0.000 g/ft ²)	ASTM E 859
High Velocity Air Erosion	No continued erosion after 4 hours	ASTM E 859, UMC STD 6-1
Corrosion	Does not contribute to corrosion	ASTM E 937
Bond Impact	No cracking, spalling or delamination	ASTM E 760
Deflection	No cracking, spalling or delamination	ASTM E 759
Resistance to Mold Growth	No growth after 60 days	ASTM G 21
Surface Burning Characteristics	Flame Spread = 0 Smoke Developed = 0	ASTM E 84
Combustibility	Less than 5 M J/m ² total, 20 kW/m ² peak heat release	ASTM E 1354
Impact Penetration	3.3 cm ³	Developed by City of San Francisco
Abrasion Resistance	8.3 cm ³	Developed by City of San Francisco

Mixing

- a) 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 640–720 kg/m³ (40–45 pcf).
- b) 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 688 ±16 kg/m³ (43 ±1 pcf) is most desirable. Overmixing Monokote will reduce pumping rate.

Application

- a) Application of Monokote fireproofing can be made in the following sequence:
 - 1. For thickness of approximately 13mm (1/2 in.) or less, apply in one pass.
 - 2. For thickness of 16mm (5/8 in.) or greater, apply subsequent passes after the first coat has set.
- b) Spatterkote™ SK-3 shall be applied to all flat plate cellular deck units and below all bottomless trench headers prior to application of Type MK-6/HY. Spatterkote shall be applied in accordance with the manufacturer's application instructions.
- c) Spatterkote SK-3 shall be applied to roof decking where required prior to application of Monokote.
- d) Monokote fireproofing material shall not be used if it contains partially set, frozen or caked material.
- e) Monokote shall have a minimum average dry, in-place density of 240 kg/m³ (15 lbs./ft³)
- f) Monokote is formulated to be mixed with water at the job site.
- g) Monokote Accelerator is to be used with Monokote Type MK-6/HY to enhance set characteristics and product yield. The Monokote Accelerator is injected into the Monokote Type MK-6/HY at the spray gun. Monokote Accelerator shall be mixed and used according to manufacturer's recommendations.
- h) Monokote is applied directly to the steel, at various rates of application which will 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 38 KPa (20 psi) will provide the correct hangability, density and appearance.

NOTE: If freshly sprayed Monokote does not adhere properly, it is probably due either to a too wet mix, poor thickness control, or an improperly cleaned substrate.

Temperature and Ventilation

- a) An air and substrate temperature of 4.4°C (40°F) minimum shall be maintained for 24 hours prior to application, during application and for a minimum of 24 hours after application of Monokote.
- b) 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 air exchange rate of 4 times per hour until material is substantially dry.



Field Test

- a) The architect will select, and the owner will pay for an independent testing laboratory to sample and verify the thickness and density of the fireproofing in accordance with the provisions of ASTM E 605-93, "Standard Test Method for Thickness and Density of Sprayed Fire-Resistive Material Applied to Structural Members" or Uniform Building Code Standard No. 7-6 "Thickness and Density Determination for Spray Applied Fireproofing".
- b) The architect will select, and the owner will pay an independent testing laboratory to randomly sample and verify the bond strength of the fireproofing in accordance with the provisions of ASTM E 736.
- c) 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 prejob conference.

Safety

- a) *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.*
- b) *A Material Safety Data Sheets for Monokote® Type MK-6/HY is available upon request*