

3M Company
Design No. 3MU/AF 120-04
Applied Fire Proofing
Jet Fire
3M™ Interam™ ES-5A-12 Series Endothermic Mat – 2 Layers
ISO 22899-1
Temperature Rise 13°C – Time 15 minutes
Temperature Rise 48°C – Time 30 minutes
Temperature Rise 80°C – Time 45 minutes
Temperature Rise 116°C – Time 60 minutes
Temperature Rise 239°C – Time 90 minutes
Temperature Rise 363°C – Time 120 minutes
Temperature Rise 400°C – Time 132 minutes

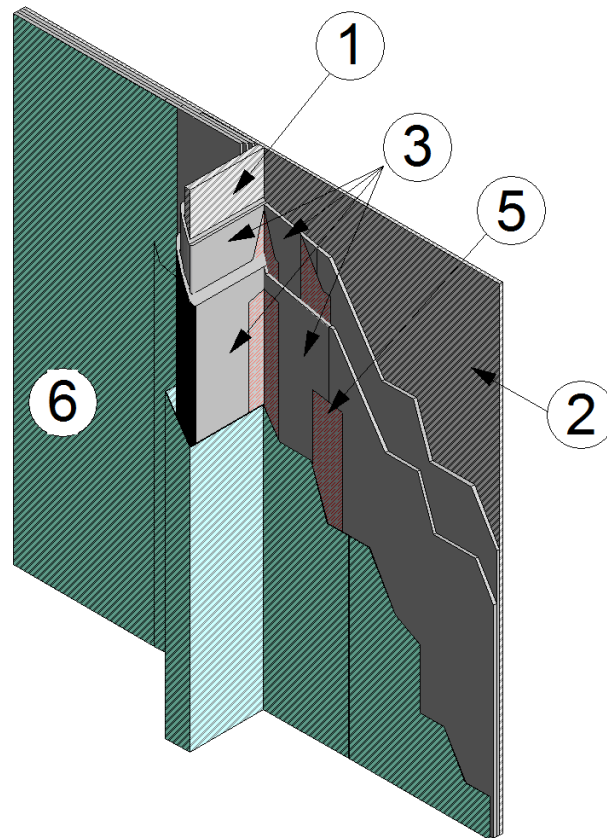


Figure 1 – Structural Steel Work Protection

- 1. STRUCTURAL STEELWORK:** Use structural steel having a min. thickness of 20 +/- 0.25mm (0.79 +/- 0.01 in.).
- 2. STEEL PANEL:** Use a steel panel constructed of 10mm (0.39 in.) thick steel, complying with ISO 630:1995, Grade Fe 430 representing steelwork with no corners or edge features.



3. CERTIFIED MANUFACTURER: 3M Company

CERTIFIED PRODUCT: Applied Fireproofing

CERTIFIED MODEL: 3M™ Interam™ ES-5A-12 Series Endothermic Mat

ENDOTHERMIC MAT: Install two layers of foil-faced flexible Endothermic Mat, tightly over the Structural Steelwork (Item 1) and Steel Plate (Item 2). Each layer shall have one single piece of Endothermic Mat over the Structural Steelwork (Item 1) with the foil facing away from the Structural Steelwork. Install first layer with continuous vertical sections of Endothermic Mat with vertical joints fit tightly together and foil facing away from the steel panel. Adhere the first layer to the steel panel (Item 2) using 3M Hi-Strength 90 Adhesive (not shown) applied to the steel and the back of the first layer being applied. Use rollers over the entire layer to ensure complete adhesion is achieved. Tape all joints of first layer with Aluminum Tape (Item 5) and use rollers over tape to ensure complete adhesion. Install the second layer with joints offset min. 51mm (2 in.) from joints of the previous layer. Adhere the second layer of Endothermic Mat to the first layer of Endothermic Mat using 3M Hi-Strength 90 Adhesive (not shown) applied to the face of the first layer. Use rollers over the entire layer to ensure complete adhesion is achieved. Tape all joints of the second layer with Aluminum Tape (Item 5), with min. 50mm (2 in.) overlap onto itself, with the foil facing away from the cable tray. Temporarily affix sections of Endothermic Mat with filament tape if needed. Install each additional layer in the same manner ensuring the seams between layers are offset a min. of 50mm (2 in.).

4. CERTIFIED MANUFACTURER: 3M Company

CERTIFIED PRODUCT: Caulk

CERTIFIED MODEL: 3M™ Fire Barrier CP 25WB+

CAULK (Not Shown): Install caulk in any joints between Endothermic Mat (Item 3) or between the Endothermic Mat (Item 3) and any steel member (Item 1 and/or 2) that exceed 3mm (1/8 in.).

- 5. ALUMINUM TAPE:** Apply 102mm (4 in.) wide pressure sensitive tape with aluminum foil-facing to all joints of each layer of the Endothermic Mat (Item 3).
- 6. STEEL SHEATHING:** Install one layer of min. 0.48mm (26 GA, 0.0156 in.) T-304 stainless steel sheathing over the Endothermic Mat (Item 3) in continuous vertical sheets. Install Steel Sheathing with min. 76mm (3 in.) overlap at joints to create a stepped surface installation. Adhere each piece of Steel Sheathing to the final layer of Endothermic Mat (Item 3) using 3M Hi-Strength 90 Adhesive (not shown) applied to the edges of the back of the Steel Sheathing face of the corresponding locations on the final layer of Endothermic Mat (Item 3).
- 7. PINS (Not Shown):** Install nominal 35mm (1-3/8 in.) long, 12 GA (2.70mm (0.106 in.) thick) stainless steel cup-head pins with a min. 38mm (1-1/2 in.) washer. Install pins by pre-drilling holes through the Steel Sheathing (Item 6) and the Endothermic Mat (Item 3) with an 11mm (7/16 in.) drill bit, and welding the pins to the Structural Steelwork (Item 1). Pins shall be spaced both vertically and horizontally 305mm (12 in.) on center and centered over the overlap of each joint in the Steel Sheathing (Item 6).