



# 3M™ Interam™ Endothermic Mat E-5A-4

Leaving cable trays and structural steel exposed to fire can lead to severe damage of a refinery's superstructure, thus compromising continuity of operations. 3M™ Interam™ Endothermic Mat provides easy-to-install, full-envelope fire protection for a broad range of critical components including structural steel, electrical raceways and vessel skirts. Its flexibility and space-saving design allows 3M™ Interam™ Endothermic Mat to meet installation requirements in most areas.

As our flagship product for fire protection in refineries, this flexible mat provides a uniform covering that, when exposed to high temperatures, releases chemically-bound water to cool the outer surfaces of the wrap material and significantly retard heat transfer. Advanced fire protection technology from 3M offers outstanding performance in many fire scenarios.

- Up to 4-hour protection for structural steel and up to 3-hour electrical circuit protection<sup>1</sup>
- Outstanding performance in high-intensity fires, provides protection against large hydrocarbon pool fires in accordance with UL 1709 (ASTM E 1529)<sup>1</sup>
- Available with an aluminum or stainless steel backing<sup>2</sup>
- Can easily cut to size and is flexible—install in new applications or directly over existing fire protection
- Outdoor durable<sup>3</sup>
- Continuity of operations during installation
- 2/5" thick x 24½" wide x 20 ft. long roll
- A fireproofing material recognized by API 2218<sup>4</sup>








<sup>1</sup> See system details for layering requirements

<sup>2</sup> Stainless steel-backed product is 3M™ Interam™ Endothermic Mat E-54C

<sup>3</sup> When covered with 0.010" stainless steel jacketing

<sup>4</sup> American Petroleum Institute, "Fire Proofing Practices in Petroleum and Petrochemical Processing Plants"

# Ordering Information

Product Number	Description	Unit	Size	Billing UPC Number	Qty.	
<b>3M™ Interam™ Endothermic Mat E-5A-4 (Aluminum Scrim)</b>						
E-5A-4	Protective wrap for cable trays, conduits, and more	Roll	24.5" x 20 ft. (.408" thick)	000-51115-16571-9	1/Cs	
<b>3M™ Interam™ Endothermic Mat E-54C (Stainless Steel Scrim)</b>						
E-54C	Protective wrap for cable trays, conduits, and more	Roll	24.5" x 20 ft.	000-51115-54914-4	1/Cs	
<b>3M™ Aluminum Foil Tape 425</b>						
425	Seals cut edges of 3M™ Interam™ Endothermic Mat	Roll	4" x 60 yd. (4.6 mil thick)	000-51138-95074-3	2/Cs	
<b>3M™ Interam™ Stainless Steel Tape T-65</b>						
T-65	For use with 3M™ Interam™ E-54C with Stainless Steel Scrim	Roll	4" x 100 ft.	000-51115-00705-7	1/Cs	
<b>3M™ Fire Barrier Composite Sheet CS-195+</b>						
CS-195+ (non load-bearing) Openings up to 36 sq. ft.	Up to 4-hr Penetration Firestop	Sheet	36" x 24" (.303" thick nominal)	000-51115-07220-8	1/Cs	
	Up to 4-hr Penetration Firestop	Sheet	28" x 52" (.303" thick nominal)	000-51115-08260-3	1/Cs	
	Up to 4-hr Penetration Firestop	Sheet	16" x 28" (.303" thick nominal)	000-51115-07437-0	1/Cs	
	Up to 4-hr Penetration Firestop	Sheet	36" x 41" (.303" thick nominal)	000-51115-07224-6	1/Cs	
	Up to 4-hr Penetration Firestop	Sheet	36" x 36" (.303" thick nominal)	000-51115-07222-2	1/Cs	
<b>3M™ Fire Barrier Sealant CP 25WB+</b>						
CP 25WB+	Up to 4-hr Penetration Firestop	Color: ■ 	Tube	10.1 oz.	000-51115-11638-4	12/Cs
	Up to 4-hr Penetration Firestop	Color: ■ 	Sausage	20 oz.	000-51115-11642-1	10/Cs
	Up to 4-hr Penetration Firestop	Color: ■ 	Cartridge	27 oz.	000-51115-11641-4	6/Cs
	Up to 4-hr Penetration Firestop	Color: ■ 	Pail	2 gal.	000-51115-11639-1	1/Cs
	Up to 4-hr Penetration Firestop	Color: ■ 	Pail	5 gal.	000-51115-11640-7	1/Cs
<b>3M™ Fire Barrier Moldable Putty MP+</b>						
MP+	Up to 4-hr Penetration Firestop	Color: ■ 	Stix in tube	1.45" dia. x 6"	000-51115-16561-0	12/Cs
MPS-2+	Up to 4-hr Penetration Firestop	Color: ■ 	Stix	1.4" dia. x 11"	000-51115-16526-9	10/Cs
<b>Scotch® Filament Tape 898</b>						
898	For use with 3M™ Interam™ Endothermic Mats to temporarily hold mat pieces in place during installation	Roll	18mm x 55m 24mm x 55m	000-51131-06897-1 000-51131-06898-8	48/Cs 36/Cs	

Visit [www.3M.com/firestop](http://www.3M.com/firestop) or call 1-800-328-1687 for technical information, listed systems, training information and more.



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[www.3M.com/firestop](http://www.3M.com/firestop)

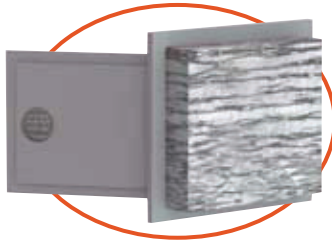
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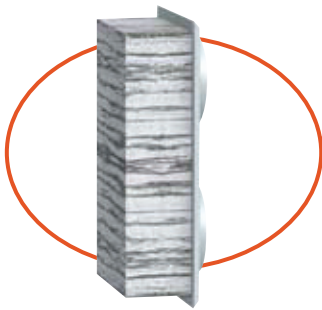
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# Typical Building Applications Using 3M™ Interam™ Endothermic Mat



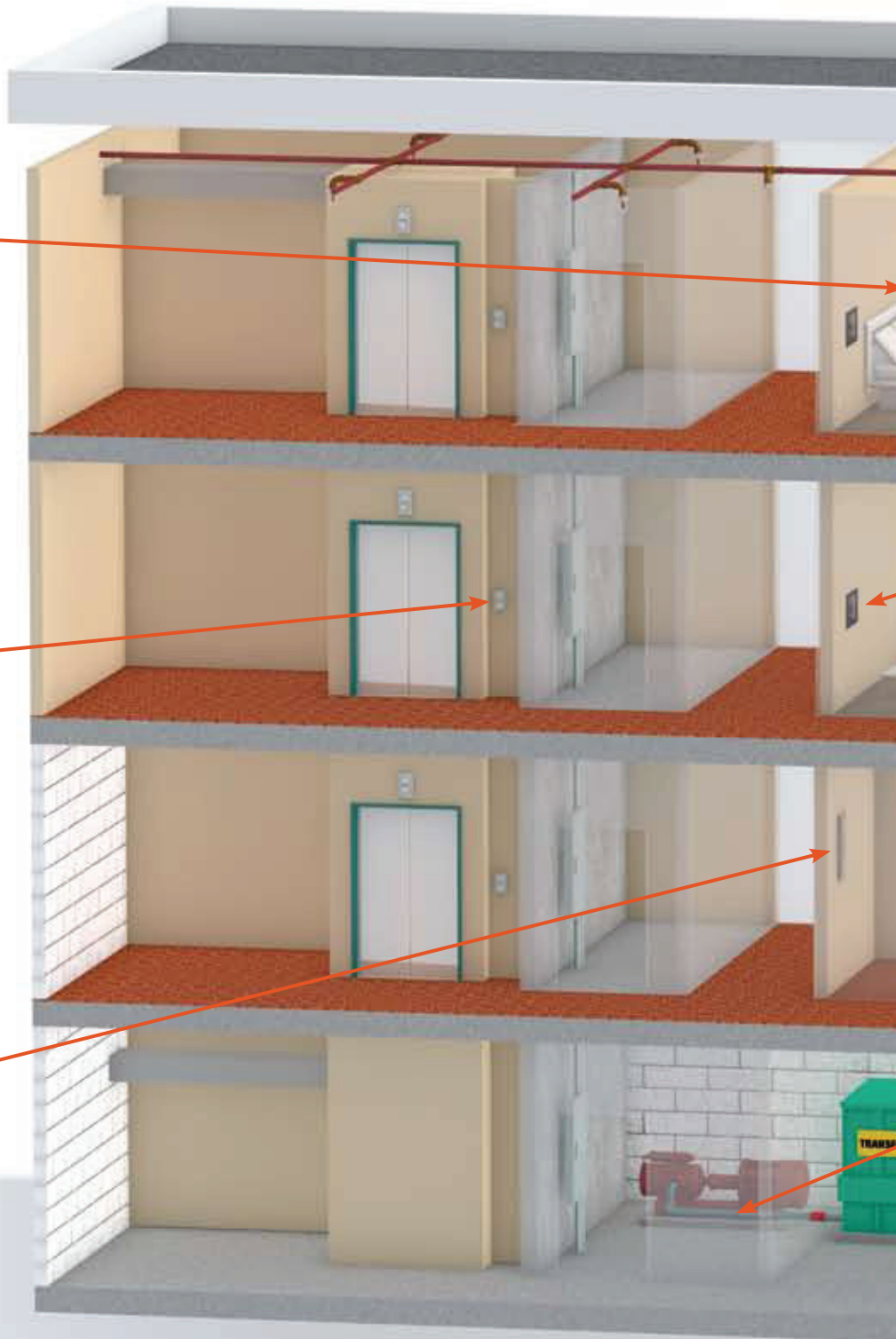
Safe Deposit Box W-L-7168  
3M™ Interam™ Endothermic Mat  
Product # E-5A-4



Elevator Call Box W-L-7168  
3M™ Interam™ Endothermic Mat  
Product # E-5A-4



Electrical Panel W-L-7168  
3M™ Interam™ Endothermic Mat  
Product # E-5A-4



# UL Approved System W-L-7168

- 1 Wall Assembly** – The 1 or 2 hour fire rated framed gypsum board wall assembly shall be constructed of the materials and in the manner specified in the individual U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

  - A. **Studs** – Wall framing shall consist of steel channel studs. Steel studs to be min 3 5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC. An additional framing member shall be used to form a shelf within the wall cavity to support the steel box (Item 2) and mat fill material (Item 3). The framed opening is to be 1 in. (25 mm) wider than the width of the steel box.
  - B. **Gypsum Board\*** – The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual Wall and Partition Design. Size of cutout made to accommodate steel box (Item 2) is to be 1 in. (25 mm) wider and 1 in. (25 mm) higher than the width and height of the steel box.

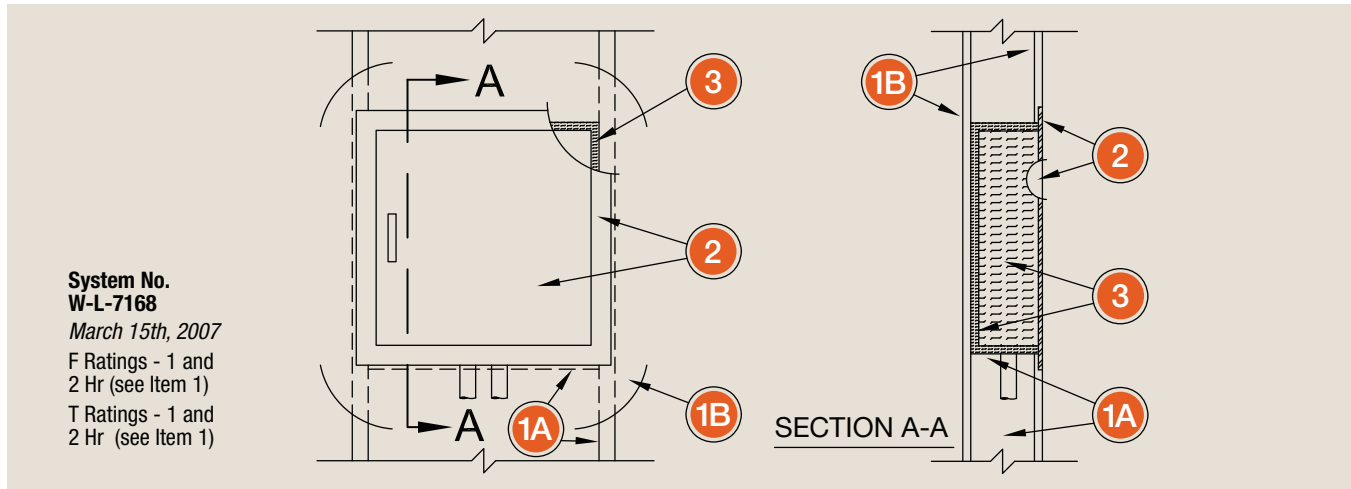
**The hourly F and T Ratings of the firestop system are equal to the hourly fire rating of the wall in which the firestop system is installed.**
- 2 Steel Box** – Max 19 in. (483 mm) wide by max 32 in. (813 mm) high by max 3 1/2 in. (89 mm) deep recessed steel utility box with hinged steel door and mounting flange. Steel box secured to steel studs with steel screws after application of mat material (Item 3) on exterior surfaces of steel box. Bottom and/or top of steel box may be penetrated by up to two max 1 1/2 in. (38 mm) diameter copper, steel or iron pipes or tubes. Open pipes or tubes which terminate within the box shall be sealed with caulk (Item 4) or plugged with a ball of putty (Item 5).
- 3 Fill, Void or Cavity Materials\* – Mat** – Nominal 0.4 in. (10 mm) thick aluminum foil faced endothermic mat supplied in 24 in. wide rolls. Individual pieces of mat cut to cover four sides and back of box and laminated to box with high-strength, fast, contact-type adhesive (foil face exposed). The mat sections on the top and bottom of the box shall be cut to overlap the mat sections on the sides of the box. The mat section on the back of the box shall be cut to overlap the edge of the mat sections on the top, bottom and vertical sides of box. Circular cutouts made in the mat to accommodate the pipes or tubes to be 1/4 to 1/2 in. (6 to 13 mm) larger than outside diameter of pipe or tube. All corners and butted seams in the mat are to be covered with min 2 mil aluminum foil tape.

**3M COMPANY** – Type E-5A-4 or E-5A-4 Mat
- 4 Fill, Void or Cavity Materials\* – Caulk or Sealant** – (Not Shown) – Nom 1/4 in. (6 mm) diameter bead of caulk applied to the edge of the mat material around the perimeter of the box mounting flange. Additional caulk fill material shall be used to completely fill each circular cutout made in the mat material to accommodate a pipe or tube. The end of each open pipe or tube which terminates within the box shall be sealed with a min 1/2 in. (13 mm) depth of caulk.

**3M COMPANY** – Type CP-25WB+ Caulk, FB-3000WT Sealant
- 5 Fill, Void or Cavity Materials\* – Putty** – (Not Shown) – As an alternate to the caulk (Item 4), the end of each open pipe or tube which terminates within the box may be sealed with a min 1/2 in. (13 mm) depth of putty fill material.

**3M COMPANY** – Type MP+ Moldable Putty

Additional materials needed: Spray 90 Spray Adhesive, CP-25WB+ Firestop Caulk.  
 \*Bearing the UL Classification Mark.



Product Number	Description	Size	Unit	Case	UPC
E-5A-4	Endothermic Mat	24.5" x 20' x 0.4"	Roll	1 Roll/Case	0-51115-16571-4

## Additional application materials

Product Number	Description	UPC
Spray 90	Spray Adhesive	083631-8
CP-25WB+	Firestop Caulk	011638-9

For CAD drawings and other UL System details, please see our website [www.3M.com/firestop](http://www.3M.com/firestop) or call 1-800-328-1687.



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# 3M™ Interam™ Endothermic Mat E-5A-4

## Product Data Sheet

### 1. Product Description

When properly installed, 3M™ Interam™ Endothermic Mat E-5A-4 provides a uniform covering that, when exposed to high temperatures, releases chemically-bound water to cool the outer surfaces of the wrap material and significantly retard heat transfer. Helps protect structural steel components for up to four hours, critical electrical components for up to three hours and wall opening membranes for up to two hours. Applied to the back and sides of metallic utility boxes, this product helps achieve an equal F-rating and T-Rating in membrane penetrations of rated wall assemblies. 3M™ Interam™ Endothermic Mat E-5A-4 is non-flame supporting with low-smoke evolution. The mat is flexible which aids in installation and allows it to more easily be applied on complex shapes and around corners.



Endothermic fire protection in a wide variety of structural, electrical and membrane penetration applications.

### Product Features

- Provides up to 4 hour fire protection for structural steel applications<sup>1</sup> in accordance with ASTM E 119
- Provides up to 3 hour fire protection for electrical circuit applications<sup>1,2</sup> in accordance with ASTM E 1725
- Provides protection against large hydrocarbon pool fires in accordance with ASTM E 1529 (UL 1709)
- Chemically-bound water helps cool protective item(s) in the event of a fire
- Non-flame supporting
- Low-smoke evolution
- Flexible – can be installed on complex shapes and around corners
- Easy-to-cut for various shapes and sizes
- Non-corrosive
- For use in new or retrofit applications
- Easy-to-clean

<sup>1</sup> Specific fire-ratings are achieved via single layer or multiple layering of mat per listed system requirements. Per system details, additional layers of mat increase the hourly-rating of the installation.

<sup>2</sup> Under normal operating conditions, the mat's ambient conductivity allows heat, such as that generated by power cables, to dissipate rather than be trapped by it.

### 2. Applications

3M™ Interam Endothermic Mat E-5A-4 is a flexible and space-saving wrap system that protects against fire spread and smoke contamination in a wide range of new or retrofit applications requiring full envelope protection, including: structural steel, electrical circuitry / raceways, cables, cable trays, conduits, equipment shrouds, steam lines and membrane penetrations (e.g. spaces containing electrical panels, elevator call boxes, safe deposit boxes, medical gas boxes). Consult system details, contact your local 3M sales representative or call 1-800-328-1687 to inquire about application-specific installation guides).

### 3. Specifications

Installation shall be in strict accordance with manufacturer's written instructions, as shown on approved shop drawings. 3M™ Interam™ Endothermic Mat E-5A-4 shall be a flexible, endothermic (i.e. heat absorbing) mat with low smoke evolution capable of being layered for 1-, 2-, 3- and 4-hour structural steel applications; 1-, 2- and 3-hour electrical system applications. The product shall be capable of achieving an equal F-Rating and T-Rating when applied to metallic utility boxes which penetrate the membrane of a fire-resistive wall assembly. When properly installed, 3M™ Interam™ Endothermic Mat E-5A-4 helps protect the encapsulated item(s) against heat penetration and flame spread. 3M™ Interam™ Endothermic Mat E-5A-4 shall be listed by independent test agencies such as UL, ULC, Intertek, or FM. Suitability for the intended application should be determined prior to installation.

#### Typically Specified MasterFormat (2004)

- Section 05 12 00 – Structural Steel Framing
- Section 07 80 00 – Fire and Smoke Protection
- Section 07 81 00 – Applied Fireproofing
- Section 07 84 00 – Firestopping
- Section 26 01 00 – Operation and Maintenance of Electrical Systems
- Section 27 20 00 – Data communications

ASTM (UL, ULC) and NBN/ISO Standard Test Methods:

ASTM E 84 (UL 723)	Surface Burning Characteristics of Building Materials
ASTM E 119 (UL 263)	Fire Tests of Building Construction and Materials
ASTM E 1529 (UL 1709)	Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies
ASTM E 1725 (UL 1724)	Fire Tests of Fire-Resistive Barrier Systems for Electrical System Components
ASTM E 814 (UL 1479)	Standard Test Method for Fire Tests of Penetration Firestop Systems
CAN/ULC-S115	Standard Method of Fire Tests of Firestop Systems

WALL OPENING MEMBRANES

UP TO **2** HOUR  
Fire Protection

ELECTRICAL CIRCUITS

UP TO **3** HOUR  
Fire Protection

STRUCTURAL STEEL

UP TO **4** HOUR  
Fire Protection

**CLASSIFIED**



Mat Materials  
Fire Resistance Classifications  
Rapid Temperature Rise  
Fire Exposure  
Design No. XR201  
See UL Fire Resistance Directory  
90G9

**ULC**

**LISTED**

FILL, VOID OR CAVITY MATERIALS  
90G9

Classified Mat Materials  
Fire Resistance Classification  
Design No. X203 and X204  
See UL Fire Resistance Directory  
90G9



**Intertek**  
FIRESTOP SYSTEMS  
SEE INTERTEK DIRECTORY

**CLASSIFIED**



ELECTRICAL CIRCUIT PROTECTIVE MATERIALS FOR USE IN ELECTRICAL CIRCUIT PROTECTIVE SYSTEMS SYSTEM NO. 7, 8 AND 9  
SEE UL BUILDING MATERIALS DIRECTORY  
90G9

