



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.

Product Features



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

- Tested in accordance with AS1530-4-2005
- Provides up to 4 hour fire protection for structural steel applications¹ in accordance with ASTM E 119
- Provides up to 3 hour fire protection for electrical circuit applications^{1,2} 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

¹ 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.

² 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	ELECTRICAL CIRCUITS	STRUCTURAL STEEL
UP TO 2 HOUR Fire Protection	UP TO 3 HOUR Fire Protection	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

CLASSIFIED

LISTED

Intertek
 FIRESTOP SYSTEMS
 SEE INTERTEK DIRECTORY 90G9

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

4. Performance & Typical Physical Properties

Color:	Silver exterior, white interior	Surface Burning (ASTM E 84):	Flame Spread 0.7, Smoke Development 0 Fuel Contribution 0
Mat Lamination	3 mil. aluminum/ scrim	Thermal Conductivity:	0.087 BTU/ft-hr – °F @ 200°F (0.151 W/m – °C @ 93°C) 0.101 BTU/ft-hr – °F @ 350 °F (0.175 W/m – °C @ 177 C) 0.058 BTU/ft-hr – °F @ 600 °F (0.100 W/m – °C @ 316 C) 0.068 BTU/ft-hr – °F @ 750 °F (0.118 W/m – °C @ 399 C) 0.081 BTU/ft-hr – °F @ 900 °F (0.140 W/m – °C @ 482 C)
Mat Thickness	0.408 in. (10.3 mm)	Mean Specific Heat:	0.331 BTU/lb – °F @ 75-400°F (1385 J/kg- °C @ 24-200 °C) 0.276 BTU/lb – °F @ 75-1650°F (1155 J/kg- °C @ 24-900 °C)
Roll Dimensions	24.5 in. x 20 ft. roll (622 mm x 6.09 m)	Loss on Ignition:	28%
Roll Weight	74.6 lbs. (33.8 kg)	Tensile Strength (with aluminum foil):	110 psi (758 KPa)
Weight/Unit Area	1.83 lbs/ft ² (8.93 kg/m ²)		
Bulk Density	54 lbs/ft ³ (865 kg/m ³)		
Mat Area/Roll	40.8 ft ² (3.79 m ²)		

5. Packaging, Storage, Shelf Life

Packaging	3M™ Interam™ Endothermic Mat E-5A-4 is packaged in a corrugated cardboard box, 1 roll per box.
Storage	3M™ Interam™ Endothermic Mat E-5A-4 is stable under normal storage conditions, store in a dry warehouse environment in original, unopened container. Normal stock and stock rotation practices are recommended.
Shelf Life	Product shelf life is indefinite when stored indoors.

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable Listed Third Party (e.g. UL, ULC, Intertek, FM) drawings and system details. Refer to application-specific 3M™ Interam™ Endothermic Mat E-5A-4 Installation Guides for installation information.

Recommended tools/materials For a typical mat installation, the following tools may be of assistance: razor knife, large scissors or electric scissors (to cut mat), T-Square or similar straight edge (to help with straight cuts of mat), tape measure (to measure mat required), marking pen (to identify layers of mat), 3M™ Aluminum Foil Tape 425 (to seal cut edges of mat), rubber roller (to ensure good adhesion of tape), Scotch® Filament Tape 898 (to temporarily hold mat pieces in place - optional), stainless steel bands 1/2 in. wide x .020 in. min thick (12.7 mm x .5 mm) and band clips to help secure mat, band tensioners, 3M™ Fire Barrier Sealant CP 25WB+ (to fill seams).

Installation considerations Determine the appropriate number of layers required for your application. Ensure proper covering and protection of joints, seams, overlaps and any area that requires special cutting and fitting. Ensure proper use of banding to mechanically restrain the mat system. Refer to listed system details for sealant, banding requirements, layer requirements and other installation procedures.

7. Maintenance

No maintenance is expected to be required when installed in accordance with listed system details. Once installed, if any section of the 3M™ Interam™ Endothermic Mat E-5A-4 is damaged, the following procedure will apply: for damage to the outer metallic covering, install 3M™ Aluminum Foil Tape 425 to overlap a min. 2" (50.8 mm) in all directions. For more extensive damage (including damage to the mat material), contact 3M Fire Protection Products at 1-800-328-1687.

8. Availability

3M™ Interam™ Endothermic Mat E-5A-4 is available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Interam™ Endothermic Mat E-5A-4 comes 1/case and is available in a 24.5 in. x 20 ft. roll (622.3 mm x 6.1 m). For additional technical and purchasing information regarding this and other 3M Fire Protection Products, please call: 1-800-328-1687 or visit www.3m.com/firestop.

9. Safe Handling Information

Consult product's Material Safety Data Sheet (MSDS) from country of use prior to handling and disposal.

Important Notice to User:

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty and Limited Remedy: 3M warrants that each 3M Fire Protection Product will be free from defects in material and manufacture for 90 days from the date of purchase from 3M's authorized distributor. 3M MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If a 3M product does not conform to this warranty, the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

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