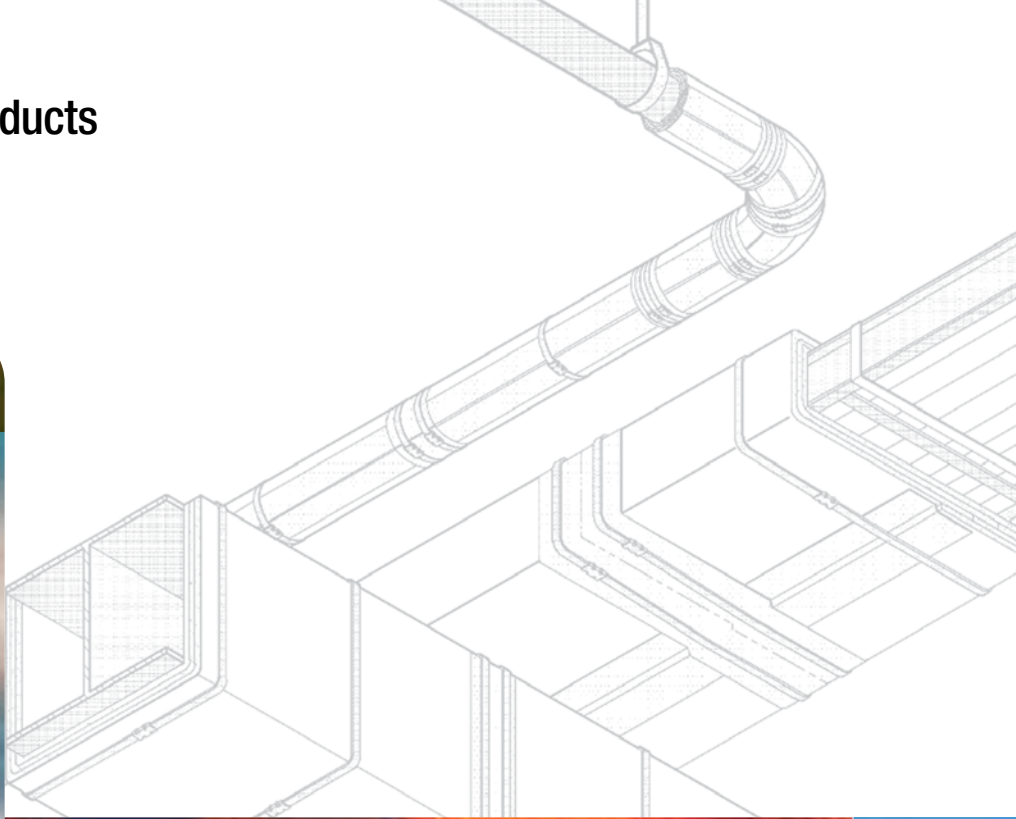


3M™ Fire Protection Products  
Oil & Gas Applications



Plan for the worst.  
Protect with the best.



*Tested & Trusted*



# Helping protect lives

# and maintaining continuity of operations

The devastating effects of a refinery fire can result in lost production and worker injuries. In the event of a fire, 3M™ Fire Protection Products are designed to help mitigate fire spread, providing additional time to control the fire and to allow for a safe evacuation.

With over 30 years of fire protection experience, 3M has developed tested and listed systems for the protection of critical electrical and structural components.

3M™ Fire Protection Products provide you practical and proven applications for exceptional refinery infrastructure protection, including outstanding performance in high-intensity hydrocarbon pool and jet fires with advanced fire protection for your most critical assets.

The Solution is  
3M™ Fire Protection Products.

LIFE SAFETY



ASSET PROTECTION

CONTINUITY OF OPERATIONS



# 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 and life safety in the event of a fire. 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 fulfill installation requirements, even in space-constrained situations.

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. This chemically bound water cools the outer wrap material, significantly retarding heat transfer and keeping the integrity of the structural steel or electrical raceways intact.

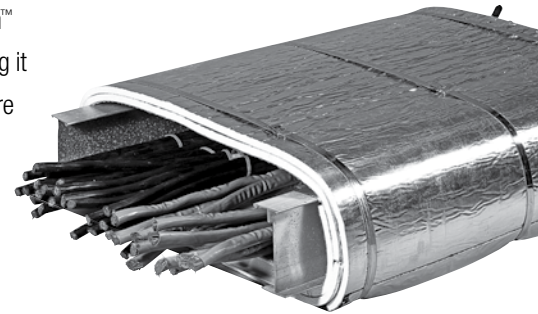
<sup>1</sup> See system details for layering requirements

<sup>2</sup> When covered with 0.010" stainless steel jacketing or 3M™ VentureClad™ Insulating Jacketing Tape

<sup>3</sup> American Petroleum Institute, "Fire Proofing Practices in Petroleum and Petrochemical Processing Plants"

- Up to 4-hour protection for structural steel and up to 3-hour electrical circuit protection<sup>1</sup>
- 3M E-Mat has been tested and listed to:
  - UL 1709 / ASTM E 1529 hydrocarbon pool fire
  - ASTM E 119 / UL 263 / ISO 834 cellulosic fire
  - ISO 22899-1 jet fire
  - NFPA 58, ANNEX H/NFPA 290 "torch test"
  - Lloyd's Register
  - DNV
  - Factory Mutual
  - Underwriters Laboratories (UL)
  - Intertek
- Flexible. Can easily be cut to size
- Install in new applications or directly over existing fire protection
- Outdoor durable<sup>2</sup>
- 2/5" thick x 24 1/2" wide x 20 ft. long roll (10mm x 62cm x 6.1m)
- API 2218<sup>3</sup> 6.3.5 recommended practice
- Passes UL environmental aging and exposure for humidity, salt spray, wet, freeze dry, acid spray and solvent spray
- Manufactured in ISO 9001 facility
- Used in Canada, North Sea, U.S.A., Saudi Arabia, China and Russia, to name a few
- E-Mat has also been tested for blast, radiation, seismic, acoustic and chemical analysis of leachable products
- Reaction to fire properties according to ASTM E 662, ASTM E 162, BSS 7239, EN ISO 11925, EN 13501-1, EN 13823-2010 and UL 723/ASTM E 84

When a fire occurs, the electrical systems that deliver critical power and control signals must remain operational in order to facilitate a safe and orderly plant shutdown and evacuation. 3M™ Interam™ Endothermic Mat is significantly more flexible and conformable than rigid panel systems, making it easier to install on complex shapes common in electrical systems. It also passes the most severe hydrocarbon and jet fires which many of the spray on cable coatings do not.




# Protect Your Electrical & Control Systems



3M™ Interam™ Endothermic Mat is designed to provide cable trays and conduits with full envelope protection in the event of a fire.


- Ideal for cable raceways, conduit, junction boxes and other electrical control systems
- Helps maintain circuit integrity from intense hydrocarbon pool fires per UL 1709 (ASTM E 1529) for 60+ minutes and 3-hour protection from standard fires per ASTM E 119 (UL 263)<sup>1</sup>
- Low ampacity derating of cables tested to IEEE P848
- Re-enterable for cable alterations, maintenance and inspections

<sup>1</sup> See system details



Traditionally, structural steel has been protected with messy, sprayed on materials or encased in concrete. 3M™ Interam™ Endothermic Mat can significantly reduce the installation time for fireproofing structural steel versus cementitious trowel or spray-on applications. Whether used for retrofit or new construction, the mat's flexibility allows it to be installed easily and maintained with virtually no disruption to operations. For retrofit applications, E-Mat may be applied over damaged fireproofing as a patch.

# A Safer, Simpler Way to Protect Structural Steel



Installing multiple layers of 3M™ Interam™ Endothermic Mat flexible wrap allows you to tailor the desired amount of fire protection — up to 4 hours for structural steel.

- 1, 2, 3 or 4 hour protection for structural steel per UL 1709, ASTM E 119 and ISO 22899
- Easy installation, easy cleanup and virtually maintenance free
- Won't spall, crack or chip
- Doesn't contribute to corrosion of steel or other metals
- Has demonstrated its ability to remain secure in blast tests up to peak pressure of 0.33 bar (4.8 psi)<sup>1</sup>
- Easy inspection. E-Mat can be removed, the steel inspected for CUI, then the same E-Mat can be reinstalled to restore full fire protection

<sup>1</sup> WBE 807-0001

3M™ Interam™ Endothermic Mat provides passive fire protection as an effective alternative or supplement to active systems for protecting vessels from fire. Applied directly to the vessel, this flexible mat is often used where water or other active protection systems are inadequate, such as in remote locations or where difficulties arise with traditional water run-off.

# Effective Vessel & Pipeline Protection



When 3M™ Interam™ Endothermic Mat is applied to vessel skirts and pipe lines, it minimizes the effects of fire exposure by flame impingement in order to reduce the steel's rate of temperature rise and to delay structural failure.

- Meets criteria of NFPA 290 Standard for Fire Testing of Passive Protection Materials for Use on LP-Gas Containers<sup>1</sup>
- Protection where active suppression systems are undersized, unreliable or unavailable
- Re-enterable for cost-effective maintenance and inspection
- Doesn't contribute to corrosion of steel or other metals<sup>2</sup>
- Product qualification includes testing that has been conducted to the hydrocarbon fire exposure per UL 1709 (ASTM E 1529)

<sup>1</sup> Similar to NFPA 58, Appendix H

<sup>2</sup> Per API 2218, American Petroleum Institute, "Fire Proofing Practices in Petroleum and Petrochemical Processing Plants"

# Additional Products for Complete Fire Protection

## 3M™ Fire Barrier Sealant CP 25WB+

Our most popular intumescent firestop sealant approved up to 4 hours of fire protection in listed through penetration firestop assemblies. Also used to seal joints (gaps) between adjacent pieces of 3M™ Interam™ Endothermic Mat in fireproofing installations.



## 3M™ Fire Barrier Composite Sheet CS-195+

A thin one-part composite system designed to firestop large openings (e.g. blank or openings with single or multiple penetrations). Use 3M™ Fire Barrier Composite Sheet CS-195+ at locations where cable trays, conduit or busways penetrate fire-rated assemblies.

- Firestop tested for up to 4 hours in accordance with ASTM E 814 (UL 1479)
- Thermally conductive—allows unwanted heat build-up to escape
- Re-enterable and repairable
- Easy to cut and form to desired shape



## 3M™ Fire Barrier Moldable Putty Stix MP+

Designed to firestop a wide variety of through penetrations, including cable, conduit, insulated pipe and metal pipe.

- Firestop tested for up to 3 hours in accordance with ASTM E 814 (UL 1479)
- Re-enterable and repairable
- Provides cold smoke seal (L-rating)
- Pliable—can form into almost any desired shape



## 3M™ Fire Barrier Pillows

Self-contained, highly-intumescent firestop pillows are stackable and conformable for new and retrofit projects.

- Up to 3-hour fire ratings per ASTM E 814 (UL 1479)
- UL listed systems with openings up to 1,080 sq. in.
- No wire mesh or graphite
- Available sizes: 2" x 4" x 9" (small), 2" x 6" x 9" (medium) and 3" x 6" x 9" (large)



## Scotch® Filament Tape 898

High performance polypropylene-backed tape reinforced with continuous glass yarn.

- Used to temporarily hold endothermic mat pieces in place during installation



## 3M™ Aluminum Foil Tape 425

Used to seal cut edges of aluminum foil-backed 3M™ Interam™ Endothermic Mat E-5A-4 in order to complete total encapsulation.

- Designed to perform in high temperatures
- Thermally-conductive, dead-soft aluminum backing combined with a transparent acrylic adhesive backing
- 4.6 mil thick aluminum foil, 4" x 60 yd. roll



## 3M™ Fire Barrier Rated Foam FIP 1-Step

Firestop foam used to fill the annular space created by pipes and cables penetrating through fire-rated construction.

- Firestop tested up to 2 hours in accordance with ASTM E 814 (UL 1479) and CAN/ULC S115
- Meets the International Building Code for Passive Fire Protection
- Intumescent foam expands up to 5X when dispensed



## 3M™ Interam™ Stainless Steel Foil Tape T-65

Used to seal cut edges of stainless steel foil-backed 3M™ Interam™ Endothermic Mat E-54C in order to complete total encapsulation.

- Designed to perform in high temperatures
- Thermally-conductive, stainless-steel backing with acrylic adhesive backing
- 4 mil thick stainless steel foil, 4" x 100 ft. roll

## 3M™ VentureClad™ Insulation Jacketing Tape 1577CW-E

A UL listed, multilayered laminate designed for use as a zero permeability vapor barrier and is an option for cladding over 3M™ Interam™ Endothermic Mat E-5A-4.



# 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
	Up to 4-hr Penetration Firestop	Color: ■	Sausage	20 oz.	000-51115-11642-1
	Up to 4-hr Penetration Firestop	Color: ■	Cartridge	27 oz.	000-51115-11641-4
	Up to 4-hr Penetration Firestop	Color: ■	Pail	2 gal.	000-51115-11639-1
	Up to 4-hr Penetration Firestop	Color: ■	Pail	5 gal.	000-51115-11640-7
<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
MPS-2+	Up to 4-hr Penetration Firestop	Color: ■	Stix	1.4" dia. x 11"	000-51115-16526-9
<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
<b>3M™ Fire Barrier Rated Foam FIP 1-Step</b>					
FIP 1-Step	Up to 2-hr Penetration Firestop	Color: ■	Cartridge	12.85 oz.	000-51115-54925-0
<b>3M™ VentureClad™ Insulation Jacketing Tape 1577CW-E Embossed Natural Aluminum</b>					
1577CW-E	For use as a vapor barrier cladding over 3M™ Interam™ Endothermic Mat E-5A-4	Roll	100mm x 50m	000-51128-95763-9	12/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.

#### Important Notice to User:

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