

3M Fire Protection Products



Confidence Even Under Fire



Principalproducts

Our understanding of the spread of fire, smoke and toxic gases help us to offer preventative and affordable firestopping solutions

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Passive Fire Protection Specialists

3M

Fire Protection Products

3M

Protecting Lives for More Than 30 Years

In 1974, the movie *Towering Inferno*[†] sparked the imagination of Richard Licht, a 3M product developer who passionately believed 3M technologies could be used to improve the safety of multi-story buildings. Several devastating fires — including the 1980 MGM Grand Hotel fire that killed 84 people and injured 679 — inspired Licht to develop the first firestop products based on existing 3M intumescent technology.

Recognized by many as “one of the fathers of firestopping,” Licht also helped develop some of the first firestop requirements in commercial building codes. He worked tirelessly to make the codes more progressive to improve the safety of all buildings.

[†] Produced by Irwin Allen

3M Firestopping Progress & Trends

As an industry leader, 3M drives technologies that enable lower cost building solutions. For instance, 3M intumescent technology enabled the use of plastic pipes that were previously banned in commercial buildings due to their combustible nature — providing a cheaper, easy-to-install solution for electrical conduits and plumbing lines.

From Understanding Your Needs to Providing the Solution





Leadership You Can Trust

3M is proud to be the industry leader in firestopping. Our dedication to stringent testing and code developments help make buildings safer today than they were even 10 years ago. And when that dedication is backed by a brand as powerful as 3M, you get what you would expect — proven reliability and outstanding service.

The construction industry is increasingly moving toward easy-to-use firestop solutions. That's why 3M, in its leadership role, provides cutting-edge and fully integrated systems. These systems are designed to help you efficiently construct safer buildings that help protect lives and property.

The majority of 3M's firestopping innovations are tested online in the company's own UL and Intertek certified fire-test center. By testing these systems in job-specific conditions, 3M can more effectively provide fire protection solutions that meet current industry needs.

Comprehensive fire protection includes fire detection, fire containment and fire suppression. 3M Fire Protection Products address fire containment and are an integral part of a well-designed fire protection system. Our understanding of the spread of fire, smoke and toxic gases helps us continue to create preventative and affordable firestopping solutions.

Building designs and uses continue to evolve, and so too must 3M firestop technology. For example, in buildings where telecommunication cables are constantly being upgraded, the 3M™ Fire Barrier Pass-Through Device allows for re-enterability and helps keep cables organized and protected.

From time-tested fire barrier sealants to today's innovative firestop devices and duct wraps, 3M scientists work to develop solutions to firestop virtually anything on a building site. With over 100 products and almost 1,000 tested approved systems, 3M has the most complete program for all your firestopping needs.





3M™ Fire Barrier CP 25WB+ Sealant

Product Description

3M Fire Barrier CP 25WB+ Sealant is a premium elastomeric latex caulk designed for use as a one-part fire, smoke, noxious gas and water sealant. In addition, the unique intumescent property of this material (expands when heated) means that as cable insulation is consumed by fire, CP 25WB+ Sealant expands to maintain the penetration seal.

CP 25WB+ Sealant features superior adhesion strength, caulk rate and no-sag application plus a halogen-free formula.

3M Fire Barrier CP 25WB+ Sealant can be installed with a standard caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel. CP 25WB+ Sealant will bond to concrete, metals, wood, plastic and cable jacketing. No mixing is required. CP 25WB+ Sealant offers excellent performance achieving Fire Resistance Ratings of up to 4 hours.



Product Features

- Water Based: Easy clean up, no special handling, routine disposal
- Intumescent: Expands when heated to seal around items consumed by fire
- Endothermic: Absorbs heat energy, releases chemically bound water
- Thixotropic: Will not sag or run in overhead or vertical applications
- Halogen-free
- Fast dry: Tack-free in approximately 10-15 minutes
- Paintable: (Best results obtained after 72 hour cure.)
- Minimal shrinkage
- Reddish Brown colour
- Water seal: Seals against inadvertent water spills in the unexpanded state
- High caulk rate: 1000 g/min. with 6mm (1/4") nozzle
- Point contact allowed
- Testing in accordance with AS1530.4, EN1366, and ASTM E814 (UL Listed).
- Assessed in accordance with AS4072.1 – 2005
- EWFA Report No: RIR 23263

Physical Properties

Typical Physical Properties	
Tack Free Time (ASTM C679-87)	10 to 15 minutes @ 22°C (72°F)
Continuous operating temperature	Up to 48°C (120°F)
Expansion at 350° C (662°F)	2.0-3.0
Expansion at 540°C (1000°F)	3+
Colour	Reddish Brown
Density	1.35 kg/L (11.2 lb/gal)
Adhesion	Very good on all construction substrates
Application	Caulk guns, trowel, spatula, pressurized pumps
Durometer Hardness (Shore A)	70
Solids	79% by weight
VOC	0% by weight
Odour	Pleasant non-irritating
Flow Rate	1000 grams/min. from 6.35 mm (1/4") nozzle at 50 psi
ASTM E 84: Flame Spread	5
Smoke Development	0
Boeing Flow (Sag Characteristics)	0

Availability

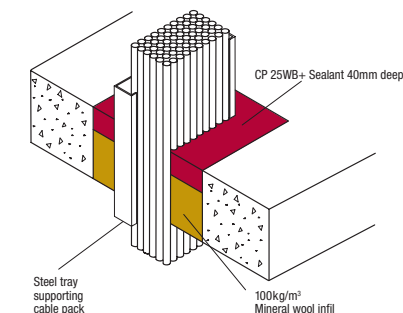
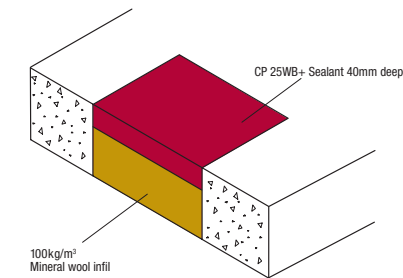
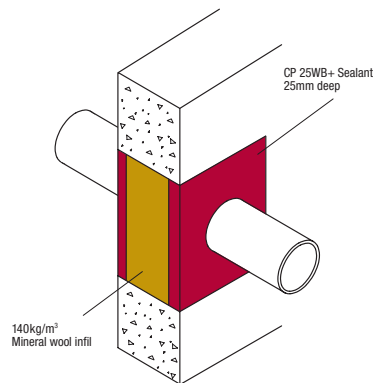
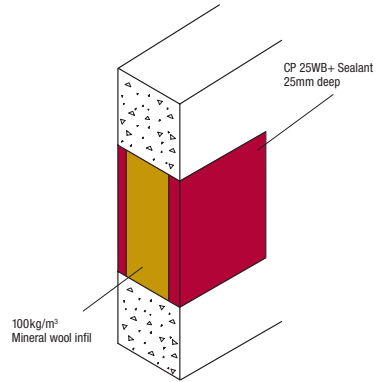
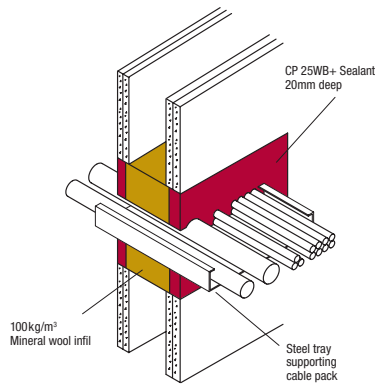
3M™ Fire Barrier CP 25WB+ Sealant is available from Authorized 3M Fire Protection Products Distributors.

3M Order Code	Packing	Unit/Case
98040054565	300 ml (10.1 fl.oz.) cartridge	12
98040053831	594 ml (20 fl. oz.) sausage	10
98040053823	802 ml (27 fl. oz.) cartridge	6
98040053807	7.6 litre (2 gallon) pail	1
98040053815	19 litre (5 gallon) pail	1

Maintenance

CP 25WB+ Sealant is stable under normal storage conditions and has a one year shelf life. Normal stock and stock rotation are recommended.

Recommended: Store between 4°C (40°F) & 32°C (90°F) for maximum shelf life. Keep from freezing.



Installation Techniques:

Installation Techniques: Walls

Electrical Cables, Blank (unpenetrated) Seals

- Install 100kg/m³ mineral wool infill friction fitted and centred in the penetration. Ensure that enough space is left on either side of the mineral wool for the CP 25WB+ Sealant.
- Install CP 25WB+ Sealant to a depth of 20mm for electrical cables and 25mm for blank unpenetrated seals on both sides of the wall. Ensure that the Sealant is installed flush with the wall on both sides of the penetration.

Metal Pipes

- Install 140kg/m³ Mineral Wool infill friction fitted and centred in the penetration. Ensure that enough space is left for the CP 25WB+ Sealant.
- Install CP 25WB+ Sealant to a depth of 25mm on both sides of the wall, ensure that the Sealant is installed flush with the wall on both sides of the penetration.

Installation Techniques: Floors

Electrical Cables, Blank (unpenetrated) Seals

- Install 100kg/m³ mineral wool infill friction fitted into the floor slab, the bottom of the mineral wool should be flush with the bottom surface of the floor slab. Ensure that enough space is left above the mineral wool for the CP 25WB+ Sealant.
- Install CP 25WB+ Sealant to a depth of 40mm on the top side of the floor slab only; ensure that the Sealant is installed flush with the top surface of the floor slab.

Performance Specifications for Installers

Australian Standard FRLs		Fire Resistance Level (FRL)				
3M Fire Barrier System	Building Element	Blank (Unpenetrated) Seal	PVC Insulated Cables, Cable trays and Cable bundles	Copper or Steel Pipes Small 15mm diameter or smaller 0.9mm wall thickness or thicker	Steel Pipes Small 34mm diameter or smaller 3.5mm wall thickness or thicker	Steel Pipes Large 114mm diameter or smaller 4.5mm wall thickness or thicker
3M CP 25WB+ Sealant	Floor: Concrete slab. <i>Minimum 120mm thickness</i>	-/180/120	-/120/30	—	—	—
	Wall: Plasterboard Dry Wall, solid masonry, hollow masonry or concrete construction. <i>Minimum 116mm thickness</i>	-/120/120	-/120/30	—	—	—
	Wall: Plasterboard Dry Wall. <i>Minimum 150mm thickness</i>	-/120/120	-/120/30	-/120/30	-/120/30	-/120/-
	Wall: Solid masonry, hollow masonry or concrete construction. <i>Minimum 150mm thickness</i>	-/240/180	-/120/30	-/240/30	-/240/30	-/240/30

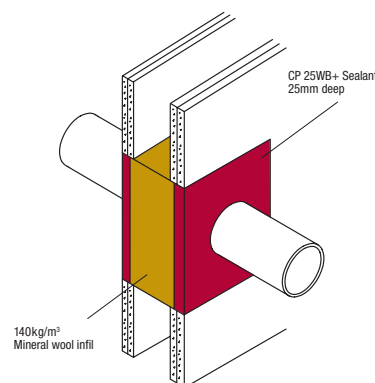
In order to achieve the above FRLs you must ensure that the CP 25WB+ Sealant is installed as per the Installation Techniques and the building element you are installing into has an FRL performance equal to or better than that of the CP25 WB+ system. The Installation Techniques can be found on the final page of this document.

What does FRL mean?

FRL stands for 'Fire Resistance Level'. For example, an FRL of '-/240/30' indicates:

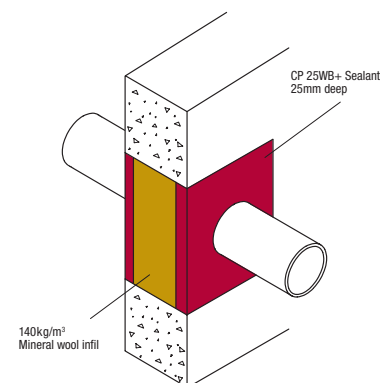
- **Structural Adequacy.** The first dash '-' indicates that CP 25WB+ is non load bearing
- **Integrity.** The middle number '240' indicates for how many minutes the CP 25WB+ system can resist the passage of flames and hot gasses
- **Insulation.** The last number '30' indicates how many minutes it takes the unexposed face to heat up by more than 140°C.

Metal Pipes



Dry Wall 150mm

Copper: 15mm dia, 0.91mm wall: FRL: -/120/30
Steel: 34mm dia, 3.5mm wall: FRL: -/120/30
Steel: 114mm dia, 4.5mm wall: FRL: -/120/-



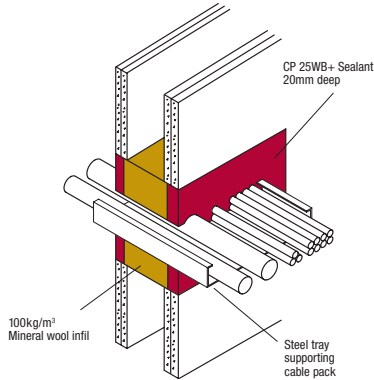
Solid Masonry, Hollow Masonry or Concrete Wall 150mm

Copper: 15mm dia, 0.91mm wall: FRL: -/240/30
Steel: 34mm dia, 3.5mm wall: FRL: -/240/30
Steel: 114mm dia, 4.5mm wall: FRL: -/240/30

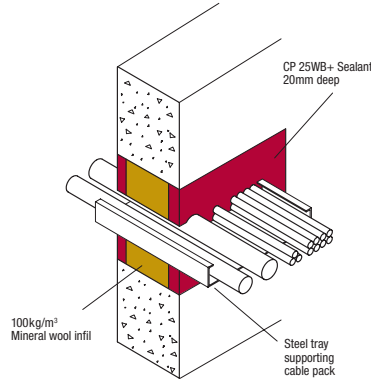
Performance Specifications for Engineers and Specifiers

3M Fire Barrier CP 25WB+ Sealant has been tested in accordance with AS1530.4-2005 and assessed in accordance with AS4072.1-2005 under BWA Report No: 23263. The following illustrations provide a summary of the test results for D1 and D2 cable configurations, metal pipe penetrations and blank unpenetrated seals with CP 25WB+ installed as per the Installation Techniques. Specifications for standard D1 and D2 cable configurations can be found in AS1530.4-2005 Appendix D.

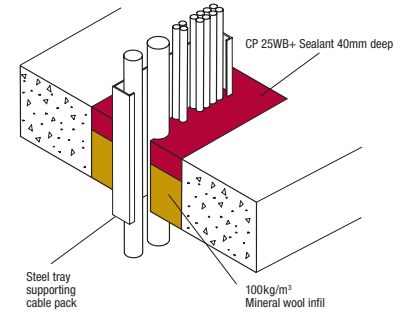
D1 Cable Pack – Power Transmission Cables.



Dry Wall 116mm – FRL: -/120/30

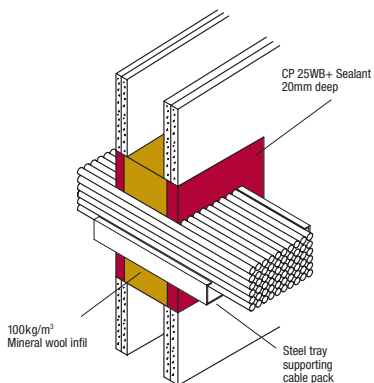


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

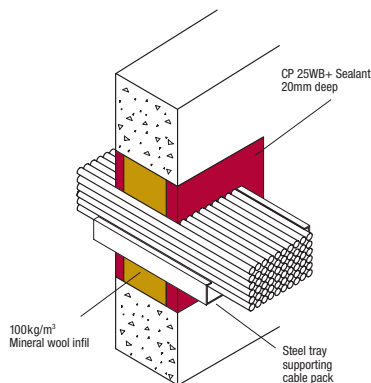


Concrete Floor 120mm – FRL: -/120/30

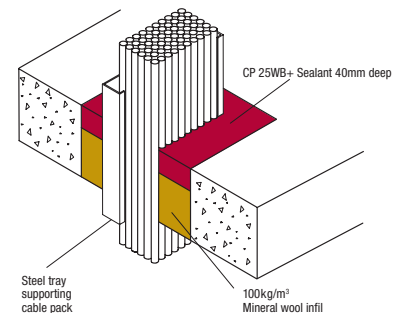
D2 Cable Pack – Telecom Cables.



Dry Wall 116mm – FRL: - /120/30

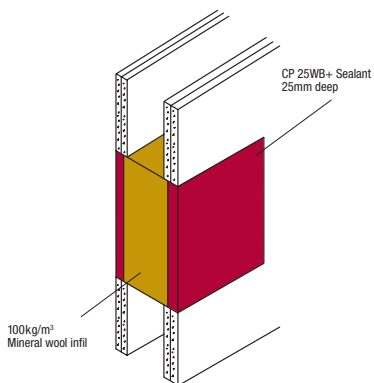


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

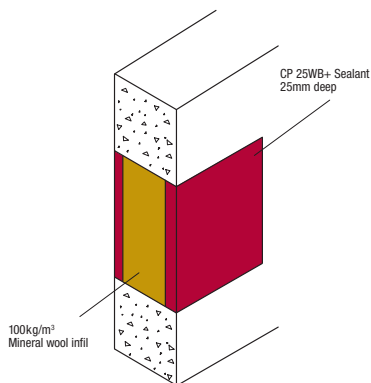


Concrete Floor:
120mm - FRL: -/120/30
150mm - FRL: -/180/30

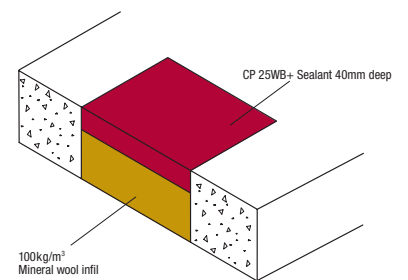
Blank Openings (unpenetrated)



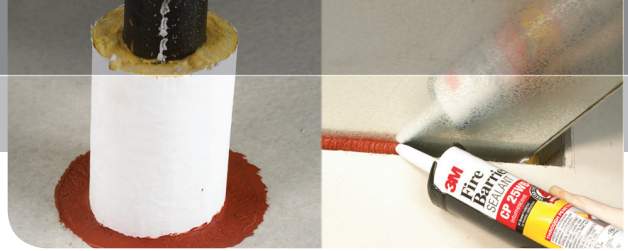
Dry Wall 116mm – FRL: -/120/120



Solid Masonry, Hollow Masonry
or Concrete Wall:
116mm - FRL: -/120/120
150mm - FRL: -/240/180
170mm - FRL: -/240/240



Concrete Floor:
120mm - FRL: -/180/120
150mm - FRL: -/180/180



3M™ Fire Barrier Sealant CP 25WB+

Product Data Sheet

1. Product Description

3M™ Fire Barrier Sealant CP 25WB+ is a high-performance, ready-to-use, gun-grade, latex-based, intumescent sealant that dries to form a monolithic fire-stop seal that also acts as a barrier to airborne sound transmission. 3M™ Fire Barrier Sealant CP 25WB+ helps control the spread of fire, smoke and noxious gasses before, during and after exposure to a fire when installed in accordance with a listed through penetration or fire-resistive joint assembly system.

3M™ Fire Barrier Sealant CP 25WB+ firestops blank openings and penetrations passing through fire-rated floor, floor/ceiling or wall assemblies and other fire-rated interior building construction. The unique intumescent property of this material allows 3M™ Fire Barrier Sealant CP 25WB+ to expand and help maintain a firestop penetration seal for up to 4 hours as penetrants are exposed to fire. 3M™ Fire Barrier Sealant CP 25WB+ exhibits excellent adhesion to a full range of construction substrates and penetrants. No mixing is required.

Product Features

- AS1530.4-2005 and AS4072.1.2005
- Firestop tested up to 4 hours in accordance with ASTM E 814 (UL 1479) & CAN/ULC S115
- Fire Resistance tested for static construction joint systems in accordance with ASTM E 1966 (UL 2079)
- Re-enterable / repairable
- Meets UL 1479 aging requirements
- Helps minimize sound transfer*
- Applied with conventional caulking equipment (excellent caulk rate)
- Extensive listed systems
- Sag-resistant
- Halogen-free
- Excellent adhesion
- Paintable
- Water clean up



High-performance firestop sealant that also helps minimize sound transfer

Product Color: ■ Red

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants. <250 g/L VOC contents (less H₂O and exempt solvents).

**Minimizes noise transfer—STC-Rating of 54 when tested in STC 54-rated wall assembly.*

2. Applications

High-performance 3M™ Fire Barrier Sealant CP 25WB+ is ideal for sealing single or multiple through penetrations in fire-rated construction. 3M™ Fire Barrier Sealant CP 25WB+ is typically used in mechanical, electrical and plumbing applications to firestop openings created by the following penetrations in fire-rated floors, floor/ceilings or walls: metallic pipe, plastic pipe (excluding CPVC), conduit, power and communication cable, cable trays, busways, combos, insulated pipe and HVAC duct penetrations. 3M™ Fire Barrier Sealant CP 25WB+ is also used to firestop blank openings and static construction joints.

3. Specifications

3M™ Fire Barrier Sealant CP 25WB+ shall be a one component, ready-to-use, gun-grade, latex-based, intumescent firestop sealant capable of expanding a minimum of 3 times its dried volume when exposed to temperatures above 1000°F (538°C). The material shall be thixotropic and shall be applicable to overhead, vertical and horizontal firestops. The sealant shall be listed by independent test agencies such as UL, Intertek or FM. 3M™ Fire Barrier Sealant CP 25WB+ shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems, ASTM E 1966 (UL 2079) Standard Test Method for Fire Resistive Joint Systems and CAN/ULC S115 Standard Method of Fire Tests of Firestop Systems. 3M™ Fire Barrier Sealant CP 25WB+ meets the requirements of the IBC, IRC, IFC, IPC, IMC, NFPA 5000, NEC (NFPA 70) and NFPA 101.

Typically Specified Division
Division 7

Section 07 84 00 – Firestopping

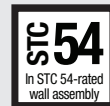
Related Sections

- Section 07 84 16 – Annular Space Protection
- Section 07 84 43 – Fire-Resistant Joint Sealants
- Section 07 86 00 – Smoke Seals
- Section 07 87 00 – Smoke Containment Barriers
- Section 07 27 00 – Air Barriers
- Section 21 00 00 – Fire Suppression
- Section 22 00 00 – Plumbing
- Section 26 00 00 – Electrical

FIRE BARRIER SMOKE SEAL



SOUND BARRIER



FILL, VOID OR CAVITY MATERIAL FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY 90G9



LISTED
FILL, VOID OR CAVITY MATERIALS
90G9



SUBJECT TO THE CONDITIONS OF APPROVAL AS A WALL & FLOOR PENETRATION FIRESTOP WHEN INSTALLED AS DESCRIBED IN THE CURRENT EDITION OF THE FMRC APPROVAL GUIDE

LISTED



Intertek

FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY

LISTED



Intertek

FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY

4. Physical Properties

Color:	Red	Hardness (ASTM D 2240 Shore A):	45
Application Temperature Range: (ASTM C 1299)	40° to 122°F (4° to 50°C)	Tensile Strength:	85 psi (0.59 MPa)
Service Temperature Range:	-20° to 180°F (-28° to 82°C)	Volume Shrinkage (ASTM C 1241):	28%
STC (ASTM E 90 and ASTM E 413):	54 when tested in STC 54-rated wall assembly	VOC Less H₂O and Exempt Solvents:	<1 g/L
Surface Burning (ASTM E 84):	Flame Spread 0 Smoke Development 0	Dry:	Under typical conditions of 75°F (23°C) and 50% R.H., sealant becomes tack-free in about ten minutes and dry-to-touch in 30 to 60 minutes. Full dry depends upon ambient conditions and volume of sealant. Typical dry rate is approximately 1/8 inch (3 mm) per day.

Unit Volume: 10.1 fl. oz tube (298.7 mL, 18.2 in.³), 20 fl. oz. sausage (591.5 mL, 36.1 in.³), 27 fl. oz tube (798.5 mL, 48.7 in.³), 2 gal. pail (7.57 L, 462 in.³), 5 gal. pail (18.9 L, 1155 in.³)

5. Packaging, Storage, Shelf Life

Packaging	Product packaged in cartridge or pail is enclosed in HDPE plastic containers, sausage is packaged in aluminum foil wrap
Storage	3M™ Fire Barrier Sealant CP 25WB+ should be stored indoors in dry conditions between 40°F and 90°F (4°C and 32°C) in the original unopened package. Avoid repeated freeze / thaw exposures of the 3M™ Fire Barrier Sealant CP 25WB+ prior to installation.
Shelf Life	3M™ Fire Barrier Sealant CP 25WB+ shelf life is 12 months in original unopened containers from date of packaging when stored above 68°F (2°C). Lot numbering (e.g. 8183AS): First digit = Last digit of year manufactured, Second to fourth digit = Julian Date, Letters = Random to distinguish between lot numbers

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, Intertek or other third-party drawings and system details.

Preparatory Work	The surface of the opening and any penetrating items should be cleaned to allow for the proper adhesion of the 3M™ Fire Barrier Sealant CP 25WB+. Ensure that the surface of the substrates are not wet and are frost free. Sealant can be installed with a standard caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel.
Installation Details	Install the applicable depth of backing material, if required, as detailed within the applicable UL, Intertek, FM or other third-party listed system. Cut the end of the 3M™ Fire Barrier Sealant CP 25WB+ tube spout to achieve the desired bead width when applying. Install the applicable depth of 3M™ Fire Barrier Sealant CP 25WB+ into the opening flush with the surface of the substrate, or as detailed within the applicable listed system, at the depth for the assembly and rating that is required. Tool within 5 minutes. Clean all tools immediately after use with water.
Limitations	Do not apply 3M™ Fire Barrier Sealant CP 25WB+ when surrounding temperature is less than 40°F (4°C) and in conditions where seals may be exposed to rain or water spray within 18 hours of application. Do not apply 3M™ Fire Barrier Sealant CP 25WB+ to building materials that bleed oil, plasticizers or solvent (e.g. impregnated wood, oil-based sealants, or green or partially vulcanized rubber). Do not apply 3M™ Fire Barrier Sealant CP 25WB+ to wet or frost-coated surfaces or to areas that are continuously damp or immersed in water.

NOTICE: This product is not acceptable for use with chlorinated polyvinylchloride (CPVC) pipes.

7. Maintenance

No maintenance should be required when installed in accordance with the applicable UL, Intertek, FM or other third-party listed system. Once installed, if any section of the 3M™ Fire Barrier Sealant CP 25WB+ is damaged, the following procedure will apply: remove and reinstall the damaged section in accordance with the applicable listed system, with a minimum 1/2 in. (12.7 mm) overlap onto the adjacent material.

8. Availability

3M™ Fire Barrier Sealant CP 25WB+ is available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Sealant CP 25WB+ is available in 10.1 fl. oz. cartridges (12/case), 20.0 fl. oz. sausages (10/case), 27.0 fl. oz. cartridges (6/case), 2 gallon pails (1/case) and 5 gallon pails (1/case). 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) 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.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



3M™ Fire Barrier IC 15WB+ Sealant

Product Description

The 3M Fire Barrier IC 15WB+ Sealant is a latex sealant designed for use as a one-part fire, smoke, noxious gas and water resistant sealant. In addition, the unique intumescent property of this material (expands when heated) means that as the combustible cable insulation is consumed by fire, the sealant expands to maintain the penetration seal.

IC 15WB+ Sealant can be installed with a standard or bulk caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel. Sealant bonds to gypsum wallboard, concrete, metals, wood, plastic and cable jacketing. No mixing is required. Tool within 5 minutes of application, if required. IC 15WB+ Sealant provides Fire Resistance Ratings of up to 2 hours.

Product Features



- Water Based: Easy clean up, no special handling, routine disposal
- Intumescent: Expands when heated to maintain seal around items consumed by fire
- Endothermic: Absorbs heat energy, releases chemically bound water
- Thixotropic: Will not sag or run in overhead or vertical applications
- Halogen-free
- Fast dry: Tack-free in approximately 8 to 12 minutes @ 23°C (73°F)
- Paintable. Best results obtained after 72 hour cure
- Minimal shrinkage
- Yellow colour
- High flow rate: 2000 g/min. with 6 mm (1/4") nozzle
- Point contact allowed
- Testing in accordance with AS1530.4, EN1366, and ASTM E814 (UL Listed).
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 23262

Physical Properties

Typical Physical Properties	
Tack Free Time (ASTM C679-87)	8 to 12 minutes @ 23°C (73°F)
Continuous operating temperature	Up to 48°C (120°F)
Expansion at 350° C (662°F)	2.0
Colour	Yellow
Density	1.43 kg/L (12.0 lb./gal.)
Adhesion	Very good on all construction substrates
Application	Caulk guns, trowel, spatula, pressurized pumps
Durometer Hardness (Shore A)	70
Solids	80% by weight
VOC	0% by weight
Odour	Pleasant non-irritating
Flow Rate	2000 grams/min. from 6.35 mm (1/4") nozzle at 50 psi
ASTM E 84: Flame Spread	0
Smoke Development	0
Boeing Flow (Sag Characteristics)	<5.08 cm (2") in 5 minutes

Availability

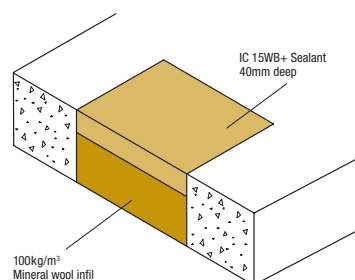
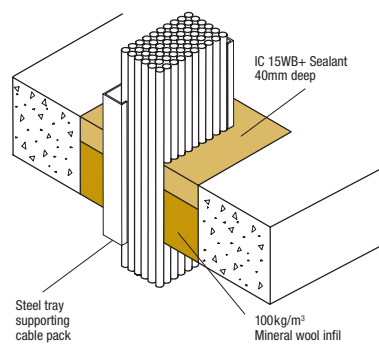
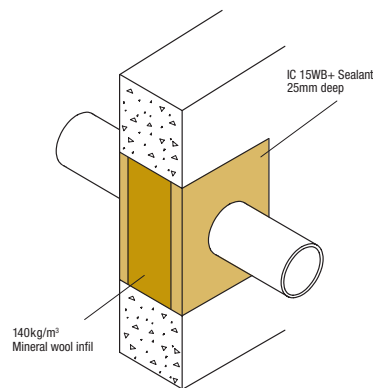
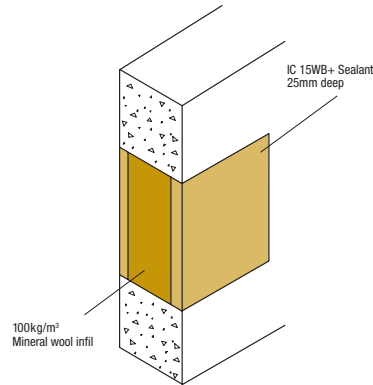
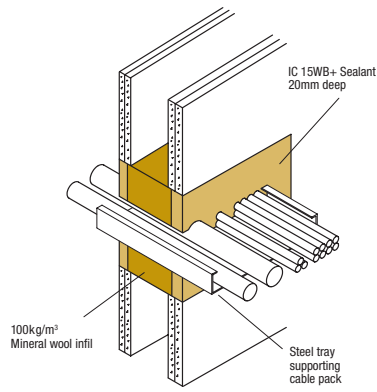
3M™ Fire Barrier IC 15WB+ Sealant is available from Authorized 3M Fire Protection Products Distributors.

3M Order Code	Packing	Unit/Case
98040055091	300 ml (10.1 fl.oz.) cartridge	12
98040055125	594 ml (20 fl. oz.) sausage	10
98040055117	802 ml (27 fl. oz.) cartridge	6
98040055109	17 litre (4.5 gallon) pail	1

Maintenance

IC 15WB+ Sealant is stable under normal storage conditions and has a one year shelf life. Normal stock and stock rotation are recommended.

Recommended: Store between 4°C (40°F) & 32°C (90°F) for maximum shelf life. Keep from freezing.



Installation Techniques:

Installation Techniques: Walls

Electrical Cables, Blank (unpenetrated) Seals

- Install 100kg/m³ mineral wool infill friction fitted and centred in the penetration. Ensure that enough space is left on either side of the mineral wool for the IC 15WB+ Sealant.
- Install IC 15WB+ Sealant to a depth of 20mm for electrical cables and 25mm for blank unpenetrated seals on both sides of the wall. Ensure that the Sealant is installed flush with the wall on both sides of the penetration.

Metal Pipes

- Install 140kg/m³ Mineral Wool infill friction fitted and centred in the penetration. Ensure that enough space is left for the IC 15WB+ Sealant.
- Install IC 15WB+ Sealant to a depth of 25mm on both sides of the wall, ensure that the Sealant is installed flush with the wall on both sides of the penetration.

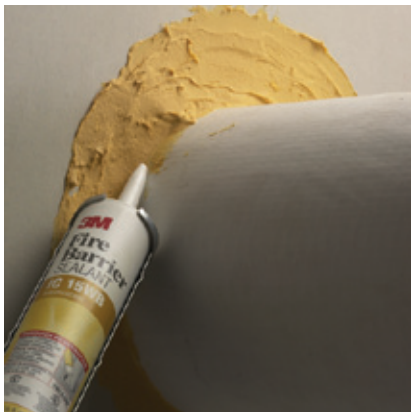
Installation Techniques: Floors

Electrical Cables, Blank (unpenetrated) Seals

- Install 100kg/m³ mineral wool infill friction fitted into the floor slab, the bottom of the mineral wool should be flush with the bottom surface of the floor slab. Ensure that enough space is left above the mineral wool for the IC 15WB+ Sealant.
- Install IC 15WB+ Sealant to a depth of 40mm on the top side of the floor slab only; ensure that the Sealant is installed flush with the top surface of the floor slab.

Performance Specifications for Installers

Australian Standard FRLs		Fire Resistance Level (FRL)				
3M Fire Barrier System	Building Element	Blank (Unpenetrated) Seal	PVC Insulated Cables, Cable trays and Cable bundles	Copper or Steel Pipes Small 15mm diameter or smaller 0.9mm Wall thickness or thicker	Steel Pipes Small 34mm diameter or smaller 3.5mm wall thickness or thicker	Steel Pipes Large 114mm diameter or smaller 4.5mm wall thickness or thicker
3M IC 15WB+ Sealant	Floor: Concrete slab. <i>Minimum 120mm thickness</i>	-/120/120	-/120/30	—	—	—
	Wall: Plasterboard Dry Wall, solid masonry, hollow masonry or concrete construction. <i>Minimum 116mm thickness</i>	-/120/120	-/120/30	—	—	—
	Wall: Plasterboard Dry Wall, solid masonry, hollow masonry or concrete construction. <i>Minimum 150mm thickness</i>	-/120/120	-/120/30	-/120/30	-/120/30	-/120/-



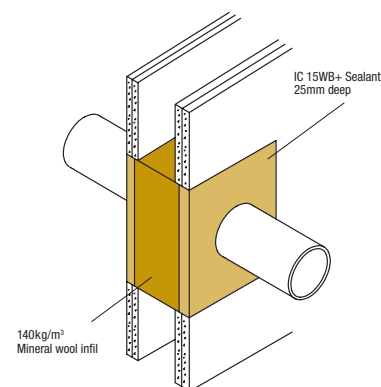
In order to achieve the above FRLs you must ensure that the IC 15WB+ Sealant is installed as per the Installation Techniques and the building element you are installing into has an FRL performance equal to or better than that of the IC 15WB+ system. The Installation Techniques can be found on the final page of this document.

What does FRL mean?

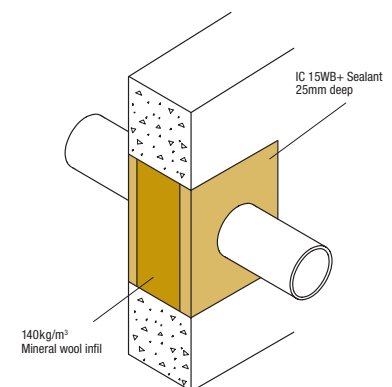
FRL stands for 'Fire Resistance Level'. For example, an FRL of '-/120/30' indicates:

- **Structural Adequacy.** The first dash '-' indicates that IC 15WB+ is non load bearing
- **Integrity.** The middle number '120' indicates for how many minutes the IC 15WB+ system can resist the passage of flames and hot gasses
- **Insulation.** The last number '30' indicates how many minutes it takes the unexposed face to heat up by more than 140°C.

Metal Pipes



Dry Wall 150mm
 Copper: 15mm dia, 0.91mm wall: FRL: -/120/30
 Steel: 34mm dia, 3.5mm wall: FRL: -/120/30
 Steel: 114mm dia, 4.5mm wall: FRL: -/120/-

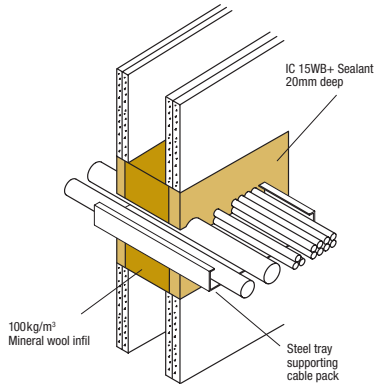


Solid Masonry, Hollow Masonry or Concrete Wall 150mm
 Copper: 15mm dia, 0.91mm wall: FRL: -/120/30
 Steel: 34mm dia, 3.5mm wall: FRL: -/120/30
 Steel: 114mm dia, 4.5mm wall: FRL: -/120/30

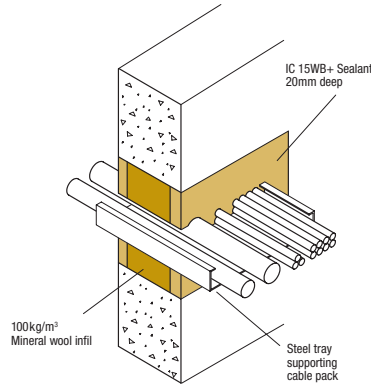
Performance Specifications for Engineers and Specifiers

3M Fire Barrier IC 15WB+ Sealant has been tested in accordance with AS1530.4-2005 and assessed in accordance with AS4072.1-2005 under BWA Report No: 23262. The following illustrations provide a summary of the test results for D1 and D2 cable configurations, metal pipe penetrations and blank unpenetrated seals with IC 15WB+ installed as per the Installation Techniques. Specifications for standard D1 and D2 cable configurations can be found in AS1530.4-2005 Appendix D.

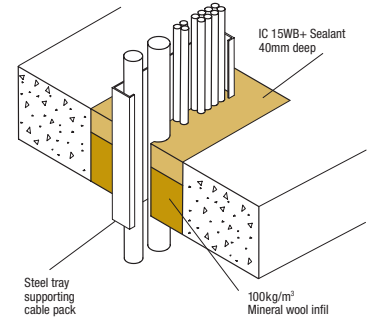
D1 Cable Pack – Power Transmission Cables.



Dry Wall 116mm – FRL: -/120/30

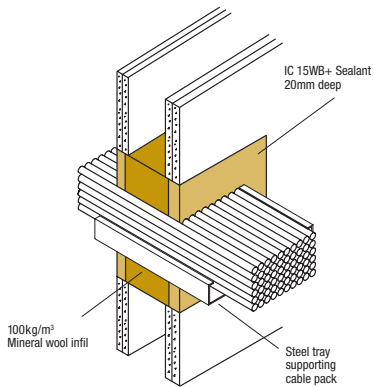


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

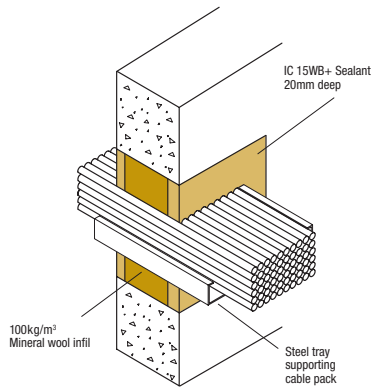


Concrete Floor 120mm – FRL: -/120/30

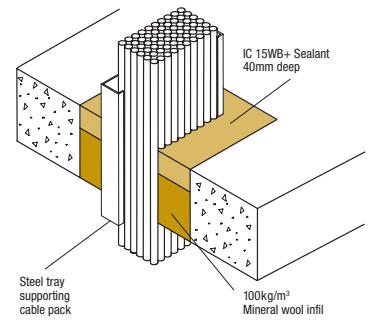
D2 Cable Pack – Telecom Cables.



Dry Wall 116mm – FRL: -/120/30

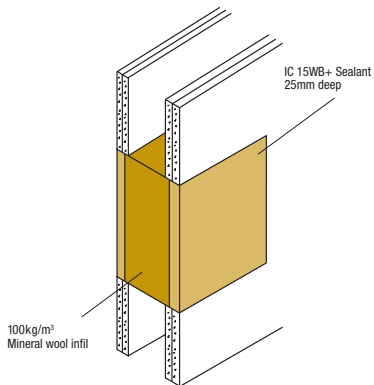


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

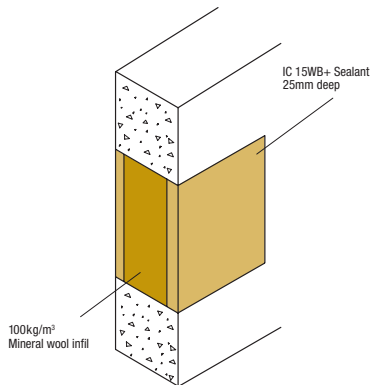


Concrete Floor 120mm – FRL: -/120/30

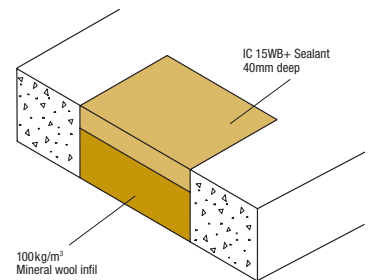
Blank Openings (unpenetrated)



Dry Wall 116mm – FRL: -/120/120



Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/120



Concrete Floor 120mm – FRL: -/120/30



3M™ Fire Barrier Sealant IC 15WB+

Product Data Sheet

1. Product Description

3M™ Fire Barrier Sealant IC 15WB+ is an economical, one-part, gun-grade, latex-based, intumescent firestop sealant that dries to form a monolithic firestop seal that also acts as a barrier to airborne sound transmission. 3M™ Fire Barrier Sealant IC 15WB+ firestops through penetrations passing through fire-rated floor, floor/ceiling or wall assemblies, as well as other fire-rated interior building partitions and assemblies (e.g. static construction joints or blank openings). In addition, the unique intumescent property of this material allows 3M™ Fire Barrier Sealant IC 15WB+ to expand and help maintain a firestop penetration seal for up to 3 hours as penetrants are exposed to fire. 3M™ Fire Barrier Sealant IC 15WB+ bonds to most construction substrates, including: gypsum wallboard, concrete, metals, wood, plastic (including CPVC) and cable jacketing. No mixing is required.



Economical firestop sealant available in tube, pail or sausage.

Product Color: ■ Yellow.

FGG =BM= CZ
SYSTEM COMPATIBLE

Product Features

- AS1530.4-2005 and AS4072.1.2005
- Firestop tested up to 3 hours in accordance with ASTM E 814 (UL 1479), ASTM E 1966 (UL 2079) & CAN/ULC-S115
- CPVC compatible
- Expanded fire protection systems
- Helps minimize sound transfer*
- Sag-resistant
- Halogen-free
- Excellent adhesion
- Re-enterable/repairable
- Excellent caulk rate
- Paintable
- Water clean up

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants. <250 g/L VOC contents (less H₂O and exempt solvents).

**Minimizes noise transfer—STC-Rating of 54 when tested in STC 54-rated wall assembly.*

2. Applications

3M™ Fire Barrier Sealant IC 15WB+ is a general-purpose intumescent firestop ideal for sealing single or multiple through penetrations in fire-rated construction. 3M™ Fire Barrier Sealant IC 15WB+ is typically used in mechanical, electrical and plumbing applications to firestop openings created by the following penetrations in fire-rated floors, floor/ceilings or walls: metallic pipe, plastic pipe, conduit, power and communication cable, cable trays, busways, combos, insulated pipe and HVAC duct penetrations. 3M™ Fire Barrier Sealant IC 15WB+ is also used to firestop blank openings and static construction joints.

3. Specifications

3M™ Fire Barrier Sealant IC 15WB+ shall be a one component, ready-to-use, gun-grade, latex-based, intumescent firestop sealant capable of expanding a minimum of 3 times at 1000°F. The material shall be thixotropic and be applicable to overhead, vertical and horizontal firestops. The sealant shall be listed by independent test agencies such as UL, ULC, Intertek or FM. 3M™ Fire Barrier Sealant IC 15WB+ shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems, ASTM E 1966 (UL 2079) Standard Test Method for Fire Resistive Joint Systems and CAN/ULC-S115 Standard Method of Fire Tests of Firestop Systems. 3M™ Fire Barrier Sealant IC 15WB+ meets the requirements of the IBC, IRC, NBCC, IFC, IPC, IMC, NFPA 5000, NEC (NFPA 70) and NFPA 101.

Typically Specified MasterFormat (2004)

Section 07 84 00 – Firestopping

Related Sections

- Section 07 27 00 – Air Barriers
- Section 07 84 16 – Annular Space Protection
- Section 07 84 43 – Fire-Resistant Joint Sealants
- Section 07 86 00 – Smoke Seals
- Section 07 87 00 – Smoke Containment Barriers
- Section 07 92 13 – Elastomeric Joint Sealants
- Section 07 92 19 – Acoustical Joint Sealants
- Section 21 00 00 – Fire Suppression
- Section 22 00 00 – Plumbing
- Section 23 00 00 – Heating, Ventilating, and Air Conditioning (HVAC)
- Section 26 00 00 – Electrical



SOUND BARRIER



FILL, VOID, OR CAVITY FOR USE IN JOINT SYSTEMS, THROUGH-PENETRATION FIRESTOP SYSTEMS AND PERIMETER CONTAINMENT SYSTEMS SEE UL FIRE RESISTANCE DIRECTORY 90G9



LISTED

FILL, VOID OR CAVITY MATERIALS 90G9

LISTED



Intertek

FIRESTOP SYSTEMS SEE INTERTEK DIRECTORY

4. Performance & Typical Physical Properties

Color:	Yellow	Hardness (ASTM D 2240 Shore A):	70
Application Temperature Range: (ASTM C 1299)	40° to 122°F (4° to 50°C)	Tensile Strength:	85 psi (0.59 MPa)
Service Temperature Range:	-20° to 180°F (-28° to 82°C)	Volume Shrinkage (ASTM C 1241):	28%
STC Acoustic Barrier: (ASTM E 90 and ASTM E 413)	54 when tested in STC 54 rated wall assembly	VOC Less H₂O and Exempt Solvents:	<250 g/L

Surface Burning (ASTM E 84): Flame Spread 5, Smoke Development 50

Dry: Under typical conditions of 75°F (23°C) and 50% R.H., sealant becomes tack-free in about ten minutes and dry-to-touch in 30 to 60 minutes. Full dry depends upon ambient conditions and volume of sealant. Typical dry rate is approximately 1/8 inch (3 mm) per day.

Unit Volume: 10.1 fl. oz tube (298.7 ml, 18.2 in.³), 20 fl. oz. sausage (591.5 ml, 36.1 in.³), 27 fl. oz tube (798.5 ml, 48.7 in.³), 4.5 gal. pail (17.03 L, 1039.5 in.³)

5. Packaging, Storage, Shelf Life

Packaging	Product packaged in cartridge or pail is enclosed in HDPE plastic containers, sausage is packaged in aluminum foil wrap.
Storage	3M™ Fire Barrier Sealant IC 15WB+ should be stored indoors in dry conditions between 40°F and 90°F (4°C and 32°C) in the original unopened package. Avoid repeated freeze / thaw exposures of the 3M™ Fire Barrier Sealant IC 15WB+ prior to installation.
Shelf Life	3M™ Fire Barrier Sealant IC 15WB+ shelf life is 12 months in original unopened containers from date of packaging when stored above 68°F (2°C).

Lot numbering (e.g. 8183AS): First digit = Last digit of year manufactured, Second to fourth digit = Julian Date, Letters = Random to distinguish between lot numbers

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, cUL, ULC, Intertek or other third-party drawings and system details.

Representative for Applicable UL, cUL, ULC, Intertek or other third-party drawings and system details.

Preparatory Work	The surface of the opening and any penetrating items should be cleaned to allow for the proper adhesion of the 3M™ Fire Barrier Sealant IC 15WB+. Ensure that the surface of the substrates are not wet and are frost free. Sealant can be installed with a standard caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel.
Installation Details	Install the applicable depth of backing material, if required, as detailed within the applicable UL, cUL, ULC, Intertek, FM or other third-party listed system. Cut the end of the 3M™ Fire Barrier Sealant IC 15WB+ tube spout to achieve the desired bead width when applying. Install the applicable depth of 3M™ Fire Barrier Sealant IC 15WB+ into the opening flush with the surface of the substrate, or as detailed within the applicable listed system, at the depth for the assembly and rating that is required. Tool within 5 minutes. Clean all tools immediately after use with water.
Limitations	Do not apply 3M™ Fire Barrier Sealant IC 15WB+ when surrounding temperature is than less 40°F (4°C) and in conditions where seals may be exposed to rain or water spray within 18 hours of application. Do not apply 3M™ Fire Barrier Sealant IC 15WB+ to building materials that bleed oil, plasticizers or solvent (e.g. impregnated wood, oil-based sealants, or green or partially vulcanized rubber). Do not apply 3M™ Fire Barrier Sealant IC 15WB+ to wet or frost-coated surfaces or to areas that are continuously damp or immersed in water.

7. Maintenance

No maintenance is expected to be required when installed in accordance with the applicable UL, cUL, ULC, Intertek, FM or other third-party listed system. Once installed, if any section of the 3M™ Fire Barrier Sealant IC 15WB+ is damaged, the following procedure will apply: remove and reinstall the damaged section in accordance with the applicable listed system, with a minimum 1/2 in. (12.7 mm) overlap onto the adjacent material.

8. Availability

3M™ Fire Barrier Sealant IC 15WB+ is available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Sealant IC 15WB+ is available in 10.1 fl. oz. cartridges (12/case), 20.0 fl. oz. sausages (10/case), 27.0 fl. oz. cartridges (6/case), and 4.5 gallon pails (1/case). 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 country-of-use Material Safety Data Sheet (MSDS) 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.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



3M™ FireDam™ Spray 200

Product Data Sheet

1. Product Description

3M™ FireDam™ Spray 200 is a sprayable water-based material that dries to form a tough, elastomeric coating. This material is used to firestop perimeter joints (curtain wall), construction joints and through penetration openings. 3M™ FireDam™ Spray 200, when installed properly, will help control the transmission of fire, heat, and smoke before, during, and after exposure to fire.

Available in: ■ Gray ■ Red.



Sag-resistant, highly elastomeric formula for construction joints (airless sprayer sold separately).

Product Features

- Up to 4-hour fire protection in construction joints per ASTM E 1966 (UL 2079)
- Up to 2-hour fire protection for through penetration systems per ASTM E 814 (UL 1479) & CAN/ULC-S115
- Highly elastic material maintains performance with up to ± 50% movement capabilities
- Helps minimize sound transfer*
- Broad range of applications (extensive portfolio of tested and listed building and perimeter joint systems)
- Improved spraying pattern – applied with conventional airless spray equipment
- Robust jobsite formula (freeze/thaw resistant and uniform seal formation in hot or cold drying conditions)
- Improved spraying for lower sag, uniform coating build properties (stays where it's sprayed)
- Improved hiding power to maintain proper coating thickness
- Paintable
- Easy water clean up

Meets the intent of LEED® VOC guidelines—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants.

**Minimizes noise transfer—STC-Rating of 56 when tested in STC 56-rated wall assembly.*

2. Applications

3M™ FireDam™ Spray 200 is ideal for sealing perimeter joints (curtain walls), construction joints and through penetrations. Recommended for firestopping areas that require large coverage. Helps limit the spread of noxious gas, smoke and water. Helps maintain the integrity of fire-rated construction. Note: when tested at 50% movement for 100 cycles in a 4-inch joint, product remained elastomeric and did not show signs of cracking. 3M™ FireDam™ Spray 200 has been qualified for use as a replacement or repair material in all listed systems that specify its predecessor, 3M™ FireDam™ Spray 100.

3. Specifications

This coating is tested and listed by independent test agencies such as UL, ULC, Intertek. In addition, the coating has Factory Mutual approval. The coating complies with the current requirements of the International Building Code (IBC), NBCC, NFPA 5000 and NFPA 101.

Construction Joints: Has been fire tested and evaluated under the pass/fail criteria of ASTM E 1966 (UL 2079) and CAN/ULC-S115 at the maximum extended joint width.

Perimeter Joints: Has been fire tested and evaluated under the pass/fail criteria of ASTM E 2307 and CAN/ULC-S115 at the maximum extended joint width.

Through Penetrations: Has been fire tested and evaluated under the pass/fail criteria of ASTM E 814 (UL 1479) Standard and CAN/ULC-S115.

Typically Specified Division

Division 7

- Section 07 84 00 – Firestopping
- Section 07 84 13 – Penetration Firestopping
- Section 07 84 16 – Annular Space Protection
- Section 07 84 43 – Fire Resistive Joint Sealants
- Section 07 85 53 – Building Perimeter Firestopping
- Section 07 86 00 – Smoke Seals
- Section 07 92 13 – Elastomeric Joint Sealants
- Section 07 92 19 – Acoustical Joint Sealants

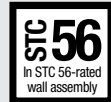
FIRE BARRIER



SMOKE SEAL



SOUND BARRIER



ELASTOMERIC



FILL, VOID OR CAVITY MATERIAL FOR USE IN JOINT SYSTEMS, THROUGH-PENETRATION FIRESTOP SYSTEMS, AND PERIMETER CONTAINMENT SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY 90G9

FILL, VOID, OR CAVITY 90G9



Intertek
FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY



Intertek
FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY



SUBJECT TO THE CONDITIONS OF APPROVAL AS A WALL & FLOOR PENETRATION/FIRESTOP WHEN INSTALLED AS DESCRIBED IN THE CURRENT EDITION OF THE FMRC APPROVAL GUIDE

4. Performance & Typical Physical Properties

Colors Available:	Gray or Red	Unit/vol:	5 Gallon (18.9 liter) pail / 1155.0 cu. in. (18926.9 cu. cm.)
Non-Volatile Content:	65%	Viscosity:	120,000 cps with shear thinning
Coverage*:	12.8 sq. ft./gallon (0.31sq. m/liter) *calculated coverage based on 1/8 in. (3 mm) thick wet coating		
Flash Point:	None		
ASTM E 84:	Flame Spread <25 Smoke Developed Index <50		
Dry Time:	<4 hour to tack free@70°F (21°C)/50% R.H.		<24 hours fully dry
STC Rating:	56 when installed in a 56 STC-rated wall assembly		

5. Packaging, Storage, Shelf Life

Packaging	3M™ FireDam™ Spray 200 is packaged in 5 gallon (18.9 liter) plastic pails.
Storage	3M™ FireDam™ Spray 200 should be stored indoors in dry conditions. It is recommended that the pails of product remain in heated storage at 70°F (21°C) prior to spraying material in conditions below 40°F (4°C).
Shelf Life	3M™ FireDam™ Spray 200 shelf life is 18 months from date of packaging when stored above 40°F (4°C). Lot numbering (e.g. 8183AS): First digit = Last digit of year manufactured, second to fourth digit = Julian Date, Letters = Random to distinguish between lot numbers.

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, cUL, ULC, Intertek or other third-party drawings and system details.

Equipment	In order to achieve the thickness and coverage necessary to comply with the tested systems, 3M™ FireDam™ Spray 200 is applied using an airless sprayer. Pump requirements (minimum specifications) Flow Output: 0.7 gpm minimum Liquid Pressure: 2000 psi minimum Motor Size: Minimum 0.75 horsepower Recommended Tip Size: 419 (8 in. fan with 0.019 in. orifice) which can be changed based upon application conditions
Preparatory Work	Surfaces must be frost free, clean, dry and dust free.
Installation Details	Tested and listed system details must be followed for each specific application. Install mineral fiber insulation in accordance with system details for density, depth and compressions requirements. Note: 3M™ Fire Barrier Packing Material PM-4 can be used as a suitable insulation material in through penetration applications only. Apply 3M™ FireDam™ Spray 200 using an airless sprayer. A nominal 1/8 in. (3mm) wet coating should be applied over the insulation, adjacent substrates and penetrant (if applicable) maintaining all required overlaps.
Limitations	3M™ FireDam™ Spray 200 must be applied at a temperature between 40°F (4°C) and 110°F (43°C). 3M™ FireDam™ Spray 200 can be applied to surfaces that are 10°F (-12°C) or higher providing that the surfaces are frost free, clean, dry and dust free. 3M™ FireDam™ Spray 200 can be applied when the ambient air temperature is 10°F (-12°C) or higher. The drying (evaporating of water) of the 3M™ FireDam™ Spray 200 is affected by the ambient temperature and humidity. The lower the temperatures and the higher the humidity, the slower the 3M™ FireDam™ Spray 200 will dry. At 70°F (21°C) and 50% R.H. a 1/8 in. (3mm) thick wet coating is fully dried in 24 hours. At temperatures below 32°F (0°C), no drying of the 3M™ FireDam™ Spray 200 will occur.

7. Maintenance

No maintenance is expected to be required when installed in accordance with the 3M™ FireDam™ Spray 200 Installation Guide. Once installed, if any section of the 3M™ FireDam™ Spray 200 is damaged, the following procedure will apply: Any damaged product must be cut out and removed. The insulation material must be inspected to ensure no moisture is evident. The open area created must then be filled with new product, installed as detailed in the original applicable 3rd party tested and listed system. The new product must overlap a minimum 1 in. (25.4 mm) onto the previously installed product. This procedure is applicable to both current and previous formulations of 3M™ FireDam™ Spray 200 as well as 3M™ FireDam™ Spray 100 (discontinued).

8. Availability

3M™ FireDam™ Spray 200 is available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ FireDam™ Spray 200 is available in the following 5-gallon (18.9 liter) pails: Gray (3M ID Number: 98-0400-5587-7), Red (3M ID Number: 98-0400-5598-5). 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 country-of-use Material Safety Data Sheet (MSDS) 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.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



FireDam™ Spray 200

New faster drying firestop spray for construction joints.

From 3M, the industry leader in fire protection technology:

3M™ FireDam™ Spray 200 is ideal for sealing building joints, penetration seals and perimeter joints. Applied as a 1/8 inch (3 mm) thick coating with an airless sprayer, this water-based coating dries in ambient conditions to form a flexible seal with compression/extension of up to +/- 25% of nominal joint width.



Ideal for head of wall, floor to wall and perimeter joints!

3M FireDam Spray 200 meets IBC requirements and is tested for up to 4 hours. It's available from any 3M Authorized Fire Protection Products Distributor in five-gallon pails.

- Fast drying
- Dries to a neutral gray color
- Highly elastic
- High-cling properties help prevent sagging
- Applied with conventional airless sprayers
- Cleans easily with water (no solvents required)
- Superior adhesion to most construction materials
- Paintable when cured



3M – The Leader in Fire Protection



For more than 25 years, 3M has consistently delivered innovative firestop systems to building professionals. Effective and easy to install, 3M™ FireDam™ Spray 200 is part of a family of 3M fire protection products that offer affordable, long-lasting solutions in a variety of commercial, industrial and residential applications.



APPLICATIONS

3M FireDam Spray 200 is ideal for sealing head of wall, floor to wall and perimeter joints between fire-rated floors (concrete, fireproofed fluted steel decks) and fire-rated walls (gypsum, concrete). It helps control the transmission of fire, heat, smoke, noxious gas and water before and during exposure to fire, while maintaining the integrity of the fire-rated construction.

**3M™ FireDam™
Spray 200**
shown with airless sprayer



SPECIFICATIONS

3M FireDam Spray is a sprayable, water-based coating that dries in ambient conditions to form a flexible seal. The coating is listed by independent test agencies such as Intertek and UL. It's been cycled to meet the wind sway and thermal category of ASTM E 1399 (500 cycles at a minimum 10 cycles/minute). The coating was fire tested and evaluated under the pass/fail criteria conditions of ASTM E 1966 and UL2079 at the maximum extended joint width. The coating has also been tested and evaluated under the pass/fail criteria conditions of ASTM E 814 and UL 1479 for through penetrations. It complies with IBC, ICC, BOCA, ICBO, SBCCI and NFPA Code #101.

800-328-1687
www.3m.com/firestop

Warranty and Limited Remedy. This product will be free from defects in material and manufacture for a period of ninety (90) days from date of purchase. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, AN IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's application. If the 3M product is defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product.

Limitation of Liability. Except where prohibited by law, 3M will not be liable for any loss or damage arising from a 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



Ultimate Convenience & Performance

Introducing a breakthrough in firestopping. 3M™ Fire Barrier Packing Material offers an unmatched combination of convenience, accessibility and performance. From a lightweight roll that's convenient to transport to hand-tear dispensing, there's never been a more contractor-friendly fire protection solution. And, because 3M Fire Barrier Packing Material is less irritating to skin than competitive products, it's a lot easier on you.

3M™ Fire Barrier Packing Material

A long-awaited improvement in firestopping technology

- Easy to transport and carry
- Convenient, hand-tear dispensing
- Less irritating to skin
- From the industry leader in fire-protection technology

With superior accessibility and convenience features, 3M Fire Barrier Packing Material is an ideal product for virtually any through-penetration firestopping application. Its lightweight packaging, quick hand-tear dispensing and less irritable material offer a long-awaited alternative to mineral wool, fiberglass and backer rod.

3M Fire Barrier Packing Material PM4 is approved for use in all of 3M's UL listed through-penetration firestop systems. It may be used around metallic, nonmetallic, insulated pipe, HVAC and power and communication cable penetrants. In typical commercial and industrial construction, 3M Fire Barrier Packing Material can be used with gypsum and concrete assemblies. In marine applications, PM4 is used at bulkhead locations. Along with the appropriate depth of caulk or sealant, the listed systems using PM4 have F Ratings of up to four hours. Refer to the specific third-party firestop system for the 3M Fire Barrier Packing Material depth and compression requirements.

3M Fire Barrier Packing Material PM4 is not intended for use in perimeter joints or other construction joint applications.



Product Ordering Information	
Product Number	PM4-Bulk
Description	Fire Barrier Packing Material 4" x 20.5'
UPC Number	000-51115-18764-3
Unit	Roll
Units Per Case	5

*Minimum order quantity - one case
Half pallet and one pallet large volume discounts available upon request.

With over 5 meter of material packed into a lightweight, 300mm diameter roll, 3M Fire Barrier Packing Material is convenient and easy to transport.

Warranty and Limited Remedy. This product will be free from defects in material and manufacture for a period of ninety (90) days from date of purchase. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. If this 3M product is proved to be defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the product.

Limitation of Liability. Except where prohibited by law, 3M will not be liable for any loss or damages arising from the use of this 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



Fire Barrier Packing Material PM4 Bulk

Bulk Packing Material for Through Penetration Firestop Systems

Product Data & Installation Instructions



Packing Material Classified by Underwriters Laboratory, Inc.® For Use In Through-Penetration Firestop Systems (XHEZ). See Current UL Fire Resistance Directory.

1. Product Description

3M™ Fire Barrier Packing Material PM4 Bulk is designed to be used as an alternative packing material to mineral wool, fiberglass and backer rod in through-penetration firestop systems. With excellent strength and flexibility characteristics, it is an ideal through-penetration packing material. PM4 is also non-asbestos, mold resistant, and inorganic. This installation friendly material is easy to dispense and its compact packaging is optimized for portability. The smooth textured woven material can be torn by hand, eliminating the need for a knife.

2. Applications

Packing material is a part of many through-penetration firestop systems. 3M Fire Barrier Packing Material is approved for use in 3M's Underwriters Laboratories (UL) listed firestop systems. These Systems achieve up to 4 hour fire ratings when tested by Underwriters Laboratory, Inc. in accordance with ASTM E 814 (UL1479).

Prior to installation, refer to the appropriate third party listing or approval for proper installation instructions.

3. Availability

Product	Unit	Size	Unit	Wt.
3M Fire Barrier Packing Material PM4 Bulk	Roll	0.5 in. x 4 in. x 20.5 ft. (12,7mm x 101,6mm x 6,24 m)	1	3.42 lbs 1.55 kg

Stock# 98-0400-5529-9

4. Typical Physical Properties

Density: 4 PCF (nominal)

Surface Burning Characteristics:
Flame Spread: 0
Smoke Developed: 0

5. Performance

3M Fire Barrier Packing Material has been tested in accordance with the following:

ASTM E 84
Standard Test Method for Surface Burning Characteristics of Building Materials

ASTM E 136
Standard Test Method for Behavior of Material in a Vertical Tube Furnace at 750°C

ASTM E 814
Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

ASTM C 1338
Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings

UL 1479
Fire Tests of Through-Penetration Firestops

Code Compliance

3M Fire Barrier Packing Material complies with requirements of the following codes:

ICC International Building Code

Legacy Codes

BOCA National Building Code

ICBO Uniform Building Code

SBCCI Standard Building Code

This is only a partial list of code compliance. For the latest code and approval information go to www.3m.com/firestop or speak to your authorized 3M distributor or sales representative at (800) 328-1687.

6. Installation Techniques

3M Fire Barrier Packing Material PM4 should be installed in accordance with the following installation instructions.

Material and Equipment:

- 3M Fire Barrier Packing Material, 1/2 in. (12.7 mm) thick, 4 in. (101.6 mm) wide, 20.5 ft. (6,24 m). The 4 in. width meets or exceeds the parameters of most UL listed 3M firestop systems.
- Putty Knife (if needed)
- Protective Gloves

Storage: The 3M Fire Barrier Packing Material and must be stored in a dry warehouse environment. Pallets should not be stacked.

Preparatory Work: The surfaces of all openings and penetrating items need to be clean, dry, frost free and free of dust.

Method: Dispense the Packing Material by pulling it through the center opening of the package. Tear or cut-off the material once the desired length is extracted from the packaging.

If the pipe is centered within the opening, coil the Packing Material around the penetrating item and then slide it down into the opening. The material should be positioned so the 4 in. width is facing either the penetrating item or the sides of the opening.

In openings where the penetrating item(s) are installed off-center, the Packing Material should be coiled around the penetrating items until the nearest edge of the opening is reached. All remaining open space should be filled with strips or coils of Packing Material until the entire opening is filled.

An installation method that is especially suited for large and/or rectangular openings is to install the material in a continuous accordion pattern. For a wall opening, a beginning course of material is installed along the bottom of the opening. When the material reaches the edge of the opening, fold the material back over itself and then continue on in the opposite direction. Repeat this zigzag pattern until the opening is completely filled up.

In all instances the firestop system requirements for Packing Material compression should be followed.

Also, recess the Packing Material to accommodate the depth of fill material required by the firestop system.

When the required depth of Packing Material is less than the 4 in. width of the material, the Packing Material can be folded into a "U" shape to achieve the required width of Packing Material. The material should be inserted into the opening with bottom of the "U" shape pointing into the opening.

If sliding the material into the opening by hand alone becomes difficult, a putty knife or similar tool can be used to aid in stuffing the Packing Material into the opening.

7. Maintenance

No maintenance is required when installed in accordance with the 3M Installation Instructions.

8. Purchase Information

3M Fire Barrier products are available through a network of nationwide distributors. For information on where to buy, go to www.3m.com/firestop.

9. Safe Handling Information

Consult Material Safety Data Sheet prior to handling and disposing of 3M Packing Material PM4.

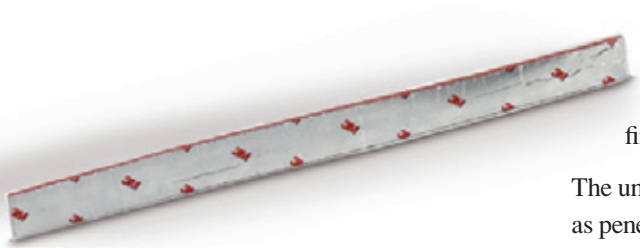
Warranty and Limited Remedy. This product will be free from defects in material and manufacture for a period of ninety (90) days from date of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. If this 3M product is proved to be defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the product.

Limitation of Liability. Except where prohibited by law, 3M will not be liable for any loss or damages arising from the use of this 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



3M™ Fire Barrier FS-195+ Wrap/Strip

Product Description



3M Fire Barrier is one-part, organic/inorganic, fire resistive elastomeric sheet with aluminum foil on one side. It is available in convenient strips which are quickly and easily installed. FS-195+ is designed to firestop penetrations in fire-rated walls and floor-ceiling assemblies.

The unique, intumescent property of this material (expands when heated) means that as penetrating items such as cable insulation is consumed by fire, FS-195+ Wrap/Strip expands to maintain a tight seal preventing the spread of fire, deadly smoke and other by-products of combustion.

3M Fire Barrier Systems including FS-195+ achieve Fire Resistance Ratings of up to 4 hours.



Product Features

- Intumescent: Expands when heated to seal around items consumed by fire
- Smoke seal: Retards spread of toxic by-products of combustion
- Proven stability and performance for the life of a building
- Improved flexibility: Easy, cost effective installation
- Low flame spread and smoke development
- Versatile: can be cut to fit irregular shapes
- Re-enterable: No special tools required
- Non-flame supporting
- Low odour
- Red-brown colour: Consistent, enforceable
- Tested in accordance with AS1530.4, EN1366 and ASTM E814 (UL Listed).



Physical Properties

Properties	
Strip Size	6.35 mm x 50.8 mm 609.6 mm (1/4" x 2" x 24")
Detail: Wrap/Strip thickness	5.55 mm - 8.15 mm (0.22" - 0.32")
Aluminium foil thickness	0.05 mm ± 0.0125 mm (0.002" ± 0.0005")

Physical & Electrical Properties	Results
Thermal Conductivity:	
FS195+ sheet as supplied	2.392 BTU/hr/ft ² /F• in. @ 110°F 2.406 BTU/hr/ft ² /F• in. @ 165°F
Intumescent Activation:	
Expansion sequence begins	150°C (300°F)
Significant expansion	175°C (350°F)
Multi-directional free expansion	5 to 15 times (8 times average)
Weight loss (TGA)	20% @ 350°C (662°F) 31% @ 500°C (932°F)
Hardness	70 to 90 Shore A
Tensile Strength (PSI)/Elongation (%)	104 PSI/514% (ASTM D-412)
Colour	Red - Brown / Black Char

Weatherability				After Exposure	
Test Condition	Temperature	Humidity	Time	Elastic Properties	Normal Expansion
Oven	90°C (194°F)	–	90 days	Very Good	6

Fire Performance Tests	Results
Flame Spread Index (ASTM E 84)	5
Smoke Development Index (ASTM E 84)	50
Oxygen Index (ASTM D 2863)	50

Availability

3M™ Fire Barrier FS-195+ Wrap/Strip is available from Authorized 3M Fire Protection Products Distributors.

3M Order Code	Packing	Unit/Case
98040022224	50.8 mm x 609.6 mm (2" x 24")	10

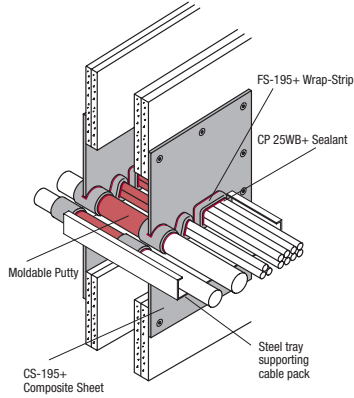
Maintenance

3M Fire Barrier FS-195+ Wrap/Strip remains stable for an indefinite period of time under normal storage conditions.

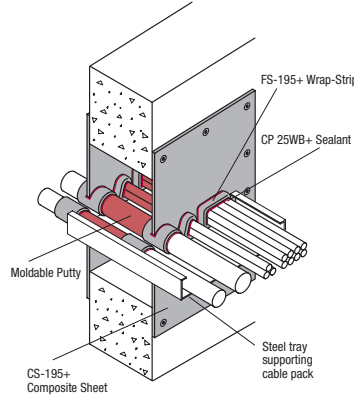
Applications

3M Fire Barrier FS-195+ Wrap/Strip is used as a component in several 3M Fire Barrier Systems. For more details on the systems illustrated below please refer to the 3M Fire Barrier CS-195+ Composite Sheet Product Data Sheet.

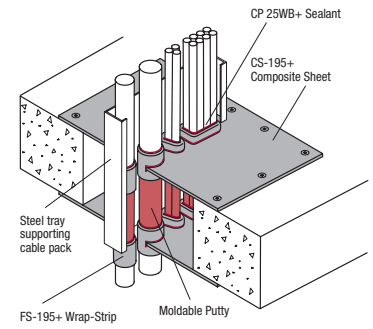
D1 Cable Pack – Power Transmission Cables.



Dry Wall

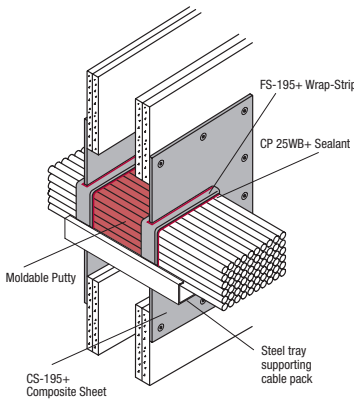


Solid Masonry, Hollow Masonry or Concrete Wall

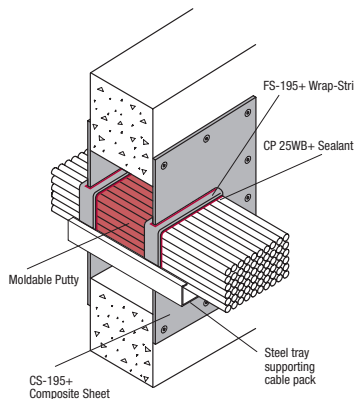


Concrete Floor

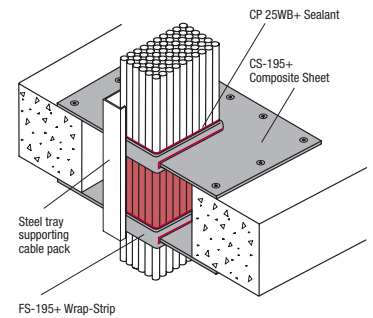
D2 Cable Pack – Telecom Cables.



Dry Wall

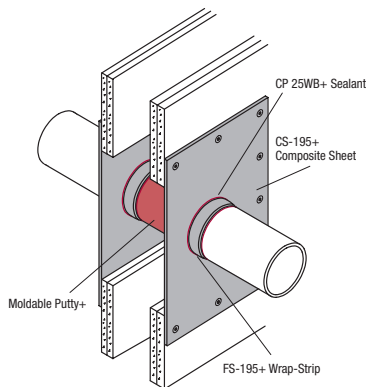


Solid Masonry, Hollow Masonry or Concrete Wall

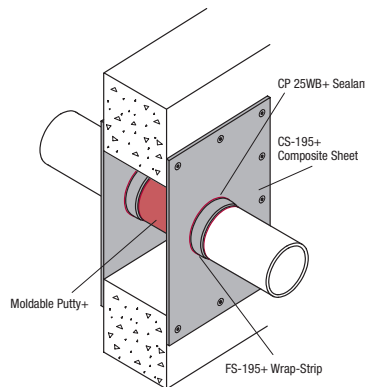


Concrete Floor

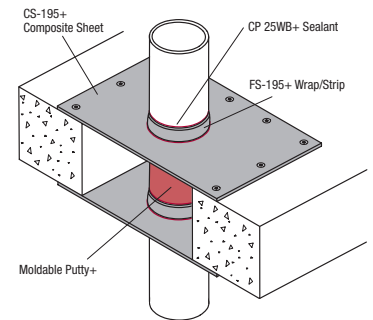
Metal Pipes



Dry Wall



Solid Masonry, Hollow Masonry or Concrete Wall



Concrete Floor



Fire Protection Products



November 3, 1995

TO WHOM IT MAY CONCERN

Re: Aging of Intumescent Products

To prevent misunderstanding or confusion regarding the long-term performance of the 3M FS-195+ Wrap/Strip or CS-195+ Composite Sheet, we make the following statement:

During the development process of its intumescent products, 3M established design and performance criteria to address the aging properties of these materials. Our FS-195+ and CS-195+ products have successfully passed the test procedures necessary to qualify for UL Component Recognition Listing. Component Recognition subjects the products to a series of aging standards to determine the effect of various environmental conditions on the intumescent properties, including such conditions as high temperature aging (95°C), moist air, CO₂-SO₂, temperature cycling, high humidity, wet-freeze-dry and weatherometer exposure.

In addition, 3M successfully fire tested penetrations using worse case aged products versus “as produced” products in full-scale UL wall tests.

Through its International organization, 3M has documented Arrhenius Plot/data from CEI, IEC 216-1, “Guide for the Determination of Thermal Endurance Properties of Electrical Materials” to show the performance life of FS-195+ and CS-195+ to be in excess of 100 years to the minimum designed expansion.

Please call 3M technical service (800) 458-4452 if you have any questions.

Regards,

Richard R. Licht
Technical Manager

RRL/ks



Interam™ Graphite Mat (Ultra GS)

Product Data



1. Product Description

3M™ Interam™ Ultra GS is a graphite based, largely inorganic, flexible, fire resistive, intumescent mat.

It is available in convenient rolls for quick and easy installation. Ultra GS is designed to firestop plastic pipe penetrations in fire-rated walls and floors and floor-ceiling assemblies.

The unique, intumescent property (expands when heated) of this material means that as penetrating items such as plastic pipe are consumed by fire, Ultra GS expands to maintain a tight seal, preventing the spread of fire, deadly smoke, and other by-products of combustion.

Ultra GS is UL classified in firestop systems for plastic pipe. See the current UL Fire Resistance Directory.

Product Features:

- Intumescent: Expands when heated to seal around items consumed by fire.
- Thermal insulator: Intumescent char provides thermal insulation to deter heat transfer of a fire.
- Smoke seal: Retards spread of toxic by-products of combustion when used in conjunction with CP 25WB+ or Moldable Putty+.
- Excellent flexibility: Conformable, cost effective installation.
- Meets performance criteria AS1530.4-2005.
- Excellent weatherability:
- Versatile: Easily cut and shaped with common tools..
- Normal Disposal procedures.

2. Applications

3M Interam Ultra GS provides a rapid and cost-effective means of sealing wall and floor penetrations where fire resistance is required.

The 3M Interam Ultra GS is used to seal ccPVC, PVC, CPVC, FRPP, PVDF, ccABS, and ABS pipes penetrating 1 and 2 hour fire rated gypsum wallboard assemblies and up to 3 hour fire rated concrete walls and floors. It may be applied to drain, waste, vent or closed pipe systems. The Ultra GS is used in conjunction with the RC-1 Restricting Collar for firestopping plastic pipe. See current UL Fire Resistance Directory for through-penetration systems.

3. Specifications

A. Product

The penetration seal must be capable of passing ASTM E-814 (ANSI/UL 1479) Standard Method of Fire Tests for Through Penetration Fire Stops up to the desired fire resistance.

B. Engineering/Architectural

All penetrations in fire-rated walls or floors shall be fitted and sealed with 3M Brand Fire Barrier Products in accordance with the manufacturer's installation instructions.

Performance

A. Physical Properties

Color: Gray/Black

B. Roll Size: 1/8" x 2" x 40' (3 mm x 5,08 cm x 12,1 m)

Heat Expansion (Intumescence):

Expansion begins.....410°F (210°C)

Significant expansion.....555°F (290°C)

Free expansion.....25 times (5 min @ 662°F [350°C])

C. Weatherability (Tested to ASTM G23 and G53)

Test Condition	Time	After Exposure
Temperature/Humidity 90°F (32°C)/90%	120 Days	No change in expansion

D. Surface Burning Characteristics (ASTM E-84, UL 723)

Flame spread index 0

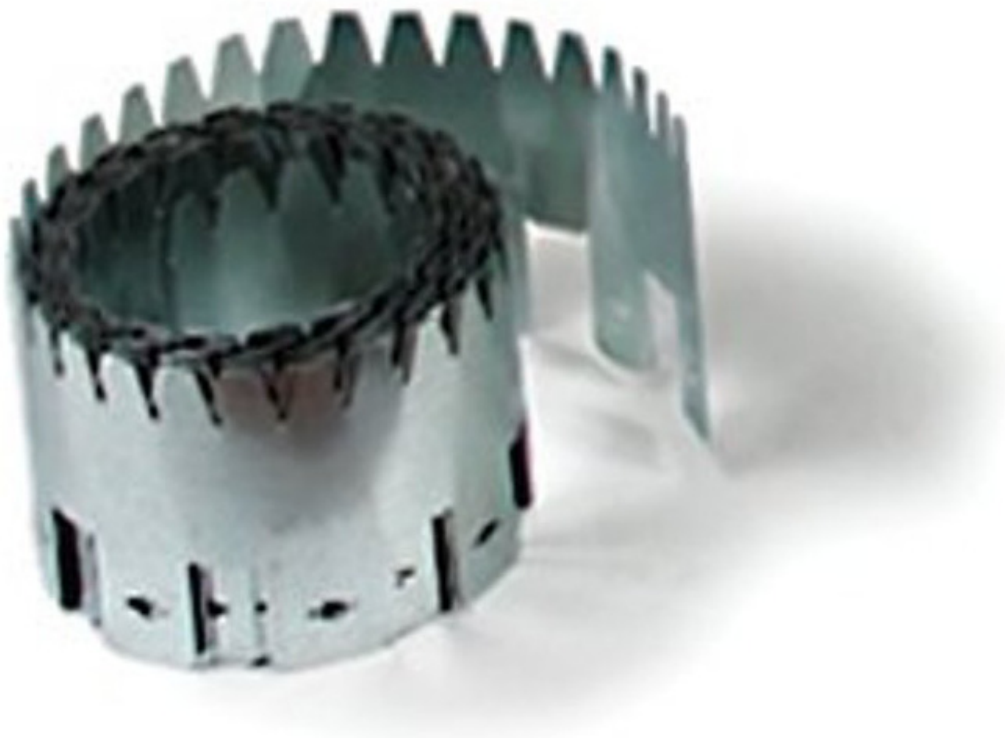
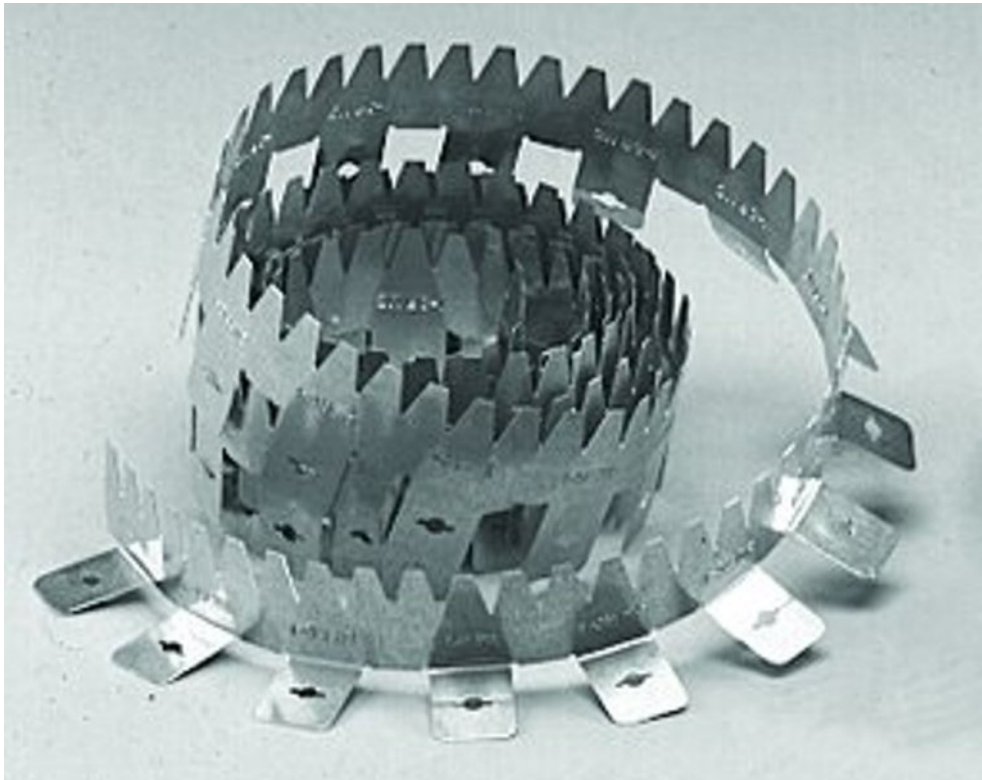
Smoke development index 5

Important Notice to Purchaser:

LIMITATIONS OF REMEDIES AND LIABILITY: If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M SHALL NOT OTHERWISE BE LIABLE FOR LOSS OR DAMAGES, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, INVESTMENT, GOODWILL, OR BUSINESS OPPORTUNITY) REGARDLESS OF THE LEGAL THEORY ASSERTED, INCLUDING NEGLIGENCE, CONTRACT, WARRANTY, OR STRICT LIABILITY.



Barrier RC-1 Restricting Collar





Barrier RC-1 Restricting Collar

Product Data

This collar works in conjunction with 3M FS-195+ wrap/strip to close an opening left by a burned away pipe.

- UL-classified for use on PVC, CPVC, ABS, CCPVC, CCABS, PVDF, PP and PB plastic pipe
- Easy installation
- 28 gauge steel
- Convenient 25 ft. (7,62 m) roll
- Required for firestopping plastic pipes larger than 4 in. (101,6 mm) in diameter

Product	Size	Units Per Carton
RC-1 Restricting Collar	2 in. 25 ft. (50,8 mm x 7,62m)	1
	1 in. x 25 ft. (25,4 mm x 7,62 m)	1

Important Notice to Purchaser:

This product will be free from defects in material and manufacture for a period of ninety (90) days from date of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. If this 3M product is proved to be defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the product.

Limitation of Liability.

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Ultra Plastic Pipe Device



One-minute application. Three-hour protection.

The 3M™ Ultra PPD Plastic Pipe Device is the quickest, easiest firestop around. Its patent-pending, ultra fast anchoring system secures the device to most substrates without any power tools. All you need is a pliers to get up to 1-, 2- and 3-hour, UL-classified protection — in just one minute.

The one-piece metal collar assembly encases an intumescent material developed in 3M laboratories. When exposed to temperatures of 300°F (149°C) and higher, the material expands up to 25x its original volume, sealing off the plastic pipe while releasing chemically bound water to help cool it.

Less confusing. More convenient.

The 3M Ultra PPD firestops ccPVC, PVC, CPVC, FRPP, PVDF, ccABS and ABS pipes penetrating 1- and 2-hour floor/ceiling assemblies; 1-, 2- and 3-hour fire-rated gypsum wallboard assemblies; and up to 3-hour fire-rated concrete wall and floor assemblies. It may be applied to drain, waste, vent or closed-pipe systems. In short, the 3M Ultra PPD firestops most varieties of plastic pipe in gypsum and 2-1/2" (63mm) and 4-1/2" (114mm) concrete. So there's never any confusion over which type of device to use. This one versatile PPD covers them all.

The 3M Ultra PPD also has a softer intumescent material than other

conventional PPDs, so it's easier to wrap around the pipe. And it has a simplified closure system — just lock the latch and bend the tab. There's no need to apply caulk. And there's no need for power tools either, so it's especially convenient in hard-to-work areas such as on scaffolding.

Saves time. Saves money.

All this convenience and time savings means it saves you money, too. And it doesn't take long to really add up. In fact, in the time it takes to install one conventional PPD, you could have at least four 3M Ultra PPDs installed.

So get the UL-classified protection you need — in a fraction of the time — with 3M Ultra PPD.

3M™ Ultra Plastic Pipe Device

Complete application in just one minute.



Slide ultra fast anchor straps through the stamped slots of the PPD.

:00



Open Ultra PPD and fit around the pipe, then close to the first locking position.

:15



Slide anchor straps through the annular space between the pipe and the edge of the opening until they catch the opposite edge of the opening.

:30



Slide Ultra PPD flush against the substrate surface, close collar to final locking position, and bend tab over. Use pliers to pull anchor straps tight, put a half twist in them, and bend them over the PPD body.

:45



In just one minute, using only a pliers, you have up to 3-hour, UL-classified protection.

:60



NOTE: The 3M Ultra PPD is equipped for conventional anchoring, which should be used when the annular space does not allow for using the anchor straps.

Specifications

Installations shall be in strict accordance with manufacturer's written instructions, as shown on approved shop drawings. The device is also classified by Underwriter's Laboratory, Inc. as a through-penetration firestop device when testing in accordance with ASTM E 814 (UL 1479) for up to a 3-hour rating.

PPD/ Pipe size	Color	Intumescent material	Anchors per collar
1.5" (38mm)	Red	3M™ Interam™ Ultra GS	2
2" (50mm)	Red	3M™ Interam™ Ultra GS	2
3" (76mm)	Red	3M™ Interam™ Ultra GS	3
4" (101mm)	Red	3M™ Interam™ Ultra GS	4



No need to use power tools, mounting screws, washers and other fasteners that can take almost five minutes to install ...



...when you can install a 3M Ultra PPD in a fraction of the time simply by using the patented ultra fast anchor straps and a pliers.

Performance test

- Tested in accordance with 1530-4-2005
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 27377
- UL tests per ASTM E 814 (UL 1479)
- UL-classified, 1-, 2- and 3- hour fire (F) and temperature (T) rating. See UL Fire Resistance Directory under Through-Penetration Firestop Device (XHCR) R9269 (N) 90G8
- Tested in accordance with AS1530-4-2005
- Assessed in accordance with AS4072.1 – 2005
- EWFA Report No : RIR 27377



Fire Barrier

Ultra PPD Plastic Pipe Device

Installation Instructions

These instructions are based on product performance per ASTM E 814 (UL 1479) fire tests. Classified for a maximum 1, 2, and 3 hour rated gypsum wallboard assemblies, 1 and 2 hour floor/ceiling assemblies and up to 3 hour concrete floors and walls by UL for through-penetration firestop device file R9269(N)90G8.

Penetration Firestop Device for 1½, 2, 3, 4 inch (38 mm, 5 cm, 7,6 cm, 10 cm) PVC, ccPVC, CPVC, ABS, ccABS, FRPP, and PVDF Plastic Pipe Through Gypsum, Concrete or Block Walls, Floor/Ceiling and Chase Wall Assemblies. For other plastic pipe types and hourly ratings, consult the current UL Fire Resistance Directory.

1. Examination

- A. Determine if PPD will fit the pipe application and determine the required number of anchors. See Table 1.
- B. Determine if the annular space between the pipe and the edge of the opening is between χ inch (3 mm) and ¼ inch (6 mm). The annular space must be χ inch (3 mm) minimum to allow the Ultra Fast Anchor Strap to slide through. See Alternate Anchor Methods Below. Also, if the annular space is greater than ¼ inch (6 mm), the PPD cannot be used. See UL Fire Resistance Directory for other applications.
- C. Review current UL Fire Resistance Directory for additional application details.

2. Alternate Anchor Methods

- A. If the annular space does not allow for using the Ultra Fast Anchor use one of the following anchor methods.
- B. Gypsum Wall or Floor/Ceiling Assemblies: Secure the PPD to the anchoring surface with steel hollow wall anchors (pullout strength 75 lbs. [16.9 N] minimum) and minimum 1¼ inch (32 mm) diameter steel

washers. Anchor all mounting tabs.

- C. Chase Wall Assemblies: Secure the PPD to the header plate with ¼ inch (6 mm) by 2 inch (5 cm) long steel screws with minimum ¾ inch (19 mm) diameter steel washers. Anchor all mounting tabs.

- D. Concrete Walls of floors: Use traditional masonry fasteners (minimum pullout strength of 75 lbs. [16.9 N]) in all anchor tabs.

3. PPD Installation Using Ultra Fast Anchor Straps (supplied separately)

- A. Assemble PPD and Ultra Fast Anchor Strap. (Figure 1)
 1. Position the PPD with anchor tabs up.
 2. Position the Ultra Fast Anchor Strap with the large end up and the spring tab facing to the outside of the PPD body.
 3. Slide the narrow end of the Ultra Fast Anchor Strap through the stamped slot in the top of body, through fire stop layers, and out bottom slot in the PPD. Install the number of straps required according to Table 1.

- B. Open the PPD and fit around the pipe. (Figure 2)

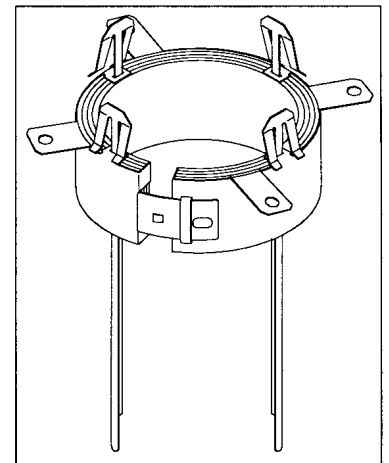


Figure 1: Assemble PPD & Ultra Fast Anchor

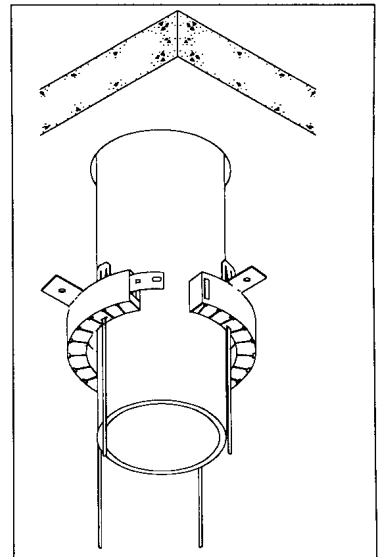


Figure 2: Open PPD and fit around pipe.

Table 1 - PPD Size and Number of Anchors

Plastic Pipe Device	Plastic Pipe Size	Number of Ultra Anchors
1½ inches (38 mm)	1½ inch (38 mm)	2
2 inches (5 cm)	2 inch (5 cm)	2
3 inches (7,6 cm)	3 inch (7,6 cm)	3
4 inches (10 cm)	4 inch (10 cm)	4

C. Close the PPD to the *first* locking position only by sliding the metal tab into the raised belt loop and position the PPD 2 inches (5 cm) from the wall or substrate surface. (Figure 3)

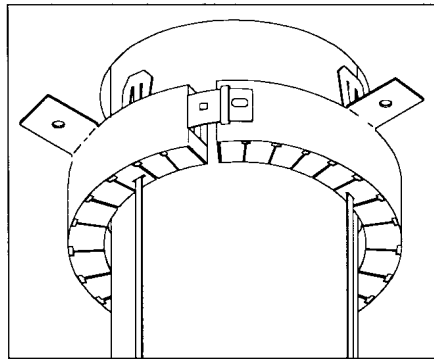


Figure 3: Close PPD to first tab and position

D. Slide the Ultra Fast Anchor Straps through the annular space between the pipe and edge of the opening until they catch the opposite edge of the opening. (Figure 4 & 8)

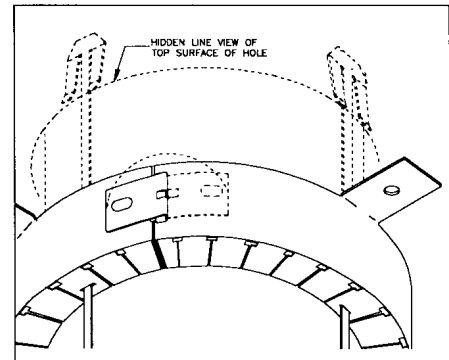


Figure 4: Slide straps through, PPD flush, lock, secure

E. Slide the PPD flush against the substrate surface and close PPD to final locking position on latch, then bend latch tab completely over to secure. (Figure 4)

F. Pull down on Ultra Fast Anchor Straps until spring tab comes in contact with opposite edge of the opening. Using pliers pull anchor strap approximately 1/2 inch (13 mm) and at the same time put a half twist in the strap and then bend the strap over the PPD body. (Figure 5)

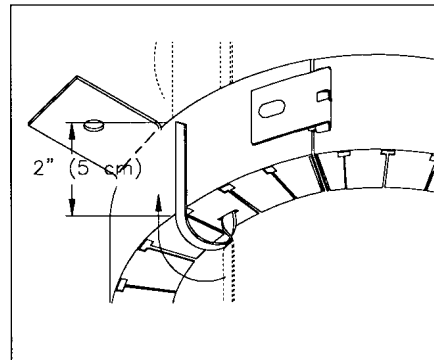


Figure 5: Pull down straps, twist and wrap around

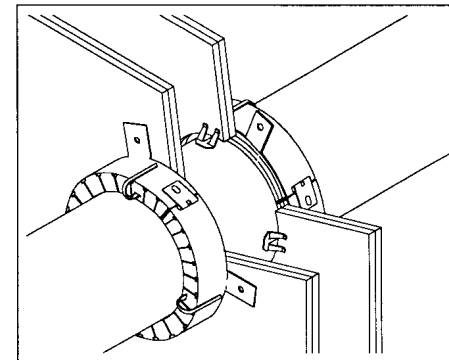


Figure 6: Gypsum wall or hollow CMU application

G. The length of excess strap will vary depending on the thickness of the substrate (ie. gypsum or hollow CMU versus solid concrete). The excess strap can be cut off if desired. Remaining strap length must be a minimum 2 inch (5 cm) after bending the strap over the PPD body. (Figure 5)

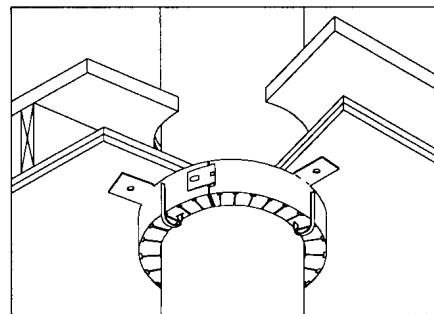


Figure 7: Gypsum floor/ceiling assembly

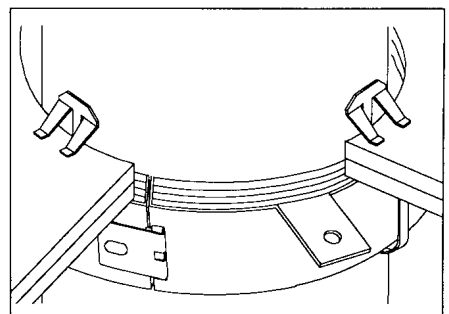


Figure 8: Top view of installed ultra fast anchor strap

4. Wall Applications

A. The PPD must be installed on both sides of a wall. Repeat the above steps to install the second PPD. (Figure 6)

B. The Ultra Fast Anchors cannot be used on solid concrete or solid block walls because the anchors will interfere with installation of the PPD on the opposite side of the wall. Instead, use traditional masonry fasteners (minimum pullout strength of 75 lbs. [16.9 N]) in all anchor tabs.

Important Notice to Purchaser: LIMITATION OF REMEDIES AND LIABILITY: If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION SHALL BE TO REFUND THE PURCHASE PRICE OF OR REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M SHALL NOT OTHERWISE BE LIABLE FOR LOSS OR DAMAGES, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, INVESTMENT, GOODWILL OR BUSINESS OPPORTUNITY), REGARDLESS OF THE LEGAL THEORY ASSERTED, INCLUDING NEGLIGENCE, CONTRACT WARRANTY OR STRICT LIABILITY.



3M™ Fire Barrier Tuck-In Wrap Strips

Product Data Sheet

1. Product Description 3M™ Fire Barrier Tuck-In Wrap Strips are designed to help prevent the passage of fire and smoke in new or existing non-metallic (e.g. plastic) pipe penetrations through wall or floor assemblies. 3M™ Fire Barrier Tuck-In Wrap Strips are engineered primarily for top-side firestop installations and help eliminate the need for retaining collars, concrete screws, ladders or most other material and equipment necessary for bottom-side installations. 3M™ Fire Barrier Tuck-In Wrap Strips come ready-to-install with an adhesive-backed closure label (excludes WS Roll). The wrap strips can be easily installed in both concrete floor and wall assemblies, as well as gypsum wallboard assemblies.



Ideal for top-side firestop installations in concrete floors.

Product Features

- Firestop tested for up to 3 hours in accordance with ASTM E 814 (UL 1479)
- Top-side concrete floor installations help eliminate the need for steel retaining collars and most other bottom-side installation equipment and materials
- Adhesive-backed label for quick installation
- Ready-to-install wrap strip—precut to length for 2 in. (51 mm), 3 in. (76 mm) and 4 in. (102 mm) non-metallic pipes
- Firestop up to 6 in. (152 mm) PVC pipe (requires 2-layers using 3M™ Fire Barrier Tuck-In Wrap Strip WS Roll)

2. Applications

3M™ Fire Barrier Tuck-In Wrap Strips are ideal for use when firestopping through penetrations in fire-rated concrete floor or wood floor/ceiling assemblies. The wrap strips also have the ability to be used within concrete and gypsum wallboard assemblies. Current non-metallic listed applications include PVC, ccPVC, RNC and FRPP piping systems. Can be used in conjunction with 3M™ Fire Barrier Pillows (standard or self-locking) or 3M™ Fire Barrier Mortar to firestop large openings penetrated by non-metallic pipe).

3. Specifications

To be used for penetrations through fire-rated construction with non-metallic penetrating items. 3M™ Fire Barrier Tuck-In Wrap Strips provide through-penetration firestop systems when used in conjunction with 3M™ Fire Barrier Sealants (e.g. 3M™ Fire Barrier Sealant IC 15WB+, 3M™ Fire Barrier Sealant CP 25WB+, 3M™ Fire Barrier Water Tight Sealant 3000 WT)*. When properly installed, these through-penetration firestops help resist the spread of fire, smoke and other gases and help maintain the original fire resistance rating of the construction assembly that has been penetrated. 3M™ Fire Barrier Tuck-In Wrap Strips shall be listed by independent test agencies such as UL, Intertek, or FM and shall be tested under the pass/fail requirements of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems. These through-penetration firestops meet the current requirements of the International Building Code (IBC) and National Fire Protection Association (NFPA 5000 and NFPA 101).

* Consult specific system details for approved firestop sealants.

Typically Specified MasterFormat (2004)

Section 07 84 00 – Firestopping
Section 07 84 13 – Penetration Firestopping
Section 22 00 00 – Plumbing

FIRE BARRIER



FILL, VOID OR CAVITY MATERIAL
FOR USE IN THROUGH-PENETRATION
FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
90G9



LISTED

FILL, VOID OR
CAVITY MATERIAL
90G9

4. Performance & Typical Physical Properties

Color:	Gray with Red Liner
Fire Resistance:	1-3 Hours (wall- or floor-rating dependent)
Activation Temperature:	550° F (288° C)
Expansion Volume:	100x

Product Number	Thickness	Width	Length	Nominal Pipe Diameter	Installation Hole Size (max.)
WS 200	3/16 in. (5 mm)	2-1/2 in. (64 mm)	8-1/4 in. strip (210 mm)	2 in. (51 mm)	4 in. (102 mm)
WS 300	3/16 in. (5 mm)	2-1/2 in. (64 mm)	11-1/2 in. strip (292 mm)	3 in. (76 mm)	5 in. (127 mm)
WS 400	3/16 in. (5 mm)	2-1/2 in. (64 mm)	14-7/8 in. strip (378 mm)	4 in. (102 mm)	6 in. (152 mm)
WS Roll	3/16 in. (5 mm)	2-1/2 in. (64 mm)	8.2 ft. roll (2.5 m)	up to 6 in. (152 mm)*	up to 8 in. (203 mm)*

*Installation hole size can be up to two inches larger than nominal pipe diameter.

5. Packaging, Storage, Shelf Life

Packaging	3M™ Fire Barrier Tuck-In Wrap Strips (WS 200, WS 300, WS 400) are packed in a cardboard box containing 24 pre-labeled wrap strips. 3M™ Fire Barrier Tuck-In Wrap Strips WS Roll comes 6 individual rolls per case.
Storage	3M™ Fire Barrier Tuck-In Wrap Strips should be stored indoors in dry conditions.
Shelf Life	3M™ Fire Barrier Tuck-In Wrap Strips shelf life is indefinite when stored in original unopened packaging indoors.

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for applicable UL, or other third-party, drawings and system details.

Representative for applicable UL, or other third-party, drawings and system details.

Preparatory Work	The 3M™ Fire Barrier Wrap Strip should be sized appropriately for the penetrating item. The opening should be clean, dry, free of dust or debris. 3M™ Fire Barrier Wrap Strip WS Roll can be pre-cut to length (note: for a 6-inch pipe, wrap the roll around the pipe twice, mark the length and cut (approx. 44-1/4 in. +/- 1/4 in. (1.12 m +/- 6.4 mm)). 3M™ Fire Barrier Wrap Strip WS Roll can be secured around pipe by using glass-reinforced Scotch® Filament Tape, 3M Aluminum Foil Tape or similar.
Installation Details	Install the correct 3M™ Fire Barrier Tuck-In Wrap Strip and 3M™ Fire Barrier Sealant as detailed within the applicable UL, or other third-party, system for the assembly and required system rating(s).
Limitations	This product is not acceptable for use with chlorinated polyvinyl chloride (CPVC) pipes.

7. Maintenance

No maintenance should be required when installed in accordance with the applicable independent test agency's listed system and 3M™ Fire Barrier Tuck-In Wrap Strip Installation Guide. Once installed, if any portion of the 3M™ Fire Barrier Tuck-In Wrap Strip is damaged, the entire damaged wrap strip should be removed and re-installed with a new 3M™ Fire Barrier Tuck-In Wrap Strip and new 3M™ Fire Barrier Sealant as detailed within the applicable Listed System.

8. Availability

3M™ Fire Barrier Tuck-In Wrap Strips are available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Tuck-In Wrap Strips are available for the following nominal pipe diameters: 2 in. WS 200 (51 mm), 3 in. WS 300 (76 mm), 4 in. WS 400 (102 mm) and up to 6 in. WS Roll (152 mm). 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 applicable country-of-use Material Safety Data Sheet (MSDS) of any 3M™ Fire Barrier Sealant, Mortar or Pillows used in conjunction with 3M™ Fire Barrier Tuck-In Wrap Strips prior to handling and disposing of that product.

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.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



3M™ CS-195+ Composite Sheet

Product Description

3M Fire Barrier CS-195+ Composite Sheet is a one-part composite system comprised of four components. The heart of the system is an organic/ inorganic, fire-resistive elastomeric sheet. It is bonded on one side to a layer of 30 gauge galvanized steel. The other side is reinforced with hexagonal shaped steel-wire mesh and covered with aluminum foil. CS-195+ Composite Sheet is designed to seal larger penetrations through fire-rated walls and floors. It is also used for shielding cable trays and conduit, HVAC ductwork and vital process equipment from radiant heat, flame spread and smoke. CS-195+ Composite Sheet functions as an effective intermittent fire-break within horizontal and vertical cable tray runs, and is excellent for both new and retrofit construction.

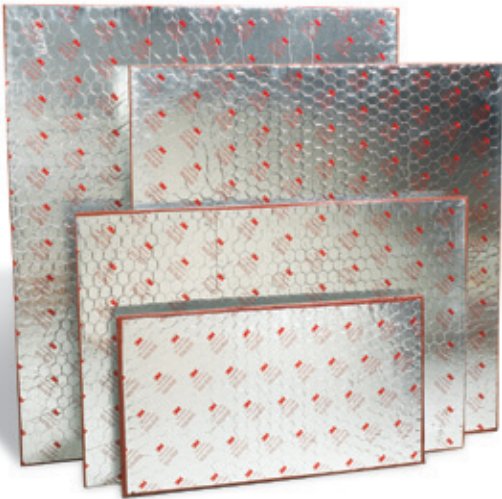
The nominal 7.62 mm (0.3") thick composite sheet systems provide up to 4-hour fire ratings. It is lightweight and can be easily installed with common trade tools.

When exposed to temperatures in excess of 121°C (250°F), the fire-resistive sheet begins to volumetrically expand and swells 8-10 times its original size, forming a high strength, hard char that retards heat transmission. This expansion process is called 'intumescence.'

Under normal operating conditions, CS-195+ Composite Sheet is a good thermal conductor which allows unwanted heat build-up to escape from process and control equipment and also minimizes power cable derating.

Product Features

- Intumesces (expands with heat) to form a hard char that tightly seals penetrations against flame spread, smoke and toxic fumes
- Multiple applications – through penetration firestop, heat shield and firebreak protection
- Easy to install using common trade tools
- Lightweight – easy to handle, cut and form to desired shape
- Easy to fasten – bolt punch or drill through. Use self-tapping screws or anchor bolts
- Thermally conductive – allows unwanted heat build-up to escape
- Non-flame supporting
- Cost effective, high performance versus installed cost
- No mixing or damming – is clean to install
- Versatile: can be cut to fit irregular shapes
- Re-enterable
- Low odor
- Tested in accordance with AS1530.4, EN1366 and ASTM E814 (UL Listed).
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 22695



Maintenance

3M Fire Barrier CS-195+ Composite Sheet remains stable for an indefinite period of time. CS-195+ Composite Sheet should be stored in the original shipping container until used.

The materials are non-impaired by freezing or storage at temperatures up to 86°C (187°F).

Physical Properties

Sheet Sizes

406.4 mm x 711.2 mm (16" x 28")

711.2 mm x 1320.8 mm (28" x 52")

914.4 mm x 609.6 mm (36" x 24")

914.4 mm x 914.4 mm (36" x 36")

914.4 mm x 1.041 mm (36" x 41")

Component	Thickness
Galvanized sheet steel	0.399 mm ± 0.076 mm (0.0157" ± 0.003 in.) 30 gauge
Fire-resistive sheet	7.24 mm ± 1.27 mm (0.285" ± 0.05")
Hexagonal restraining wire	20 gauge
Aluminum foil	0.0508 mm ± 0.00508 mm (0.002" ± 0.0002")
Complete material	7.70 mm ± 1.37 mm (0.303" ± 0.054")

A. Physical and Electrical Properties CS-195+ Composite sheet as installed

Normal Weight 13.4 kg/m² (2.75 lb/ft²)

Intumescent Activation Sequence

Expansion begins 150°C (302°F)

Significant expansion 177°C (350°F)

Weight loss (TGA) 20.1% @ 350°C (662°F); 31.0% @ 500°C (932°F); 53.2% @ 1000°C (1,832°F)

Expansion 8-10 typical

Intumescent Sheet Properties (as part of composite)

Domestic Strength (ASTD 149) 119 volts/mil average

Non-flame supporting hardness 45 to 65 Shore A

Tensile strength/elongation (ASTM D 412, Method A) 0.645 MPa (93.6 psi) /489%

Compression set 25% (maximum)

Surface Burning Characteristics ASTM E 84 (ANSI/UL 723) Flame Speed 5 Smoke Development 50

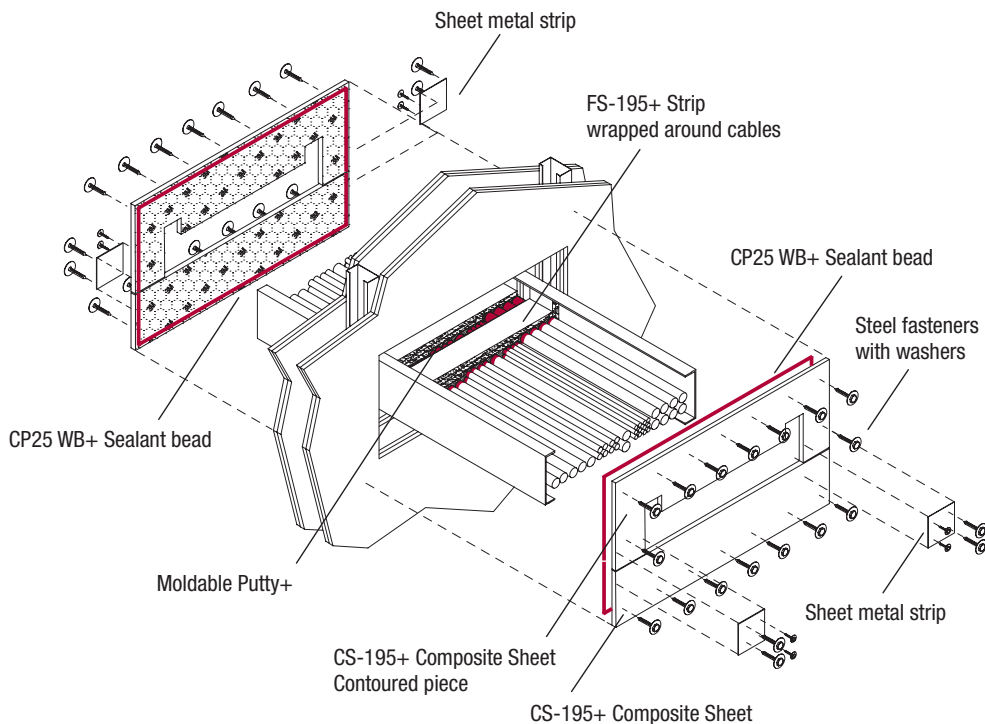
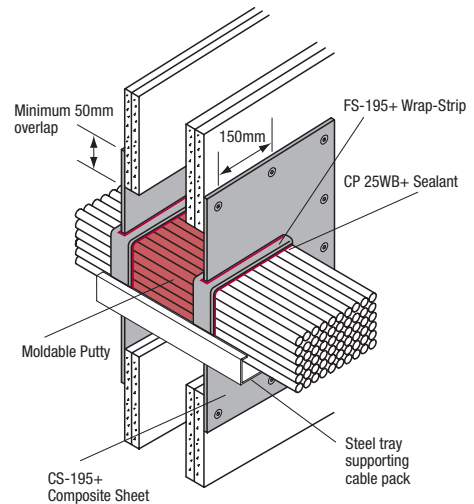
Availability

3M™ Brand Fire Barrier CS-195+ Composite Sheet is available from Authorized 3M Fire Protection Products Distributors.

3M Order Code	Packing	Unit/Case
98040026019	Boxed 406.4 mm x 711 mm (16" x 28")	1
98040029476	Boxed 711 mm x 1321 mm (28" x 52")	1
98040024071	Boxed 914.4 mm x 610 mm (36" x 24")	1
98040024089	Boxed 914.4 mm x 914.4 mm (36" x 36")	1
98040024097	Boxed 914.4 mm x 1041.4 mm (36" x 41")	1

Installation Techniques:

1. For drywall constructions, add metal framing to the top and bottom of the opening. If metal studs are used, the top (flat) surface should be facing toward and flush with the opening, and the channel of the stud should be facing into the wall cavity.
2. Wrap cables and metal pipes with a single layer of 3M Fire Barrier Moldable Putty+ Pad for the full depth of the seal.
3. Install 3M Fire Barrier FS-195+ Wrap/Strip around cables and metal pipes on both sides of the fire seal. Use steel wire to hold the FS-195+ Wrap/Strip in place.
4. Use cardboard, marking pencils and scissors to make templates of the exact size and shape of CS-195+ Composite Sheet pieces. Ensure that a 50mm overlap is allowed around the sides of the opening. The template will generally need to be made in at least two pieces. Plan the size of the first piece so only one piece requires contour cuts. The fewer pieces that need contour cuts, the quicker the installation will be.
5. Use a jigsaw to cut the CS-195+ Composite Sheet to the cardboard template.
6. Run a bead of 3M CP 25WB+ Sealant around the opening within 50mm of the edge.
7. Secure the CS-195+ Composite Sheet into place using 6mm steel fasteners with washers placed with 150mm spacing around the opening. Ensure that there is at least 50mm overlap around the opening.
8. Use 40mm wide steel sheet metal strips and sheet metal screws to cover the CS-195+ Composite Sheet seams.
9. Apply Fire Barrier CP 25WB+ Sealant around the cable tray and fill spaces between CS-195+ Composite Sheet and FS-195+ Wrap/Strip. Also, cover edges of the Wrap/Strip and fill any spaces that smoke would likely penetrate.



Performance Specifications for Installers

Australian Standard FRLs: 3M CS-195+ Composite Sheet				
Building Element	Blank (Unpenetrated) Seal	PVC Insulated Cables, Cable trays and Cable bundles	Copper or Steel Pipes Small* 15mm diameter or smaller 0.9mm wall thickness or thicker	Steel Pipes Small* 34mm diameter or smaller 3.5mm wall thickness or thicker
Floor: Concrete slab. <i>Minimum 120mm thickness</i>	-/240/120	-/180/30	-/240/-	-/240/-
Wall: Plasterboard Dry Wall. <i>Minimum 116mm thickness</i>	-/120/30	-/120/30	-/120/-	-/120/-
Wall: Solid masonry, hollow masonry or concrete construction. <i>Minimum 116mm thickness</i>	-/240/90	-/180/30	-/180/-	-/180/-



In order to achieve the above FRLs you must ensure that the CS-195+ Composite Sheet is installed as per the Installation Techniques and the building element you are installing into has an FRL performance equal to or better than that of the CS-195+ system. The Installation Techniques can be found on the final page of this document.

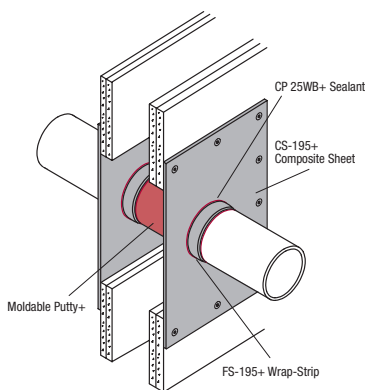
What does FRL mean?

FRL stands for 'Fire Resistance Level'. For example, an FRL of '-/240/120' indicates:

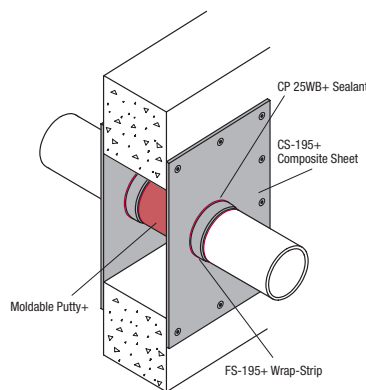
- **Structural Adequacy.** The first dash '-' indicates that CS-195+ is non load bearing
- **Integrity.** The middle number '240' indicates for how many minutes the CS-195+ system can resist the passage of flames and hot gasses
- **Insulation.** The last number '120' indicates how many minutes it takes the unexposed face to heat up by more than 140°C.

Metal Pipes*

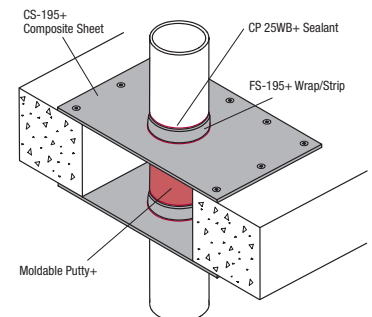
* With or without up to 19mm Armaflex insulation



Dry Wall 116mm
Copper: 15mm dia, 0.91mm wall: FRL: -/120/-
Steel: 34mm dia, 3.5mm wall: FRL: -/120/-



Solid Masonry, Hollow Masonry
or Concrete Wall 120mm
Copper: 15mm dia, 0.91mm wall: FRL: -/180/-
Steel: 34mm dia, 3.5mm wall: FRL: -/180/-

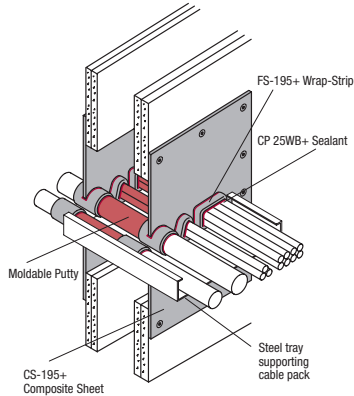


Concrete Floor 120mm
Copper: 15mm dia, 0.91mm wall: FRL: -/240/-
Steel: 34mm dia, 3.5mm wall: FRL: -/240/-

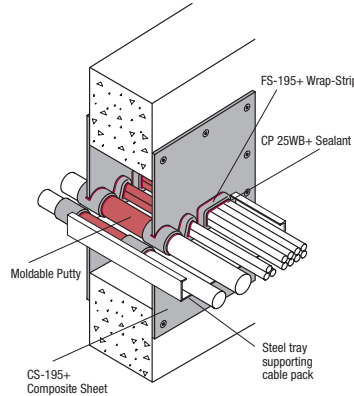
Performance Specifications for Engineers and Specifiers

3M Fire Barrier CS-195+ Composite Sheet has been tested in accordance with AS1530.4-2005 and assessed in accordance with AS4072.1-2005 under BWA Report No: 22695. The following illustrations provide a summary of the test results for D1 and D2 cable configurations, metal pipe penetrations and blank unpenetrated seals with CS-195+ installed as per the Installation Techniques. Specifications for standard D1 and D2 cable configurations can be found in AS1530.4-2005 Appendix D.

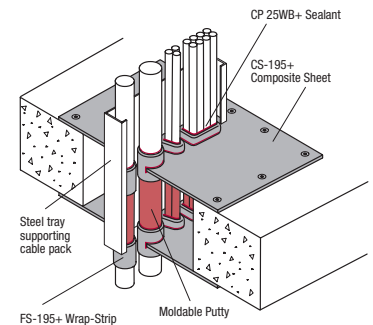
D1 Cable Pack – Power Transmission Cables.



Dry Wall 116mm – FRL: -/120/30

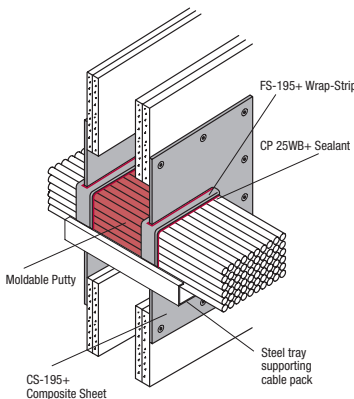


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/180/30

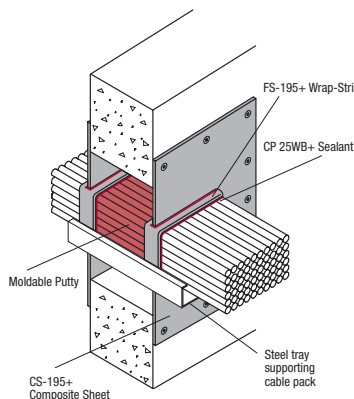


Concrete Floor 120mm – FRL: -/180/30

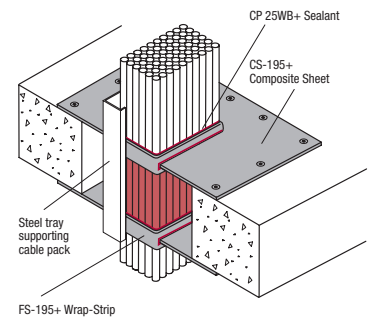
D2 Cable Pack – Telecom Cables.



Dry Wall 116mm – FRL: - /120/30

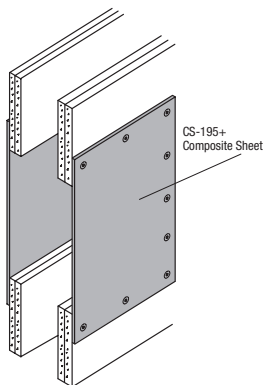


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/180/90

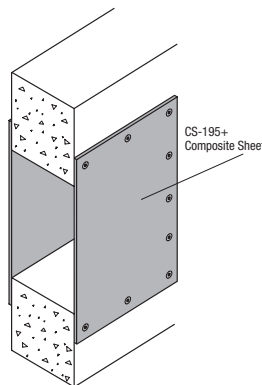


Concrete Floor 120mm – FRL: -/180/90

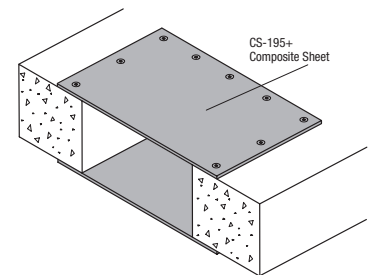
Blank Openings (unpenetrated)



Dry Wall 116mm – FRL: -/120/30



Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/240/90



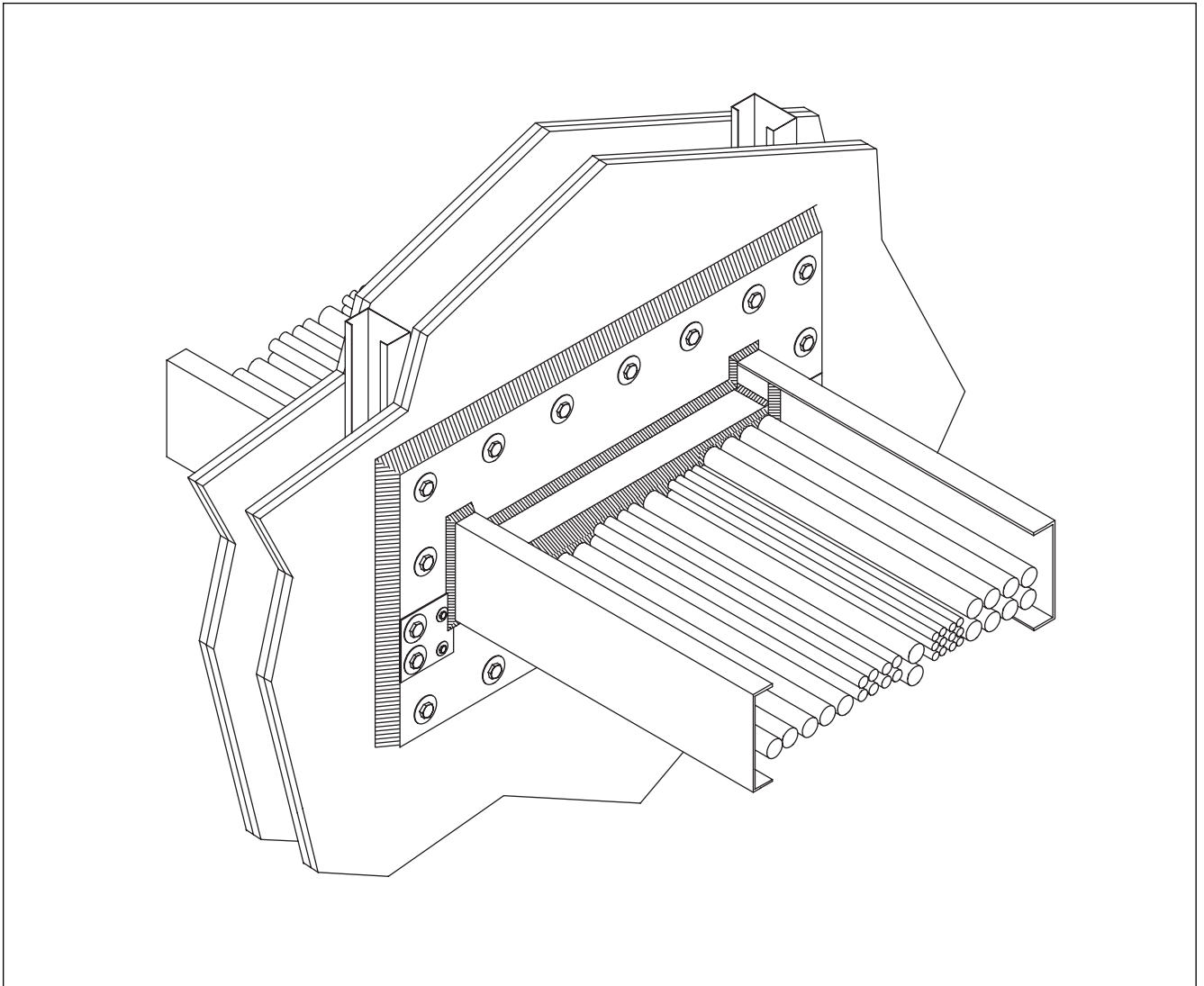
Concrete Floor 120mm – FRL: -/240/120

3M

Fire Barrier

Composite Sheet CS-195+

Installation Guide For Telecommunications and Electrical Applications





Fire Protection Products



November 3, 1995

TO WHOM IT MAY CONCERN

Re: Aging of Intumescent Products

To prevent misunderstanding or confusion regarding the long-term performance of the 3M FS-195+ Wrap/Strip or CS-195+ Composite Sheet, we make the following statement:

During the development process of its intumescent products, 3M established design and performance criteria to address the aging properties of these materials. Our FS-195+ and CS-195+ products have successfully passed the test procedures necessary to qualify for UL Component Recognition Listing. Component Recognition subjects the products to a series of aging standards to determine the effect of various environmental conditions on the intumescent properties, including such conditions as high temperature aging (95°C), moist air, CO₂-SO₂, temperature cycling, high humidity, wet-freeze-dry and weatherometer exposure.

In addition, 3M successfully fire tested penetrations using worse case aged products versus “as produced” products in full-scale UL wall tests.

Through its International organization, 3M has documented Arrhenius Plot/data from CEI, IEC 216-1, “Guide for the Determination of Thermal Endurance Properties of Electrical Materials” to show the performance life of FS-195+ and CS-195+ to be in excess of 100 years to the minimum designed expansion.

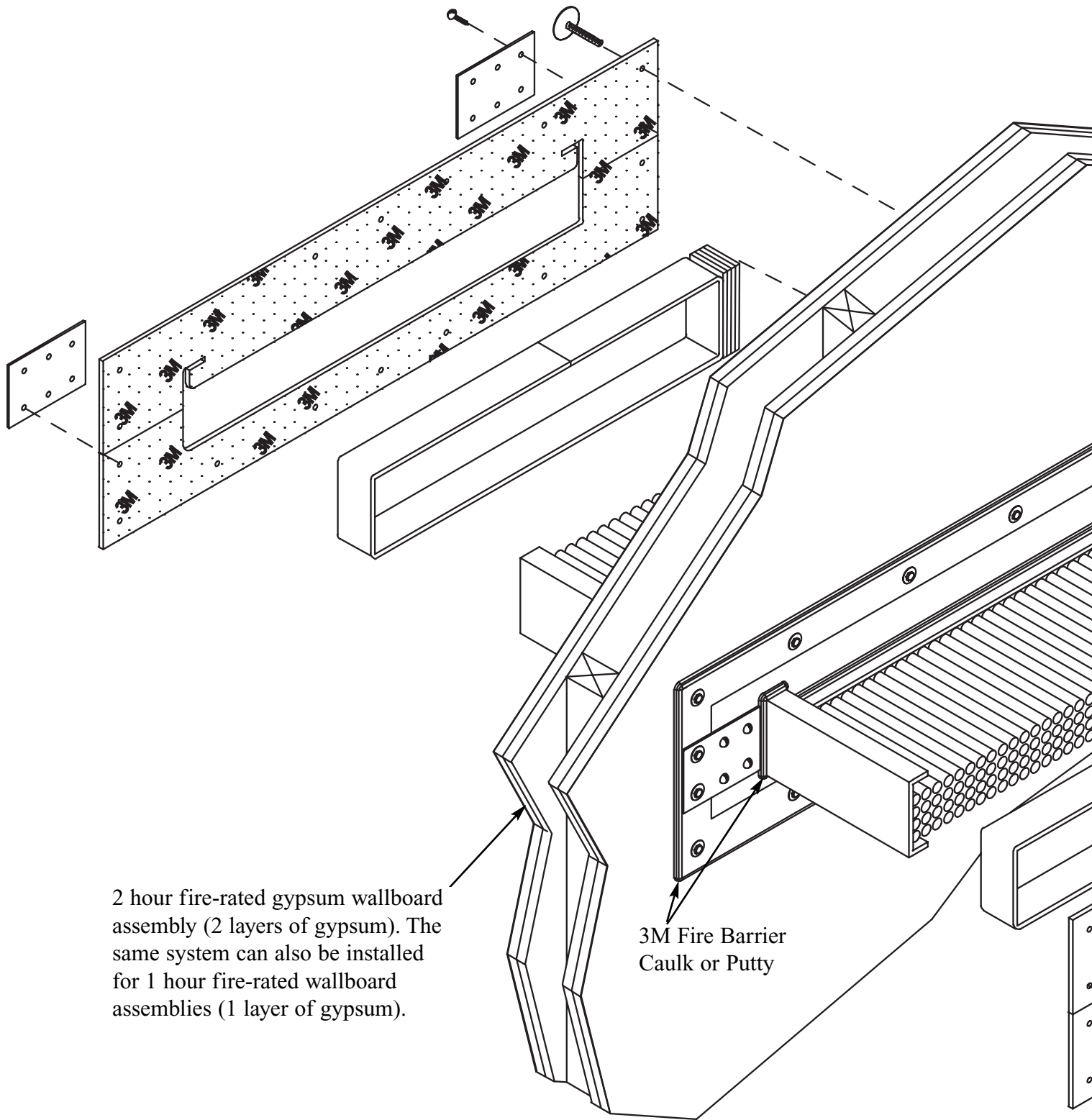
Please call 3M technical service (800) 458-4452 if you have any questions.

Regards,

Richard R. Licht
Technical Manager

RRL/ks

Typical System Overview



2 hour fire-rated gypsum wallboard assembly (2 layers of gypsum). The same system can also be installed for 1 hour fire-rated wallboard assemblies (1 layer of gypsum).

3M Fire Barrier
Caulk or Putty

Table of Contents

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Detailed Step-by-Step Instructions Based on W-L-4004	49-52
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Cable Bundle Systems	55
Corner Applications	56
Composite Sheet Seaming Details	57
Composite Sheet Anchoring Details	58

Introduction

This installation guide highlights requirements for 3M Fire Barrier Composite Sheet CS-195+ for firestopping cable assemblies typical in the telecommunications industry.

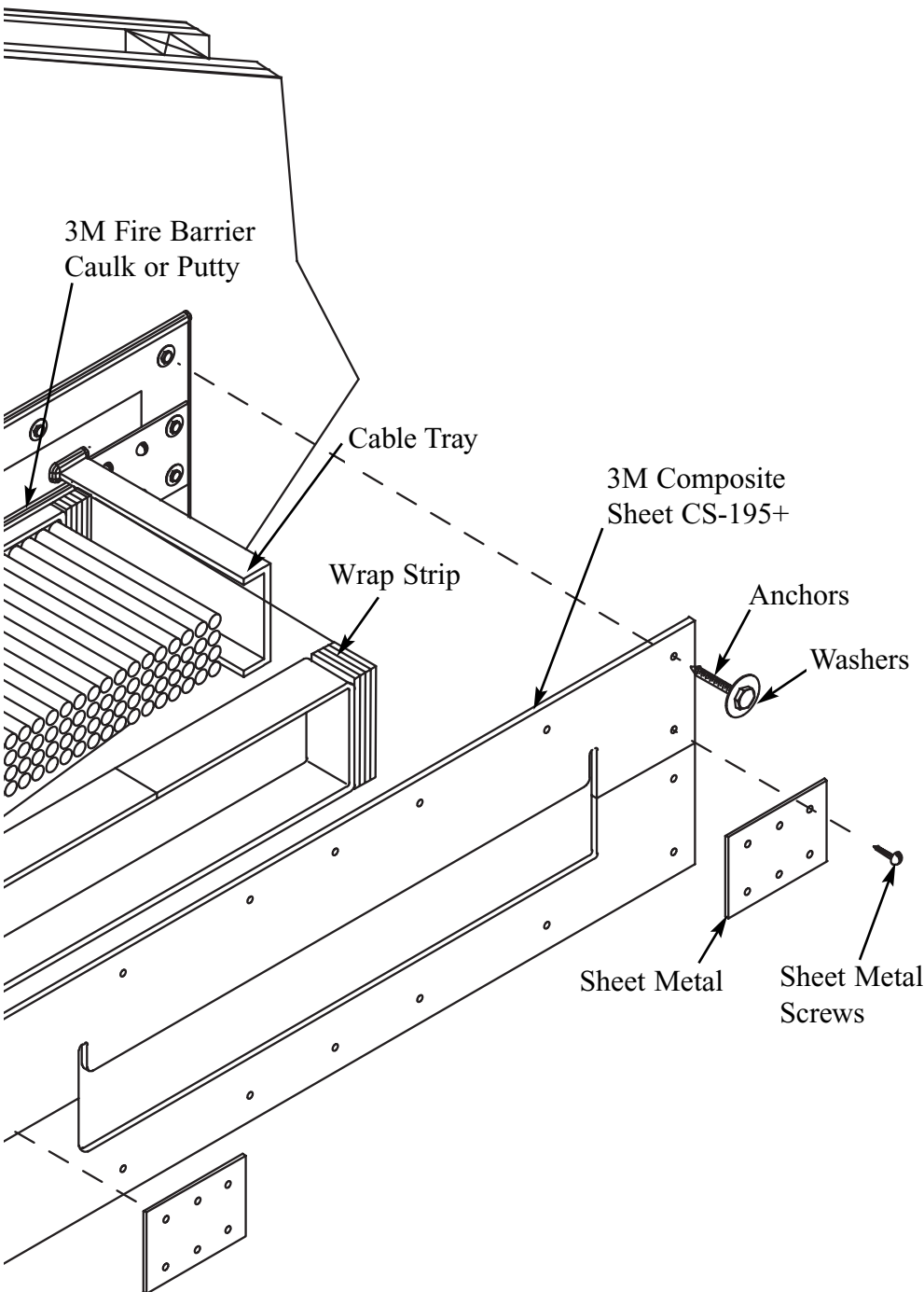
The information contained herein is based on Underwriters Laboratories Inc.[®] published system requirements found in the current UL Fire Resistance Directory and engineering studies performed by UL referenced herein.

Written requirements for system construction are intended only to highlight important features of different systems or methods and are not intended to describe all the requirements.

Refer to current Underwriters Laboratories Inc.[®], Fire Resistance Directory and referenced engineering studies for additional information and system details.

See page 16 on the back cover of this document for a Typical Bill of Materials

based on the system shown to the left.



Detailed Step-by-Step Instructions

Based on W-L-4004

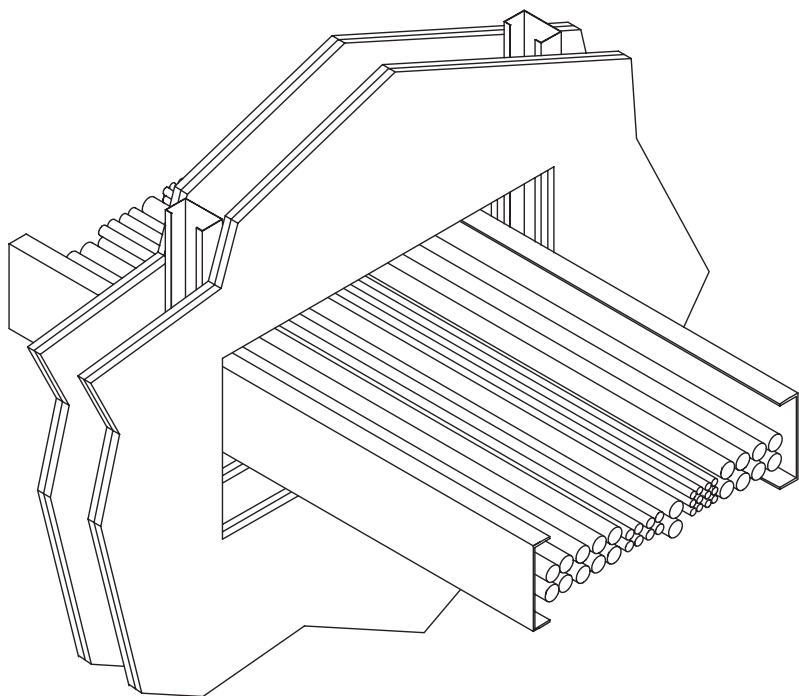


Figure 1: Single Cable Tray
2 hour fire-rated gypsum wallboard assembly with a single cable tray. Tray must be centered in opening and supported on each side of the wall. Studs must be located on each side of the opening.

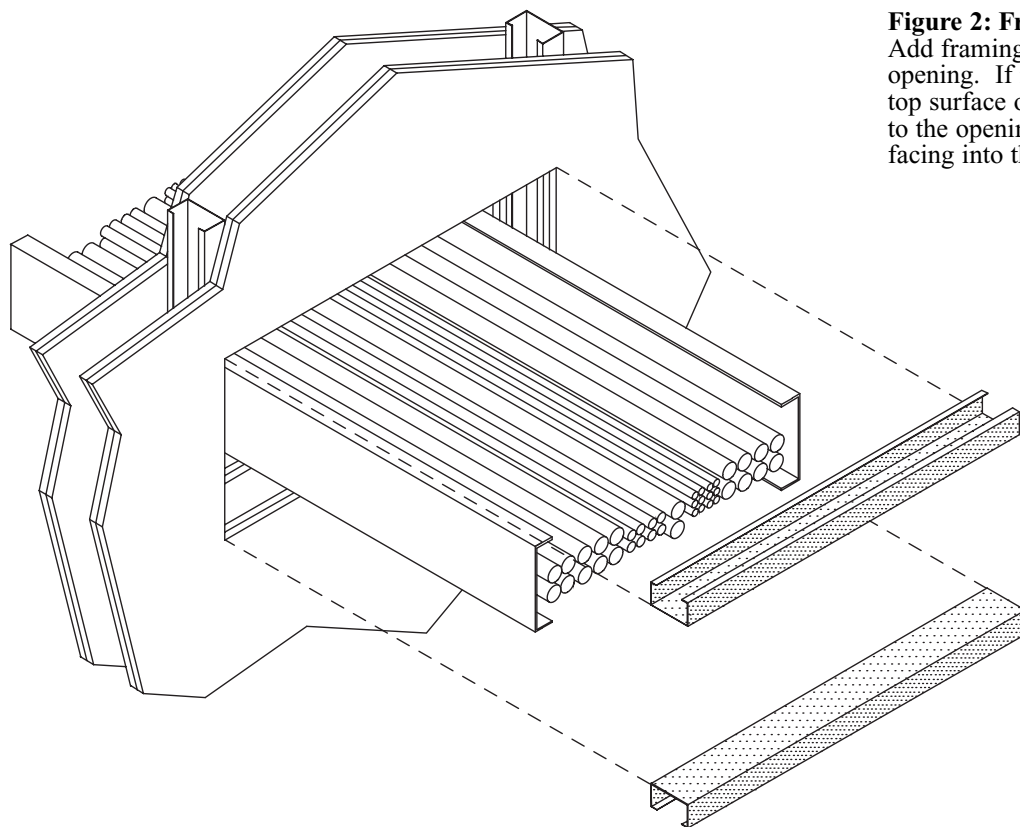


Figure 2: Frame Opening
Add framing to top and bottom of opening. If metal studs are used, the top surface of the stud should be facing to the opening with the channel opening facing into the wall cavity.

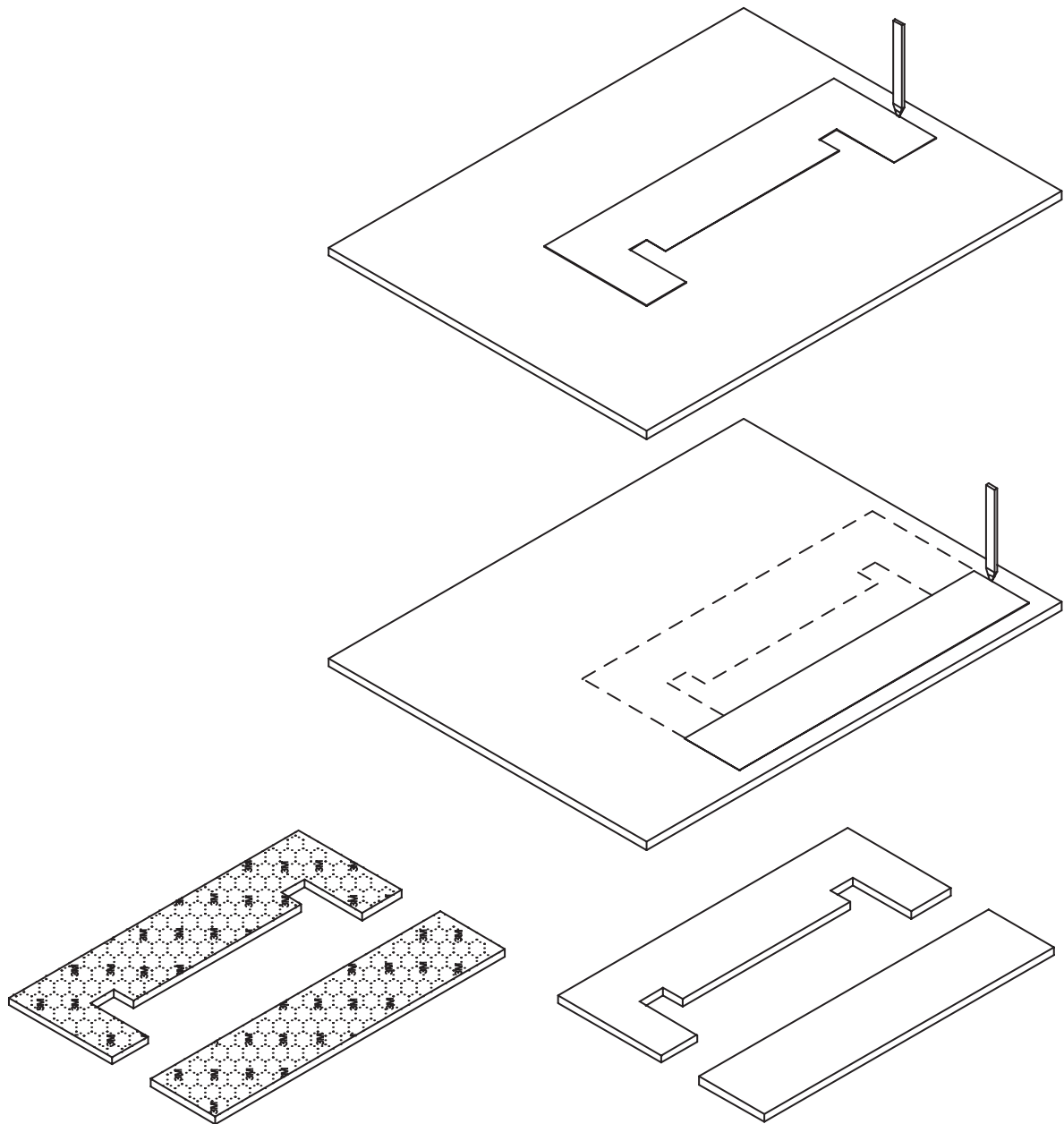


Figure 7: Cut Composite Sheet

Use the cardboard template to mark the 3M™ Fire Barrier CS-195+ Composite Sheet. Mark the sheet metal side not the foil side that is printed with 3M logos and has chicken wire embedded under the foil. Cut two pieces from the template. Then cut two more pieces for the bottom of the opening. With proper planning many applications will only require one contour cut piece for each side the other can be measured and cut rectangular as shown above. Four pieces total will be needed, two for each side of the wall. Cut the composite sheet using an electric jig saw. Use a metal file to remove burs from the cut edges.

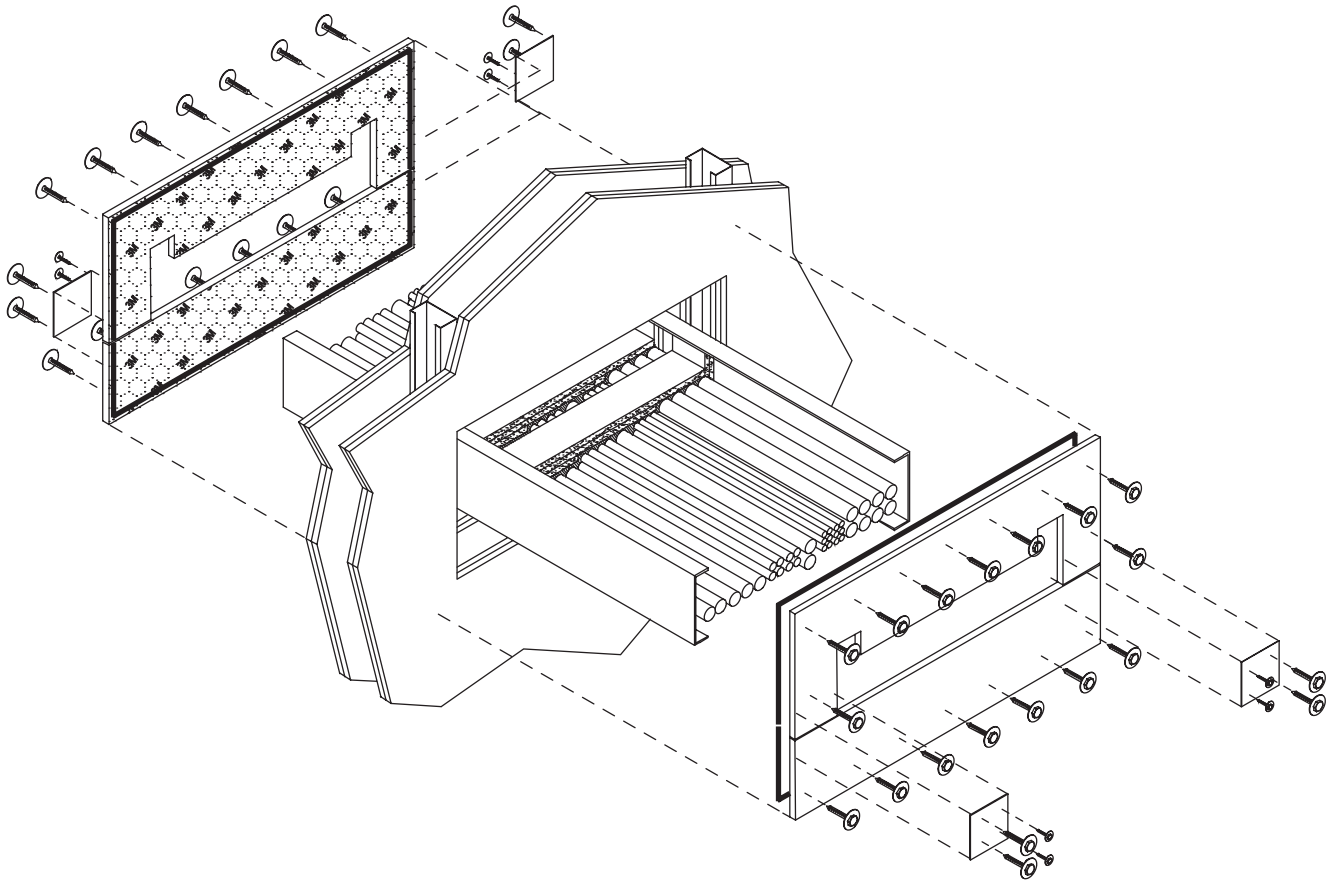


Figure 8: Fasten Composite Sheet to Wall.

Apply 3M™ Graphite Intumescent Seal (GIS) to the back side of the composite sheet (the side with the 3M logos). Position the GIS slightly away from the edge of the composite sheet. Fasten the composite sheet in place. Use sheet metal and sheet metal screws to cover the composite sheet seams.

Alternate anchoring methods for gypsum wall systems include threaded rod through the walls with wing nuts. Occasionally the composite sheet needs to be removed. An anchoring system that allows easy removal and re-installation decreases labor and prevents workers from having to install new composite sheet if a penetration has to be modified.

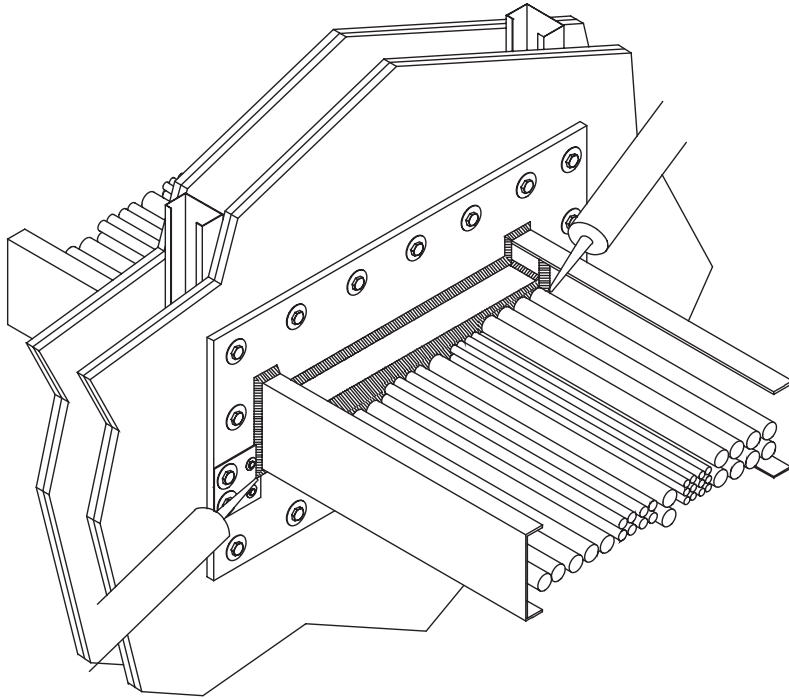


Figure 9: Apply Caulk or Putty
 Apply 3M™ Fire Barrier CP 25WB+ Caulk or 3M™ Fire Barrier Moldable Putty+ around cable tray to fill the annular space between the edge of the composite sheet and the wrap strip. Also, cover the edges of the wrap strip and fill any spaces between layer, rails and other crack where smoke could penetrate during a fire. If 3M™ GIS is used as the smoke seal, no caulk or putty is needed at the outer perimeter of the composite sheet.

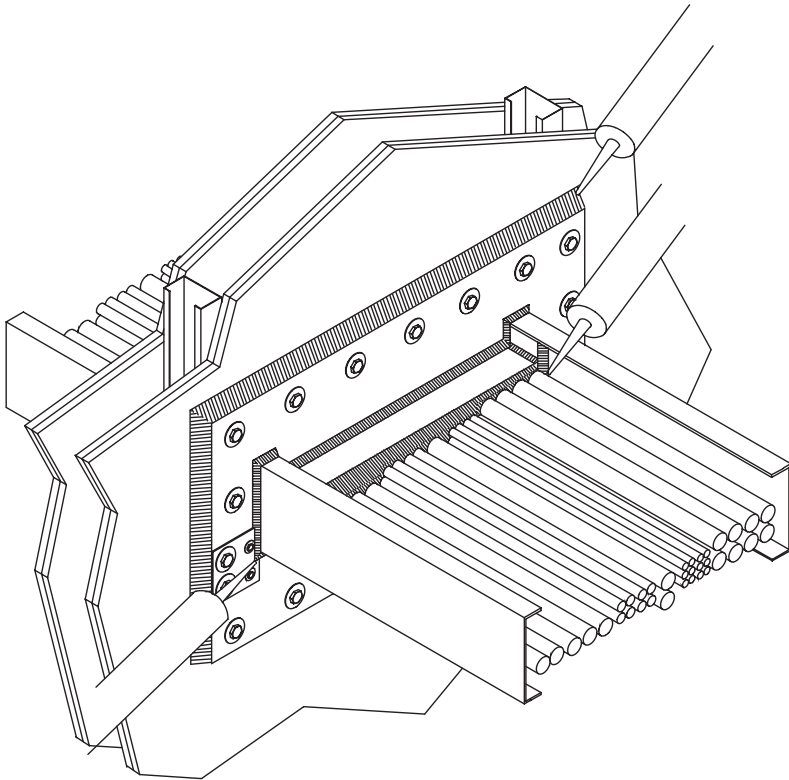


Figure 10: Alternate Perimeter Smoke Seal
 If 3M™ GIS was not used on the back side of the composite sheet before fastening it to the wall, apply caulk or putty at the composite sheet perimeter as a smoke seal.

Concrete Floor Systems

C-AJ-4003 with Single Cable Tray and Multiple Cable Tray

Figure 11: Single Cable Tray Option C-AJ-4003

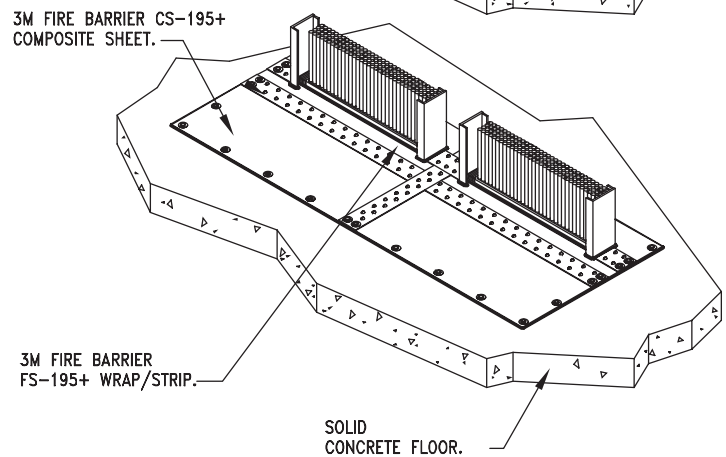
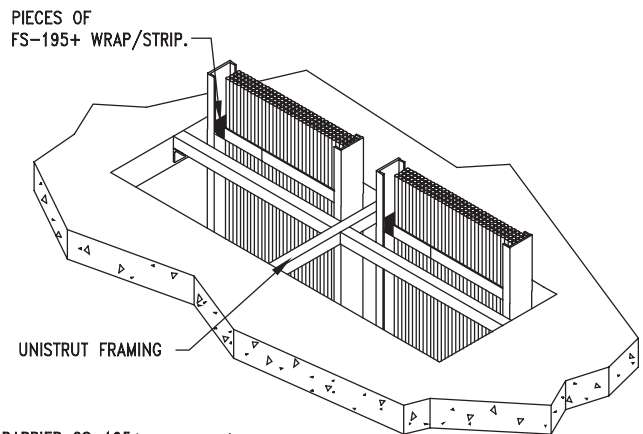
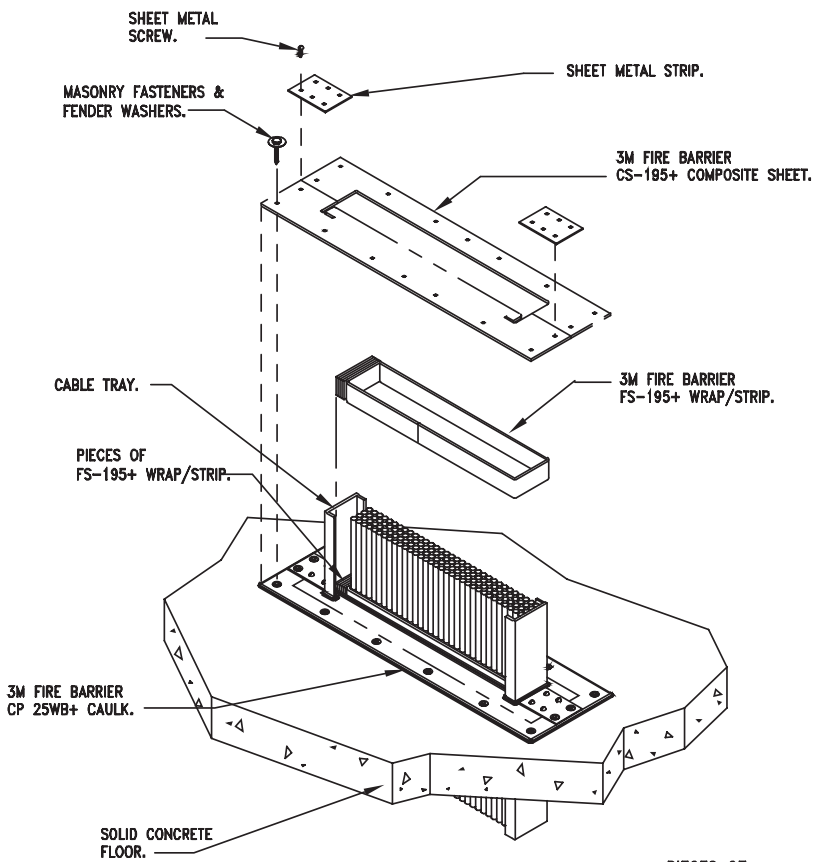


Figure 12: Double Cable Tray Option C-AJ-4003

Concrete Floor Systems

F-B-3004 Cable Penetration With Curb Retrofit

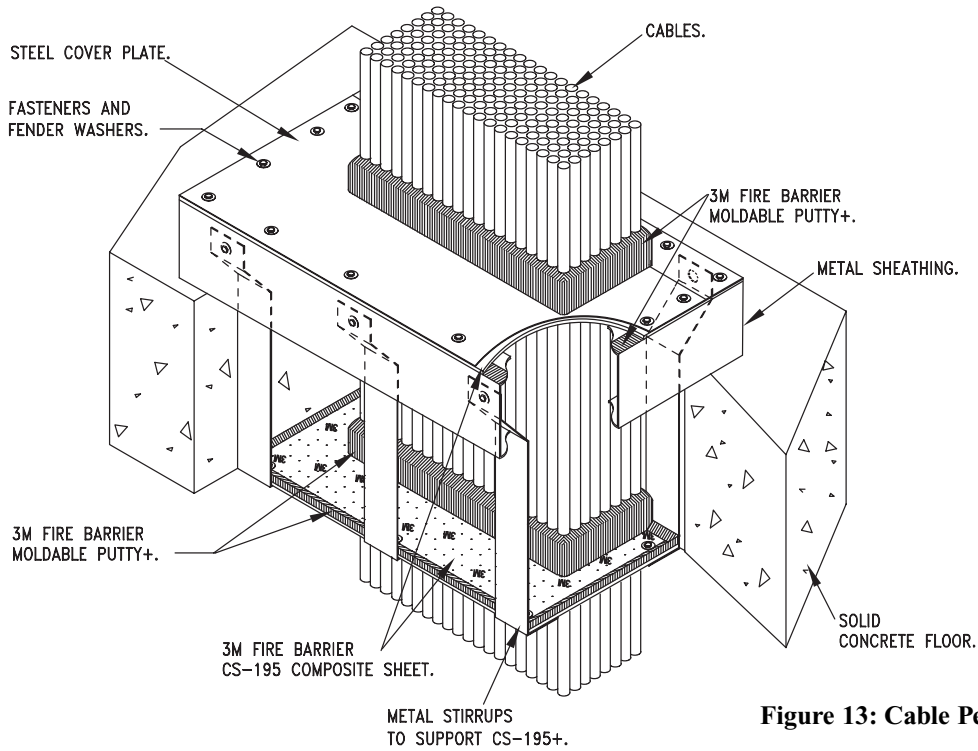


Figure 13: Cable Penetration with Curb Retrofit

Concrete Wall Systems

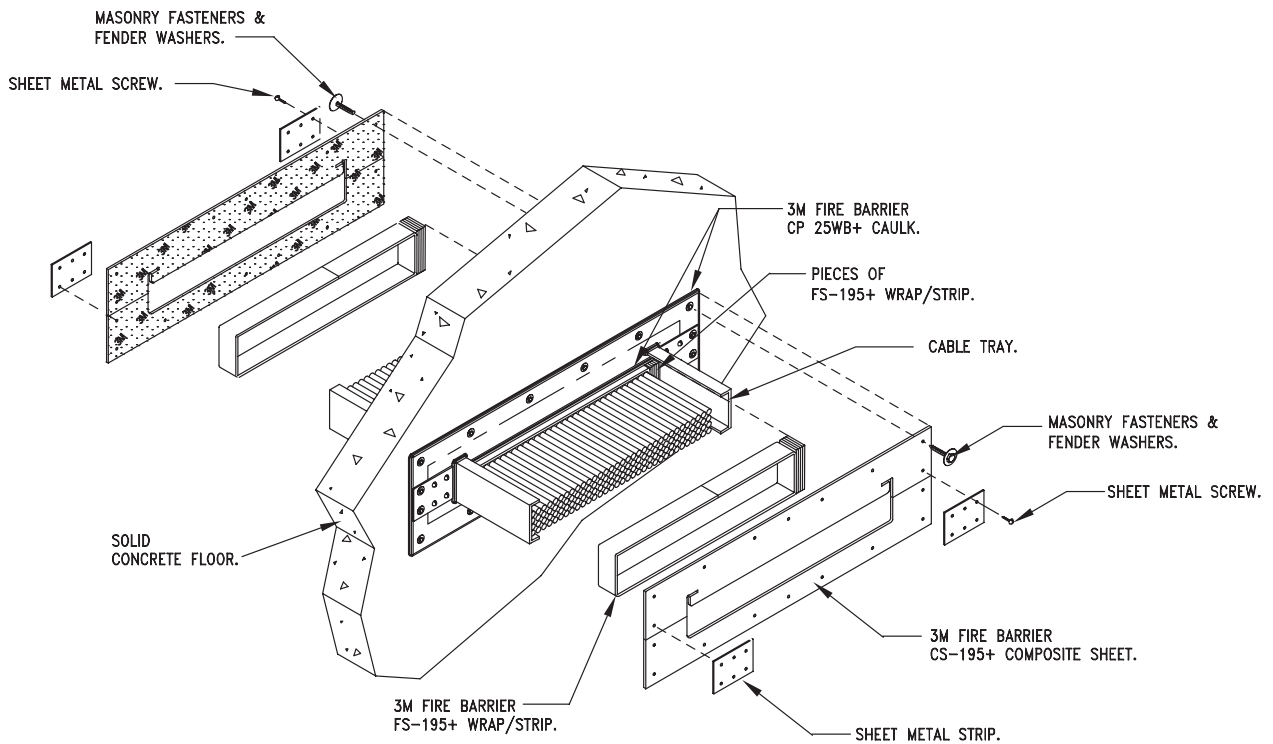


Figure 14: Concrete Wall Application

Cable Bundle Systems

Figure 15: Multiple Cable Bundles Through Concrete

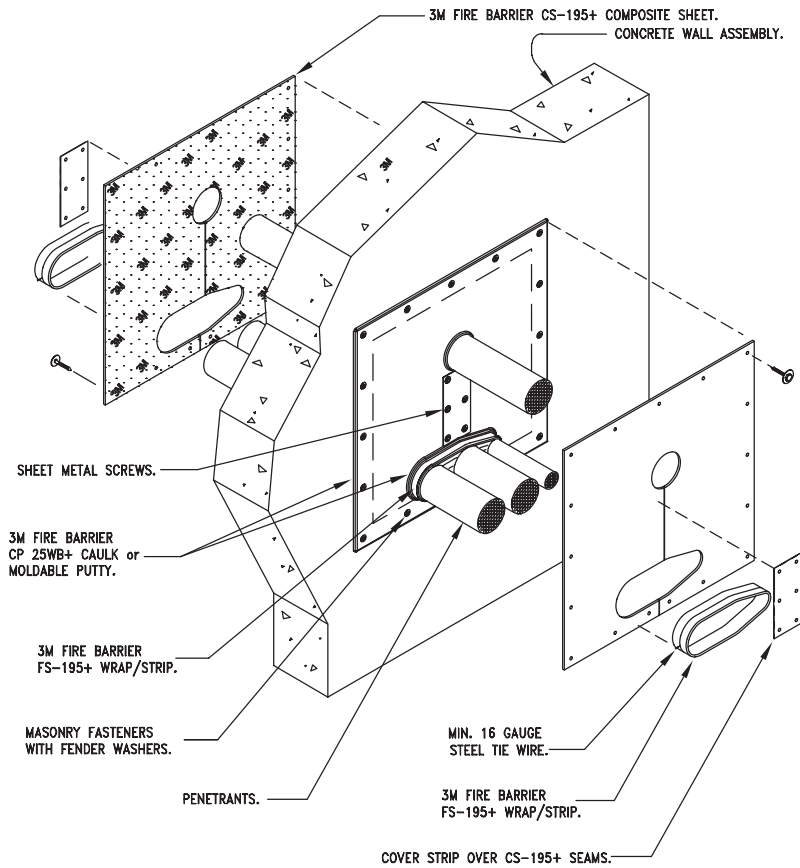
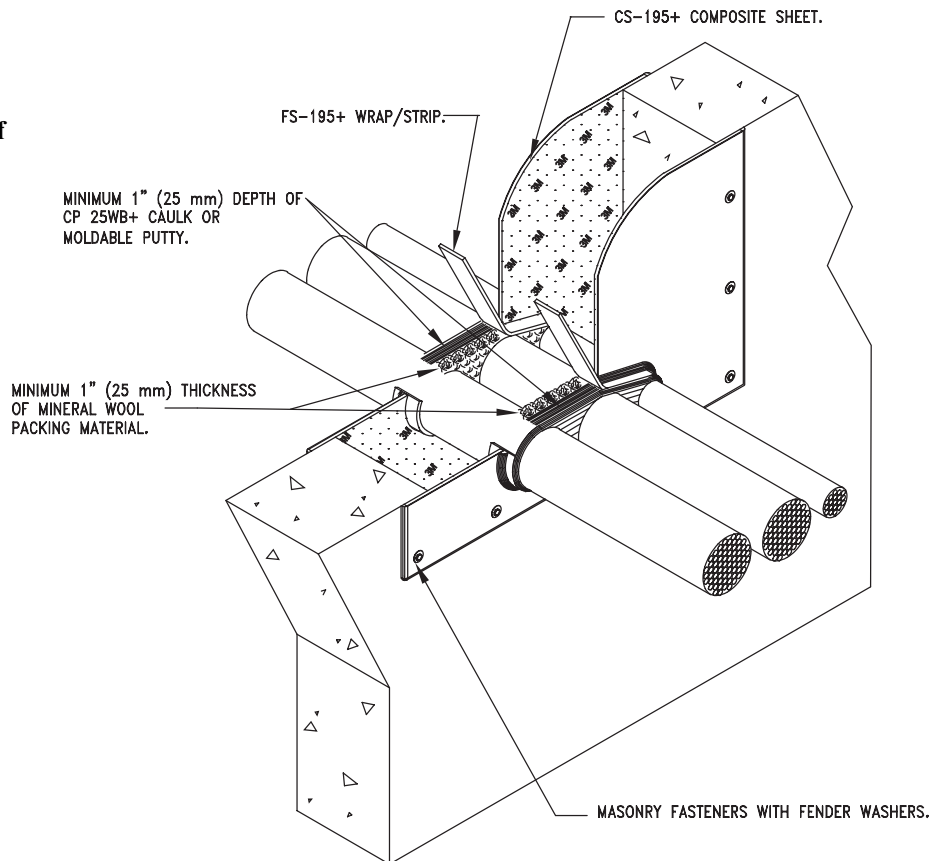


Figure 16: Cut away detail view of above drawing



Corner Applications

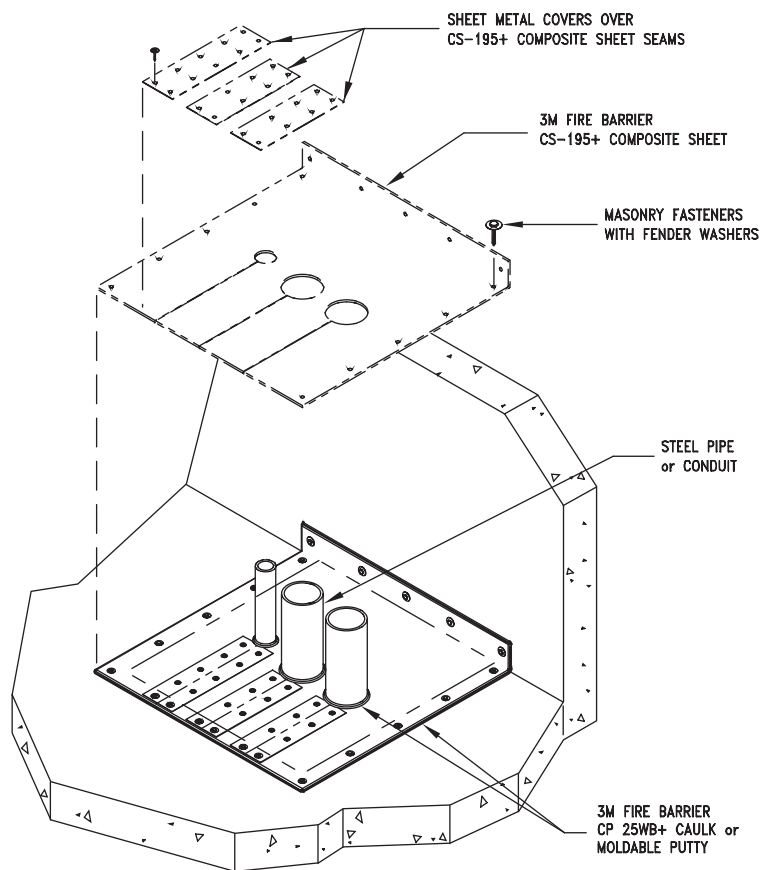
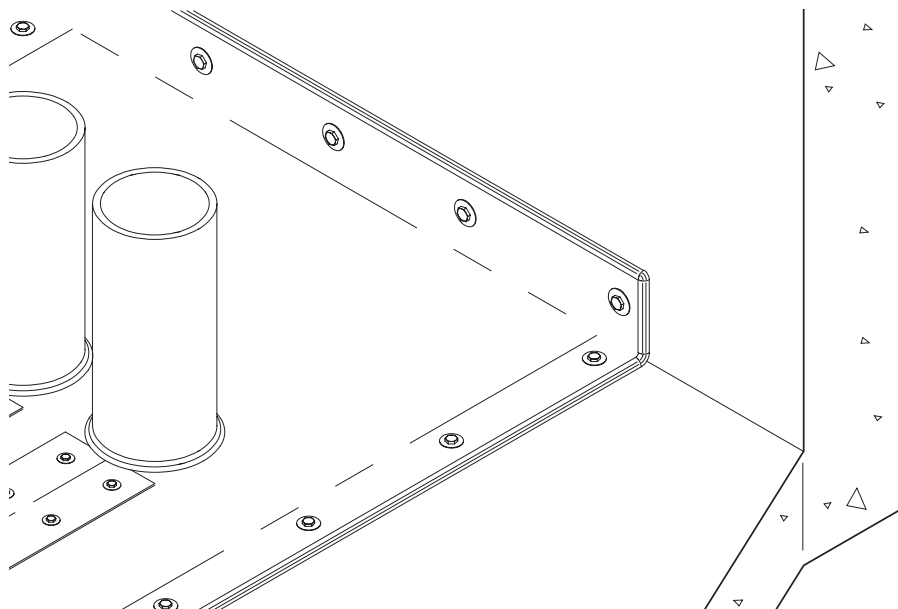


Figure 17: Bending composite sheet around a corner

Figure 18: Detail view of above



Composite Sheet Seaming Details

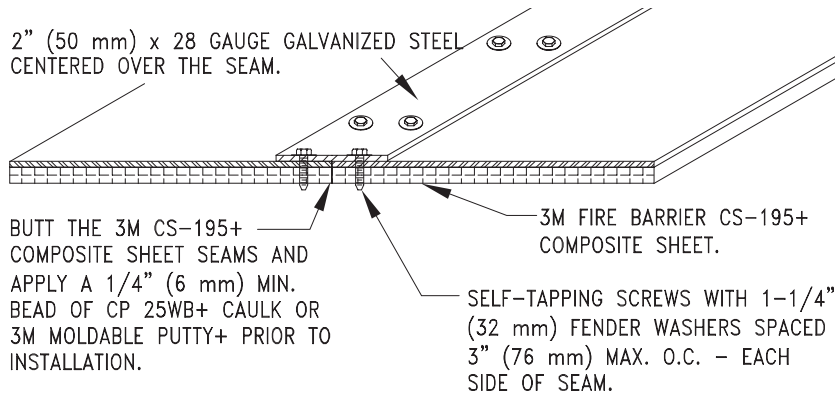


Figure 19: Butt seam

Figure 20: Supported seam

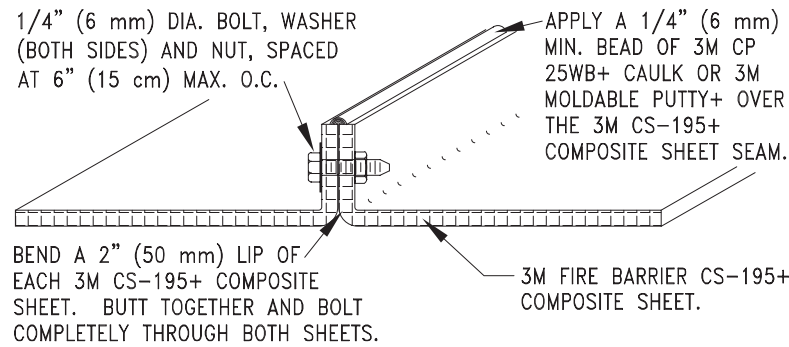
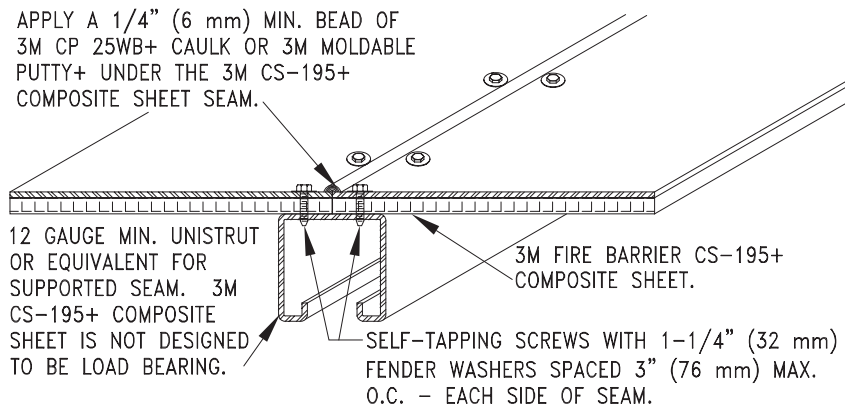
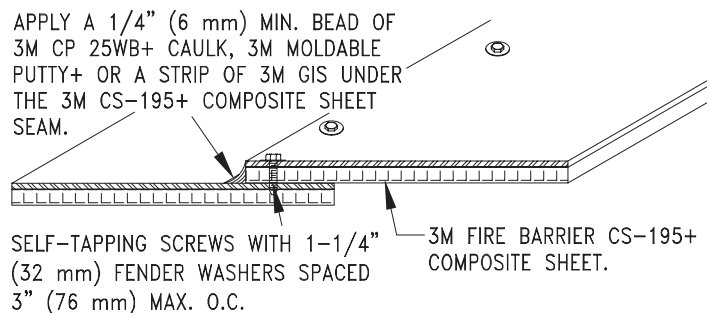


Figure 21: Flange seam

Figure 22: Overlap seam onto composite sheet



Composite Sheet Anchoring Details

APPLY A 1/4" (6 mm) MIN. BEAD OF 3M CP 25WB+ CAULK, 3M MOLDABLE PUTTY+ OR A STRIP OF 3M GIS UNDER THE 3M CS-195+ COMPOSITE SHEET SEAM.

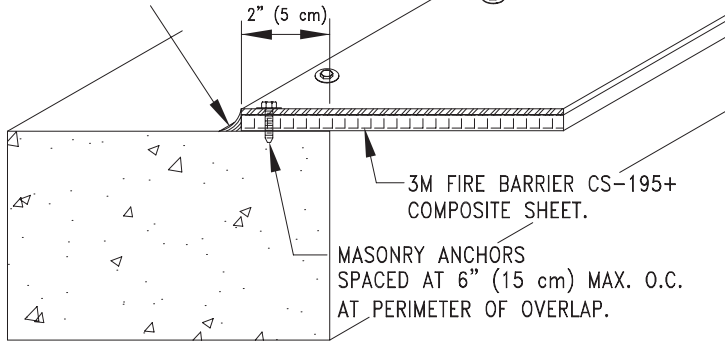
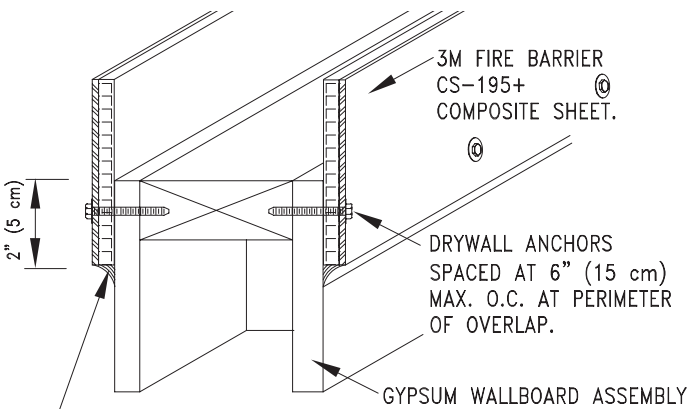
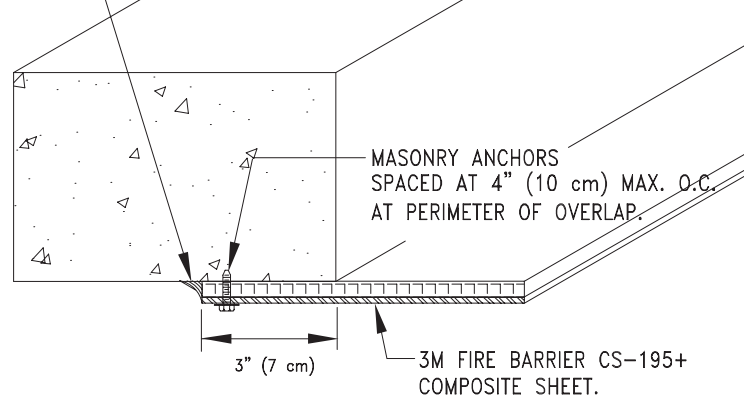


Figure 23: Overlap seam onto concrete top

Figure 24: Overlap seam onto concrete bottom

APPLY A 1/4" (6 mm) MIN. BEAD OF 3M CP 25WB+ CAULK, 3M MOLDABLE PUTTY+ OR A STRIP OF 3M GIS UNDER THE 3M CS-195+ COMPOSITE SHEET SEAM.



APPLY A 1/4" (6 mm) MIN. BEAD OF 3M CP 25WB+ CAULK, 3M MOLDABLE PUTTY+ OR A STRIP OF 3M GIS UNDER THE 3M CS-195+ COMPOSITE SHEET SEAM.

Figure 25: Overlap seam onto gypsum wall



3M™ Fire Barrier Moldable Putty Pads MPP+

Product Data Sheet

1. Product Description

3M™ Fire Barrier Moldable Putty Pads MPP+ are a one-part, ready-to-use, intumescent wall-opening protective. When properly applied to the back of electrical outlet boxes, 3M™ Fire Barrier Moldable Putty Pads MPP+ help control the spread of fire, smoke and noxious gases through fire-restive walls and partitions. Installed in accordance with the UL wall-opening protective listing (UL Category CLIV), the product helps achieve up to 2-hour ratings in a variety of wall constructions. 3M™ Fire Barrier Moldable Putty Pads MPP+ can effectively provide protection for back-to-back electrical boxes.

3M™ Fire Barrier Moldable Putty Pads MPP+ are also used as a firestop material in through-penetration fire-stop systems. 3M™ Fire Barrier Moldable Putty Pads MPP+ help to maintain a firestop penetration seal for up to 4 hours. 3M™ Fire Barrier Moldable Putty Pads MPP+ exhibit excellent adhesion to a full range of construction substrates and penetrants. The pads are easily molded by hand (no mixing required). In addition to its fire-resistant properties, the 1/10th in. (2.54 mm) thick pads have airborne sound reduction characteristics which helps minimize sound transmission through assemblies requiring an STC rating.

Color: ■ Dark Red

Product Features

- Firestop tested up to 4 hours in accordance with ASTM E 814 (UL 1479) & CAN/ULC S115
- Wall opening protective tested up to 2 hours in accordance with UL 263
- Provides draft and cold smoke seal
- Pliable and conformable—molds easily into required shape
- Helps reduce noise transfer*
- Tested in accordance with A.S.1530-4-2005
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 23261
- Excellent adhesion
- Re-enterable/repairable
- Halogen-free and solvent-free
- Excellent aging properties
- Low VOC
- Will not dry out or crumble
- Red color widely recognized as a fire protective product

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants.

**Minimizes noise transfer—STC-Rating of 52 when tested in STC 53-rated wall assembly.*



4 in. x 8 in. (101.6 mm x 203.3 mm),
7 in. x 7 in. (177.8 mm x 177.8 mm) and
9.5 in. x 9.5 in. (241.2 mm x 241.3 mm)
pad sizes available.

2. Applications

4 in. x 8 in. (101.6 mm x 203 mm) 3M™ Fire Barrier Moldable Putty Pads MPP+ are typically used as a wall opening protective to meet building requirements, for protection of membrane penetrations made by listed steel or non-metallic electrical boxes. It is also used to seal gaps between cables in multiple penetrations (including fiber optic inner duct) and to firestop cable bundles, insulated pipe, electrical conduit and metal pipe. Larger sized pads, 7 in. x 7 in. and 9.5 in. x 9.5 in. (177.8 mm x 177.8 mm and 241.2 mm x 241.2 mm) are widely used to firestop metallic and non-metallic electrical outlet boxes up to 14 in. x 4.5 in. by 2-1/2 in. (355.6 mm x 114.3 mm x 63.5 mm) deep. For larger applications, pads can be molded together by hand.

3. Specifications

3M™ Fire Barrier Moldable Putty Pads MPP+ shall be a one component, ready-to-use, intumescent elastomer capable of expanding a minimum of 3 times at 1000°F. The material shall be thixotropic and shall be applicable to overhead, vertical and horizontal firestops. Under normal conditions, 3M™ Fire Barrier Moldable Putty Pads MPP+ shall be noncorrosive to metal and compatible with synthetic cable jackets. The putty shall be listed by independent test agencies such as UL, Intertek or FM. 3M™ Fire Barrier Moldable Putty Pads MPP+ shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems and CAN/ULC S115 Standard Method of Fire Tests of Firestop Systems. 3M™ Fire Barrier Moldable Putty Pads MPP+ meets the requirements of the IBC, NFPA 5000, NEC (NFPA 70), NFPA 101 and NCB (Canada) Building Codes.

Typically Specified MasterFormat (2004)

Section 07 84 00 – Firestopping

Related Sections

Section 07 84 16 – Annular Space Protection

Section 07 86 00 – Smoke Seals

Section 07 87 00 – Smoke Containment Barriers

Section 07 27 00 – Thermal and Moisture Protection Firestopping

Section 21 00 00 – Fire Suppression

Section 26 00 00 – Electrical

FIRE BARRIER UP TO 4 HOUR Fire Protection	SMOKE SEAL L RATED Meets Optional L Requirements
WALL OPENING UP TO 2 HOUR Fire Protection	SOUND BARRIER STC 52 In STC 53-Rated Wall Assembly

FM APPROVED

SUBJECT TO THE CONDITIONS OF APPROVAL AS A WALL & FLOOR PENETRATION FIRESTOP WHEN INSTALLED AS DESCRIBED IN THE CURRENT EDITION OF THE FMRC APPROVAL GUIDE

ULC LISTED FILL, VOID OR CAVITY MATERIALS 90G9	CLASSIFIED UL WALL OPENING PROTECTIVE MATERIAL FIRE RESISTANCE CLASSIFICATION SEE UL FIRE RESISTANCE DIRECTORY 90G9
CLASSIFIED UL FILL, VOID, OR CAVITY FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS SEE UL FIRE RESISTANCE DIRECTORY 90G9	

4. Performance & Typical Physical Properties

Color:	Dark Red	STC (ASTM E 90, ASTM E 413):	52 when tested on back-to-back electrical boxes
Nominal Density:	10-12 lbs./gal. (1.2-1.45 kg/l)	Tested in STC 53 rated wall assembly	
Nominal Thickness:	1/10 in. (2.54 mm)	VOC Less H₂O and Exempt Solvents:	<250 g/L
Surface Burning (ASTM E 84):	Flame Spread 0, Smoke Development 0		
Heat Expansion:	Begins @ 350°F (177°C), Significant @ 400°F (204°C) Free Expansion is Nominal 3 times		
Dimensions:	4 in. x 8 in. x 1/10 in. (101.6 mm x 203.2 mm x 2.5 mm)	7 in. x 7 in. 1/10 in. (177.8 mm x 177.8 mm x 2.5 mm)	9.5 in. x 9.5 in. 1/10 in. (241.3 mm x 241.3 mm x 2.5 mm)
Unit Volume:	2.52 in. ³ (41.4 cm ³)	4.63 in. ³ (76.0 cm ³)	6.1 in. ³ (139.8 cm ³)
Unit weight:	2.7 oz (76 g)	4.1 oz (76 g)	7.6 oz (215 g)

5. Packaging, Storage, Shelf Life

Packaging	Corrugated cardboard box with liner between individual pads.
Storage	3M™ Fire Barrier Moldable Putty Pads MPP+ should be stored indoors in dry conditions.
Shelf Life	3M™ Fire Barrier Moldable Putty Pads MPP+ shelf life is indefinite in original unopened containers. Product will not dry or crumble in opened containers. Normal stock and stock rotation practices are recommended.

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, Intertek or other third-party drawings and system details.

Preparatory Work	The surface of the electrical box, or opening and any penetrating items should be cleaned (i.e. free of dust, grease, oil, loose materials, rust or other substances) to allow for the proper adhesion of the 3M™ Fire Barrier Moldable Putty+ Pad. Ensure that the surface of the substrates are not wet and are frost-free.
Installation Details	Electrical boxes must be firestopped under the following conditions: boxes larger than 16 sq. in. (103 sq. cm), if horizontal spacing between boxes is less than 24 in. (609.6 mm), when multiple boxes are located in one stud cavity or if the aggregate area of all boxes exceeds 100 sq. in. per 100 sq. ft. (645 sq. cm. per 9.29 sq. m) - refer to listed system details and applicable local building code requirements. For electrical box installations, a minimum of 1/10 in. (2.5 mm) thick putty application is required, 3M™ Fire Barrier Moldable Putty Pads MPP+ are to be installed to completely cover the exterior of the outlet box (except for the side against the stud). To firestop penetrations, install the applicable depth of backing material (if required), remove the desired amount of putty from the pad, form (if necessary) and install as detailed within the listed system. Make sure that putty is in complete contact with the substrate and penetrating item(s). Note: Partial pads can be pieced together and the seams between partial pads should overlap a minimum of 1/8 in. with the seams worked with the fingertips to create adhesion at the seam.
Limitations	Over application (i.e. using excessive amount of material) of product to vertical surfaces may cause sagging, follow system details. Product is not impaired by freezing but should be warmed to 32°F (0°C) before applying.

7. Maintenance

No maintenance is expected when installed in accordance with the applicable UL, Intertek, FM or other third-party listed system. Once installed, if any section of the 3M™ Fire Barrier Moldable Putty Pad MPP+ is damaged, the following procedure will apply: remove damaged putty, clean the affected area and install the proper thickness of putty, ensuring it bonds to the substrate and adjacent putty (product from damaged area can be reused if it is free from contaminants). Putty can be molded together at new/existing putty overlap.

8. Availability

3M™ Fire Barrier Moldable Putty Pads MPP+ are available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Moldable Putty Pads MPP+ are available in the following sizes: (10 pads/pack, 10 packs /case) 4 in. x 8 in. x 1/10 in. (101.6 mm x 203.2 mm x 2.5 mm), (20 pads/case) 7 in. x 7 in. 1/8 in. (177.8 mm x 177.8 mm x 2.5 mm), (20 pads/case) 9.5 in. x 9.5 in. 1/8 in. (241.3 mm x 241.3 mm x 2.5 mm); red-colored firestop material. 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.

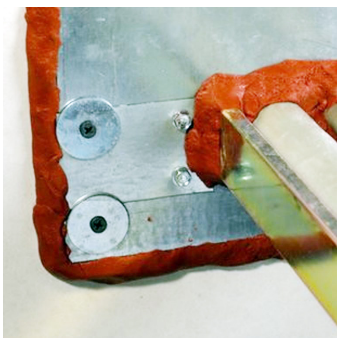
Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



3M™ Fire Barrier Moldable Putty+ Product Description

The 3M Fire Barrier Moldable Putty+ consists of a synthetic elastomer designed for use as a one part, intumescent fire resistive putty used to restore the integrity of fire rated building construction.

Moldable Putty+ achieves up to a 4 hour Fire Resistance Rating when tested in accordance with AS1430.4. This is achieved by the unique intumescent (expanding when heated) and high strength insulating char-forming properties of this material.



3M Moldable Putty + Stix - Application



Product Features

- Halogen-free formula: Free from corrosive gases during a fire, making it safe for building occupants and sensitive electrical equipment.
- Minimal odour
- Long shelf life: Stix and pad packages can be sealed for reuse. Putty will not dry out or crumble
- Easily re-enterable
- Provides a draft and cold smoke seal in the installed condition, even before any temperature rise occurs, resulting from a fire
- Adheres to all common building surfaces (cement, gypsum, wood and plastic), including metal and plastic electrical boxes
- One part, solventless pads or stix are easily hand molded, with no damming required, allowing easy application
- Intumescent: expands when heated, forming a hard char, preventing the transmission of hot gases and fire
- No special tools required
- Contains no asbestos, non toxic
- Testing in accordance with AS1530.4, EN1366, and ASTM E814 (UL Listed).
- Tested in accordance with A.S.1530-4-2005
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 23261

Physical Properties

Typical Physical Properties	Value
Colour	Red-Brown
Density	1.20-1.45 kg/l (10-12 lbs/gal)
Adhesion	Good on all construction substrates

Heat Expansion		
Begins	177°C (350°F)	
Significant	204°C (400°F)	
Free Expansion	Normal	3 times

Test Condition	Temperature	Humidity	Time	Normal Expansion
Oven	80°C (176°F)	–	90 days	2.7 Times
Humidity Chamber	32°C (90°F)	90 Percent	90 days	2.6 Times

Weight	
178 mm x 178 mm Pad (7" x 7")	103 gm (3.63 oz.)
40.6 mm dia. x 279 mm Stix (1.6" x 11")	491 gm (17.30 oz.)

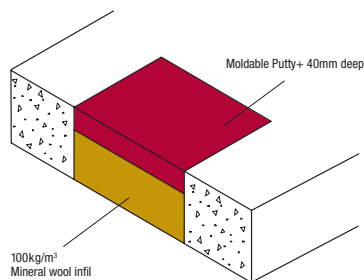
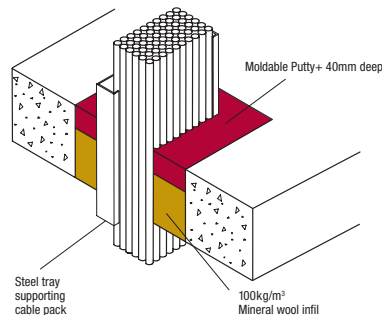
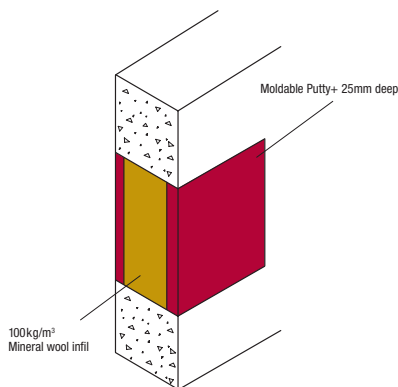
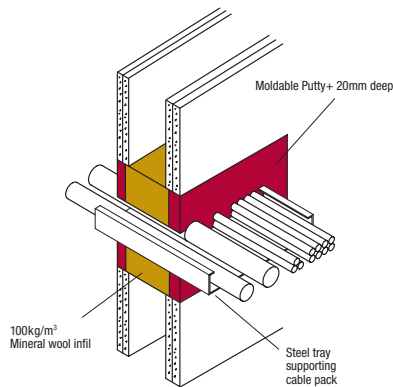
Availability

3M™ Fire Barrier Moldable Putty+ is available from Authorized 3M Fire Protection Products Distributors.

3M Order Code	Packing	Unit/Case
98040055240	178 mm x 178 mm (7" x 7")	20

Maintenance

Moldable Putty+ is stable under normal storage conditions. Normal stock and stock rotation practices are recommended. This product is not impaired by freezing; however, it should be warmed to at least 0°C (32°F) before applying.



Installation Techniques:

Installation Techniques: Walls

Electrical Cables, Blank (unpenetrated) Seals

- Install 100kg/m³ mineral wool infill friction fitted and centred in the penetration. Ensure that enough space is left on either side of the mineral wool for the Moldable Putty+.
- Install Moldable Putty+ to a depth of 20mm for electrical cables and 25mm for blank unpenetrated seals on both sides of the wall. It is usually easiest to mold the Putty into place one section at a time. Ensure that the Moldable Putty+ is installed flush with the wall on both sides of the penetration.

Installation Techniques: Floors

Electrical Cables, Blank (unpenetrated) Seals

- Install 100kg/m³ mineral wool infill friction fitted into the floor slab, the bottom of the mineral wool should be flush with the bottom surface of the floor slab. Ensure that enough space is left above the mineral wool for the Moldable Putty+.
- Install Moldable Putty+ to a depth of 40mm on the top side of the floor slab only. It is usually easiest to mold the Putty into place one section at a time. Ensure that the Moldable Putty+ is installed flush with the top surface of the floor slab.

Performance Specifications for Installers

Australian Standard FRLs		Fire Resistance Level (FRL)		
3M Fire Barrier System	Building Element	Blank (Unpenetrated) Seal	Mixed PVC Insulated Cables, Cable trays and Cable bundles	For Telecommunication Cables, Cable trays and Cable bundles only
	Floor: Concrete slab. <i>Minimum 120mm thickness</i>	-/240/120	-/180/-	-/240/30
3M Fire Barrier Moldable Putty+	Wall: Plasterboard Dry Wall, solid masonry, hollow masonry or concrete construction. <i>Minimum 116mm thickness</i>	-/120/120	-/120/30	-/120/30
	Wall: Solid masonry, hollow masonry or concrete construction. <i>Minimum 150mm thickness</i>	-/240/180	-/120/30	-/120/30



In order to achieve the above FRLs you must ensure that the Moldable Putty+ is installed as per the Installation Techniques and the building element you are installing into has an FRL performance equal to or better than that of the Moldable Putty+ system. The Installation Techniques can be found on the final page of this document.

What does FRL mean?

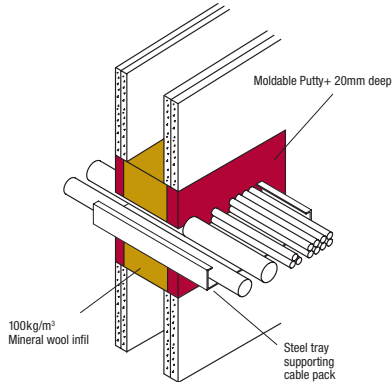
FRL stands for 'Fire Resistance Level'. For example, an FRL of '-/240/180' indicates:

- **Structural Adequacy.** The first dash '-' indicates that Moldable Putty+ is non load bearing
- **Integrity.** The middle number '240' indicates for how many minutes the Moldable Putty+ system can resist the passage of flames and hot gasses
- **Insulation.** The last number '180' indicates how many minutes it takes the unexposed face to heat up by more than 140°C.

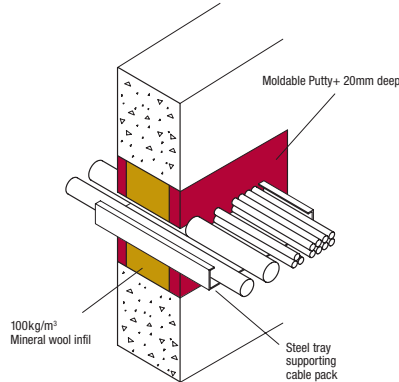
Performance Specifications for Engineers and Specifiers

3M Fire Barrier Moldable Putty+ has been tested in accordance with AS1530.4-2005 and assessed in accordance with AS4072.1-2005 under BWA Report No: 23261. The following illustrations provide a summary of the test results for D1 and D2 cable configurations and blank unpenetrated seals with Moldable Putty+ installed as per the Installation Techniques. Specifications for standard D1 and D2 cable configurations can be found in AS1530.4-2005 Appendix D.

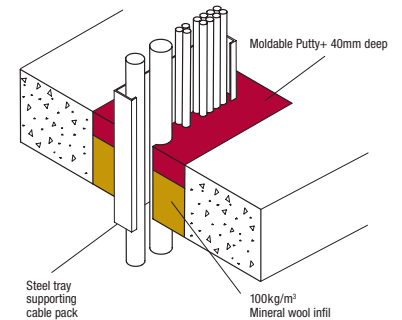
D1 Cable Pack – Power Transmission Cables.



Dry Wall 116mm – FRL: -/180/30

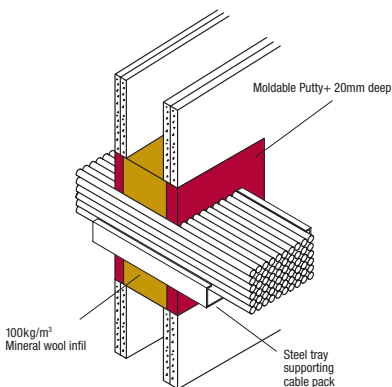


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/180/30

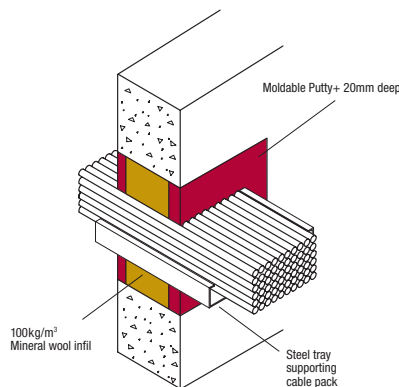


Concrete Floor 120mm – FRL: -/180/-

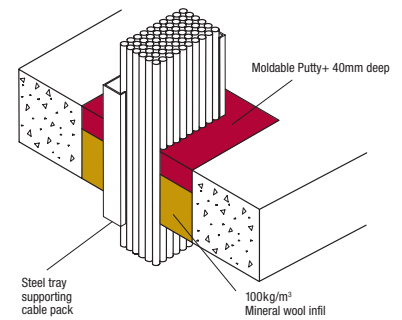
D2 Cable Pack – Telecom Cables.



Dry Wall 116mm – FRL: -/120/30

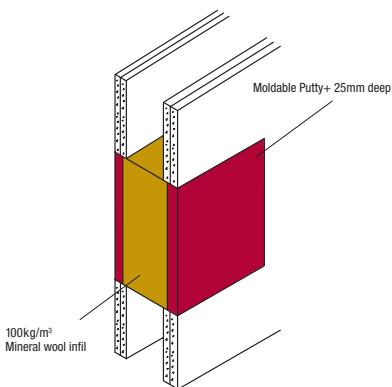


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

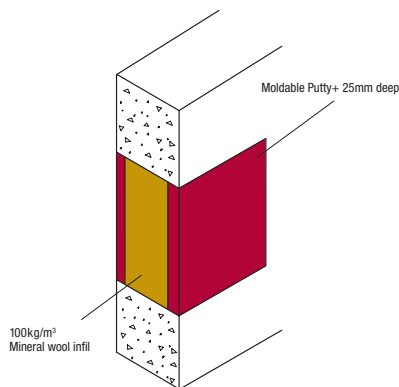


Concrete Floor 120mm – FRL: -/240/30

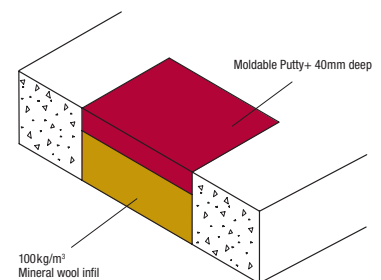
Blank Openings (unpenetrated)



Dry Wall 116mm – FRL: -/120/120



Solid Masonry, Hollow Masonry
or Concrete Wall :
116mm - FRL: -/120/120
150mm - FRL: -/240/180
170mm - FRL: -/240/240



Concrete Floor :
120mm - FRL: -/240/120
150mm - FRL: -/240/180
170mm - FRL: -/240/240



Versatile, Dual Protection One Complete Kit



Whether used in new construction or renovation projects, everything you need is in one complete kit.

The 3M™ Fire Barrier Putty Sleeve Kit contains all the components required to meet firestop code for installation of cable and blank applications. Innovative sleeve design delivers both fire and cable protection and helps ensure smooth cable entry and no-slip installations. Easy-slit label on sleeve allows quick splitting for retrofitting around existing cables. Bracket plates cover smooth, rough or irregular shaped openings.

Each kit comes complete with brackets, sleeve, screws, identification labels and 3M™ Fire Barrier Moldable Putty+. Available in three sizes to cover a variety of installation needs.

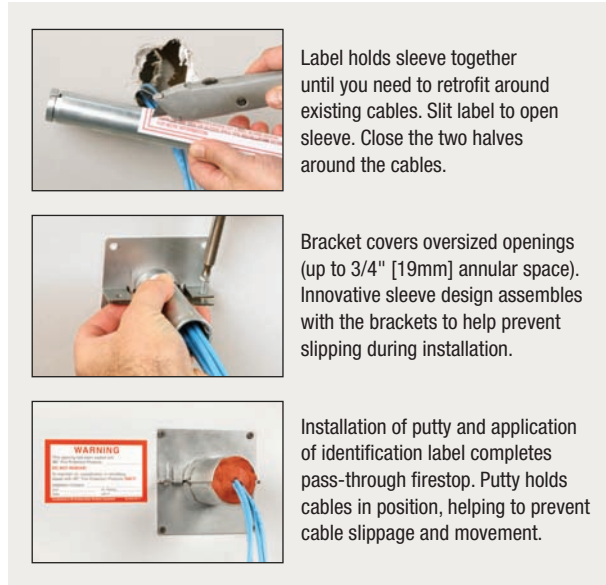
- Putty tested in accordance with A.S.1530-4-2005
- Putty assessed in accordance with A.S.4072.1 – 2005

3M™ Fire Barrier Putty Sleeve Kits

3M Fire Barrier Putty Sleeve Kits are designed for use in concrete floors, concrete walls, concrete block walls, and gypsum wall board.

Features and Benefits

- Designed to be used for both new construction and retrofitting
- System offers dual fire and cable through-penetration protection
- Kit includes all components required to meet firestop code for installation of cable and blank applications
- Rolled-out lip on sleeve facilitates smooth cable entry
- Brackets and sleeve work in tandem to help prevent slipping during installation — sleeve won't pull out
- Bracket plate covers smooth and rough irregular shaped openings to fit a variety of installation needs
- Red color for easy identification and inspection
- UL tested and fire rated up to 4 hours per ASTM E814 (UL1479)
- Economical — putty sleeve kits are versatile enough to help reduce inventory
- Available in three sleeve sizes: 1" (25mm), 2" (51mm) and 4" (102mm)



Label holds sleeve together until you need to retrofit around existing cables. Slit label to open sleeve. Close the two halves around the cables.

Bracket covers oversized openings (up to 3/4" [19mm] annular space). Innovative sleeve design assembles with the brackets to help prevent slipping during installation.

Installation of putty and application of identification label completes pass-through firestop. Putty holds cables in position, helping to prevent cable slippage and movement.

Ordering Information

3M™ Fire Barrier Putty Sleeve Kits

Product Number	Sleeve Size	Description/Kit Contains	Opening Size	UPC Number
DT100	1" (25mm)	One (1) Galvanized Steel Sleeve — 1"D x 12"L (25mm x 304mm) Two (2) Galvanized Steel Mounting Brackets — 3-3/8" x 3-3/8" (85mm x 85mm) Four (4) Hex Head Self-Drilling Screws — 3/4" (19mm) Eight (8) Coarse Thread Drywall Screws — 1-5/8" (41mm) Two (2) Installation Identification Labels 3M™ Fire Barrier Moldable Putty+ — Red	Min: 1-1/8" (29mm) Max: 2-1/4" (57mm)	000 51115 18809 1
DT200	2" (51mm)	One (1) Galvanized Steel Sleeve — 2"D x 12"L (51mm x 304mm) Two (2) Galvanized Steel Mounting Brackets — 5-1/4" x 5-1/4" (130mm x 130mm) Four (4) Hex Head Self-Drilling Screws — 3/4" (19mm) Eight (8) Coarse Thread Drywall Screws — 1-5/8" (41mm) Two (2) Installation Identification Labels 3M™ Fire Barrier Moldable Putty+ — Red	Min: 2-3/8" (60mm) Max: 4" (102mm)	000 51115 18808 4
DT400	4" (102mm)	One (1) Galvanized Steel Sleeve — 4"D x 12"L (102mm x 304mm) Two (2) Galvanized Steel Mounting Brackets — 8" x 8" (204mm x 204mm) Four (4) Hex Head Self-Drilling Screws — 3/4" (19mm) Eight (8) Coarse Thread Drywall Screws — 1-5/8" (41mm) Two (2) Installation Identification Labels 3M™ Fire Barrier Moldable Putty+ — Red	Min: 4-1/2" (114mm) Max: 6" (152mm)	000 51115 18806 0



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.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



3M™ Fire Barrier Putty Sleeve Kits DT 100, DT 200 and DT 400

Product Data Sheet



FIRESTOP DEVICE
FOR USE IN THROUGH-PENETRATION
FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
90G8



LISTED
FIRESTOP DEVICES 90G8

1. Product Description 3M™ Fire Barrier Putty Sleeve Kits DT 100, DT 200 and DT 400 are designed to help prevent the passage of fire and smoke in new or existing cable penetrations through walls or floors. Each kit comes complete in a box containing a 3M™ Fire Barrier Putty Sleeve (two-part metallic sleeve with set of two-part metallic flanges), 3M™ Fire Barrier Moldable Putty+, sheet metal screws, drywall screws and two installation identification labels. These kits can be used as a one-piece sleeve or the sleeve may be split/hinged for existing cable installations. The sleeves can be easily installed in openings that are either tight to the sleeve or irregular. The oversized openings can accommodate up to a one-inch larger diameter than the 3M™ Fire Barrier Putty Sleeve diameter.



Firestop kits with 1" (25mm), 2" (51mm) or 4" (102mm) diameter by 12" (304mm) length putty sleeves

Product Features

- Ready-to-install kit with all items needed for a complete cable or blank firestop installation
- Tested up to 4 hours for fire-rated through penetration systems in accordance with ASTM E 814 (UL 1479)
- Blank sleeve (0% cable fill) accommodates future cable installation
- Two-piece split/hinged design for easy retrofit installation on existing cables
- Suitable for installation in gypsum wallboard and concrete walls or floors
- No gasket required

Provides a re-enterable solution for firestopping applications. This feature reduces the waste associated with traditional products that must be discarded and replaced when assemblies are modified.

2. Applications 3M™ Fire Barrier Putty Sleeve Kits are ideal for existing through-penetration openings with cables, future cable installations (blank openings*) or new construction through-penetration openings for power and communication cables. The cable types can be a mixture of the following:

Cable Fill

- 100 pr. No. 24 AWG copper conductor telephone cables
- 1/C-750 kcmil copper conductor power cable
- 7/C-No. 12 AWG copper conductor control cables
- Coaxial cables
- 3/C-No 2/0 AWG aluminum conductor SER cable with No. 1 AWG aluminum ground conductor
- No. 23 AWG Category 6 data cables
- Fiber optic cable

*Blank 4" diameter 3M™ Fire Barrier Putty Sleeve Kit DT 400 requires 3M™ Fire Barrier Packing Material PM4 or 4 pcf mineral wool batt insulation—consult applicable system details.

3M™ Fire Barrier Putty Sleeve Kit	Sleeve size	Flange Dimension	Min. Opening Size	Max. Opening Size
DT 100	1" (25mm) Diameter 12" (304mm) Length	3-3/8" (86mm) x 3-3/8" (86mm)	1-1/8" (29mm)	2-1/4" (57mm)
DT 200	2" (51mm) Diameter 12" (304mm) Length	5-1/4" (133mm) x 5-1/4" (133mm)	2-3/8" (60mm)	4" (102mm)
DT 400	4" (102mm) Diameter 12" (304mm) Length	8" (203mm) x 8" (203mm)	4-1/2" (114mm)	6" (152mm)

3. Specifications

To be used for penetrations through fire-rated construction with blank openings and openings containing various penetrating cable types. These putty sleeve and flange kits provide through-penetration firestop systems. When properly installed, 3M™ Fire Barrier Putty Sleeve Kits help resist the spread of fire, resist the passage of smoke and other gases and helps maintain the original fire-resistance rating of the construction penetrated in fire-rated wall or floor assemblies. 3M™ Fire Barrier Putty Sleeve Kits shall be listed by independent test agencies (e.g. UL, Intertek, FM) and shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems.

Typically Specified Division

Division 7
Section 07 84 00 – Firestopping
Section 07 84 13 – Penetration Firestopping

Division 26
Section 26 00 00 Electrical

Division 27
Section 27 00 00 Communications

4. Physical Properties

Colors Available:	Steel-colored (galvanized steel) sleeve with red labels
Sizes:	Putty Sleeve Sizes: DT 100 1 inch (25mm); DT 200 2 inch (51mm); DT 400 4 inch (102 mm)
Length:	12 inches (304mm) for DT 100, DT 200, DT 400
Sleeve and Flange Plate Material:	18 Gauge galvanized steel
Fill Material and Properties:	3M™ Fire Barrier Moldable Putty+ Sticks Color: Red Adhesion: Very good Fire resistance: 1-4 hours (wall- or floor-rating dependent) Expansion: Begins @ 400° F (204° C) Volume expansion: @ 662° F (350° C) Nominal 3x Continuous Use Temperature: ≤ 120° F (48.8° C)
Additional Kit Materials:	Sheet metal screws, drywall screws, installation identification labels

5. Packaging, Storage, Shelf Life

Packaging	Each kit is in a box container with a product label on the exterior of the box.
Storage	3M™ Fire Barrier Putty Sleeve Kits DT 100, DT 200 and DT 400 should be stored indoors in dry conditions.
Shelf Life	3M™ Fire Barrier Putty Sleeve Kits DT 100, DT 200 and DT 400 shelf life is indefinite when stored in original unopened containers in packaging.

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for applicable UL, or other third-party, drawings and system details.

Preparatory Work	The size of the opening and any penetrating items should be sized appropriately for the selected sleeve kit to allow for proper installation and seal. Note: apply 3M™ Fire Barrier Moldable Putty+ Sticks in conditions above 32° F (0° C).
Installation Details	Install correct kit size as detailed within the applicable UL system for the assembly and required system rating(s).
Limitations	Do not apply 3M™ Fire Barrier Putty Sleeve Kits to openings larger than the allowed opening sizes (<i>refer to the 3M™ Fire Barrier Putty Sleeve Kit Installation Guide</i> for typical installation techniques).

7. Maintenance

No maintenance should required when installed in accordance with 3M™ Fire Barrier Putty Sleeve Kit Installation Guide. Once installed, if any section of the 3M™ Fire Barrier Putty Sleeve Kits is damaged, the following procedure will apply: the damaged sleeve or flange should be removed and reinstalled in accordance with the applicable UL system.

8. Availability

3M™ Fire Barrier Putty Sleeve Kits are available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Putty Sleeve Kits sizes available: 1-inch (25mm) DT 100, 2-inch (51mm) DT 200 and 4-inch (102mm) DT 400. 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 Material Safety Data Sheet (MSDS) prior to handling and disposing of 3M™ Fire Barrier Putty Sleeve Kits (refer to MSDS for 3M™ Fire Barrier Moldable Putty+ Sticks).

Important Notice to User:

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Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



3M™ Fire Barrier Mortar

Product Description

3M Fire Barrier Mortar is a lightweight cementitious firestop product. It is available in poly/paper bags and ready for mixing with potable water. 3M Fire Barrier Mortar does not contain MMMF (man-made-mineral-fibers) or asbestos and does not require fibrous damming materials. 3M Fire Barrier Mortar contains binders free of portland cement and therefore has greater resistance to common concrete poisons than PC bound products. For use in mechanical and electrical penetration firestopping.

Product Features

- Variable Mix Ratio: permits self-leveling as well as no sag (no forming) application consistencies, resulting in labour savings
- Excellent Adhesion: will bond to concrete, metals, wood, plastic and cable jacketing
- Re-enterable without use of power tools: results in lower maintenance costs due to ease of making cable changes
- Bonds to Itself: proven prior and during fire testing, resulting in proven and tested repair procedures
- MMMF and Asbestos Free
- Polypropylene-Fiber Reinforced: reduces cracking during cure and firing
- Pumpability: allows faster installations, resulting in labour savings on larger projects and reduced installation time
- Excellent Heatsink: resulting in absorption of heat from penetrants, reducing the likelihood of ignition of combustible matter on the unexposed side of the assembly
- Compression Strengths: are between 1.3 to 5.45 MPa (186 and 790 PSI), depending on the water/cement ratio (1 part water to 2.5 parts powder to 1:4)
- Tested in accordance with AS1530.4, EN1366 and ASTM E814 (UL Listed).
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 23265



Physical Properties

Typical Physical Properties	
Colour	Blue/Grey
Appearance	Solid powder with white particles and plastic fibres
Bulk Powder Density	600-910 kg/m ³ (37-57 lb/ft ³) range between loose and compacted powders
Wet Densities	1,100-1,900 kg/m ³ (68-119 lb/ft ³) depending on water/powder ratio and placement methods
Cured Densities	700-1,400 kg/m ³ (43-87 lb/ft ³) depending on water/powder ratio and placement methods
Compression Strengths	1.3-5.45 MPa (187-790 PSI) depending on water/powder ratio and placement methods

Availability

3M™ Fire Barrier Mortar is available from Authorized 3M Fire Protection Products Distributors.

3M Order Code	Packing	Unit/Case
98040026464	19.6 kg (44 lb)	1

Maintenance

Fire Barrier Mortar is expected to be stable indefinitely under normal conditions of use. Avoid presence of typical concrete poisons (i.e. sulfates, bleaches, etc.), which may deteriorate the product.

Installation Techniques:

- Clean opening and penetrating items from dirt and loose debris
- Wrap electrical cables and cable packs with a single layer of 3M Moldable Putty+ pads over the depth of the seal.
- Install damming if required (usually useful for floor openings greater than 20cm by 20cm). Use wood or 38mm+ polystyrene board . Forms will be removed after cure. When a consistency above 1:3 is used, forms can have larger holes in them without mortar leakage.
- Mask edges (not bonding surfaces) of opening and the ends of the penetrating items with 5cm wide masking tape, this will be removed after the install and will greatly help to improve the appearance of the finished job.
- Mix mortar as per the mixing instructions on this page.
- Wet down the opening with water, using a spray bottle or brush.
- Immediately place the mortar by filling the most difficult to reach areas first.
- Always work toward the sides (bonding surfaces) of the opening. Then squeeze mortar in against the sides.
- Smooth mortar off as quickly as possible after filling the opening flush with the wall or floor. It usually helps to use a variety of different shaped trowels for this work.
- Immediately after smoothing remove masking tape from the edges of the opening and penetrants by pulling away from mortar surfaces.
- After cure, remove any form work used during install.
- For large cable bundles, ‘inject’ 3M Fire Barrier CP 25WB+ Sealant into the bundles using the the nozzle of the CP 25WB+ cartridge.

Installed Mortar Thickness

- Electrical cables, metal pipes or blank (unpenetrated) seals: 120mm.

Mixing Instructions

- Add water to the mixing bucket first, and then add mortar, a little bit at a time, and mix using a large slow drill with a grout mixing paddle.
- The mixing ratio can be varied from 1:2.5 to 1:4 water:powder by weight. 1:3.5 is a typical consistency used when hand packing ‘balls’ of material into wall openings without the use of forms whereas 1:2.8 (a more watery mix) may be poured into a formed floor slab.
- Mix mortar until it is homogeneous and smooth, for a total of not less than 5 minutes. Watch for dry spots at the bottom edges of the bucket.
- For ‘remoistening’, avoid adding too much water. First try without adding any water. Do not remix more than once!

Tips:

Slumping corrections

When nearing the top of a wall opening if the mortar feels a little unstable, sprinkle a minute quantity of dry mortar powder on top, this will quickly stiffen up the mortar.

Weather Conditions

3M Fire Barrier Mortar sets fast and set time can be influenced by weather conditions. The hotter and dryer the weather, the faster the set time will be and the greater the likelihood of shrinkage. To minimise these adverse weather effects protect the seal with a sheet of plastic during the cure time.

Caution!

This mortar will conduct electricity when wet. DO NOT install in contact with live exposed conductors or old cloth style cable jacketing. Consult an electrician or electrical engineer in case of doubt.

This mortar is not intended to be load bearing. Do not walk on sections of mortar in floors. See ‘compressive strengths’ under the Physical Properties heading.

Performance Specifications for Installers

Australian Standard FRLs: Fire Barrier Mortar						
Building Element	Blank (Unpenetrated) Seal	PVC Insulated Cables, Cable trays and Cable bundles	Copper or Steel Pipes 54mm diameter or smaller 1.79mm Wall thickness or thicker	Steel Pipes 79mm diameter or smaller 2.29mm wall thickness or thicker	Copper or Steel Pipes Up to 152.4mm diameter	Brass Pipes Up to 101.6mm diameter
Floor: Concrete slab. <i>Minimum 120mm thickness</i>	-/180/180	-/120/-	-/120/-	-/120/-	-/90/-	-/90/-
Wall: Solid masonry, hollow masonry or concrete construction. <i>Minimum 116mm thickness</i>	-/180/180	-/120/-	-/120/-	-/120/-	-/90/-	-/90/-



In order to achieve the above FRLs you must ensure that the 3M™ Fire Barrier Mortar is installed as per the Installation Techniques and the building element you are installing into has an FRL performance equal to or better than that of the Fire Barrier Mortar. The Installation Techniques can be found on the final page of this document.

What does FRL mean?

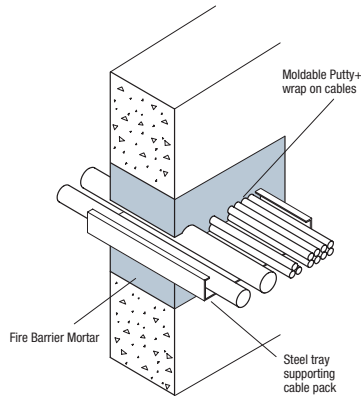
FRL stands for 'Fire Resistance Level'. For example, an FRL of '-/180/180' indicates:

- **Structural Adequacy.** The first dash '-' indicates that Fire Barrier Mortar is non load bearing
- **Integrity.** The middle number '180' indicates for how many minutes the Fire Barrier Mortar system can resist the passage of flames and hot gasses
- **Insulation.** The last number '180' indicates how many minutes it takes the unexposed face to heat up by more than 140°C.

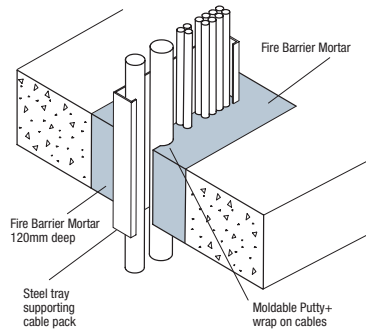
Performance Specifications for Engineers and Specifiers

3M™ Fire Barrier Mortar has been tested in accordance with AS1530.4-2005 and assessed in accordance with AS4072.1-2005 under BWA Report No: 23265. The following illustrations provide a summary of the test results for D1 and D2 cable configurations, metal pipes and blank (unpenetrated) openings with 3M™ Fire Barrier Mortar installed as per the Installation Techniques. Specifications for standard D1 and D2 cable configurations can be found in AS1530.4-2005 Appendix D.

D1 Cable Pack – Power Transmission Cables.

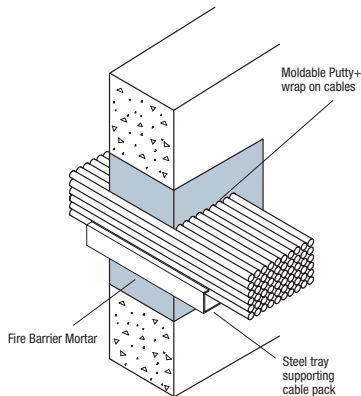


Solid Masonry, Hollow Masonry or Concrete Wall 120mm – FRL: -/180/60

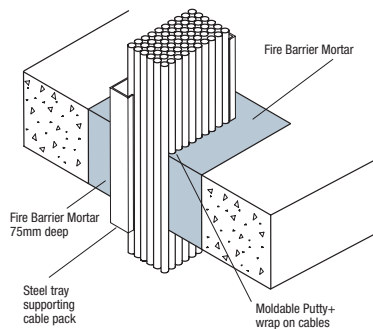


Concrete Floor 120mm – FRL: -/180/60

D2 Cable Pack – Telecom Cables.

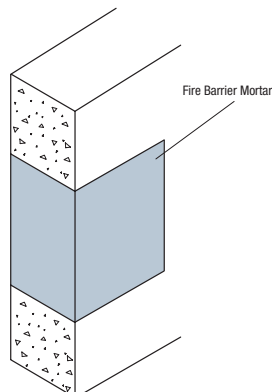


Solid Masonry, Hollow Masonry or Concrete Wall 120mm – FRL: -/120/-

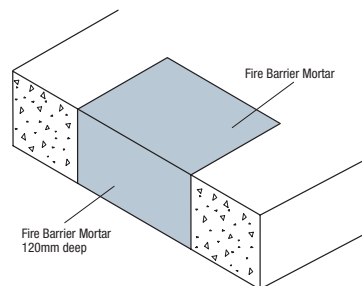


Concrete Floor 120mm – FRL: -/120/-

Blank Openings (unpenetrated)

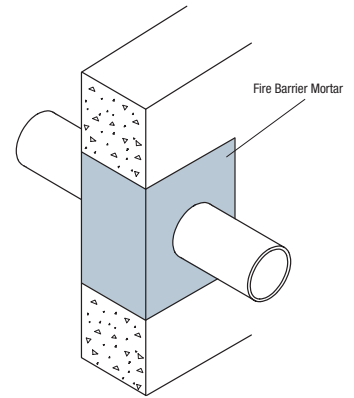


Solid Masonry, Hollow Masonry or Concrete Wall 120mm – FRL: -/180/180



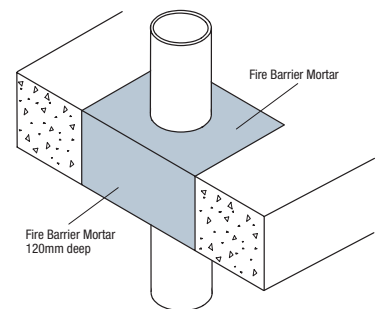
Concrete Floor 120mm – FRL: -/180/180

Metal Pipes



Solid Masonry, Hollow Masonry or Concrete Wall 120mm

Copper & Ferrous: 54mm dia, 1.79mm wall: FRL: -/120/-
 Copper & Ferrous: 79mm dia, 2.29mm wall: FRL: -/120/-
 Copper & Ferrous: 152.4mm dia, 1.63mm wall: FRL: -/90/-
 Brass: 101.6mm dia, 1.22mm wall: FRL: -/90/-



Concrete Floor 120mm

Copper & Ferrous: 54mm dia, 1.79mm wall: FRL: -/120/-
 Copper & Ferrous: 79mm dia, 2.29mm wall: FRL: -/120/-
 Copper & Ferrous: 152.4mm dia, 1.63mm wall: FRL: -/90/-
 Brass: 101.6mm dia, 1.22mm wall: FRL: -/90/-



3M™ Fire Barrier Pillows

Product Description



The 3M Fire Barrier Pillow is a self-contained, highly intumescent firestop product for use in through-penetration firestops. Simple to install, compressing pillows prior to insertion secures them in the opening, no wire mesh required. 3M Fire Barrier Pillows offer excellent performance achieving Fire Resistance Ratings of up to 3 hours.

Product Features



- Graphite free composition
- Available in three sizes
- Easy to install
- Easy retrofit – remove and reuse pillows as needed
- Easy to inspect
- Testing in accordance with AS1530.4, EN1366, and ASTM E814 (UL Listed).

Physical Properties

Typical Physical Properties	
Colour	3M Red with white label
Density	95kg/m ³
Heat Expansion Begins	200°C (392°F)
Significant Expansion Begins	280°C (536°F)
Volume Expansion	18% (Calculated)

Availability

3M™ Fire Barrier Pillows are available from Authorized 3M Fire Protection Products Distributors.

3M Order Code	Packing	Unit/Case
98040054219	50.8mm 101.6mm x 228.6mm (2" x 4" x 9")	24
98040054227	50.8mm x 152.4mm x 228.6mm (2" x 6" x 9")	16
98040054235	76.2mm x 152.4mm 228.6mm (3" x 6" x 9")	20

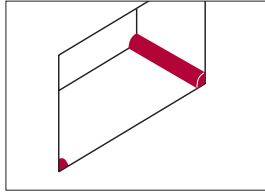
Maintenance

Inspection: Installations should be inspected periodically for subsequent damage. Replace any damaged pillows.

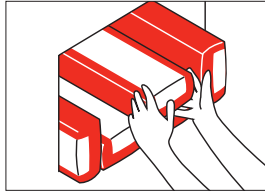
Recommended: Store in a dry warehouse environment. Pallets should not be stacked.



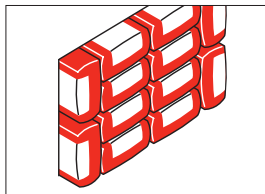
Installation Techniques:



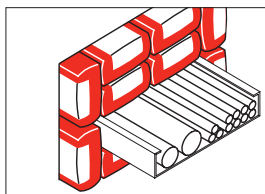
Apply 3M™ Fire Barrier Moldable Putty+ in all corners.



Install pillows lengthwise through the opening, make sure that the label side is placed directly against the framed opening.



Completely fill the penetration compressing pillows prior to insertion to lock them in place. The 3M Red logo should be visible to the installer on each pillow.



The smaller-sized pillows are used for smaller voids and spaces created by cable trays and pipes. 3M Fire Barrier Moldable Putty+ is used to seal any small openings greater than a few millimetres between pillows, cables, cable trays or pipes.

3M Fire Barrier Pillows are completely reusable. Simply remove the desired pillow(s) by inserting fingers on both sides, compress and release pillows, then reuse as required.

Performance Specifications for Installers

Australian Standard FRLs			Fire Resistance Level (FRL)			
3M Fire Barrier System	Building Element	Penetration Size	Blank (Unpenetrated) Seal	PVC Insulated Cables, Cable trays and Cable bundles	Copper or Steel Pipes Small* 15mm diameter or smaller 0.9mm Wall thickness or thicker	Steel Pipes* 34mm diameter or smaller 3.5mm wall thickness or thicker
	Floor: Concrete slab. <i>Minimum 120mm thickness</i>	Maximum opening 425mm by 300mm Maximum Area 0.128m ²	-/120/90	-/180/30	-/180/30	-/180/30
3M Fire Barrier Pillows	Wall: Plasterboard Dry Wall, solid masonry, hollow masonry or concrete construction. <i>Minimum 116mm thickness</i>	Maximum opening 600mm by 800mm Maximum Area 0.480m ²	-/120/30	-/120/30	-/120/30	-/120/30



In order to achieve the above FRLs you must ensure that the Fire Barrier Pillows are installed as per the Installation Techniques and the building element you are installing into has an FRL performance equal to or better than that of the Fire Barrier Pillows. The Installation Techniques can be found on the final page of this document.

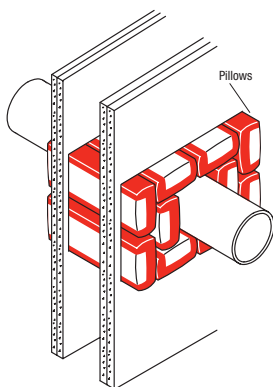
What does FRL mean?

FRL stands for 'Fire Resistance Level'. For example, an FRL of '-/120/90' indicates:

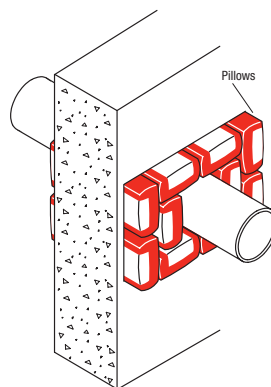
- **Structural Adequacy.** The first dash '-' indicates that Fire Barrier Pillows are non load bearing
- **Integrity.** The middle number '120' indicates for how many minutes the Fire Barrier Pillows can resist the passage of flames and hot gasses
- **Insulation.** The last number '90' indicates how many minutes it takes the unexposed face to heat up by more than 140°C.

Metal Pipes*

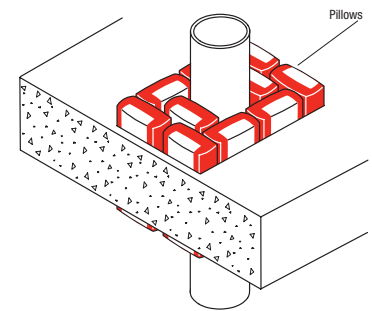
* With or without up to 19mm Armaflex insulation



Dry Wall 116mm
Copper: 15mm dia, 0.91mm wall: FRL: -/120/30
Steel: 34mm dia, 3.5mm wall: FRL: -/120/30



Solid Masonry, Hollow Masonry or Concrete Wall 116mm
Copper: 15mm dia, 0.91mm wall: FRL: -/180/30
Steel: 34mm dia, 3.5mm wall: FRL: -/180/30

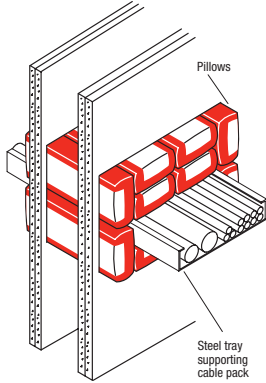


Concrete Floor 120mm
Copper: 15mm dia, 0.91mm wall: FRL: -/180/30
Steel: 34mm dia, 3.5mm wall: FRL: -/180/30

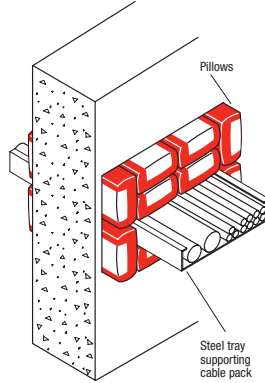
Performance Specifications for Engineers and Specifiers

3M Fire Barrier Pillows have been tested in accordance with AS1530.4-2005 and assessed in accordance with AS4072.1-2005 under BWA Report No: 23264. The following illustrations provide a summary of the test results for D1 and D2 cable configurations, metal pipes and blank (unpenetrated) openings with Fire Barrier Pillows installed as per the Installation Techniques. Specifications for standard D1 and D2 cable configurations can be found in AS1530.4-2005 Appendix D.

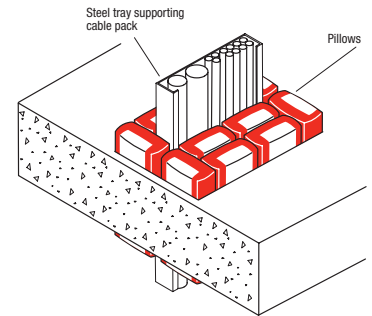
D1 Cable Pack – Power Transmission Cables.



Dry Wall 116mm – FRL: -/120/30

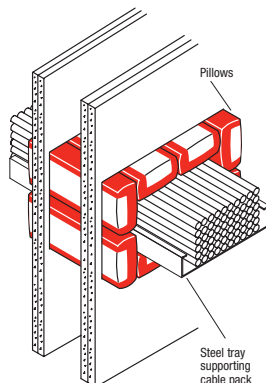


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

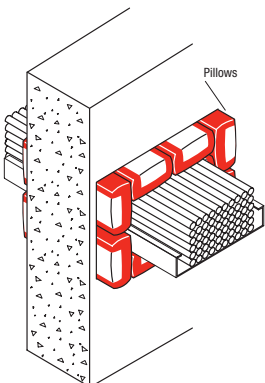


Concrete Floor 120mm – FRL: -/180/60

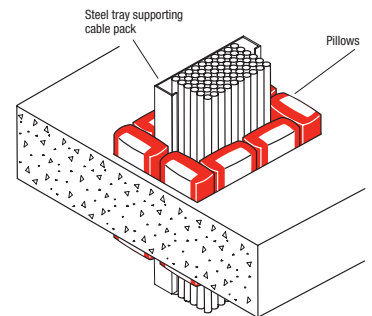
D2 Cable Pack – Telecom Cables.



Dry Wall 116mm – FRL: - /120/30

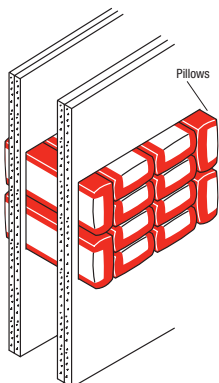


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

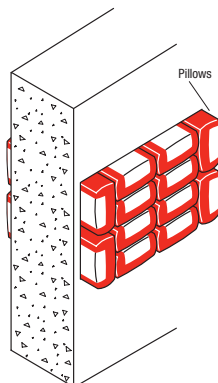


Concrete Floor 120mm – FRL: -/180/30

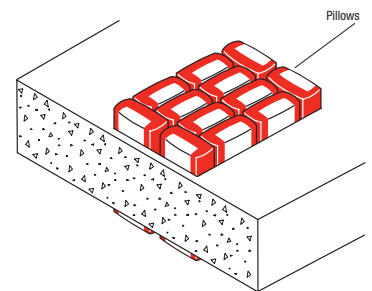
Blank Openings (unpenetrated)



Dry Wall 116mm – FRL: -/120/30



Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30



Concrete Floor 120mm – FRL: -/120/90

3M™ Fire Barrier Self-Locking Pillows can be field cut if desired.



Resealing 3M™ Fire Barrier Self-Locking Pillows can be accomplished by using either the removed original outer cover, minus contents, or by use of two inch wide carton sealing/packaging tape.



Re-sealed 3M™ Fire Barrier Self-Locking Pillows ready for installation.



Warranty; Limited Remedy

This product will be free from defects in material and manufacture for a period of ninety (90) days from the date of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. If this product is defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product.

Limited Liability

Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.

Light Flexible

Meets tougher fire test
standards



A key objective in advancing innovation for fire rated duct wrap is to attain less thermal transfer (more fire resistance) in a lighter product. 3M has developed 3M™ Fire Barrier Duct Wrap 615+ to be the only fire rated duct wrap product you'll need to help protect both grease ducts and air ducts, in an easy to install format (lightweight, flexible) while passing the necessary fire tests to achieve two hour fire resistance requirements.

www.3M.com/ductwrap



615+

3M Fire Barrier Duct Wrap
so flexible & lightweight,
it's no wonder

3M has shaped
the fire protection industry.

- Tested in accordance with A.S.1530-4-2005
- Tested in accordance with A.S.1530-4-2014 (Internal Fire)



Introducing a new, lighter weight duct wrap –
3M™ Fire Barrier Duct Wrap 615+.

Because we know where you're coming from.

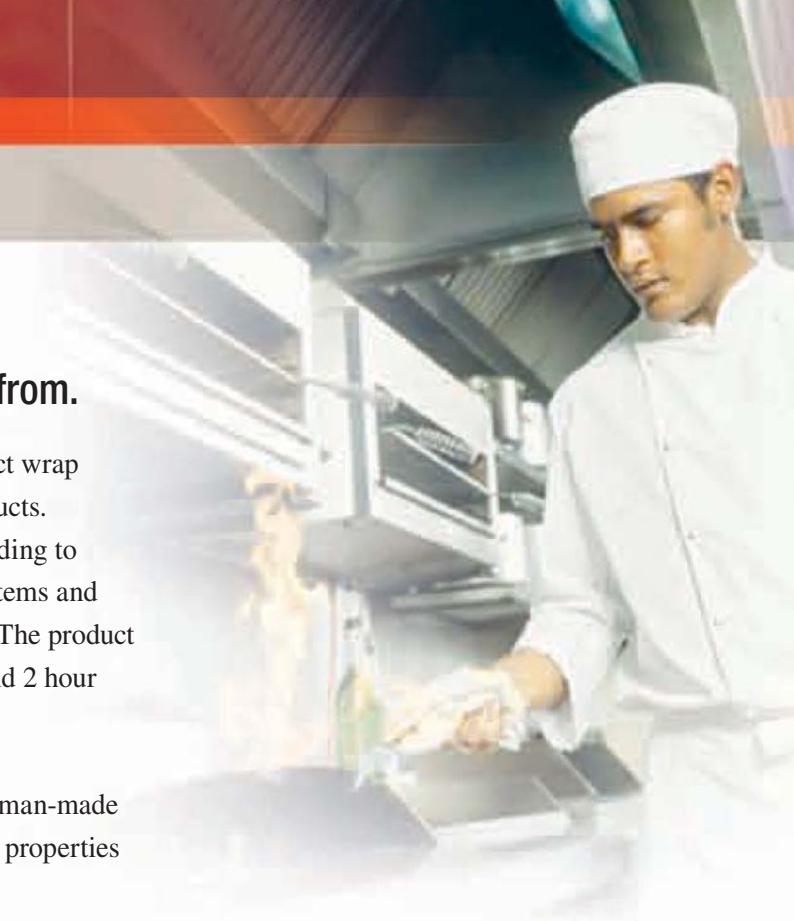
3M Fire Barrier Duct Wrap 615+ is the only fire rated duct wrap you need for code required protection of grease and air ducts. Now, in a lighter weight, 6pcf density, it is certified according to ASTM E2336 (grease duct test standard) in two layer systems and ISO 6944 (air duct test standard) in single layer systems. The product is certified with both UL and Intertek (OPL) and has 1 and 2 hour design listings.

3M Fire Barrier Duct Wrap 615+ is manufactured with a man-made vitreous spun fiber, which allows for low thermal transfer properties in a lightweight, low profile, easy to apply product.

Features and Advantages

- Lightweight (6 lbs per cu ft) and thin (1.5" *) for easier application
- 2 hour fire protection
- Third party certified to ASTM E2336 (grease ducts test standard) and ISO 6944 (air duct test standard)
- Supports maximum temperatures of up to 2192°F (1200°C)
- Apply in 2 layers for grease ducts
- Apply in 1 layer for air ducts
- Tested in accordance with A.S.1530-4-2005
- Tested in accordance with A.S.1530-4-2014 (Internal Fire)
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 25517 (Internal Fire)
- EWFA Report No. RIR 2800100.1 (External Fire)

* In accordance with the tolerances in ASTM C 892 Standard Specification for High-Temperature Fiber Blanket Thermal Insulation



Kitchen Exhaust Ducts

615+ is approved for use on kitchen exhaust ducts, per ASTM E2336 providing 1 and 2 hour protection with a 2-layer system.



3M™ Fire Barrier
 Duct Wrap 615+

Stair Pressurization and Life Safety Ventilation Ducts

615+ is tested to ISO 6944 and can be used on stair pressurization ducts and other life safety air ducts, providing 2 hour protection with a 1 layer system.



3M™ Fire Barrier Plenum Wrap 5A

Wrap plastic pipes in plenum areas more easily.

Inorganic blanket encapsulated with a scrim-reinforced foil. This wrap provides a flexible, non-combustible enclosure for pipes in return air plenums.

3M™ Fire Barrier Plenum Wrap 5A



Features and Advantages

- Tested to ASTM 84, NFPA 252 (UL 910), and UL 1887
- Strong, lightweight and flexible material for easy installation
- Foil encapsulated scrim



Plastic Pipe in Plenum Areas

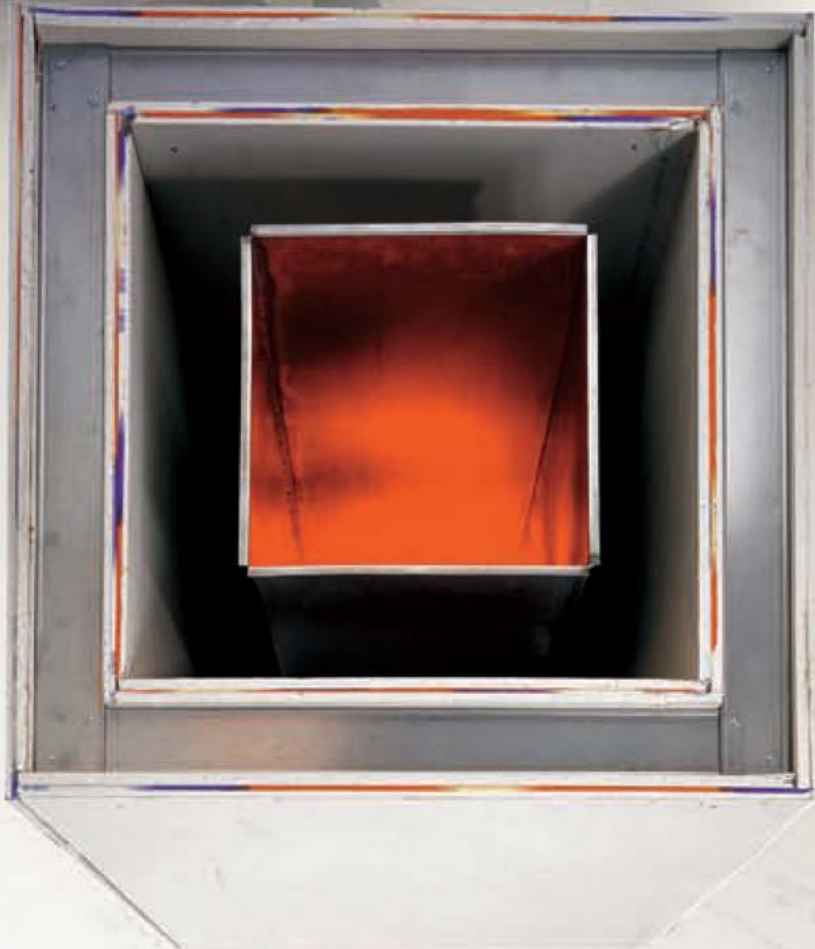
3M Fire Barrier Plenum Wrap 5A meets test criteria for use on plastic pipes located in plenum areas.

Plenum Wrap Listings for 5A

Enclosure System	Design Listing Number, Intertek (OPL)	Protected Item	Testing
1 layer of 3M™ Fire Barrier Plenum Wrap 5A, 1" (25mm) perimeter and longitudinal overlaps	3MU/FRD 120-16 (PP 100 P)	Plastic Pipe: PVC, CPVC, ABS, PB, PE, PP and PVDF	UL 1887
	3MU/FRD 120-17 (PP 101 P)	Cabling with PVC, CPVC, ABS, PB, PE, PP and PVDF jacketing	NFPA 252 (UL 910)
	3MU/BI 120-01	Plastic Pipe: PVC, CPVC, ABS, PB, PE, PP and PVDF	ASTM E84

Surface Burning Characteristics (ASTM E 84 for 5A)

Product	Flame Spread	Smoke Developed
Foil Encapsulated Blanket	0	0
Blanket	0	0
Foil Encapsulated Blanket around plastic pipes	0	45 (modified E84)



Traditional bulky protection with gypsum wall shaft



*3M's space-saving
fire barrier wrap*

We think
outside the box,
so you don't have to.

Grease Duct Listings for 615+

Fire Resistive Rating	Enclosure System	Duct System, Intertek (OPL)	Testing
615+			
1 or 2 hours	2 layers of 3M™ Fire Barrier Duct Wrap 615+, 3" (76mm) perimeter and 3" (76mm) longitudinal overlaps	3MU/FRD 120-18	ASTM E 2336/ ICC ES AC101
		3MU/FRD 120-19	AS1530.4-2005 AS1530.4-2014

Surface Burning Characteristics (ASTM E 84 for 615+)

Product	Flame Spread	Smoke Developed
Fire Barrier Duct Wrap 615+	<25	<50

Codes & Standards for 615+, Air Duct

Standards for the Installation of Air Condition and Ventilating Systems, 2009 Ed.

NFPA 92A Standard for Smoke-Control System Utilizing Barriers and Pressure Differences, 2006 Edition — Section 6.6.2

NFPA 92B Standard for Smoke Management Systems in Malls, Atria, and Large Spaces, 2005 Edition — Section 7.5.2

NFPA 101® Life Safety Code®, 2006 Edition — Section(s) 8.6.7, 18.7.7

International Mechanical Code®, 2006 Edition — Section 513.10.2

International Building Code®, 2006 Edition — Section 909.10.2

This is only a partial list of codes and standards. Go to 3M.com/firestop or speak to your authorized 3M distributor or sales representative at 1-800-328-1687.

Availability

Product	Roll Size	Roll/ctn.	Roll
3M™ Fire Barrier Duct Wrap 615+	*1.5" x 24" x 25' (38mm x 60.9cm x 762cm)	1	45 lbs. 20 kg.
3M™ Fire Barrier Duct Wrap 615+	*1.5" x 48" x 25' (38mm x 121.9cm x 762cm)	1	90 lbs. 40 kg.
3M™ Fire Barrier Plenum Wrap 5A	.5" x 24" x 50' (38mm x 121.9cm x 1524cm)	1	45 lbs. 20 kg.
3M™ Fire Barrier Plenum Wrap 5A	.5" x 48" x 25' (12.7mm x 121.9cm x 762cm)	2	90 lbs. 40 kg.

3M's Grease, Chemical Fume and Ventilation Air Duct listings all have affiliated Through-Penetration design listings that comply with ASTM E 814. Go to 3M.com/firestop or speak to your authorized 3M distributor or sales representative at 1-800-328-1687 for more information.

* In accordance with the tolerances in ASTM C 892 Standard Specification for High-Temperature Fiber Blanket Thermal Insulation

Product	Product Number	Description	Roll Size	UPC Number	Packaging		Price Unit
					Per Case	Per Pallet	
3M™ Fire Barrier Duct Wrap 615+	615+	3M™ Fire Barrier Duct Wrap 615+ for grease and air duct protection	24" W x 25' L	000-51115-18799-5	1	4	Roll
3M™ Fire Barrier Duct Wrap 615+	615+	3M™ Fire Barrier Duct Wrap 615+ for grease and air duct protection	48" W x 25' L	000-51115-18800-8	1	2	Roll
3M™ Fire Barrier Plenum Wrap 5A	5A	3M™ Fire Barrier Plenum Wrap 5A for plastic pipe protection	24" W x 50' L	000-51115-16513-9	1	8	Roll
3M™ Fire Barrier Plenum Wrap 5A	5A	3M™ Fire Barrier Plenum Wrap 5A for plastic pipe protection	48" W x 25' L	000-51115-16574-6	1	8	Roll



BATTS AND BLANKETS
FOR USE IN FIRE RESISTIVE DUCT
ASSEMBLIES SEE UL FIRE RESISTANCE
DIRECTORY 90G9



LISTED
DUCT
INSULATION
90G9



FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY



FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY

Ventilation Air Duct Listings for 615+ (tested to ISO 6944)

Fire Resistive Rating	Enclosure System	Duct System	Through-Penetration System	Listing Agency
1 or 2 hours	1 layer of 3M™ Fire Barrier Duct Wrap 615+, 3" (76mm) perimeter and longitudinal overlaps	V-27	W-L-7180, W-J-7104 F-C-7054	UL
		3MU/FRD-120-15	3MU/PH 60-03, 3MU/PV 120-23, 3MU/PV 120-25	Intertek (OPL)

This is only a partial list of systems that use Duct Wrap 615+. For complete information visit www.3M.com/firestop.

Codes & Standards for 615+, Grease Duct

NFPA 96, 2008 Edition

NFPA 96, 2004 Edition

NFPA 90A, 2002 Edition

Uniform Mechanical Code, 2006 Edition, Section 507.2.4

International Mechanical Code®, 2003 Edition, Section 506.3.10

International Mechanical Code®, 2006 Edition, Section 506.3.10

This is only a partial list of codes and standards. Go to 3M.com/firestop or speak to your authorized 3M distributor or sales representative at 1-800-328-1687.

3M™ Fire Barrier Duct Wrap Applications

	Product	
	615+	5A
Grease Duct	•	
Ventilation Air Duct	•	
Life Safety Duct (Stair Pressurization, Smoke, Exhaust, etc.)	•	
Plenum Applications		•

Note:
Consult individual project plans for which codes and standards apply.

3M™ Fire Barrier Duct Wrap Performance Characteristics

Test	Product	
	615+	5A
ASTM C 518	•	•
ASTM C 1338	•	•
ASTM E 84	•	•
ASTM E 119	•	
ASTM E 136	•	•
ASTM E 814	•	
ASTM E 2336	•	
NFPA 252 (UL 910)		•
UL 1887		•
ISO 6944	•	

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. **Limitation of Liability:** Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.



3M™ Fire Barrier Duct Wrap 615+

Product Data Sheet and Installation Guide

(Condensed Version)

1. Product Description

3M™ Fire Barrier Duct Wrap 615+ is a flexible fire-resistant wrap consisting of an inorganic fiber blanket encapsulated with a scrim-reinforced foil. The product is 1-1/2 in. thick, 6pcf density.¹ It is used to fire rate commercial kitchen grease ducts as well as ventilation ducts, and is a proven alternative to 1- or 2-hour fire-resistant rated shaft enclosures. With its excellent insulating capabilities, low weight and thin profile, it is an ideal choice for a duct enclosure system. This non-asbestos² wrap installs easily due to its high flexibility and strength.

¹ In accordance with the tolerances in ASTM C 892 Standard Specification for High-Temperature Fiber Blanket Thermal Insulation.

² Has been demonstrated to be soluble in the lungs according to EU guideline 97/69/EG, for biopersistence.

Product Features

- Tested in accordance with A.S.1530-4-2005
- Tested in accordance with A.S.1530-4-2014
- Assessed in accordance with A.S.4072.1 – 2005
- EWFA Report No. RIR 25517 (Internal Fire)
- EWFA Report No. RIR 2800100.1 (External Fire)
- Two-layer wrap for grease ducts rated as a shaft alternative per ASTM E 2336
- Zero clearance to combustible throughout the entire enclosure system for congested spaces
- Butted inner layer in 2-layer Grease Duct Applications
- One-layer wrap for fire-resistive ventilation ducts per ISO 6944
- High flexibility for installation ease
- Foil encapsulated for blanket protection, less dust, and high wrap strength
- Widest range of penetration seal systems
- Available in 24 in. x 25 ft. (609.6 mm x 7.62 m) and 48 in. x 25 ft. (1219.2 mm x 7.62 m) rolls
- Blanket adhered to foil scrim



Flexible and lightweight with a thin profile for easier application and reduced space requirements

2. Applications

3M™ Fire Barrier Duct Wrap 615+ is an ideal fire resistive enclosure for commercial kitchen grease ducts and ventilation air ducts. It is a proven performance alternative to a 1- or 2-hour fire-resistant rated shaft enclosures and provides zero clearance to combustible construction throughout the entire enclosure system. 3M™ Fire Barrier Water Tight Sealant 1000 NS, 3M™ Fire Barrier Water Tight Sealant 1003 SL or 3M™ Fire Barrier Water Tight Sealant 2000+ Silicone Sealants is used in combination with 3M™ Fire Barrier Duct Wrap 615+ to firestop the duct when the duct penetrates fire-rated floor or wall assemblies.

Two-layer grease duct applications: 3M™ Fire Barrier Duct Wrap 615+ meets the criteria of ASTM E 2336 Standard Test Methods for Fire Resistive Grease Duct Enclosure Systems.

Single-layer air duct applications: 3M™ Fire Barrier Duct Wrap 615+ has passed ISO 6944-1985 Fire Resistance Tests – Ventilation Ducts.

3. Specifications

Installation shall be in strict accordance with manufacture's written instructions, as shown on the approved shop drawings. 3M™ Fire Barrier Duct Wrap 615+ shall be a high-temperature fiber blanket thermal insulation encapsulated in a fiberglass-reinforced aluminumized polyester foil. Duct Wrap density shall be nominal 6 pcf (96 kg/m³) and have a nominal 1-1/2" (38.1 mm) thickness. The fiber blanket shall have a continuous use limit of 1000 °C (1832 °F). The blanket thermal resistance (R-value) at ambient temperature shall be minimum $6.3 \frac{^{\circ}F-ft^2-hr}{Btu}$.

Typically Specified Division

Division 7
Section 23 07 13 – Duct Insulation

Related Sections

Section 07 21 00 – Thermal Protection
Section 07 21 16 – Blanket Insulation
Section 07 84 00 – Firestopping
Section 23 00 00 – Heating, Ventilation and Air-Conditioning (HVAC)
Section 23 31 13 – Metal Ducts

Smoke Developed Index and Flame Spread Index of the bare blanket, and of the foil encapsulated blanket shall be 0/0. The foil encapsulation shall be bonded to the core blanket material.

FIRE BARRIER

FLEXIBLE WRAP

ICC-ES ESR-1255

LISTED

Intertek

FIRE RESISTANT DUCT
SEE INTERTEK DIRECTORY

LISTED

Intertek

FIRE RESISTANT DUCT
SEE INTERTEK DIRECTORY

CLASSIFIED

BATTS AND BLANKETS
FOR USE IN FIRE RESISTIVE DUCT ASSEMBLIES
SEE UL FIRE RESISTANCE DIRECTORY
90G9

CSFM
LISTING No.
2440-0941:112

4. Performance & Typical Physical Properties

Scrim Color:	Aluminium with Black Text
Blanket Color:	White
Blanket Weight:	0.9 lbs/ft. ² (4.38 kg/m ²)
Surface Burning:	Foil Encapsulated Blanket (ASTM E 84) Flame Spread 0, Smoke Development 0

Thermal Conductivity:	<i>Temp.</i>	$\frac{Btu - in.}{hr - ft^2 - ^\circ F}$	$\frac{W}{m^2 - K}$
	500°F (260°C)	0.60	0.09
	1000°F (537°C)	1.15	0.17
	1500°F (815°C)	1.93	0.28
	1800°F (982°C)	2.51	0.36
	2000°F (1093°C)	2.94	0.43

R-Value for single layer of 3M™ Fire Barrier Duct Wrap 615+ at 77°F (25°C):

$$6.38 \frac{^\circ F - ft^2 - hr}{Btu}$$

Linear Shrinkage (24 Hr@ 2012°F (1000°C)): 1.2%

5. Design Listings

Fire Resistive Rating	Enclosure System	Third-Party Testing Services Design Listing	Description
Grease Duct Listings – ASTM E 2336 / ICC-ES AC101			
1- and 2-hour	2 layers of 3M™ Fire Barrier Duct Wrap 615+	ICC-ES ESR-1255	Rectangular
		Intertek 3MU/FRD 120-18	Rectangular
		Intertek 3MU/FRD 120-19	Round
Ventilation Duct Listings – ISO 6944			
1- and 2-hour	1 layer of 3M™ Fire Barrier Duct Wrap 615+	Intertek 3MU/DI 60-01	Rectangular/Round (1 Hour)
		Underwriters Laboratories HNLJ.V-27	Rectangular (2 Hour)
		Intertek 3MU/DI 120-01	Rectangular/Round (2 Hour)

This document only contains a partial list of Design Listings. For the latest information go to www.3M.com/firestop or speak to your authorized 3M distributor or sales representative at (800) 328-1687.

6. Codes & Test Standards

3M™ Fire Barrier Duct Wrap 615+ has been tested in accordance with the following:

ASTM E 2336	Standard Test Methods for Fire Resistive Grease Duct Enclosure Systems
ICC-ES AC101	Acceptance Criteria for Grease Duct Enclosure Assemblies
ASTM E 119	Standard Test Methods for Fire Tests of Building Construction
ASTM E 814	Standard Test Method for Fire Tests of Penetration Firestop Systems
ASTM E 136	Standard Test Method for Behavior of Material in a Vertical Tube Furnace at 750°C (1382°F)
ASTM C 518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM C 1338	Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
ASTM E 84	Standard Test Method for Surface Burning Characteristics of Building Materials
ISO 6944-85	Fire Resistance Tests – Ventilation Ducts

3M™ Fire Barrier Duct Wrap 615+, when installed per ASTM E 2336 tested Grease Duct Design Listings, meets the following code requirements:

NFPA 96	2008 Edition
International Mechanical Code®	2003/2006/2009
Uniform Mechanical Code	2003/2006/2009

3M™ Fire Barrier Duct Wrap 615+, when installed per ISO 6944 tested Ventilation Duct Design Listings, can help to satisfy the following code requirements:

NFPA 92A	Standard for Smoke-Control System Utilizing Barriers and Pressure Differences, 2009 Edition – Section 6.6.2
NFPA 92B	Standard for Smoke Management Systems in Malls, Atria, and Large Spaces, 2009 Edition – Section 7.5.2
International Mechanical Code®	2006/2009 Editions – Section 513.10.2
International Building Code®	2006/2009 Editions – Section 909.10.2

7. Packaging, Storage, Shelf Life

3M™ Fire Barrier Duct Wrap 615+ rolls are packaged in corrugated cardboard boxes. Product is stable under normal storage conditions. Normal stock and stock rotation practices are recommended. 3M™ Fire Barrier Duct Wrap 615+ shelf life is indefinite when stored in original unopened packaging in a dry warehouse environment. Pallets should not be stacked. 3M™ Fire Barrier Water Tight Sealant (1000 NS or 1003 SL) or 3M™ Fire Barrier Silicone Sealant 2000+ must be also stored in a dry warehouse environment.

8. Installation Techniques

3M™ Fire Barrier Duct Wrap 615+ should be installed per the application design listing in accordance with the following basic installation instructions.

Material and Equipment

- 24 in. or 48 in. wide¹ by 1-1/2 in. (38.1 mm) thick² by 25 ft. (762 cm) standard length 3M™ Fire Barrier Duct Wrap 615+ blanket (60.96 cm or 121.92 cm by 38.1 mm by 762 cm)
- 3M™ FSK Facing Tape 3320 or equivalent
- Minimum 3/4 in. (19 mm) wide filament tape (recommend Scotch® Filament Tape 898)
- Stainless steel or carbon steel banding material, minimum 1/2 in. (12.7 mm) wide and minimum 0.015 in. (0.38 mm) thick with banding clips of the same material
- Hand banding tensioner, crimping tool and banding cutter
- Minimum 12 gauge copper-coated steel insulation pins used with minimum 2-1/2 in. (63.5 mm) square galvanized steel or stainless steel clips or 1-1/2 in. (38.1 mm) dia. round or equivalent sized insulated cup-head pins
- Capacitor discharge stud gun
- Access door hardware: four galvanized steel thread rods, 1/4 in. diameter by minimum 6 in. long (6.35 mm by 152.4 mm) with 1/4 in. (6.35 mm) wing nuts and 1/4 in. (6.35 mm) washers
- 4 in. (102 mm) long steel hollow tubing to fit threaded rods
- Minimum 4 pcf (64 kg/m³) density mineral wool or scrap pieces of 3M™ Fire Barrier Duct Wrap 615+
- 3M™ Fire Barrier Water Tight Sealant (1000 NS or 1003 SL) or 3M™ Fire Barrier Silicone Sealant 2000+.

¹ Note: 48 in. (121.92 cm) wide blanket helps to maximize coverage since the 3 in. (76.2 mm) longitudinal overlaps occur less frequently.

² In accordance with the tolerances in ASTM C 892 Standard Specification for High-Temperature Fiber Blanket Thermal Insulation.

Preparatory Work

3M™ Fire Barrier Duct Wrap 615+ is installed with common tools, such as knives, banders and capacitor discharge guns for applying insulation pins. In order to install the duct firestop system, the surfaces of all the openings and penetrating items need to be clean, dry, frost free and free of dust

2-Layer Grease Duct Method (ASTM E 2336)

Note: This general instruction for applying 3M™ Fire Barrier Duct Wrap 615+ details a two-layer wrap installation of 3M™ Fire Barrier Duct Wrap 615+ blanket applied directly to a grease duct. To minimize waste, the 3M™ Fire Barrier Duct Wrap 615+ material should be rolled out tautly before measuring. The first layer of 3M™ Fire Barrier Duct Wrap 615+ blanket is wrapped around the perimeter of the duct and is cut to a length to either butt to itself or overlap itself not less than 3 in. (76.2 mm). The interface between adjacent blankets forms the "longitudinal" joint. Inner layer longitudinal joints can be tightly butted joints or they should overlap onto adjacent blankets with a min. 3 in. (76.2 mm) overlap. Aluminum foil tape is used to seal all cut edges of the blanket and any tears in the foil scrim. This first layer is temporarily held in place using filament tape. The first layer does not require steel banding.

The second layer of 3M™ Fire Barrier Duct Wrap 615+ blanket is wrapped around the perimeter of the previously installed first layer of 3M™ Fire Barrier Duct Wrap 615+. The second layer of blanket should be centered over the longitudinal joint of the first layer. (76.2 mm). Regardless of installation method, the second layer perimeter (lateral) joint must be an overlap of not less than 3 in. (76.2 mm). When installing 3M™ Fire Barrier Duct Wrap 615+ onto grease ducts using any method except the Butt Joint with Collar method, the outer layer longitudinal joints must have a min. 3 in. (76.2 mm) overlap. With the Butt Joint with Collar method, the outer layer longitudinal joints are tightly butted and the 3M™ Fire Barrier Duct Wrap 615+ Collar is centered over the outer layer longitudinal joint. The second layer of blanket can be temporarily held in place using filament tape. The second layer of wrap requires permanent fastening with stainless, or carbon, steel banding or rows of weld pins (impaling or cup-head style).

3M™ Fire Barrier Duct Wrap 615+ Commercial Kitchen Grease Duct Systems (Figure 1)

1- or 2-Hour Shaft Alternative Zero Clearance to Combustibles

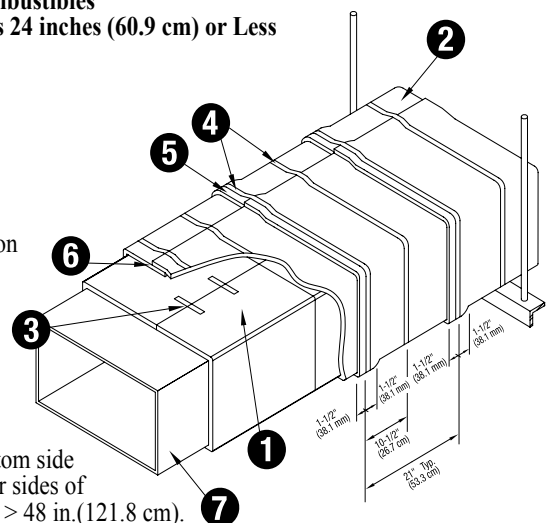
Telescoping Wrap Technique With Banding For Ducts 24 inches (60.9 cm) or Less

1. First layer 3M™ Fire Barrier Duct Wrap 615+
2. Second layer 3M™ Fire Barrier Duct Wrap 615+
3. 3/4 in. (19 mm) wide filament tape
4. Steel banding 1/2 in. (12.7 mm) wide min. typical for permanent fastening
5. Longitudinal joint butt or min. 3 in. (76.2 mm) overlap on inner layer, min. 3 in. (76.2 mm) overlap on outer layer
6. Perimeter (lateral) joint butt or min. 3 in. overlap (76.2 mm) on inner layer, min. 3 in. (76.2 mm) overlap on outer layer
7. Metallic Commercial Cooking Exhaust Duct

System integrity is limited by quality of installation.

Ducts ≥ 24 in. (60.9 cm) wide require pinning on the bottom side of horizontal ducts and on a minimum of one of the wider sides of a vertical duct. Vertical ducts require pinning on any side > 48 in. (121.8 cm).

Consult current independent testing laboratories (e.g. Intertek, UL) for design or system details.



8. Installation Techniques cont.

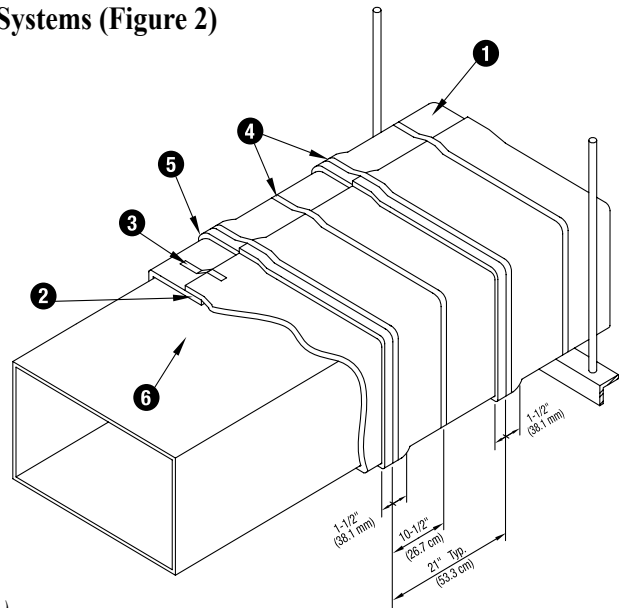
3M™ Fire Barrier Duct Wrap 615+ Ventilation Duct Systems (Figure 2)

1. 3M Fire Barrier Duct Wrap 615+, 1-layer
2. Perimeter (lateral) joint min. 3 in. (76.2 mm) overlap
3. 3/4 in. (19 mm) wide filament tape
4. Steel banding 1/2 in. (12.7 mm) wide min. typical for permanent fastening
5. Longitudinal joint min. 3 in. (76.2 mm) overlap
6. Metallic HVAC Duct

System integrity is limited by quality of installation.

Ducts ≥ 24 in. (60.9 cm) wide require pinning on the bottom side of horizontal ducts and on a minimum of one of the wider sides of a vertical duct. Vertical ducts require pinning on any side that is > 48 in. (121.8 cm).

Consult current independent testing laboratories (e.g. Intertek, UL) for design or system details.

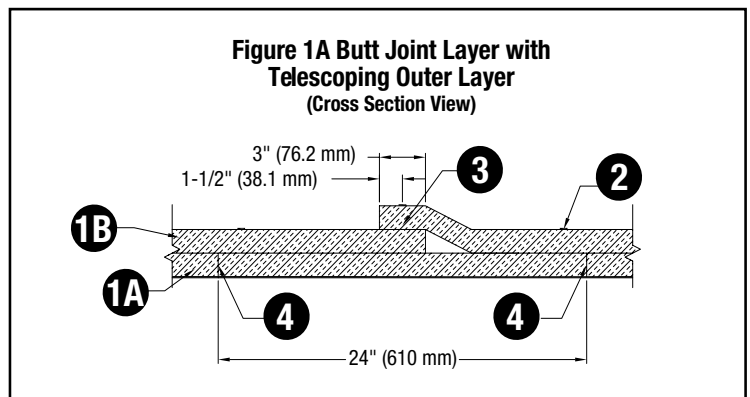


Four (4) approved grease duct installation techniques: 3M™ Fire Barrier Duct Wrap 615+

1A. Butt Joint Inner Layer with Telescoping Outer Layer

With the butt-joint inner layer and telescoping outer layer technique, the inner layer of blankets abut the adjacent pieces of blanket. The outer layer blankets each overlap one adjacent blanket, and then the exposed edge is covered by the next blanket as shown in Figure 1A.

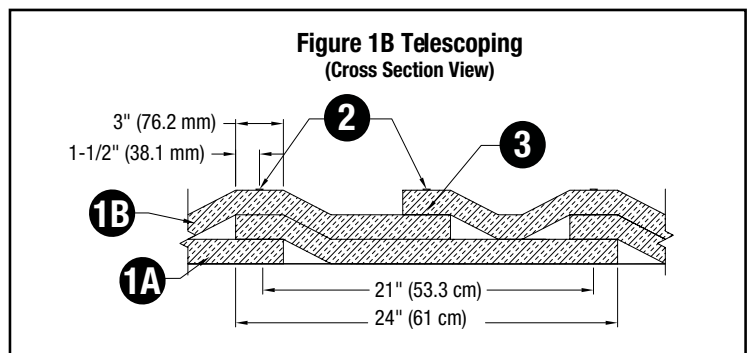
- 1A. First layer of 3M™ Fire Barrier Duct Wrap 615+
- 1B. Second layer of 3M™ Fire Barrier Duct Wrap 615+
2. Steel Banding 1/2 in. (12.7 mm) Wide Min. Typical
3. 3 in. (76.2 mm) Min. Longitudinal Overlap
4. Firmly Butted Joint



1B. Telescoping 3 in. (76.2 mm) Overlap Wrap

With the telescoping overlap wrap method, each blanket overlaps one adjacent blanket, and each blanket has one edge exposed and one edge covered by the next blanket as shown in Figure 1B.

- 1A. First layer of 3M™ Fire Barrier Duct Wrap 615+
- 1B. Second layer of 3M™ Fire Barrier Duct Wrap 615+
2. Steel Banding 1/2 in. (12.7 mm) Wide Min. Typical
3. 3 in. (76.2 mm) Min. Longitudinal Overlap



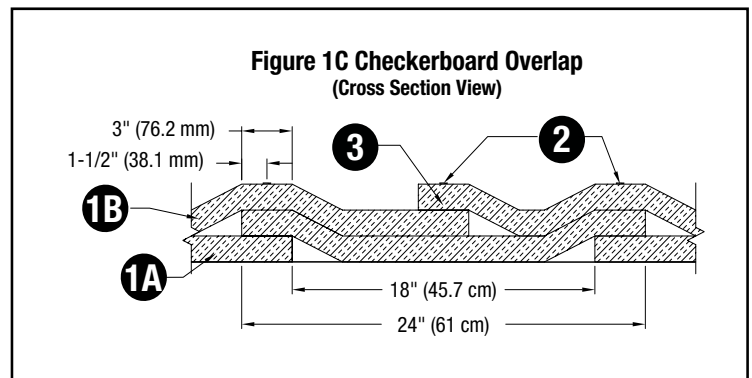
8. Installation Techniques cont.

Four (4) approved grease duct installation techniques: 3M™ Fire Barrier Duct Wrap 615+ cont.

1C. Checkerboard 3 in. (76.2 mm) Overlap Wrap

With the 3 in. (76.2 mm) checkerboard overlap wrap method, blankets with both edges exposed alternate with blankets with covered edges, as shown in Figure 1C.

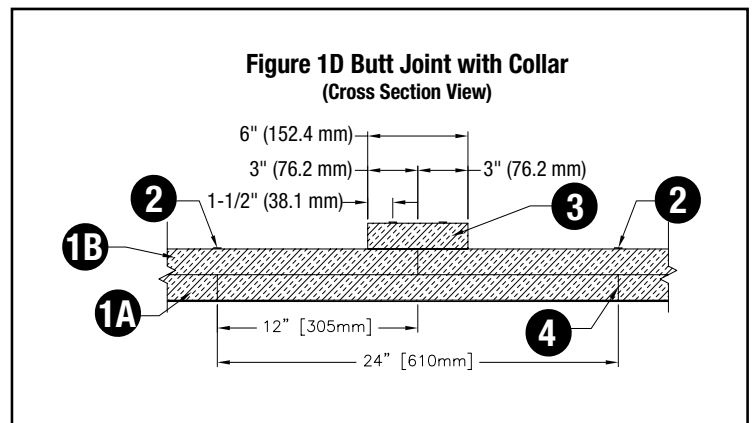
- 1A. First layer of 3M™ Fire Barrier Duct Wrap 615+
- 1B. Second layer of 3M™ Fire Barrier Duct Wrap 615+
- 2. Steel Banding 1/2 in. (12.7 mm) Wide Min. Typical
- 3. 3 in. (76.2 mm) Min. Longitudinal Overlap



1D. Butt Joint with Collar

With the butt joint and collar method, adjacent blankets are butted tightly together and 6 in. (152.4 mm) wide collar of duct wrap is centered over the joint, overlapping each blanket by 3 in. (76.2 mm) minimum as shown in Figure 1D.

- 1A. First layer of 3M™ Fire Barrier Duct Wrap 615+
- 1B. Second layer of 3M™ Fire Barrier Duct Wrap 615+
- 2. Steel Banding 1/2 in. (12.7 mm) Wide Min. Typical
- 3. 6 in. (152.4 mm) Min. Wide Fire Barrier Duct Wrap 615+ Collar
- 4. Firmly Butted Joint



Note: System integrity is limited by quality of installation. Consult current Independent Testing Laboratories (Intertek, UL) or ICC-ES Report for Design Listing or System Details. In all four overlap techniques approved for grease ducts, the perimeter overlap can occur at any location on the duct.

The blanket is mechanically attached to the duct by stainless, or carbon, steel banding or by welded insulation pins and clips for all four installation methods listed above.

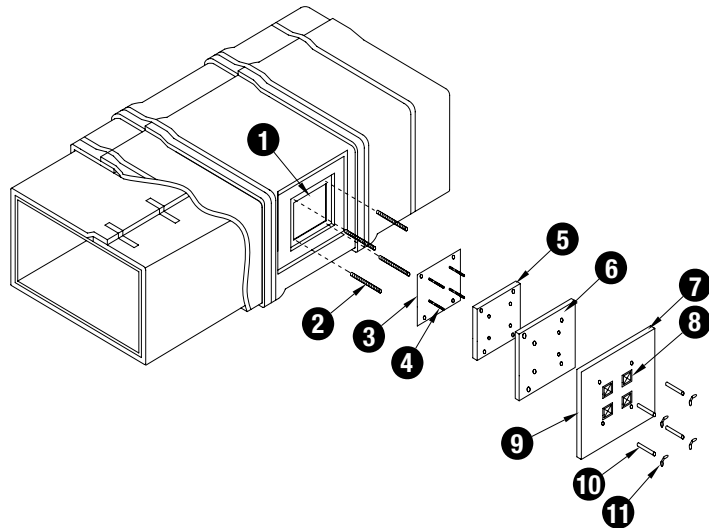
8. Installation Techniques cont.

Access Door Installation Four galvanized steel threaded rods, 1/4 in. diameter (6.35 mm) by 4-1/2 in. to 5 in. long (114.3 mm to 127 mm) are welded to the duct at the corners of the door opening. Four steel tubes, each 3 in. (76.2 mm) long, are placed over the rods to act as protection for the 3M™ Fire Barrier Duct Wrap 615+, and to transfer the wing nut force to the access door, when fastening the door. Four insulation pins are welded to the door panel for installation of the blanket. One layer of 3M™ Fire Barrier Duct Wrap 615+ is cut approximately the same size as the access panel and impaled over the insulation pins on the panel. It is essential that this layer fit tightly against the wrap surrounding the access door opening with no through openings. A second layer of 3M™ Fire Barrier Duct Wrap 615+ is cut to overlap the first layer by a minimum of 1 in. (25.4 mm). A third layer of 3M™ Fire Barrier Duct Wrap 615+ is cut to overlap the second layer by a minimum of 1 in. (25.4 mm). The third layer is impaled over the pins and all three layers are locked in place with galvanized or stainless steel speed clips. Pins that extend beyond the outer layer of 3M™ Fire Barrier Duct Wrap 615+ shall be turned down or cut off to avoid sharp points on the door. The insulated door panel is placed over the threaded rods and held in place with washers and wing nuts. The details are shown in Figure 3. The details for installing the 3M™ Fire Barrier Grease Duct Access Door (pre-manufactured) are shown in Figure 3A.

3M™ Fire Barrier Duct Wrap 615+ Commercial Kitchen Grease Duct Systems (Figure 3)

1- or 2-Hour Access Door System

1. Access Hole
2. 1/4 in. (6.35 mm) Dia. All Threaded Rods
3. Access Cover – 16 Gauge
4. Insulation Pins – Welded
5. First Layer 3M™ Fire Barrier Duct Wrap 615+ Cut Same Size As Cover
6. Second Layer 3M™ Fire Barrier Duct Wrap 615+ with 1 in. (25.4 mm) Overlap On All Sides
7. Third Layer 3M™ Fire Barrier Duct Wrap 615+ with 1 in. (25.4 mm) Overlap On All Sides
8. Speed Clips
9. Aluminum Tape Covering All Exposed Edges
10. Spool Pieces For Threaded Rods
11. 1/4 in. (6.35 mm) Diameter Wings Nuts

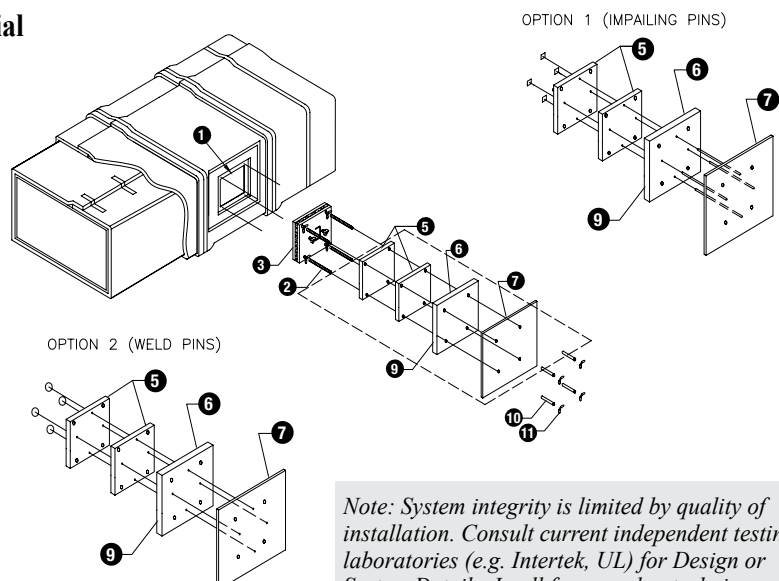


Note: System integrity is limited by quality of installation. Consult current independent testing laboratories (e.g. Intertek, UL) for Design or System Details. In all four overlap techniques the perimeter overlap can occur at any location on the duct.

3M™ Fire Barrier Duct Wrap 615+ Commercial Kitchen Grease Duct Systems (Figure 3A)

1- or 2-Hour Access Door System

1. Access Hole
2. 1/4 in. (6.35 mm) Dia. All Threaded Rods
3. 3M™ Fire Barrier Grease Duct Access Door
4. Insulation Pins – Welded
5. First Layer 3M™ Fire Barrier Duct Wrap 615+ Cut Same Size As Cover
6. Second Layer 3M™ Fire Barrier Duct Wrap 615+ with 1 in. (25.4 mm) Overlap On All Sides
7. Third Layer 3M™ Fire Barrier Duct Wrap 615+ with 1 in. (25.4 mm) Overlap On All Sides
8. Speed Clips
9. Aluminum Tape Covering All Exposed Edges
10. Spool Pieces For Threaded Rods
11. 1/4 in. (6.35 mm) Diameter Wings Nuts



Note: System integrity is limited by quality of installation. Consult current independent testing laboratories (e.g. Intertek, UL) for Design or System Details. In all four overlap techniques the perimeter overlap can occur at any location on the duct.

8. Installation Techniques cont.

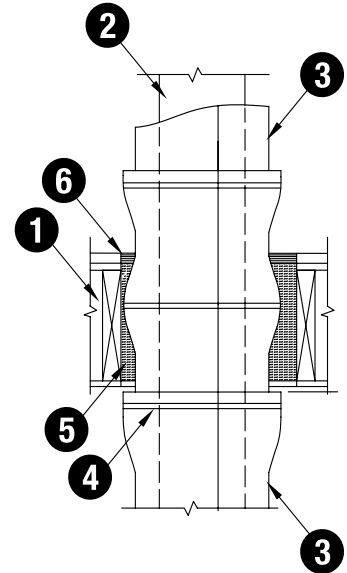
Penetrations

When the duct penetrates a fire rated wall, ceiling or floor, an approved firestop system must be employed. Figures 4-6 illustrate typical conditions. To firestop the wrapped duct, follow the installation parameters detailed in a compatible ASTM E 814 tested through-penetration firestop design. Note: Through-penetration designs in which the duct is bare where it passes through combustible or limited-combustible construction (e.g. gypsum walls or wood joist floor-ceiling assemblies) are appropriate for ventilation duct scenarios only. It is not appropriate for bare, uninsulated grease ducts to pass through combustible assemblies. Intertek design listings contain through penetration details. See system details of UL System HNLJ.V-27, Section 3.C. for applicable UL through penetration systems.

3M™ Fire Duct Wrap 615+ Typical Through Penetration Firestop System (Figure 4)

1-Hour Through Penetration Systems Fire-Rated Wood/Gypsum Floor/Ceiling Assembly

1. Floor/Ceiling Assembly
 2. Duct
 3. One or Two Layers 3M™ Fire Barrier Duct Wrap 615+
 4. Banding or Pinning
 5. 3M™ Fire Barrier Packing Material PM 4, 4 pcf mineral wool or scrap duct wrap (min. 33% compressed)
 6. 3M™ Fire Barrier Water Tight Sealant 1000 NS, 3M™ Fire Barrier Water Tight Sealant 1003 SL, or 3M™ Fire Barrier Silicon Sealant 2000+
- Note: Sealant to be applied at a minimum 5/8" (15.9 mm) depth

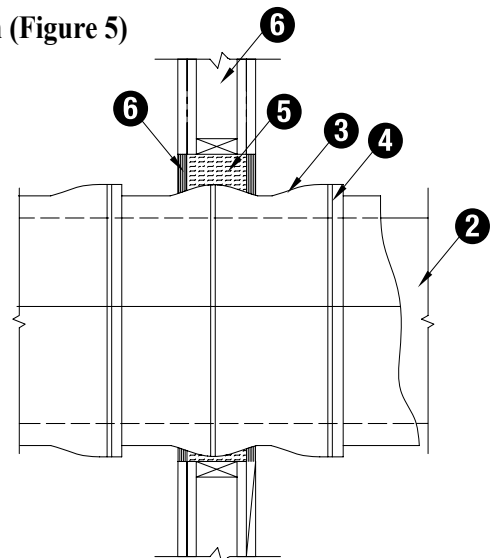


Note: System integrity is limited by quality of installation. Consult current independent testing laboratories (e.g. Intertek, UL) for Design or System Details.

3M™ Fire Duct Wrap 615+ Typical Through Penetration Firestop System (Figure 5)

1- or 2-Hour Through Penetration Systems – Gypsum Wallboard

1. Gypsum Wallboard Assembly
 2. Duct
 3. One or Two Layers 3M™ Fire Barrier Duct Wrap 615+
 4. Banding or Pinning
 5. 3M™ Fire Barrier Packing Material PM 4, 4 pcf mineral wool or scrap duct wrap (min. 33% compressed)
 6. 3M™ Fire Barrier Water Tight Sealant 1000 NS or 3M™ Fire Barrier Silicon Sealant 2000+
- Note: Sealant to be applied at a minimum 5/8" (15.9 mm) depth



Note: System integrity is limited by quality of installation. Consult current independent testing laboratories (e.g. Intertek, UL) for Design or System Details.

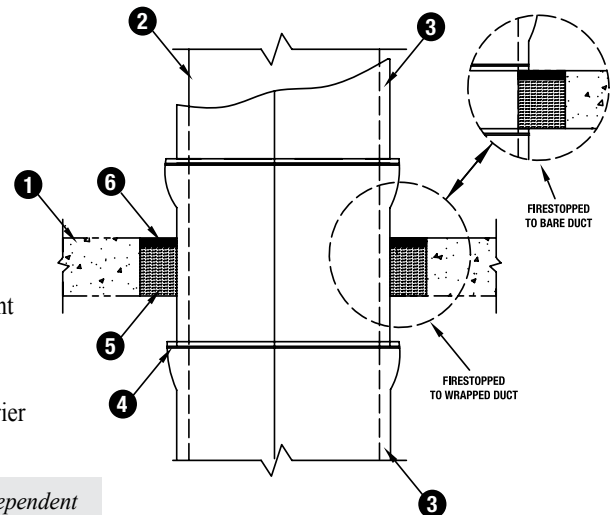
For technical data and properties of 3M™ Fire Barrier Water Tight Sealant 1000 NS, 3M™ Fire Barrier Water Tight Sealant 1003 SL or 3M™ Fire Barrier Silicone Sealant 2000+, see separate product data sheets available from your 3M representative or go to www.3M.com/firestop.

3M™ Fire Duct Wrap 615+ Typical Through Penetration Firestop System (Figure 6)

1- or 2-Hour Through Penetration Systems
4-1/2 inch (11.4 cm) Concrete Floor or Wall

1. Floor/Ceiling or Wall Assembly
 2. Duct
 3. One or Two Layers 3M™ Fire Barrier Duct Wrap 615+
 4. Banding or Pinning
 5. 3M™ Fire Barrier Packing Material PM 4, 4 pcf mineral wool or scrap duct wrap (min. 33% compressed)
 6. 3M™ Fire Barrier Water Tight Sealant 1000 NS, 3M™ Fire Barrier Water Tight Sealant 1003 SL, or 3M™ Fire Barrier Silicon Sealant 2000+
- Note: Sealant to be applied at a minimum 5/8" (15.9 mm) depth

For Wall Assembly Apply Sealant To Both Sides of Wall (note: 3M™ Fire Barrier Water Tight Sealant 1003 SL Not Suited For Wall Applications).



Note: System integrity is limited by quality of installation. Consult current independent testing laboratories (e.g. Intertek, UL) for Design or System Details.

For technical data and properties of 3M™ Fire Barrier Water Tight Sealant 1000 NS, 3M™ Fire Barrier Water Tight Sealant 1003 SL or 3M™ Fire Barrier Silicone Sealant 2000+, see separate product data sheets available from your 3M representative or go to www.3m.com/firestop.

9. Maintenance

No maintenance is expected when installed in accordance with the applicable Intertek, UL or other third-party listed system and in accordance with 3M™ Fire Barrier Duct Wrap 615+ Installation Guidelines. Once installed, if any section of the 3M™ Fire Barrier Duct Wrap 615+ is damaged such that the blanket requires repair, the following procedure will apply:

1. If the blanket has not been damaged but the foil has ripped, seal the rips with aluminum foil tape.
2. If the blanket has been damaged:
 - a. The damaged section should be removed by cutting the steel banding or removing the clips holding it in place.
 - b. A new section of the same dimension should be cut from a roll of 3M™ Fire Barrier Duct Wrap 615+, either 24 in. (60.9 cm) or 48 in. (121 cm) wide.
 - c. The new section should be placed and fitted ensuring the same overlap that existed previously.
 - d. The steel banding should be placed around the material and tensioned so as to sufficiently hold the 3M™ Fire Barrier Duct Wrap 615+ in place.

10. Availability

3M™ Fire Barrier Duct Wrap 615+ is available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Duct Wrap 615+ is available in 24 in x 25 ft, Roll (1/case), 48 in x 25 ft, Roll (1/case). 3M™ Fire Barrier Duct Wrap Collars 615+ are available in 1.5 in x 6 in x 25 ft, Rolls (4/case). 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.

11. Safe Handling Information

Prior to handling or disposal of 3M Fire Protection Products, consult all relevant Material Safety Data Sheets (MSDS).

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.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.

3M Fire Protection Products

3M™ Interam™ Endothermic Mat – For Commercial Buildings

Tested in accordance with AS1530-4-2005



Flexible Fire Protection

Get wrapped up in 3M™ Interam™ Endothermic Mat

3M™ Interam™ Endothermic Mat opens up new opportunities in building design, allowing architects to fulfill the UL mark of certification while enhancing design flexibility. Using advanced endothermic materials, 3M™ Interam™ Endothermic Mat helps prevent heat penetration via a chemical reaction, which absorbs heat energy. Its space-saving, conformable construction offers easy installation in a broad range of applications, providing flexible, full envelope protection in critical areas of all types.

Because of its flexibility, architects can use 3M™ Interam™ Endothermic Mat to meet fire protection requirements in nearly any area and along virtually any wall, helping to reduce the need to make revisions to existing plans. This represents a significant cost-saving and time-saving benefit for both builders and architects. With 3M™ Interam™ Endothermic Mat, architects can now provide guaranteed fire protection without being locked in to the design constraints of traditional fire-stopping methods.

3M is your fire protection industry leader. Trust our proven innovative technologies to help protect people and property for decades to come.



Flexible Fire Protection Solutions



MEMBRANE PENETRATIONS

Protecting some large membrane penetrations can be a challenge, with putty pads proving insufficient to cover larger areas. 3M™ Interam™ Endothermic Mat offers an excellent alternative, providing a fire-tested, code-approved method with the capacity to protect significant spaces containing electrical panels, elevator call boxes, safe deposit boxes and medical gas boxes.

ELECTRICAL CIRCUIT PROTECTION

When a fire occurs, the electrical systems that control critical areas such as control rooms, ventilation, lighting, alarms and elevators must remain operational in a building. With 3M™ Interam™ Endothermic Mat, cable raceways, conduit, equipment shrouds and other electrical systems can be protected for up to three hours in intense heat.

FUEL LINE PROTECTION

Protection of fuel lines for building generators is often an overlooked specification item, leading to urgent and often messy situations during construction. 3M™ Interam™ Endothermic Mat E-5A-4 can help provide fire protection for dual walled steel pipe fuel lines for 1, 2, or 3 hour protection. When exposed to high temperatures, chemically bound water in the mat cools the outer surfaces of the wrap material and retards heat transfer. The flexible nature of the mat and its heat retarding feature provides a high value alternative to shaft walls for the protection of fuel lines.

FEATURES

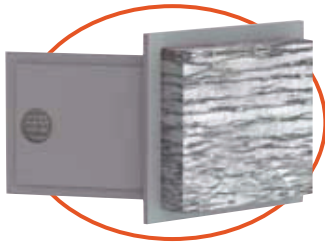
- Heat absorbing
- Non-flame supporting
- Low smoke evolution
- Flexible
- Easily cut to size
- Provides uniform covering
- Easy-to-clean aluminum surface
- Easily installed, requires no surface preparation

APPLICATIONS

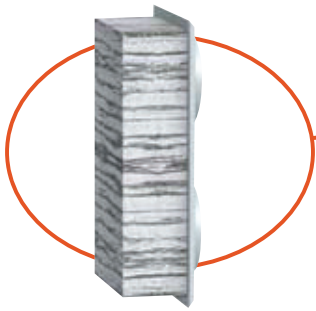
- Cable trays
- Fuel lines
- Structural steel
- Cable bundles
- Equipment shrouds
- Support members
- Electrical panels
- Medical gas boxes
- Elevator call boxes

Typical Building Applications

Using 3M™ Interam™ Endothermic Mat



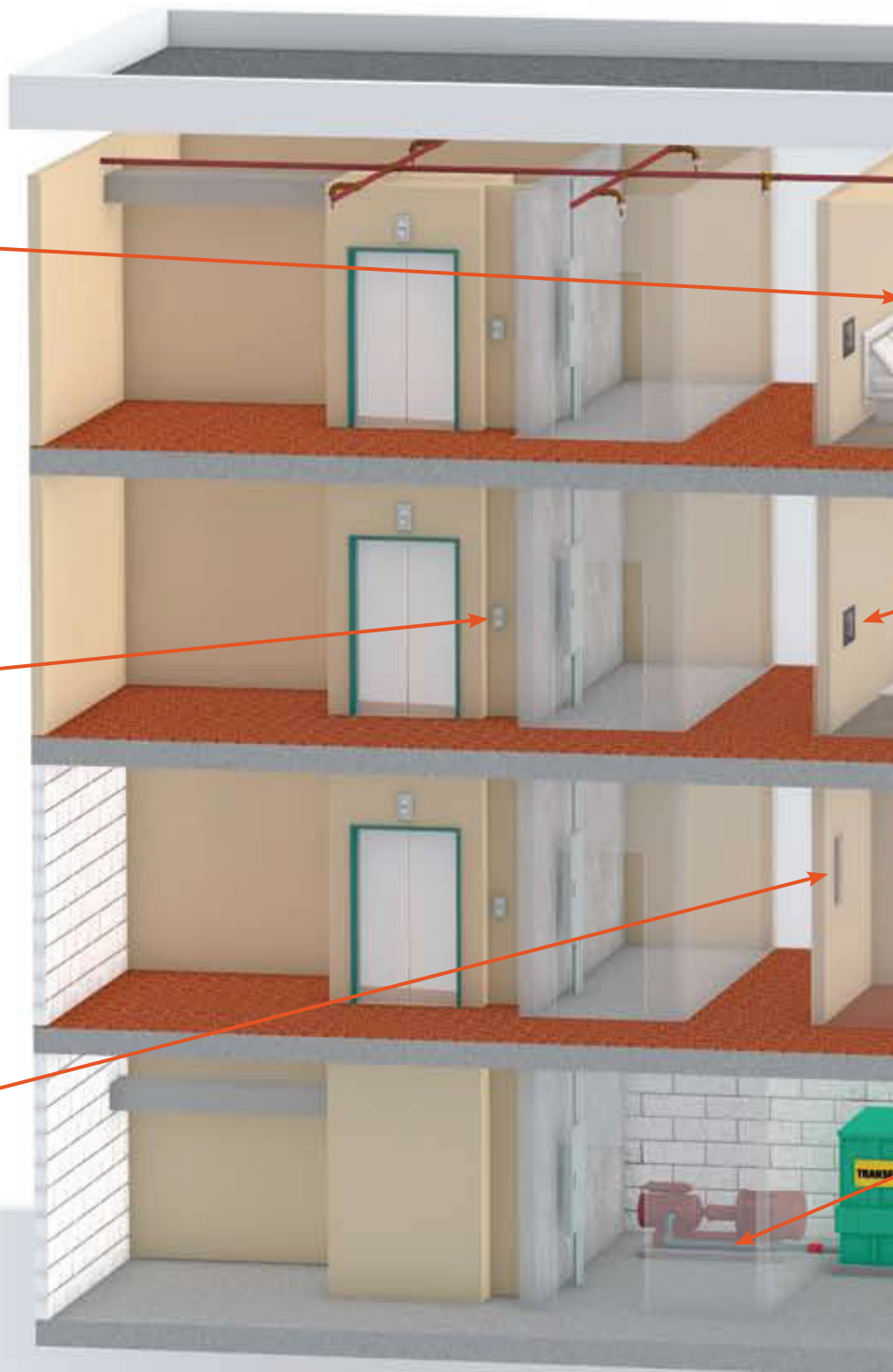
Safe Deposit Box W-L-7168
3M™ Interam™ Endothermic Mat
Product # E-5A-4

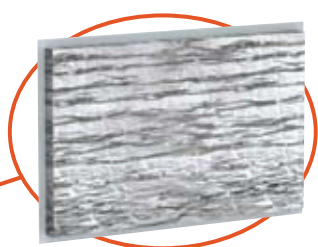
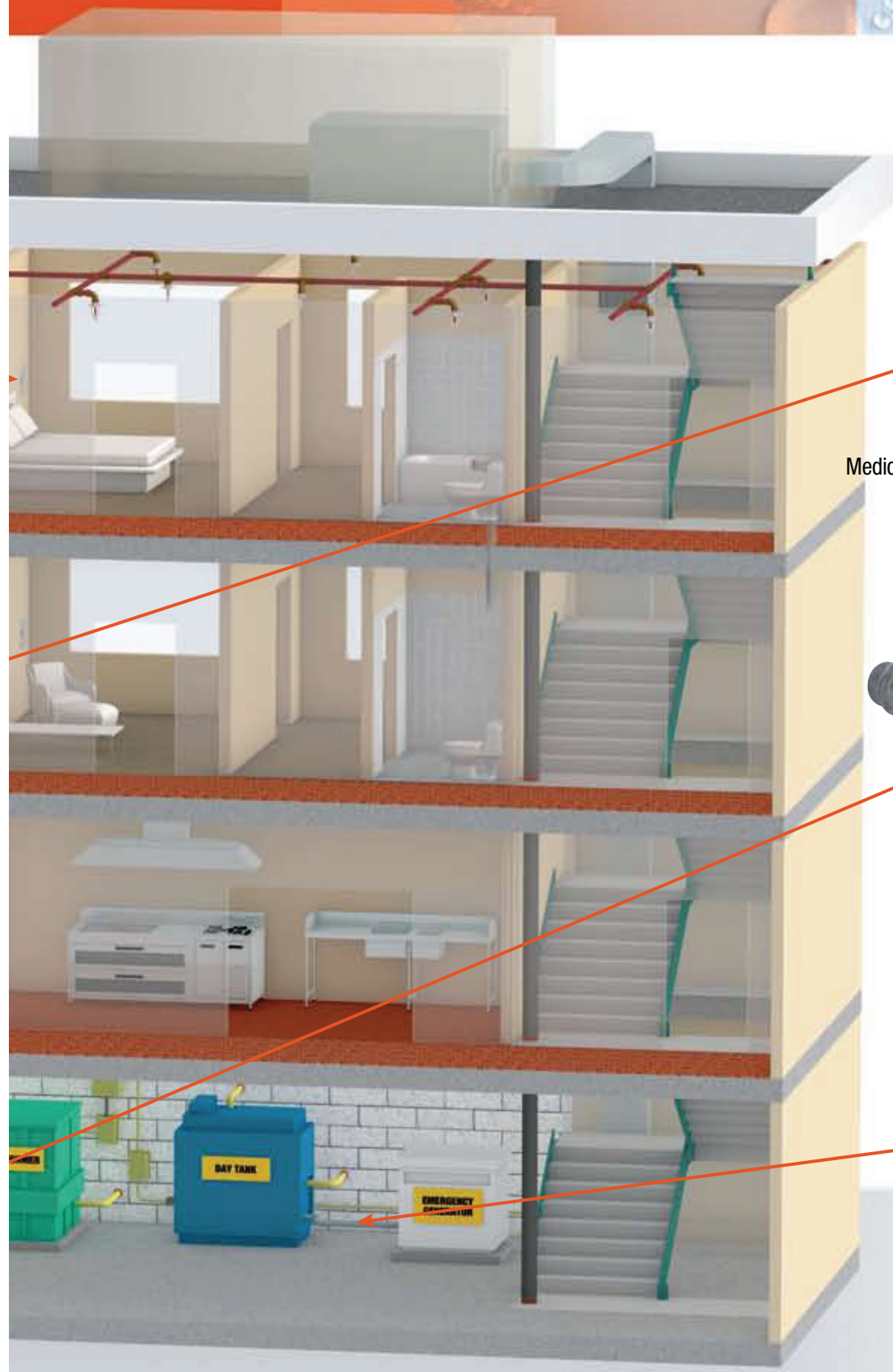


Elevator Call Box W-L-7168
3M™ Interam™ Endothermic Mat
Product # E-5A-4



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





Medical Gas Box Protection W-L-7168
3M™ Interam™ Endothermic Mat
Product # E-5A-4



Electrical Circuit Protection
Design No. ECP 526
3M™ Interam™ Endothermic Mat
Product # E-5A-4



Fuel Line Protection
Design No. FPE 501
3M™ Interam™ Endothermic Mat
Product # E-5A-4



Fire protection so flexible

you might get carried away.

3M™ Interam™ Endothermic Mat

protection so flexible that you could wrap nearly anything!

3M™ Interam™ E-5A-4 Endothermic Mat is flexible and easy to apply to virtually anything. The advanced endothermic materials contain chemically bound water that is released when exposed to high temperatures. This cools the surrounding materials to significantly retard heat transfer. With this advanced fire-stopping technology and the uniquely conformable construction of 3M™ Interam™ E-5A-4 Endothermic Mat, builders can help protect and control virtually any area in commercial construction applications with unprecedented ease.

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.

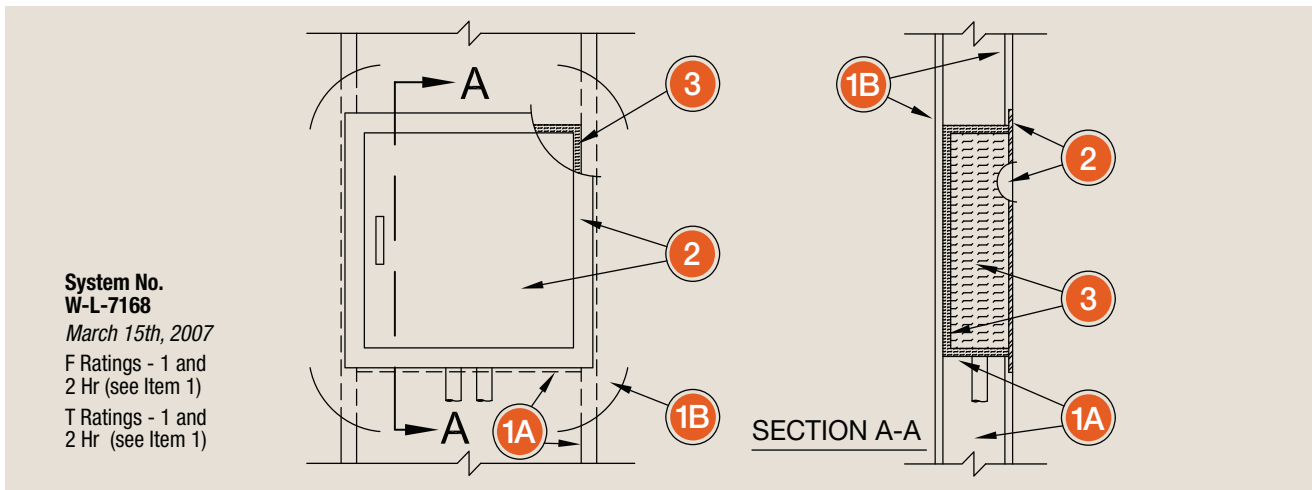
The hourly F and T Ratings of the firestop system are equal to the hourly fire rating of the wall in which the firestop system is installed.
- 2 **Steel Box** – Max 19 in. (483 mm) wide by max 32 in. (813 mm) high by max 3 1/2 in. (89 mm) deep recessed steel utility box with hinged steel door and mounting 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 or call 1-800-328-1687.



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

- 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
UL
Mat Materials
Fire Resistance Classification
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
UL
LISTED
OMEGA POINT LABORATORIES
Intertek
FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY

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.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.