



Fire Barrier FS-195+ Wrap/Strip

Product Data



FILL, VOID OR CAVITY MATERIALS
CLASSIFIED BY
UNDERWRITERS LABORATORIES, INC.[®]
FOR USE IN THROUGH-PENETRATION FIRESTOP
SYSTEMS (XHEZ).
SEE CURRENT UL FIRE RESISTANCE DIRECTORY.

1. Product Description

3M Fire Barrier FS-195+ Wrap/ Strip 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 floors and floor-ceiling assemblies.

The unique, intumescent property of this material (expands when heated) means that as penetrating items such as, plastic pipe, cable jackets and pipe insulation are 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.

FS-195+ is UL classified in firestop systems for plastic and metal pipe/conduit, insulated metal pipe, bus duct, glass pipe and insulated cable. See the UL Fire Resistance Directory.

Product features are:

- Intumescent: Expands when heated to seal around items consumed by fire.
- Smoke seal: Retards spread of toxic by-products of combustion.
- Superior, documented aging properties. Proven stability and performance for life of building.
- Improved flexibility: Easy, cost-effective installation.
- Low flame spread and smoke development.
- Normal disposal procedures.
- Versatile: Can be cut to fit irregular shapes.
- Re-enterable: No special tools required.

- Non-flame supporting.
- Low odor.
- Red-brown color: Consistent, enforceable.

2. Applications

3M Fire Barrier FS-195+ Wrap/Strip provides a rapid and cost-effective means of sealing wall and floor penetrations where fire resistance is required.

Because of its unique intumescent action, FS-195+ can be used to seal a variety of penetration types including: telephone cable, metal pipe, plastic pipe and conduit, insulated metal pipe and blank penetrations.

When used by itself or in conjunction with other 3M Fire Barrier Products such as CS-195+ Composite Sheet, CP 25WB+ Caulk, Moldable Putty+ or RC-1 Restricting Collar, fire rated penetration seals can be provided for cable trays, bus duct and cable bundles.

5. Performance Tests

A. Physical & Electrical Properties

Thermal Conductivity

- **FS195+ sheet as supplied:** 2.392 BTU/hr/ft²/°F•in @ 110°F
2.406 BTU/hr/ft²/°F•in @ 165°F

Intumescent Activation:

Expansion sequence begins	300°F (150°C)
Significant expansion	350°F (175°C)
Multi-directional free expansion	5 to 15 times (8 times average)
Weight loss (TGA)	20% @ 662°F/350°C 31% @ 932°F/500°C

Hardness: 70 to 90 Shore A

Tensile Strength (psi)/Elongation (%): (ASTM D-412)104 psi/514%

Color: Red - Brown / Black Char

B. Weatherability

<u>Test Condition</u>	<u>Temperature</u>	<u>Humidity</u>	<u>Time</u>	<u>After Exposure</u>	
				<u>Elastic Properties</u>	<u>Nominal Expansion</u>
Oven	194°F/90°C	-	90 Days	Very Good	6

C. Fire Performance Tests

<u>Test</u>	<u>Results</u>
Summary of Fire Tests Results per ASTM E 814 (UL1479)	Up to 4 hours rating for penetrations in wall and floors. See UL Building Materials Directory.
Flame Spread Index (ASTM E 84)	5
Smoke Development Index (ASTM E 84)	50
Oxygen Index (ASTM D 2863)	50

3. Physical Properties

Strip Size: (¼" X 2" x 24")

Detail:

Wrap/Strip thickness
0.22" - 0.32"

Aluminum foil Thickness
.002" ± 0.0005"

4. Specifications

A. Product

The penetration seal must be capable of passing ASTM E814 (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.

6. Installation Techniques

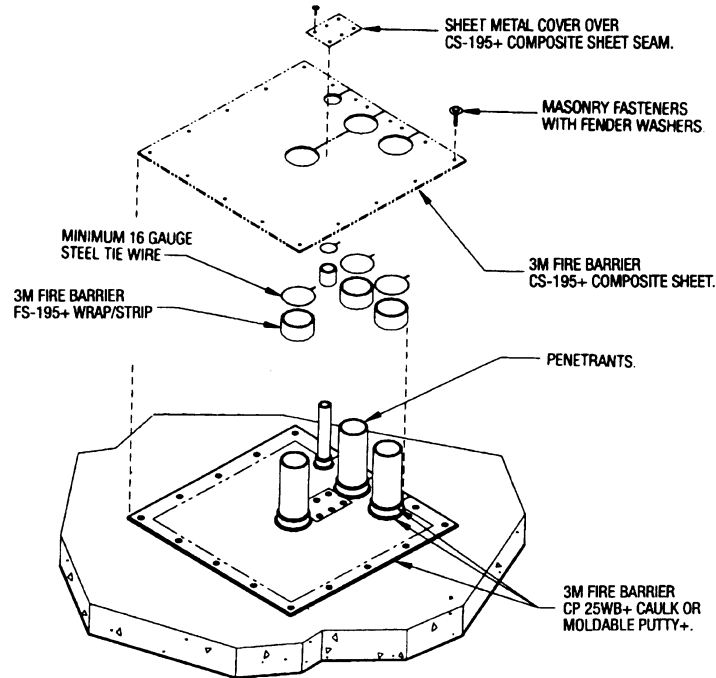
Exact instructions for specific applications are available upon request from 3M or your local 3M Fire Protection Products Distributor. The following summarizes a representative application:

A. Penetration Firestop for Large Openings With Pipe Using CS-195+ Composite Sheet and FS-195+ Wrap/Strip. See Underwriters Laboratories Fire Resistance Directory for current system numbers.

1. Seal around pipes. Wrap two inch wide 3M Fire Barrier FS-195+ Wrap/Strip around each pipe, foil side facing out. Position so wrap/strip extend one inch above the floor surface and one inch into the floor. Secure with steel wire.
2. Cover Sheet. Opening is covered with Composite Sheet cut to fit snugly around pipes and wrap/strip and to overlap the opening by a minimum of two inches. The sheet's galvanized steel layer should face outward (exposed).
3. Seal entire penetration. 3M Fire Barrier CP 25WB+ Caulk or Moldable Putty+ is used to seal the penetration. A ¼" diameter bead of

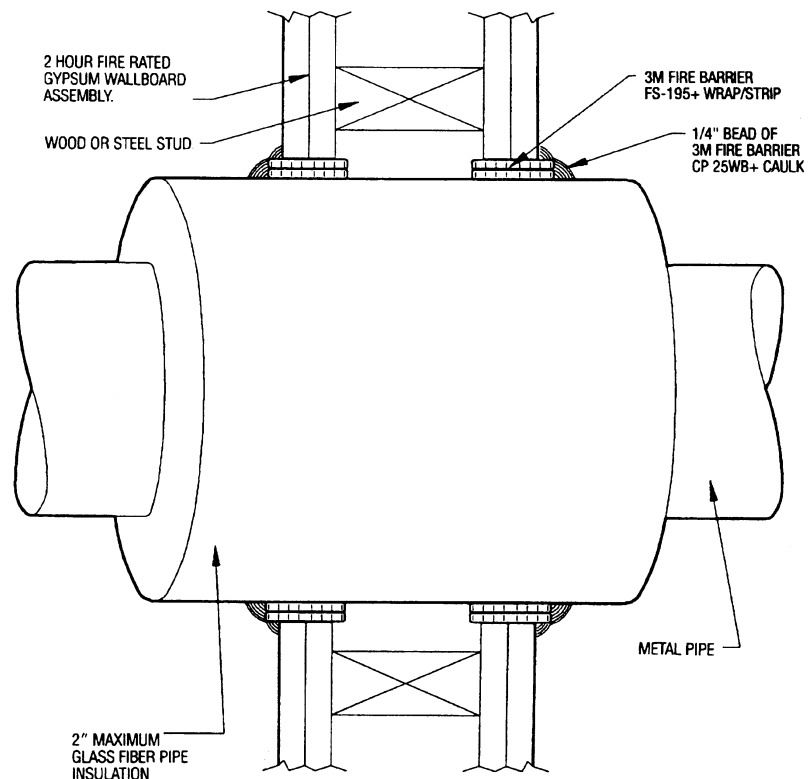
caulk or putty is applied around the opening before or after installing the cover sheet. After the cover sheet is in place, caulk or putty is applied between the wrap/strip and the composite sheet and between the wrap/strip and the pipe. A thin film

of caulk or putty is used to cover the entire wrap/strip area. All openings in the composite cover sheet are filled with CP 25WB+ Caulk or Moldable Putty+ to complete the seal.



B. Penetration Firestop for insulated metal pipe in gypsum wallboard assemblies. Refer to current UL Fire Resistance Directory for system numbers.

1. Install the firestop symmetrically on both sides of the wall assembly.
2. Minimum annular space requirement is 1/2 in. Maximum annular space requirement is 3/4 in.
3. Two layers of 3M Fire Barrier FS-195+ Wrap/Strip are required.
4. Tightly wrap the FS-195+ Wrap/Strip, foil side out, around the pipe insulation with the seam butted. Stagger the butted seams. Secure the FS-195+ Wrap/Strip with a steel tie wire or aluminum foil tape and slide the FS-195+ Wrap/Strip into the annular space. The FS-195+ Wrap/Strip should be positioned so approximately 3/4 in. protrudes from the wall surface.
5. Seal the FS-195+ Wrap/Strip with 3M Fire Barrier CP 25WB+ with a 1/4 in. bead at the FS-195+ Wrap/Strip/ wall interface and the FS-195+ Wrap/Strip/insulation interface.



C. Penetration Firestop for Plastic Pipe up to 10" max. dia. in Fire-Rated Floors and Walls. Refer to current UL Fire Resistance Directory for system numbers.

1. As an alternative to the 3M Fire Barrier RC-1 Restricting Collar and FS-195+ Wrap/Strip assembly the 3M Fire Barrier Plastic Pipe Device (PPD), UL File No. R9269, may be substituted.

2. Tightly wrap the proper number of FS-195+ Wrap/Strips around the plastic pipe foil side out. Secure with tape or tie wire. Make sure FS-195+ Wrap/Strip or PPD butts securely against the concrete with a 3/16 inch minimum overlap over the edge of the penetrating opening. When using more than one wrap, stagger the butted seams.

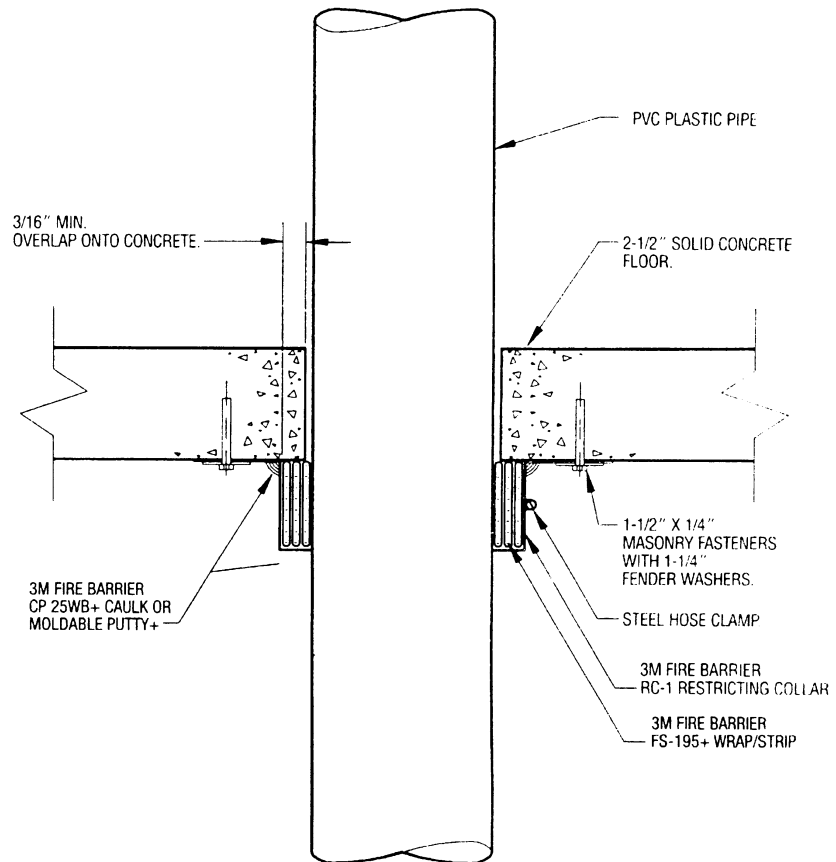
3. Apply RC-1 Restricting Collar. Remove enough RC-1 Restricting Collar to make one wrap around the applied FS-195+ Wrap/Strip with a minimum 1 inch overlap. Bend the mounting tabs away from the pipe at right angles, flush with the bottom floor surface. **Warning:** Edges of the RC-1 Restricting Collar are sharp. Handle with care.

4. Tightly secure the RC-1 Restricting Collar around the pipe with a steel hose clamp centered on the RC-1 Restricting Collar assembly. Two bands of 16 gauge steel tie wire placed 1/2 inch from the ends of the RC-1 Restricting Collar assembly may be used instead of the hose clamp.

5. Secure the collar to the slab with 1/4 inch x 1 1/2 inch masonry fasteners. Use 1 1/4 inch diameter fender washers on the mounting tabs. Fender washers are not needed when using the PPD. For 3 inch and smaller pipe secure a minimum of 3 mounting tabs. For 4

inch pipe secure a minimum of 4 mounting tabs. Secure all mounting tabs on the PPD.

6. Seal the system with a 1/4 inch bead of 3M Fire Barrier CP 25WB+ Caulk or Moldable Putty+ at the concrete and collar assembly interface.



7. Maintenance

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

8. Availability

3M Fire Barrier FS-195+ Wrap/Strip is available in strips 2" x 24" packaged 10 per box. Available from 3M Fire Protection Products Distributors.

Other 3M Fire Protection

Products: CP 25WB+ Caulk- 10 1/2 oz. Tube and 5 Gallon Pails. CS 195+ Composite Sheet - 16" x 28", 36" x 36", 24" x 36", 36" x 41". Restricting Collar. Moldable Putty+ Stix and pads. Plastic Pipe Devices-1.5", 2", 3", 4".