

3M Brand Fire Protection Products

Fire Tests of 3M Brand Fire Barrier Moldable Putty Pads and CS-195 Composite Sheet For ONE Hour Gypsum Wallboard Application in the Telecommunications Industry



Title:

FIRE ENDURANCE TEST (ASTM E814-83)
DESIGNS 3M FT 88-92
FMOQ9QO.AC (4990)

Summary:

This was a fire endurance test of one wall assembly containing two 3M firestops. The assembly contained one through penetration of communications cable, the other was a blank opening with no through penetrating items. The construction and fire test of each assembly was witnessed by a representative of Factory Mutual Research Corporation.

The objective of this test program was to investigate the fire endurance properties of each firestop construction. The test was conducted in accordance with the Standard Method of Fire Tests of Through-Penetration Firestops, ASTM E814-83.

Fire Tests:

The fire test for determining the fire endurance of the firestops was conducted at the 3M Fire Test Center located at 3M Chemolite, Bldg. 66, Cottage Grove, MN.

The fire test was conducted on the Ceramic Materials Department large scale, top loading, propane gas fired furnace. The wall assembly containing the firestops was made of 5/8 in. (15, 8 mm) thick fire rated gypsum wallboard fastened to 25 gauge (0.021 in., 0,533 mm) metal studs 3-5/8 in. by 1-5/16 in. (92,0 mm by 33,3 mm). Furnace pressure was positive during the fire tests.

A sketch of each firestop construction is shown in the illustrations.

Test Data:

The wall containing the two firestops was subjected to fire exposure. The temperatures in the furnace followed the Standard Time-Temperature Curve as specified in ASTM E814. The fire exposure continued for 1 hour followed by a hose stream test. The water stream pressure of the hose stream was 30 psi, and it continued for 17 seconds uniformly over the area of the wall containing the fire stops.

Conclusion:

Firestop 3M Design FT88-92 Firestop No. 1 (communications cable) and Firestop No. 2 (blank opening) each satisfied the fire endurance and hose stream requirements of ASTM E814 for a 1 hour F rating.

The firestops tested achieved T ratings based on the transmission of heat through the firestops during the rating period. The T rating is determined by the rise in temperature on the unexposed surface of the firestop or on any penetrating item. The temperature rise cannot be more than 325°F (162°C) above the initial temperature.

The ASTM E814 rating achieved by each stop is as listed below:

Fire Stop	T Rating
FT1 (Communication Cable)	1 hr.
FT2 (Blank)	1 hr.

The firestops also achieved Factory Mutual Research Corporation approval ratings based on the transmission of heat through the firestops during the rating period. The FMRC rating is determined by the rise in temperature on the unexposed surface of the firestop material 1 in. (25,4 mm) from the penetrating item. The temperature rise cannot be more than 325°F (162°C) above the initial temperature.

The FMRC rating achieved by each stop is as listed below.

Fire Stop	FMRC Rating
FT1	1 hr.
FT2	1 hr.

A formal approval report has been issued by Factory Mutual Research Corporation under Job Identification No. OQ9QO.AC.

3M Materials Used:

3M Fire Barrier

Moldable Putty Pads
20 each per box

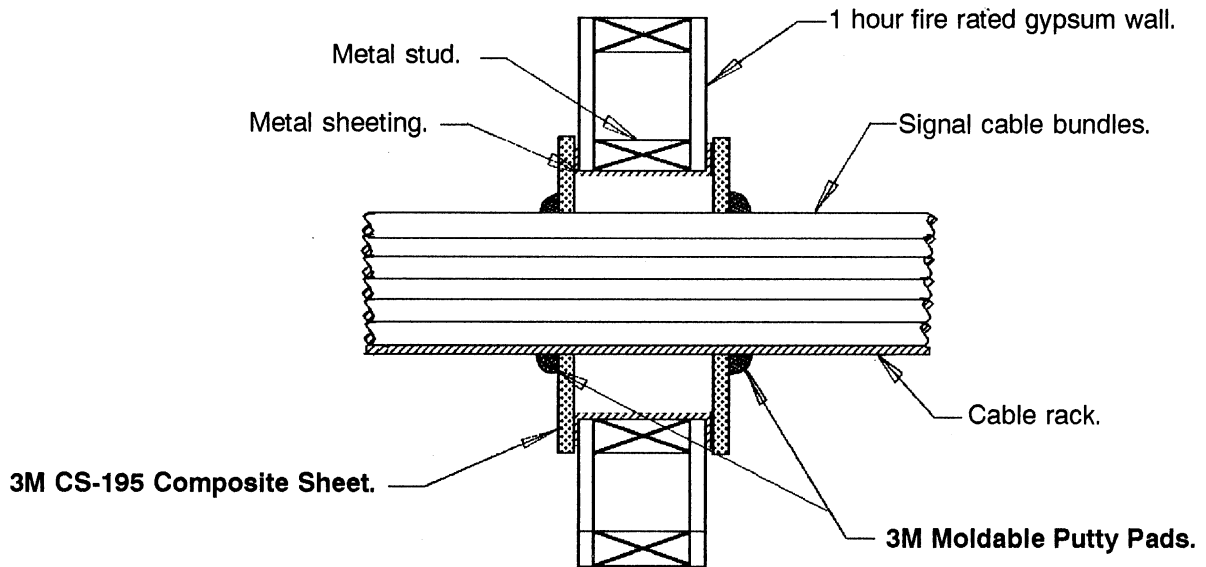
4 in. × 8 in. × 1/8 in. (101,6 mm × 203,2 mm × 3,17 mm)

3M Fire Barrier

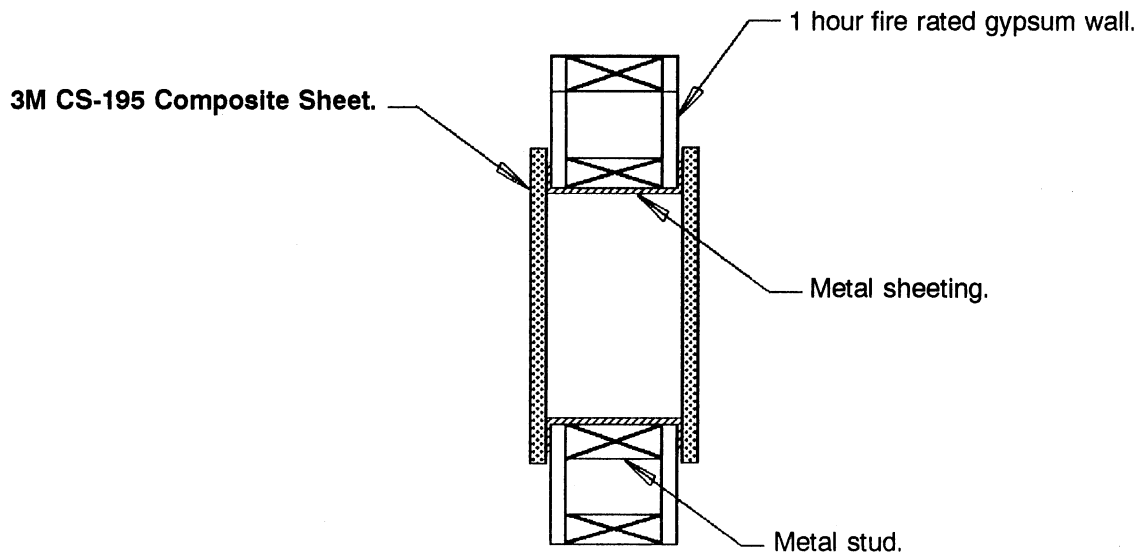
CS-195 Composite Sheet

41 in. × 36 in. (1,04 m × 914,4 mm)

Cable Tray Penetration Seal in Wall



Blank Penetration Seal in Wall



All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, however, since the conditions of use and application are beyond our control, 3M shall not be liable for any damage, direct or consequential, resulting from the use of this material or design. 3M's only warranty shall be to replace any of our products found to be defective.

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COM I.D. CPC#1007		I.D. WP <i>[Signature]</i>	
DR. KA Jensen		APP. DM Harshbarger	
DWG. I.D. 8000-CPC7			

3M Brand Fire Protection Products
Penetration Seals
Cable Tray & Blank Opening
Gypsum Wall
CS 195 / Moldable Putty
 1 Hour Rating

3M/St. Paul

Features of the 3M System include:

- Specifically designed for the Telecommunications industry.
- UL Classified and FMRC Approved materials.
- Easy to re-enter and re-seal.
- No dust.
- Low installed cost.

Plus - 3M engineering, field support and fire test capability.

Call The Leader, Call 3M

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Approved

98-0400-1185-4 (109.3) R2 CFD 330A

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