



# Fire Protection Products



ENGINEERING JUDGMENT FOR:
6/19/2020
Ryan Fenstermaker
3M FPP Sales
Northeast Territory
East Brunswick, NJ

<b>Project:</b> Centrotherm	<b>Contractor:</b> Centrotherm
<b>Firestopping Category:</b> Pen Seals / Non-metal Pipe	<b>Hourly Rating / Type:</b> 1 and 2 Hour / F
<b>Assembly Penetrated:</b> Gypsum Wallboard Assembly or Floor/Ceiling Assembly	<b>Opening Size:</b> Sized to accomodate penetrant and max annular space
<b>Penetrating Item:</b> FRPP (Flame Retardant Polypropylene Pipe)	<b>Annular Space:</b> Max 0.25 inch
<b>Space Between Penetrants:</b> Single Penetrating Item	

**Special Conditions:** Field condition with 10 in. FRPP penetrating through a gypsum wallboard assembly or 6 in., 8 in., 10 in., 12 in. FRPP penetrating through a 1 hour rated floor/ceiling assembly (wood frame).

### Application Details:

**Gypsum Wallboard Assembly - 10 in. pipe:** To firestop this application, install in accordance with 3M/PHV 120-07 with the following modifications/clarifications: **(Not Depicted on CAD)**

1. Install minimum 5/8 in. depth of sealant into the annular space around the pipe such that the sealant is flush with the surfaces of the wall.
2. Install three (3) stacks of six (6) layers of FS -195+ Wrap Strip, each stack to be contained within RC-1 Collar, around the penetrant on both sides of the wall assembly. All anchor tabs of collar assembly closest to face of wall to be secured to wall framing in accordance with system parameters.
3. Fasten the collar with each tab to the stack above it with 3/4 in. self-tapping sheet metal screws in addition to using the 1/2 in. wide stainless steel band clamps with worm gear tightening mechanisms with clamps located approximately 1 in. from each end of the wrap strips.

**Floor/Ceiling Assembly:** To firestop this application, install in accordance with 3M/PHV 120-10 with the following modifications/clarifications:

1. At the subfloor, install minimum 3/4 in. depth of sealant into the annular space around the pipe such that the sealant is flush with top surface of assembly.
2. At the gypsum ceiling lid, install minimum 5/8 in. depth of sealant into the annular space around the pipe such that the sealant is flush with bottom surface of assembly.
3. For 6 in. pipes, wrap strip/collar assemblies to be installed at the underside of ceiling lid only.
4. For 8 in., 10 in., and 12 in. pipes, wrap strip/collar assemblies to be installed both at the underside of subfloor and underside of ceiling lid.
5. Install FS-195+ Wrap Strip in accordance with the following table. See details for installation in accordance with pipe size below.

Pipe Size	Number of Layers of FS-195+ Wrap Strip	Number of Stacks
6 in.	4 layers	2 stacks
8 in.	5 layers	3 stacks
10 in.	6 layers	3 stacks
12 in.	6 layers	2 stack
	4 layers	1 stack
	Plenum Wrap 5A+ 2 layers	8 in. long 1 stack

### For 6 in., 8 in. and 10 in. pipes:

- a. Fasten the collar with each tab to the stack above it with 3/4 in. self-tapping sheet metal screws in addition to using the 1/2 in. wide stainless steel band clamps with worm gear tightening mechanisms with clamps located approximately 1 in. from each end of the wrap strips.
- b. All anchor tabs must be attached to the underside of ceiling lid/subfloor with the appropriate

fasteners, having min 75 lb. pull out strength.

**For 12 in. pipes:**

- a. Install 6 layers of FS-195+ Wrap Strip and install a RC-1 Restricting Collar around the wraps. Fasten the collar with each tab to the underside of ceiling lid/subfloor with appropriate fasteners, having min 75 lb. pull out strength. Band the collar with stainless steel banding.
- b. Install 6 layers of FS-195+ Wrap Strip and install a RC-1 Restricting Collar around the wraps. Fasten the collar with each tab of the stack above it with 3/4 in. self-tapping sheet metal screws. Band the collar with stainless steel banding.
- c. Install 4 layers of FS-195+ Wrap Strip and install a RC-1 Restricting Collar around the wraps. Fasten the collar with each tab of the stack above it with 3/4 in. self-tapping sheet metal screws. Band the collar with stainless steel banding.
- d. Install one wrap of Plenum Wrap 5A+ from the bottom of the collar in Step b. Plenum Wrap 5A+ should extend 8 in. down the pipe and must overlap onto itself a minimum 3 in. Tape the Plenum Wrap+ in place with filament tape or bands.
- e. Install 2 wraps of FS-195+ Wrap Strip over the Plenum Wrap 5A+ as the next stack of wraps and install a RC-1 Restricting Collar around the wraps. Fasten the collar with each tab to the stack above it with 3/4 in. self-tapping sheet metal screws. Band the collar with stainless steel banding.

**3M Fire Barrier Material:** FS-195+ Wrap Strip and Plenum Wrap 5A+ and CP 25WB+ Sealant, IC 15WB+ Sealant, or FB 3000WT Sealant, RC-1 Collar

**Based On:** 3M/PHV 120-07, W-L-2002, 3M/PHV 120-10

**Additional Referenced System(s):** (See Attached Drawing)

This Engineering Judgment (EJ) is based upon the sole and exclusive use of 3M brand Fire Protection Products as described within. Modification of any of the parameters of this EJ, including, without limitation, the use of non-3M brand Fire Protection Products, shall render this EJ null and void. The firestop design is expected to achieve the hourly rating indicated above. This engineering judgment is based on performance results obtained in testing with independent laboratories and / or internal 3M fire tests, which have been tested in accordance to ASTM E 814 (UL 1479) and CAN/ULC S115, CAN/ULC S102.

Engineering Judgment Prepared By:



Gabriela R. Mattos  
Technologist - Application Engineering

Reviewed By:

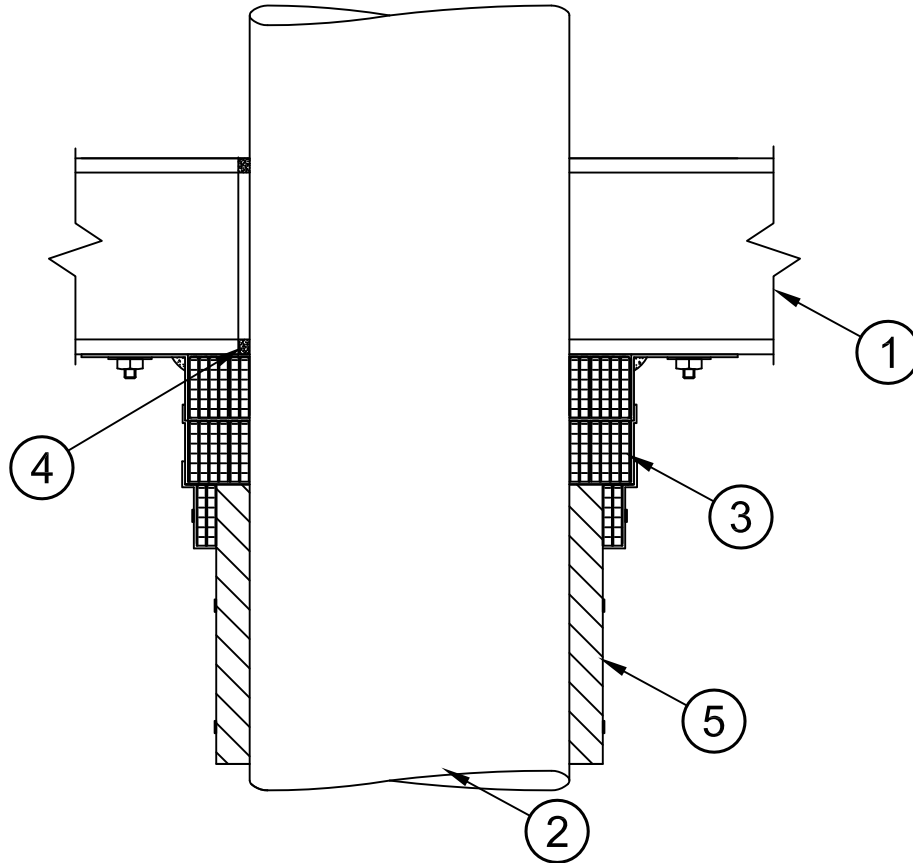


608754  
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**Technical Information, Product Selection and Use**

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3M ENGINEERING JUDGEMENT NO. 608754 REV 1  
 MODIFIED SYSTEM NO. 3M/PHV 120-07, W-L-2002, 3M/PHV 120-10  
 REQUESTED F RATING - 1 AND 2 HR / F



1. FLOOR/CEILING ASSEMBLY.
2. PENETRATING ITEM PER APPROPRIATE VERSION OF CORRESPONDING EJ.
3. WRAP STRIP/COLLAR ASSEMBLY AS OUTLINED IN APPROPRIATE VERSION OF CORRESPONDING EJ.
4. FIRESTOP SEALANT AS OUTLINED IN APPROPRIATE VERSION OF CORRESPONDING EJ.
5. FIRE BARRIER PLENUM WRAP 5A+

SEE APPLICATION DETAIL NOTES ON APPROPRIATE VERSION OF CORRESPONDING EJ.

CONFIGURATION OR ORIENTATION OF PENETRANT(S)/OPENING(S) MAY NOT MATCH SITE CONDITION(S).

CONSULT CURRENT INDEPENDENT TESTING LABORATORIES (UL/INTERTEK) FOR SYSTEMS OR DESIGN DETAILS

PROJECT: <b>CENTROTHERM</b>				SIGNATURE: <i>Anthony Kilmer</i>	
REV:	DATE:	DESCRIPTION	DRWN BY:	THIS ELEMENTARY FIRESTOP DRAWING IS TO BE USED ALONG WITH THE CORRESPONDING ENGINEERING JUDGMENT AND REFERENCED LISTED/TESTED SYSTEMS FROM INDEPENDENT TESTING LABORATORIES (UL/INTERTEK). DRAWING NOT TO SCALE.	DWG. LOCATION: <b>608754REV1.DWG</b>
0	06-22-20	ORIGINAL ISSUE	AEK		DATE: <b>06-24-20</b>
1	06-24-20	MODIFIED DRAWING	AEK		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 PROVED TO BE DEFECTIVE.
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