



# Fire Protection Products



ENGINEERING JUDGMENT FOR:
03/07/12
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Northeast Territory
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<b>Project:</b> Centrotherm	<b>Contractor:</b> Centrotherm
<b>Fire Stopping Category:</b> Pen Seals / Non-metal Pipe	<b>Hourly Rating Requested/ Type:</b> 1 and 2 Hour / F
<b>Assembly Penetrated:</b> Gypsum Wallboard Assembly	<b>Opening Size:</b> Sized to allow point contact to max 3/16 in. annular space
<b>Penetrating Item:</b> 6 in., 8 in. or 12 in. FRPP	<b>Annular Space:</b> Point contact to max 3/16 in.
<b>Space Between Penetrants:</b> Single Penetrant	

**Special Conditions:** 6 in., 8 in. or 12 in. FRPP penetrating a gypsum wallboard assembly.

**Application Details:** To firestop this application, install in accordance with Warnock-Hersey Design 3M/PHV 120-07 with the following modifications/clarifications:

1. Opening must be framed for 8 in. and 12 in. pipes in such that all fasteners for collars will be attached directly into the framing members.
2. Pipe must be supported, per local mechanical code requirements, by pipe hangers placed approximately 12 in. from the surface of the wall on both sides of the wall. The pipe hangers must be attached directly into a concrete slab or a structural support member.
3. Install minimum 5/8 in. depth of CP 25WB+ Sealant, IC 15WB+ Sealant, or FB 3000WT Sealant into the annular space around the pipe such that the sealant is flush with the surface of the wall.
4. Install FS-195+ Wrap Strip in lieu of Ultra GS Wrap Strip as follows:

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
12 in.	6 layers	2 stacks
	4 layers	1 stack
	2 layers	1 stack

For 6 in. and 8 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 wall.

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 wall per UL System W-L-2002. Band the collar with stainless steel banding.
- b. 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.
- c. Install one wrap of Plenum Wrap 5A+ from the bottom of the collar in Step b. Plenum Wrap 5A+ should extend 8 in. out the pipe and must overlap onto itself a minimum 3 in. Tape the Plenum Wrap+ in place with filament tape or bands.
- d. 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 Building and Commercial Services Division

3M Center, Building 223-2N-20  
St. Paul, MN 55144-1000

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

**Based On:** 3M/PHV 120-09, W-L-2002, W-L-2005  
**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:



Kate Baker  
Advanced Technical Service Representative

Reviewed By:

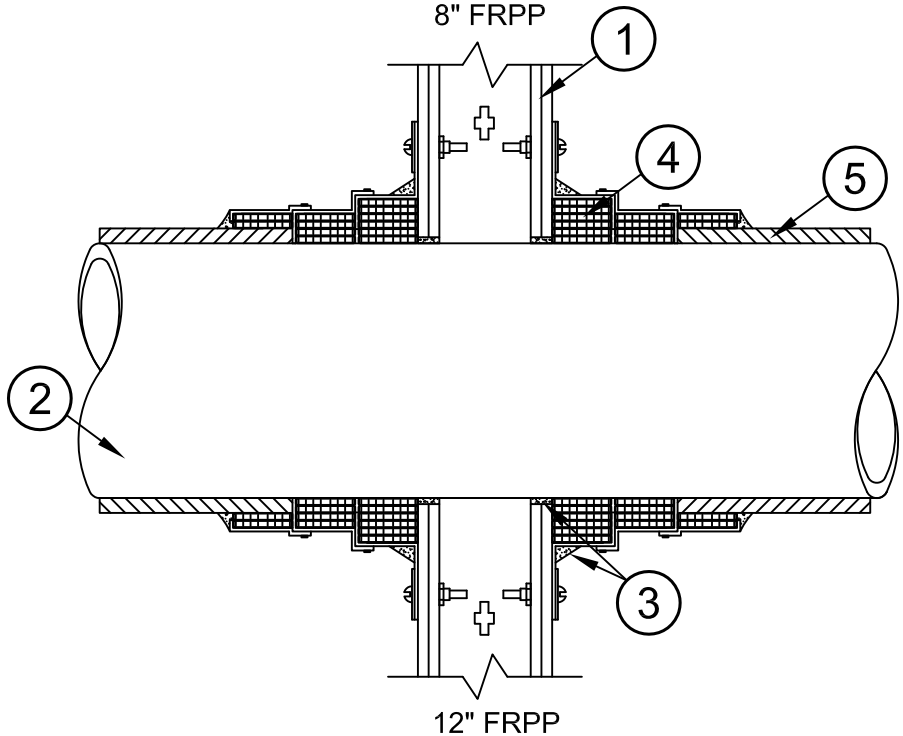
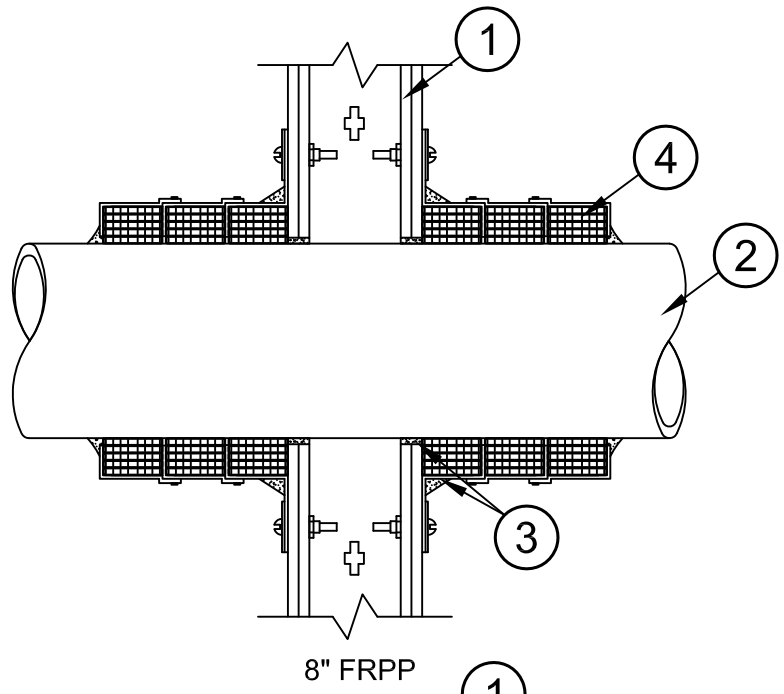
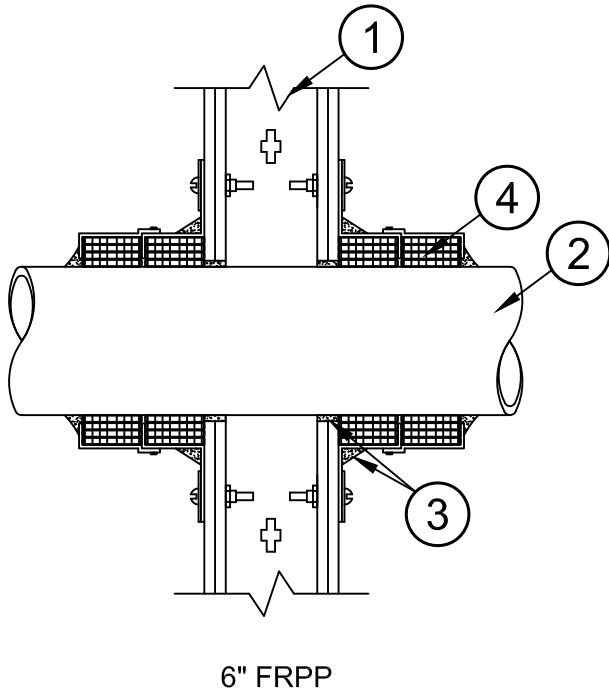


545190  
Rev. 1:KEB 7-24-12 Changed to Canadian details due to  
jobsite location  
cc: Ryan Fenstermaker

**3M Building and Commercial Services Division**

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St. Paul, MN 55144-1000

3M ENGINEERING JUDGEMENT NO. 545190 REV 1  
 MODIFIED SYSTEM NO. 3M/PHV 120-07  
 REQUESTED F RATING - 1 & 2-HR



1. GYPSUM WALLBOARD ASSEMBLY.
2. FRPP PIPE.
3. CP 25WB+ SEALANT, IC 15WB+ SEALANT, OR FB 3000WT SEALANT.
4. FS-195+ WRAP STRIP.
5. PLENUM WRAP 5A+

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

CONSULT CURRENT INDEPENDENT TESTING LABORATORIES (UL, OPL) FOR SYSTEMS OR DESIGN DETAILS

PROJECT: CENTROTHERM				SIGNATURE		
				DWG. LOCATION 545190REV1.DWG	SYSTEM / DESIGN NO. EJ545190	DATE 07-24-12
0	07-24-12	ORIGINAL ISSUE	BLF	PAGE 1 OF 1		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.
REV	DATE	DESCRIPTION	DRWN BY	NOT FOR USE AS CONSTRUCTION DOCUMENT.		
3M Fire Protection Products				DRAWING NOT TO SCALE.		