

**PLASTIC PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY**

F-RATING = 3-HR.

FT-RATING = 0-HR., 2-1/2-HR., OR 3-HR. (SEE NOTE NO. 3 AND TABLE BELOW)

FH-RATING = 0-HR. OR 3-HR. (SEE TABLE BELOW)

FTH-RATING = 0-HR., 2-1/2-HR., OR 3-HR. (SEE NOTE NO. 3 AND TABLE BELOW)

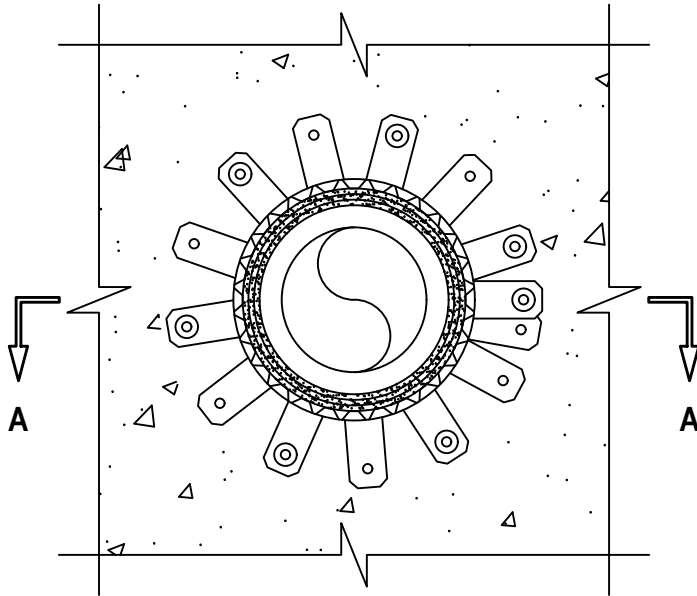
L-RATING AT AMBIENT = LESS THAN 5.1 L/S/M<sup>2</sup>

L-RATING AT 400°F = LESS THAN 5.1 L/S/M<sup>2</sup>

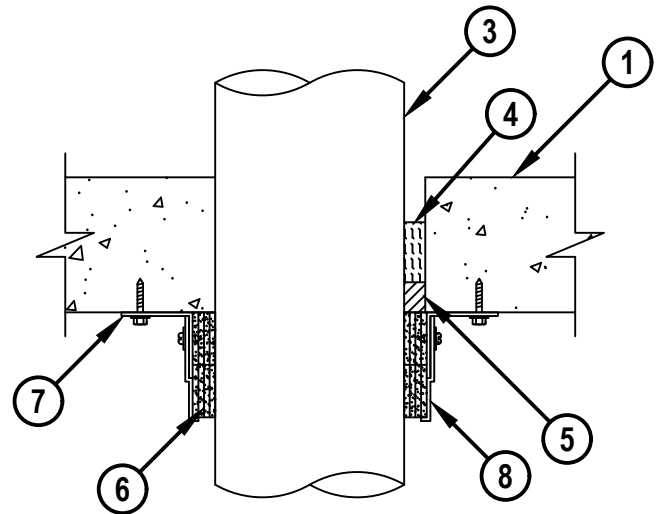
NOTE : THIS SYSTEM TESTED TO 50 PA PRESSURE DIFFERENTIAL

cUL CAJ2831c.061724

**BOTTOM VIEW**



**SECTION A-A**



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
  - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
  - B. ANY UL CLASSIFIED CONCRETE BLOCK WALL.
2. [OPTIONAL- NOT SHOWN] MAXIMUM 7" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR THINNER) (SEE NOTE NO. 3 AND TABLE BELOW).
3. PENETRATING ITEM MAY BE ONE OF THE FOLLOWING :
  - A. MAXIMUM 6" (160 MM OD) NOMINAL DIAMETER AQUATHERM GREENPIPE POLYPROPYLENE (PP-R) PLASTIC PIPE (SDR 7.4 OR 11) (CLOSED OR VENTED PIPING SYSTEM).
  - B. MAXIMUM 6" (160 MM OD) NOMINAL DIAMETER AQUATHERM BLUEPIPE POLYPROPYLENE (PP-R) PLASTIC PIPE (SDR 9 OR 11) (CLOSED OR VENTED PIPING SYSTEM).
  - C. MAXIMUM 6" (160 MM OD) NOMINAL DIAMETER NUPI AMERICAS NIRON POLYPROPYLENE (PP-RCT) PLASTIC PIPE (SDR 7.3, 9, OR 11) (CLOSED OR VENTED PIPING SYSTEM).
  - D. MAXIMUM 6" (160 MM OD) NOMINAL DIAMETER AQUATECHNIK NA FUSION-TECH POLYPROPYLENE (PP-RCT) PLASTIC PIPE (SDR 7.4 OR 11) (CLOSED OR VENTED PIPING SYSTEM).



HILTI, Inc.  
Plano, Texas USA (800) 879-8000

Sheet	1 of 2
Scale	5/32" = 1"
Date	June 17, 2024

Drawing No.  
**cUL**  
**CAJ2831c**

**PLASTIC PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY**

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FT-RATING = 0-HR., 2-1/2-HR., OR 3-HR. (SEE NOTE NO. 3 AND TABLE BELOW)

FH-RATING = 0-HR. OR 3-HR. (SEE TABLE BELOW)

FTH-RATING = 0-HR., 2-1/2-HR., OR 3-HR. (SEE NOTE NO. 3 AND TABLE BELOW)

L-RATING AT AMBIENT = LESS THAN 5.1 L/S/M<sup>2</sup>

L-RATING AT 400°F = LESS THAN 5.1 L/S/M<sup>2</sup>

NOTE : THIS SYSTEM TESTED TO 50 PA PRESSURE DIFFERENTIAL

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- E. MAXIMUM 6" (160 MM OD) NOMINAL DIAMETER UPONOR POLYPROPYLENE (PP) PLASTIC PIPE (SDR 9 OR 11) (CLOSED OR VENTED PIPING SYSTEM).
- F. MAXIMUM 6" (152 MM) NAPSYS-HR PVC HR POLYVINYL CHLORIDE (PVC-HR) PIPE (SCHEDULE 40) (CLOSED OR VENTED PIPING SYSTEM) (SEE TABLE BELOW).
- G. MAXIMUM 8" (203 MM) XFR POLYVINYL CHLORIDE (XFR-PVC) PIPE (SCHEDULE 40) (CLOSED OR VENTED PIPING SYSTEM).
- 4. MINIMUM 2" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED, RECESSED TO ACCOMMODATE SEALANT.
- 5. MINIMUM 1" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.
- 6. HILTI CP 648E WRAP STRIP (NOMINAL 3/16" THICK X 1-3/4" WIDE) CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE PIPE, COVERING FOUR TIMES, WITH ENDS BUTTED AND HELD IN PLACE WITH TAPE. BUTTED ENDS IN SUCCESSIVE LAYER SHALL BE OFFSET. TWO STACKS OF 4 LAYERS SHALL BE INSTALLED AND BUTTED TIGHTLY TO BOTTOM SURFACE OF FLOOR.
- 7. FIRST HILTI RETAINING COLLAR SHALL BE WRAPPED AROUND TOP LAYER OF WRAP STRIPS WITH ENDS OVERLAPPING 2" AND SECURED WITH TWO NO. 8 SHEET METAL SCREWS. SECURE EVERY OTHER TAB TO BOTTOM SURFACE OF FLOOR WITH 1-1/4" LONG CONCRETE SCREW ANCHORS AND 1-1/4" WASHERS.
- 8. SECOND HILTI RETAINING COLLAR SHALL BE WRAPPED AROUND BOTTOM LAYER OF WRAP STRIPS WITH ENDS OVERLAPPING 2" AND SECURED WITH FOUR NO. 8 SHEET METAL SCREWS. SECURE EVERY OTHER TAB TO FIRST RETAINING COLLAR WITH ONE NO. 8 SHEET METAL SCREW.

PENETRANT TYPE	F-RATING	FH-RATING	FT-RATING (SEE NOTE BELOW)	FTH-RATING (SEE NOTE BELOW)	MAX OPENING DIAM.	MAX ANNULAR SPACE	STEEL SLEEVE
2A, 2B, 2C, 2D, 2E	3-HR.	3-HR.	2-1/2-HR.	2-1/2-HR.	7" (178 MM)	3/4" (19 MM)	OPTIONAL
2F	3-HR.	3-HR.	3-HR.	3-HR.	7" (178 MM)	1/2" (13 MM)	OPTIONAL
2G	3-HR.	0-HR.	2-1/2HR.	0-HR.	10" (254 MM)	1/2" (13 MM)	NOT PERMITTED

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 10".  
 2. HILTI CP 648E WRAP STRIP WITH RETAINING COLLAR AND HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT ARE REQUIRED ON EACH SIDE OF A WALL ASSEMBLY.  
 3. FT AND FTH-RATINGS = 0-HR. WHEN STEEL SLEEVE (ITEM 2) IS USED.

 <b>Hilti Firestop Systems</b>	HILTI, Inc. Plano, Texas USA (800) 879-8000		Sheet 2 of 2	Drawing No. <b>cUL CAJ2831c</b>
			Scale -	
			Date June 17, 2024	
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