

cUL SYSTEM NO. C-AJ-2021  
**PLASTIC PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL**



cUL CAJ2021m.011715

F-RATING = 2-HR. OR 3-HR.

FH-RATING = 0-HR., 2-HR., OR 3-HR.

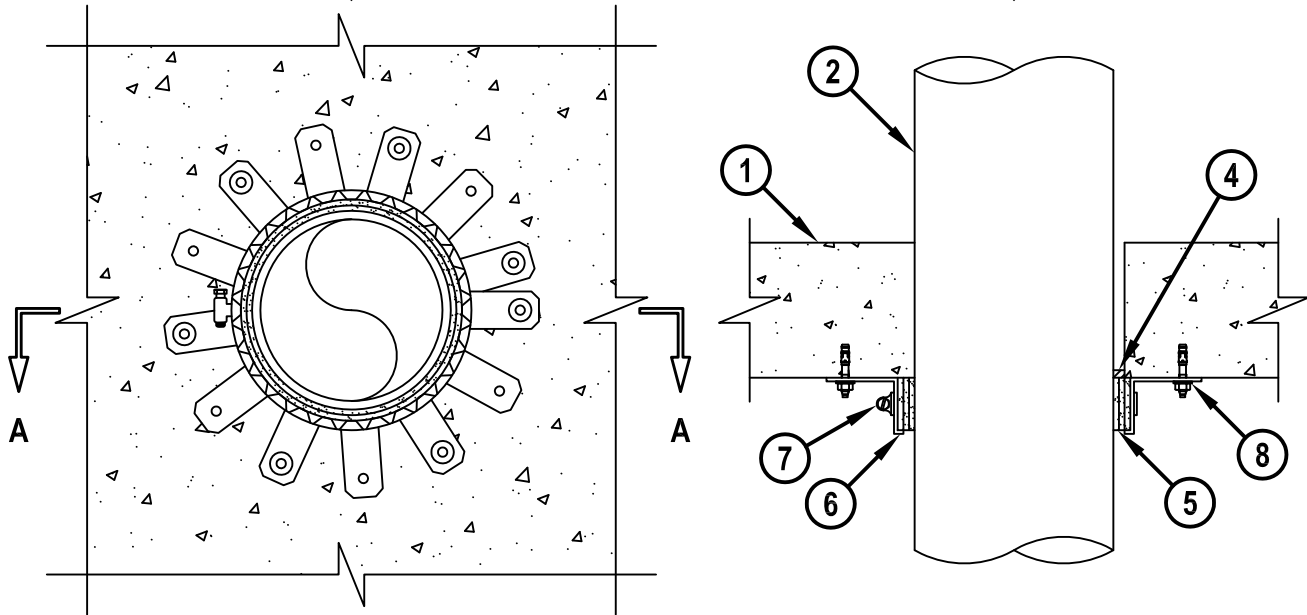
FT-RATING = 0-HR., 2-HR., OR 3-HR.

FTH-RATING = 0-HR., 1 1/4-HR., 2-HR., OR 3-HR.

NOTE : TESTED WITH A 50 Pa PRESSURE DIFFERENTIAL

**BOTTOM VIEW**

**SECTION A-A**



1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. OR 3-HR. FIRE-RATING) :
  - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
  - B. PRECAST (HOLLOW CORE) CONCRETE FLOOR (MINIMUM 6" THICK).
  - C. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
  - A. MAXIMUM 6" NOMINAL DIAMETER PVC PLASTIC PIPE (CELLULAR OR SOLID CORE).
  - B. MAXIMUM 6" NOMINAL DIAMETER ABS PLASTIC PIPE (CELLULAR OR SOLID CORE).
  - C. MAXIMUM 6" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 11 OR SDR 13.5) (CLOSED PIPING SYSTEM ONLY).
  - D. MAXIMUM 4" NOMINAL DIAMETER FRPP PLASTIC PIPE.
  - E. MAXIMUM 6" NOMINAL DIAMETER AQUARISE CPVC PLASTIC PIPE (SDR 11) MANUFACTURED BY IPEX, INC. (CLOSED PIPING SYSTEM ONLY).
  - F. MAXIMUM 4" NOMINAL DIAMETER RIGID NONMETALLIC CONDUIT (SCH 40 PVC).
3. [OPTIONAL FOR PVC OR ABS PIPES ONLY] MAXIMUM 4" NOMINAL DIAMETER PVC OR ABS PIPE COUPLING TO EXTEND MAXIMUM 1" INTO OPENING OF FLOOR ASSEMBLY OR EITHER SIDE OF WALL.
4. MINIMUM 1/4" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT (MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED WHEN OPTIONAL COUPLING IS USED).
5. HILTI CP 648E WRAP STRIP CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE PIPE, AS SPECIFIED IN TABLE BELOW, WITH ENDS BUTTED AND HELD IN PLACE WITH TAPE. WRAP STRIP TO BE BUTTED TIGHTLY AGAINST BOTTOM SURFACE OF CONCRETE FLOOR.



HILTI, Inc.  
 Tulsa, Oklahoma USA (800) 879-8000

Sheet	1 of 2
Scale	5/32" = 1"
Date	Jan. 17, 2015

Drawing No.  
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*Saving Lives through Innovation and Education*

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6. HILTI RETAINING COLLAR (SIZED TO MATCH WRAP STRIP) WRAPPED OVER THE WRAP STRIPS, OVERLAPPING MINIMUM 1".
7. NOMINAL 1/2" WIDE STAINLESS STEEL HOSE CLAMP(S) SECURED AT MID-HEIGHT OF RETAINING COLLAR.
8. EVERY OTHER TAB OF RETAINING COLLAR SECURED TO BOTTOM OF FLOOR WITH 1/4" x 1-3/4" LONG STEEL EXPANSION BOLTS, 1-1/2" LONG CONCRETE SCREW ANCHORS OR 0.145" DIAMETER x 1-1/4" LONG POWDER ACTUATED FASTENERS IN CONJUNCTION WITH 1-7/16" DIAMETER STEEL WASHERS (EX. HILTI KWIK-BOLT 3, KWIK-CON OR DX PINS).

NOMINAL PIPE DIAMETER (OR SMALLER)	ANNULAR SPACE		F RATINGS	FT AND FTH RATINGS	FH RATINGS
	MINIMUM	MAXIMUM			
1-1/2"	0"	1/4"	3	2	3
2"	0"	1/4"	3	2	3
3"	0"	1/2"	3	2	3
4"	0"	1/2"	3	2	3
4" WITH OPTIONAL COUPLING	0"	1/2"	2	1 1/4	2
6"	0"	3/8"	3	3	3

MAXIMUM PIPE DIAMETER	FIRESTOP PRODUCT	NUMBER OF LAYERS
3"	CP 648E W25/1"	2
3"	CP 648E W45/1-3/4"	1
4"	CP 648E W25/1"	3
4"	CP 648E W45/1-3/4"	2
4" WITH OPTIONAL COUPLING	CP 648E W45/1-3/4"	3
6"	CP 648E W45/1-3/4"	3

- NOTES : 1. MAXIMUM DIAMETER OF OPENING = 7".  
 2. HILTI CP 648E WRAP STRIP(S) WITH RETAINING COLLAR AND FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT ARE REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.  
 3. CLOSED OR VENTED PIPING SYSTEM (PVC, ABS & FRPP = SCH 40; CPVC = SDR 11 OR 13.5).  
 4. WHEN FRPP PIPE IS USED, FT, FH, AND FTH RATINGS ARE 0-HR.



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