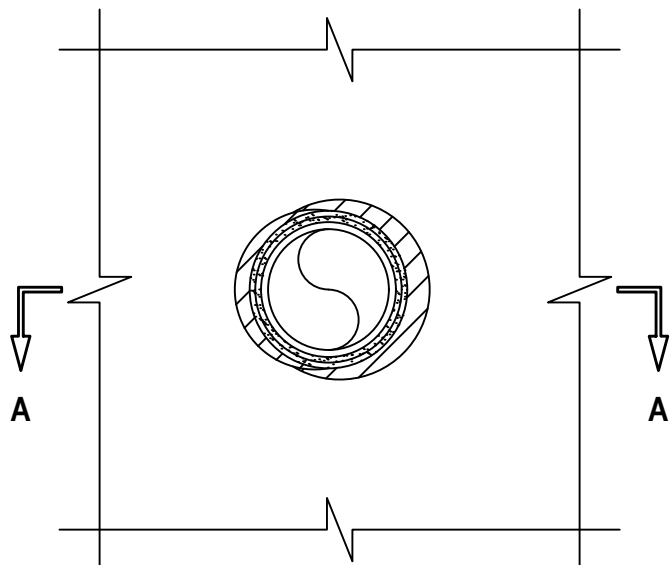
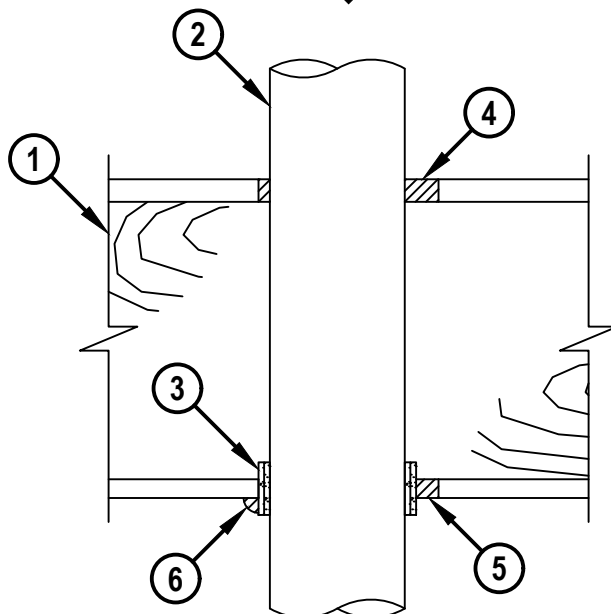


**PLASTIC PIPE THROUGH WOOD FLOOR/CEILING ASSEMBLY**

F-RATING = 1-HR.

T-RATING = 0-HR., 1/2-HR., OR 1-HR. (SEE NOTES NO. 1 AND 2 BELOW)

**BOTTOM VIEW****SECTION A-A**

1. WOOD FLOOR/CEILING ASSEMBLY (UL/cUL CLASSIFIED L500 SERIES) (1-HR. FIRE-RATING) :
  - A. LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD, OR FLOOR TOPPING MIXTURE.
  - B. [OPTIONAL - NOT SHOWN] GYPSUM WALL ASSEMBLY (FIRE-RATED OR NON FIRE-RATED) CONSISTING OF SINGLE NOMINAL 2" x 6" LUMBER PLATES AND STUDS OR DOUBLE NOMINAL 2" x 4" LUMBER PLATES AND STUDS WITH MINIMUM 1/2" THICK GYPSUM BOARD.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
  - A. MAXIMUM 4" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40) (CELLULAR CORE OR SOLID CORE) (CLOSED OR VENTED PIPING SYSTEM).
  - B. MAXIMUM 4" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED OR VENTED PIPING SYSTEM).
  - C. MAXIMUM 4" NOMINAL DIAMETER PVC CONDUIT INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NFPA 70).
3. HILTI CP 648E OR CP 648S WRAP STRIP WRAPPED CONTINUOUSLY AROUND THE OUTER CIRCUMFERENCE OF THE PIPE. NUMBER OF LAYERS AND TYPE OF WRAP STRIP TO BE IN ACCORDANCE WITH THE RESPECTIVE TABLES BELOW. WRAP STRIP HELD IN PLACE WITH TAPE (OR WITH INTEGRATED FASTENING TAPE ON THE CP 648S ONLY). WRAP STRIP CENTERED IN THE GYPSUM BOARD CEILING OR, WHEN A CHASE WALL IS PRESENT, INSTALLED IN THE LOWER TOP PLATE SO THAT ONE-HALF OF THE WRAP STRIP LENGTH EXTENDS BELOW THE LOWER TOP PLATE.

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Sheet	1 of 2
Scale	5/32" = 1"
Date	Nov. 18, 2020

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**FC**  
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**PLASTIC PIPE THROUGH WOOD FLOOR/CEILING ASSEMBLY**

F-RATING = 1-HR.

T-RATING = 0-HR., 1/2-HR., OR 1-HR. (SEE NOTES NO. 1 AND 2 BELOW)

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4. MINIMUM 3/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH TOP SURFACE OF FLOOR.
5. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM SURFACE OF CEILING.
6. MINIMUM 1/2" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED AT WRAP STRIP/CEILING INTERFACE OF WRAP STRIP/TOP PLATE INTERFACE.

**HILTI CP 648S WRAP STRIP**

PRODUCT DESIGNATION	NOM PIPE SIZE, IN. (MM)	MAX OPENING DIAM, IN. (MM)	ANNULAR SPACE	
			MIN, IN. (MM)	MAX, IN. (MM)
CP 648S 1.5" US	1-1/2 (38)	3 (76)	3/16 (4.8)	5/16 (8)
CP 648S 2" US	2 (51)	3-1/2 (89)	3/16 (4.8)	5/16 (8)
CP 648S 3" US	3 (102)	4 (102)	3/16 (4.8)	5/16 (8)
CP 648S 4" US	4 (140)	5-1/2 (140)	3/8 (10)	3/4 (19)

**HILTI CP 648E WRAP STRIP**

PRODUCT DESIGNATION	NOM PIPE SIZE, IN. (MM)	MAX OPENING DIAM, IN. (MM)	ANNULAR SPACE		NUMBER OF LAYERS
			MIN, IN. (MM)	MAX, IN. (MM)	
CP 648E W45/1-3/4"	1-1/2 (38)	3 (76)	3/16 (4.8)	5/16 (8)	1
CP 648E W45/1-3/4"	2 (51)	3-1/2 (89)	3/16 (4.8)	5/16 (8)	1
CP 648E W45/1-3/4"	3 (76)	4 (102)	3/16 (4.8)	5/16 (8)	1
CP 648E W45/1-3/4"	3 (76)	5 (127)	3/8 (10)	5/8 (16)	2
CP 648E W45/1-3/4"	4 (102)	6 (152)	3/8 (10)	5/8 (16)	2

NOTES : 1. WHEN HILTI CP 648S IS USED, THE T-RATING IS 1/2-HR. FOR PENETRATING ITEMS WITH A NOMINAL DIAMETER OF 2" OR SMALLER, AND THE T-RATING IS 0-HR. FOR NOMINAL 3" DIAMETER PENETRATING ITEMS. THE T-RATING IS 1-HR. FOR NOMINAL 4" DIAMETER PENETRATING ITEMS.

2. WHEN HILTI CP 648E IS USED, T-RATING IS 1/2-HR.

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Sheet 2 of 2

Scale -

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