

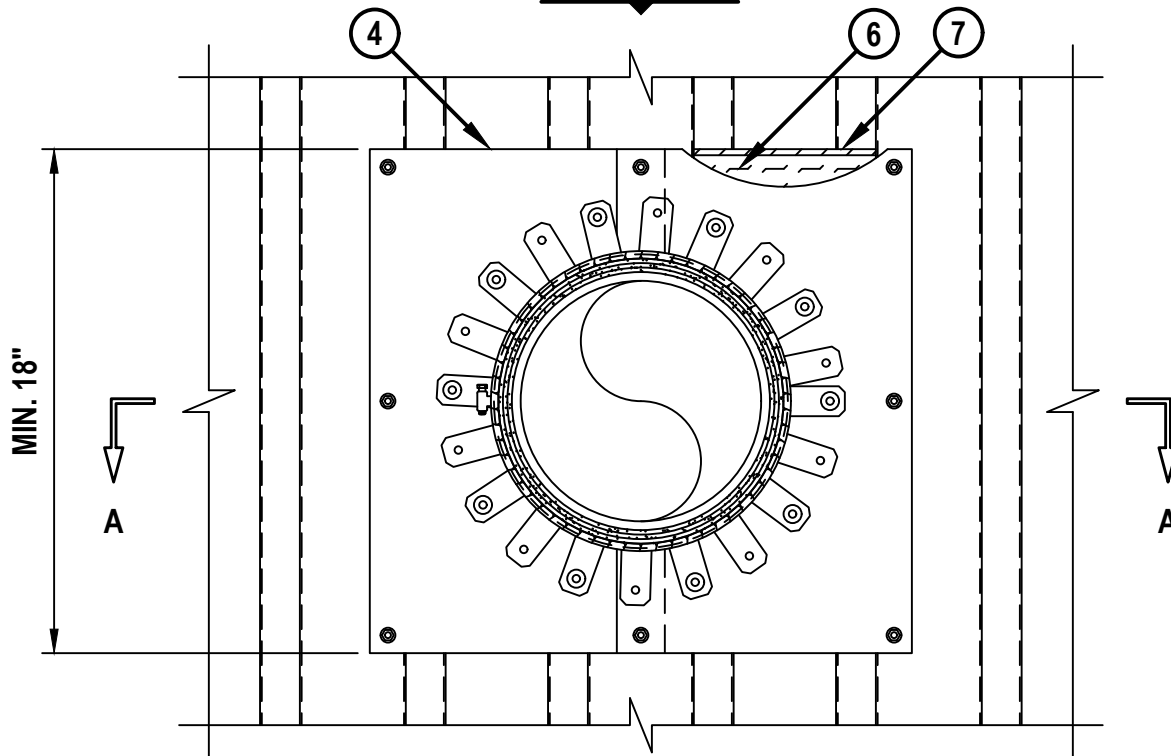
UL SYSTEM NO. F-A-2421

# PLASTIC PIPE THROUGH CONCRETE FLOOR OVER METAL DECKING

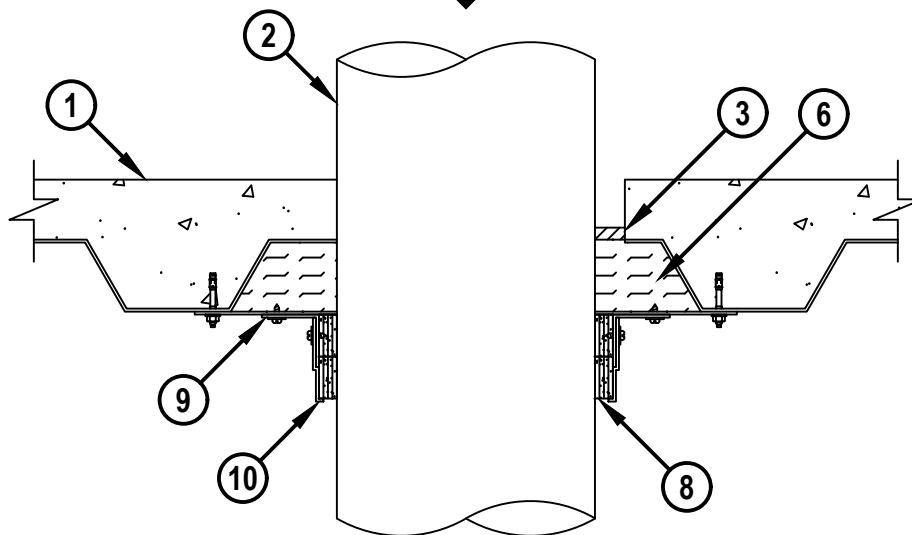
F-RATING = 2-HR.

T-RATING = 2-HR.

**BOTTOM VIEW**



**SECTION A-A**



FA2421a.081924

**HILTI**  
Hilti Firestop Systems

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

Sheet	1 of 2
Scale	1/8" = 1"
Date	Aug. 19, 2024

Drawing No.

**FA  
2421a**

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**PLASTIC PIPE THROUGH CONCRETE FLOOR OVER METAL DECKING**

F-RATING = 2-HR.

T-RATING = 2-HR.

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1. NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 2-1/2" THICK) OVER METAL DECKING (2-HR. FIRE-RATING).
2. PENETRATING ITEM TO BE ANY OF THE FOLLOWING (ALSO SEE NOTE NO. 3 BELOW) :
  - A. MAXIMUM 10" NOMINAL DIAMETER PVC PLASTIC PIPE (SCH. 40) (CLOSED OR VENTED PIPING SYSTEM).
  - B. MAXIMUM 10" NOMINAL DIAMETER CPVC PLASTIC PIPE (SCH. 40) (CLOSED PIPING SYSTEM ONLY).
3. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM OF THE FLAT PORTION OF THE FLOOR ASSEMBLY (OR TOP OF THE DECK FLUTE).
4. SHEET METAL PLATE (MIN. 18 GA.) FASTENED TO VALLEYS OF DECKING WITH 1/4" x 1-3/4" LONG STEEL EXPANSION BOLTS WITH STEEL NUTS AND MINIMUM 3/4" STEEL WASHERS OR 0.145 x 1-1/4" LONG POWDER ACTUATED FASTENERS WITH 1-7/16" DIAMETER STEEL WASHER, HILTI 1/4" x 1-1/4" LONG KWIK-CON II CONCRETE SCREW ANCHOR, 1/4" x 1-3/4" KWIK-BOLT 3 STEEL EXPANSION ANCHOR, OR HILTI X-DNI 27 P8 S15 POWDER ACTUATED FASTENER WITH INTEGRATED WASHER AT EACH CORNER, AT EACH PLATE/VALLEY INTERSECTION AND AT BOTH SIDES OF SLIT MADE TO PERMIT INSTALLATION AROUND PIPE. FASTENERS NOT TO EXCEED 10" SPACING.
5. [NOT SHOWN] MINIMUM 1/2" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED AROUND PERIMETER OF METAL PLATE BETWEEN THE METAL PLATE AND STEEL DECK.
6. MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED TO FILL METAL DECK FLUTES ABOVE METAL PLATE AND RECESSED TO ACCOMMODATE SEALANT.
7. MINIMUM 1/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT TO COMPLETELY COVER MINERAL WOOL WITHIN FLUTES.
8. 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 FOUR LAYERS SHALL BE INSTALLED AND BUTTED TIGHTLY TO BOTTOM SURFACE OF PLATE.
9. FIRST HILTI RETAINING COLLAR SHALL BE WRAPPED AROUND TOP LAYER OF WRAP STRIPS WITH ENDS OVERLAPPING 2". EVERY OTHER ANCHOR TAB OF FIRST COLLAR SECURED TO BOTTOM SURFACE OF FLOOR WITH 1/4 IN. DIAM BY 1-1/4 IN. LONG STEEL EXPANSION BOLTS IN CONJUNCTION WITH STEEL NUTS AND 1/4 IN. BY 1-1/4 IN. DIAM WASHERS, OR 1/4 IN. DIAM BY 1-7/8 IN. LONG STEEL CONCRETE SCREWS WHERE OVERLAPPING ONTO THE BOTTOM OF THE METAL DECK AND AND TO SHEET METAL COVER PLATE WITH NO. 10 x 3/4" SHEET METAL SCREWS WITH 3/4" DIAMETER STEEL WASHER.
10. 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.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 12".  
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-7/16".  
 3. SHEET METAL PLATE TO EXTEND MINIMUM 1-1/2" ON THE FLOOR UNIT VALLEY ON EACH END.



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