

UL/cUL SYSTEM NO. C-AJ-8099

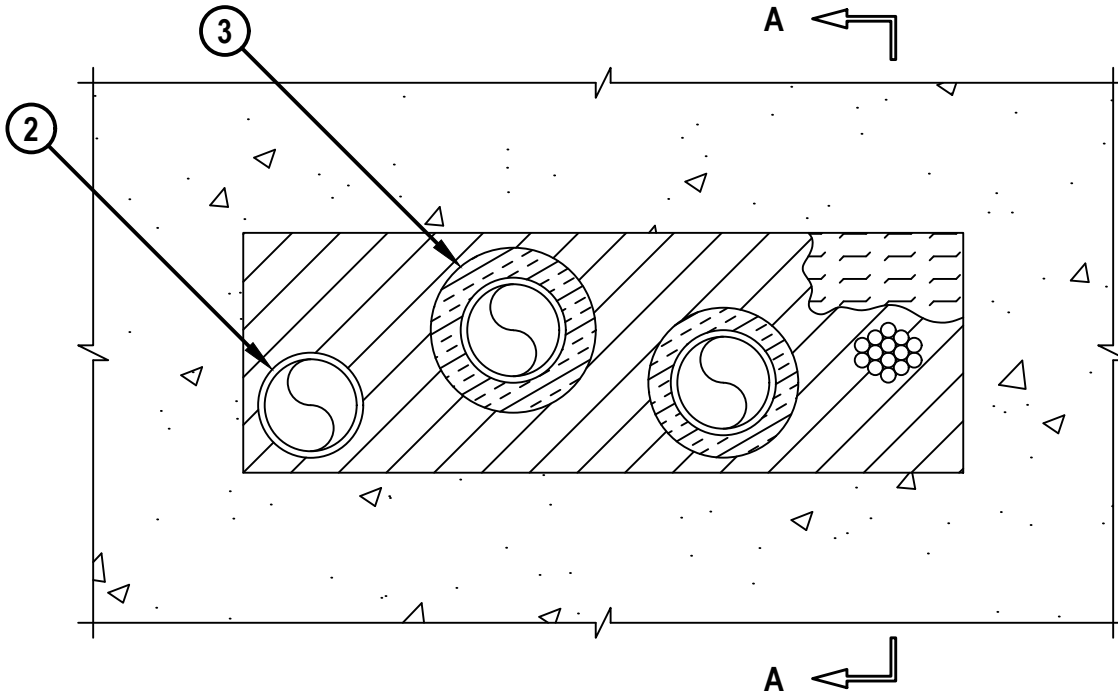
MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 3-HR.

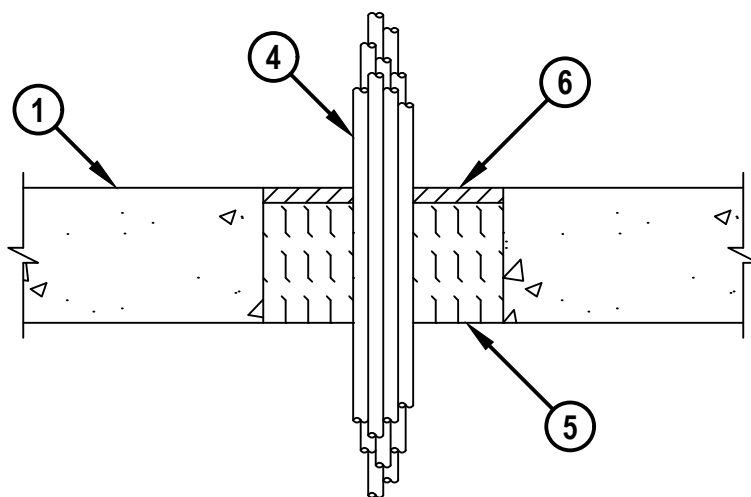
T-RATING = 0-HR. OR 3/4-HR.

CAJ8099h.072417

TOP VIEW



SECTION A-A



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

Sheet	1 of 2
Scale	5/32" = 1"
Date	July 24, 2017

Drawing No.
**CAJ
8099h**

Saving Lives through Innovation and Education

MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 3-HR.

T-RATING = 0-HR. OR 3/4-HR.

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1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
 - B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 5" THICK).
 - C. PRECAST (HOLLOW-CORE) CONCRETE FLOOR (MINIMUM 6" THICK).
 - D. ANY UL CLASSIFIED CONCRETE BLOCK WALL.
2. ONE OR MORE OF THE FOLLOWING PIPES, AND IN ANY COMBINATION MAY BE INSTALLED WITHIN THE OPENING :
 - A. MAXIMUM 3" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 3" NOMINAL DIAMETER CAST IRON PIPE.
 - C. MAXIMUM 3" NOMINAL DIAMETER COPPER PIPE.
 - D. MAXIMUM 3" NOMINAL DIAMETER STEEL CONDUIT OR EMT.
 - E. MAXIMUM 1" NOMINAL DIAMETER FLEXIBLE STEEL CONDUIT.
 - F. MAXIMUM 2" NOMINAL DIAMETER FLEXIBLE STEEL GAS PIPING (WITH OR WITHOUT PLASTIC COVERING) MANUFACTURED BY OMEGA FLEX, INC. OR WARD MFG., INC.
 - G. MAXIMUM 1" NOMINAL DIAMETER FLEXIBLE STEEL GAS PIPING (WITH OR WITHOUT PLASTIC COVERING) MANUFACTURED BY GASTITE, DIVISION OF TITEFLEX.
3. [OPTIONAL] ANY OR ALL PIPES MAY BE INSULATED WITH MAXIMUM 1" THICK GLASS-FIBER OR MAXIMUM 3/4" THICK AB/PVC PIPE INSULATION.
4. MAXIMUM 2" DIAMETER CABLE BUNDLE TO CONSIST OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - B. MAXIMUM 500 KCMIL POWER CABLE WITH PVC JACKET.
 - C. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
 - D. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (24 FIBER).
 - E. MAXIMUM 3/C NO. 12 AWG METAL-CLAD CABLE.
5. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED. WHEN INSTALLED IN PRECAST (HOLLOW-CORE) CONCRETE FLOOR, MINERAL WOOL TO FILL FLOOR, FLUSH WITH BOTTOM AND RECESSED TO ACCOMMODATE SEALANT ON TOP SIDE.
6. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.

NOTES : 1. MAXIMUM AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 192 SQ. IN. WITH A MAXIMUM DIMENSION OF 24" IN NORMAL CONCRETE, 49 SQ. IN. WITH A MAXIMUM DIMENSION OF 7" IN PRECAST (HOLLOW-CORE) CONCRETE.
 2. ANNULAR SPACE BETWEEN CABLE BUNDLE, PIPES, AND INSULATED PIPES = MINIMUM 1/2", MAXIMUM 3-1/8".
 3. ANNULAR SPACE BETWEEN PIPES/INSULATED PIPES AND PERIPHERY OF OPENING = MINIMUM 1/2", MAXIMUM 5".
 4. ANNULAR SPACE BETWEEN CABLE BUNDLE & PERIPHERY OF OPENING = MIN. 2", MAX. 4".
 5. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



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Sheet	2 of 2
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