

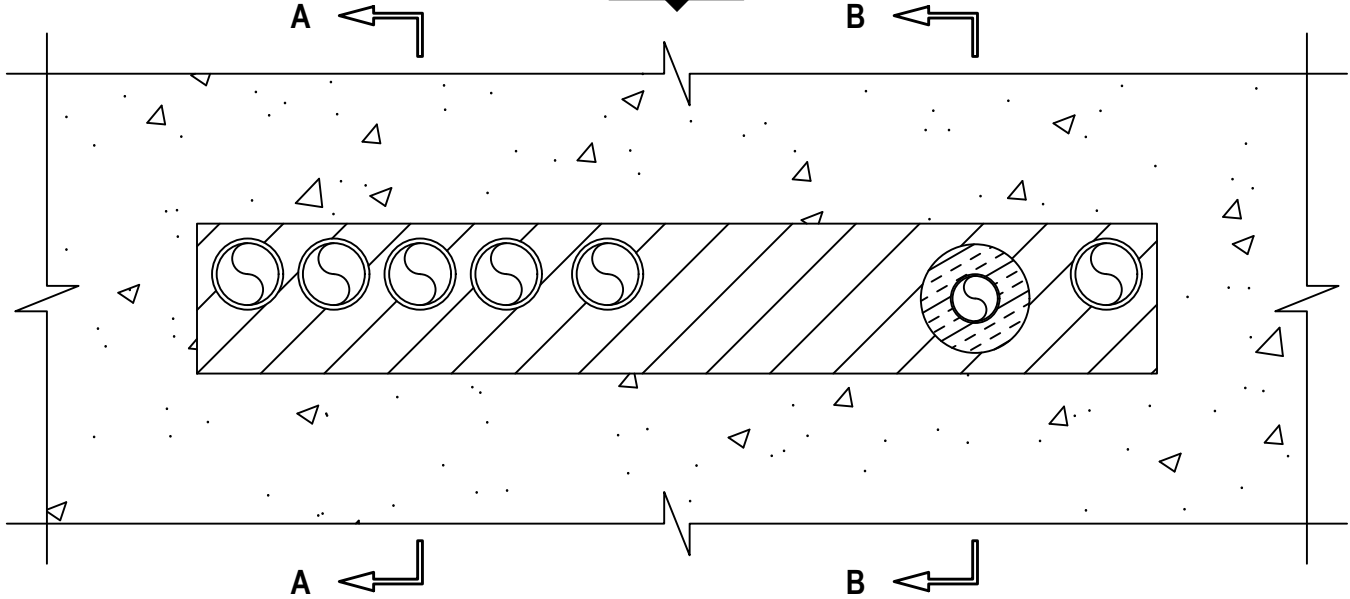
MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.

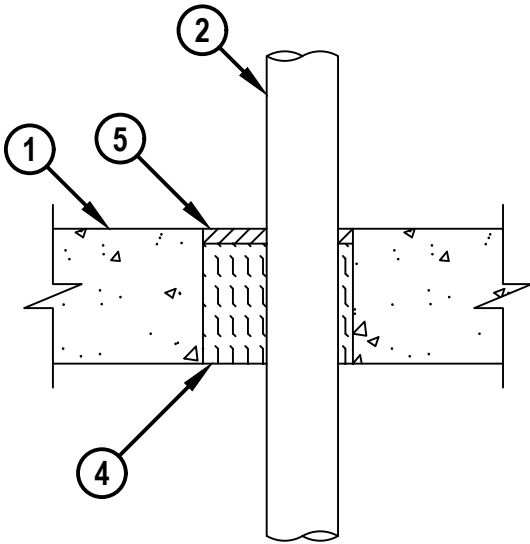
T-RATING = 1/2-HR., 1-1/4-HR., OR 2-HR.

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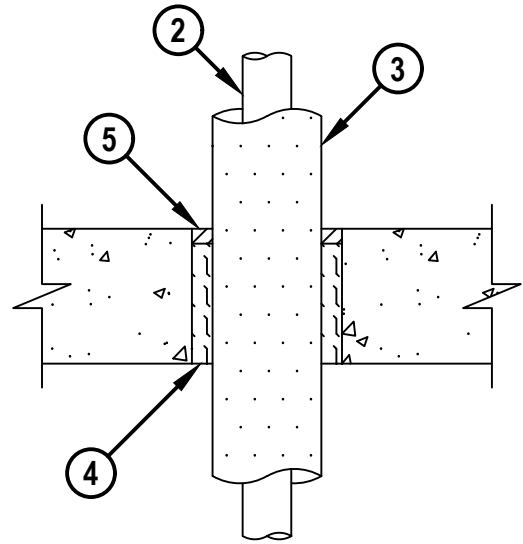
TOP VIEW



SECTION A-A



SECTION B-B



MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.

T-RATING = 1/2-HR., 1-1/4-HR., OR 2-HR.

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SYSTEM TESTED WITH A PRESSURE DIFFERENTIAL OF 2.5 PA BETWEEN THE EXPOSED AND THE UNEXPOSED SURFACES WITH THE HIGHER PRESSURE ON THE EXPOSED SIDE.

1. CONCRETE FLOOR OR WALL ASSEMBLY (2-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. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. ONE OR MORE OF THE FOLLOWING PIPES OR CONDUITS (IN ANY COMBINATION) MAY BE INSTALLED WITHIN THE OPENING :
 - A. MAXIMUM 2" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 2" NOMINAL DIAMETER STEEL CONDUIT OR STEEL EMT.
 - C. MAXIMUM 2" NOMINAL DIAMETER STAINLESS STEEL (SCHEDULE 10 OR HEAVIER).
 - D. MAXIMUM 1-1/2" NOMINAL DIAMETER COPPER TUBING.
 - E. MAXIMUM 2" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40) (CELLULAR OR SOLID CORE) (CLOSED OR VENTED PIPING SYSTEM).
 - F. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED PIPING SYSTEM ONLY).
 - G. MAXIMUM 2" NOMINAL DIAMETER RIGID NONMETALLIC CONDUIT (RNC).
 - H. MAXIMUM 2" NOMINAL DIAMETER PEX TUBING (SDR 9) (CLOSED PIPING SYSTEM ONLY).
 - I. MAXIMUM 2" NOMINAL DIAMETER AQUATHERM GREENPIPE POLYPROPYLENE (PP-R) PLASTIC PIPE (SDR 7.4 OR 11) (CLOSED PIPING SYSTEM ONLY).
 - J. MAXIMUM 2" NOMINAL DIAMETER AQUATHERM BLUEPIPE POLYPROPYLENE (PP-RCT) PLASTIC PIPE (SDR 9, 11, OR 17.6) (CLOSED PIPING SYSTEM ONLY).
 - K. MAXIMUM 2" NOMINAL DIAMETER NUPI AMERICAS NIRON POLYPROPYLENE (PP-RCT) PLASTIC PIPE (SDR 7.3, 11, OR 17) (CLOSED PIPING SYSTEM ONLY).
 - L. MAXIMUM 2" NOMINAL DIAMETER AQUATECHNIK NA FUSION-TECH POLYPROPYLENE (PP-RCT) PLASTIC PIPE (SDR 7.4, 11, 17.6) (CLOSED PIPING SYSTEM ONLY).
 - M. MAXIMUM 2" (63 MM OD) NOMINAL DIAMETER UPONOR POLYPROPYLENE (PP) PLASTIC PIPE (SDR 9 OR 11) (CLOSED PIPING SYSTEM ONLY).
3. [REQUIRED ON ITEM 2D, OPTIONAL ON ITEMS 2A, 2E, 2F, 2J, 2K, 2L] MAXIMUM 1" THICK GLASS-FIBER PIPE INSULATION.
4. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED AND RECESSED FROM TOP SURFACE OF FLOOR, OR BOTH SURFACES OF WALL.
5. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.



Hilti Firestop Systems

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

Sheet 2 of 3

Scale -

Date May 05, 2025

Drawing No.

CAJ
8333d

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UL/cUL SYSTEM NO. C-AJ-8333

MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.

T-RATING = 1/2-HR., 1-1/4-HR., OR 2-HR.

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ANNULAR SPACE	MINIMUM	MAXIMUM
BETWEEN PENETRANTS AND PERIPHERY OF OPENING	1/2"	5"
BETWEEN METALLIC PENETRANTS	1/2"	5"
BETWEEN PVC, CPVC, AND RNC	1/2"	5"
BETWEEN METALLIC PENETRANTS AND PVC (CLOSED ONLY), CPVC, OR RNC	1"	5"
BETWEEN METALLIC PENETRANTS AND PVC (VENTED)	2"	5"
BETWEEN PEX, PP-R, PP-RCT, AND PP	2"	5"
BETWEEN PEX, PP-R, PP-RCT, OR PP AND OTHER PENETRANTS	2"	5"

NOTES : 1. MAXIMUM AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 160 SQ. IN., WITH A MAXIMUM DIMENSION OF 32".
2. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL.



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