

UL SYSTEM NO. W-J-8047

# MULTIPLE PENETRATIONS THROUGH CONCRETE WALL OR BLOCK WALL ASSEMBLY

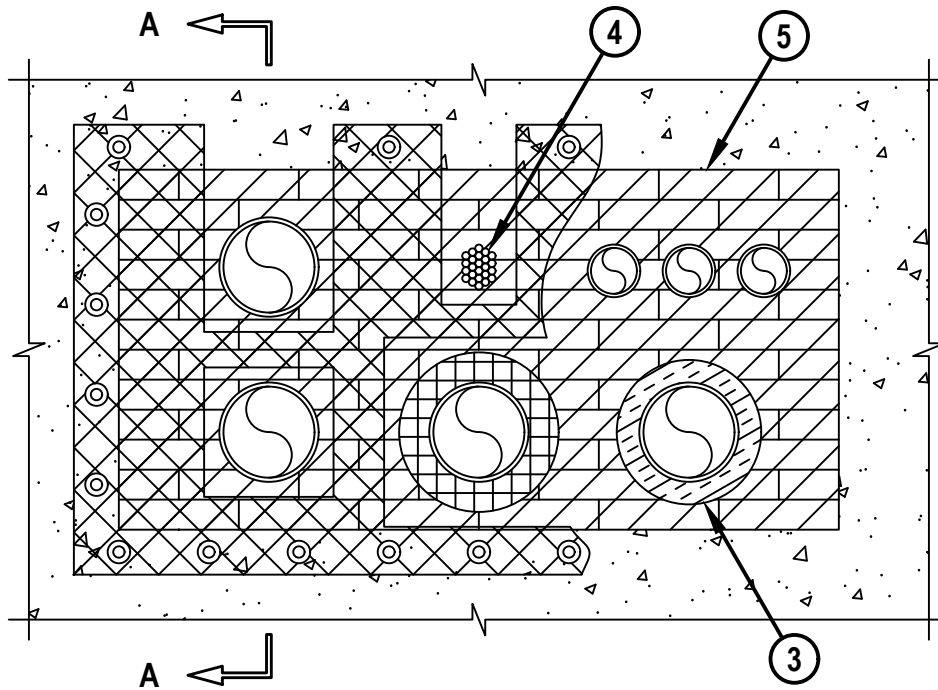
F-RATING = 2-HR.

T-RATING = 0-HR.

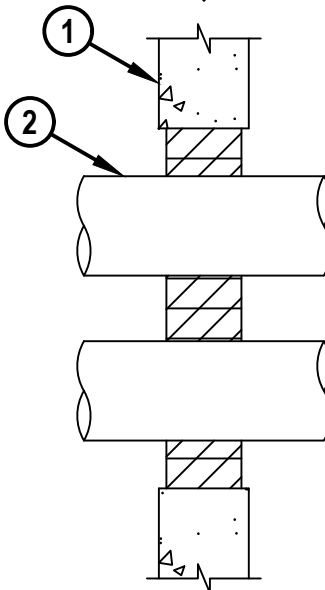
L-RATING AT AMBIENT = 5 CFM / SQ FT

L-RATING AT 400°F = 2 CFM / SQ FT

FRONT VIEW



SECTION A-A



WJ8047g.041125

**HILTI**  
Hilti Firestop Systems

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

Sheet	1 of 3
Scale	5/64" = 1"
Date	Apr. 11, 2025

Drawing No.

**WJ**  
**8047g**

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**MULTIPLE PENETRATIONS THROUGH CONCRETE WALL OR BLOCK WALL ASSEMBLY**

F-RATING = 2-HR.

T-RATING = 0-HR.

L-RATING AT AMBIENT = 5 CFM / SQ FT

L-RATING AT 400°F = 2 CFM / SQ FT

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1. CONCRETE WALL ASSEMBLY (2-HR. FIRE-RATING) :
  - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 6" THICK).
  - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. ONE OR MORE OF THE FOLLOWING PIPES, CONDUITS, OR TUBING (IN ANY COMBINATION) MAY BE INSTALLED WITHIN OPENING :
  - A. MAXIMUM 6" NOMINAL DIAMETER STEEL PIPE (SCH 5 OR HEAVIER).
  - B. MAXIMUM 6" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
  - C. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT OR MAXIMUM 4" NOMINAL DIAMETER STEEL EMT.
  - D. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE OR TUBING.
  - E. MAXIMUM 1" NOMINAL DIAMETER FLEXIBLE STEEL CONDUIT.
  - F. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED PIPING SYSTEM).
  - G. MAXIMUM 2" NOMINAL DIAMETER RIGID NON-METALLIC CONDUIT (RNC) (SCH 40).
  - H. MAXIMUM 2" NOMINAL DIAMETER FIBER OPTIC RACEWAY (PVC).
3. ONE OR MORE METALLIC PENETRANTS (ITEMS 3A, 3B, AND 3D) MAY BE INSTALLED WITH THE FOLLOWING TYPES OF INSULATION :
  - A. MAXIMUM 1-1/2" THICK GLASS-FIBER PIPE INSULATION (MIN. 3.5 PCF DENSITY).
  - B. MAXIMUM 2" THICK CALCIUM SILICATE PIPE INSULATION (SEE NOTE NO. 5 BELOW).
  - C. MAXIMUM 3/4" THICK AB/PVC PIPE INSULATION (MAY BE INSTALLED ON 2" AND SMALLER PIPES).
4. MAXIMUM 3" DIAMETER CABLE BUNDLE TO CONSIST OF ANY OF THE FOLLOWING (MAX. QTY. = 8) :
  - A. MAXIMUM 750 KCMIL POWER CABLE WITH PVC JACKET.
  - B. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
  - C. MAXIMUM 24 FIBER OPTIC CABLE WITH PVC JACKET.
  - D. MAXIMUM 3/C NO. 12 AWG METAL CLAD CABLE.
  - E. MAXIMUM 7/C NO. 12 POWER CABLE WITH PVC JACKET.
  - F. RGU/59 COAXIAL CABLE WITH PVC JACKET.
  - G. MAXIMUM 4 PAIR NO. 22 AWG CAT 5 OR CAT 6 DATA CABLE.
5. HILTI CFS-BL FIRESTOP BLOCK (2" THICK, 8" WIDE, 5" DEEP, REFERENCE : FRONT VIEW) FIRMLY PACKED AND CENTERED WITHIN OPENING (SEE NOTE NO. 6 BELOW).

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F-RATING = 2-HR.

T-RATING = 0-HR.

L-RATING AT AMBIENT = 5 CFM / SQ FT

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ANNULAR SPACE	MINIMUM	MAXIMUM
BETWEEN METALLIC PIPES AND PERIPHERY OF OPENING	0"	26"
BETWEEN METALLIC PIPES	1"	26"
BETWEEN NON-METALLIC PIPES OR RIGID NON-METALLIC CONDUITS	1-1/2"	26"
BETWEEN NON-METALLIC PIPES OR CONDUITS AND PERIPHERY OF OPENING	1-1/2"	26"
BETWEEN FIBER OPTIC RACEWAY AND OTHER PENETRANTS	3-1/2"	-
BETWEEN FIBER OPTIC RACEWAY AND PERIPHERY OF OPENING	2"	26"
BETWEEN INSULATED PIPES	1-1/2"	-
BETWEEN INSULATED PIPES AND PERIPHERY OF OPENING	1"	-
BETWEEN CABLE BUNDLES	1-1/2"	26"
BETWEEN CABLE BUNDLES AND PERIPHERY OF OPENING	1-13/16"	26"

NOTES : 1. MAXIMUM AREA OF OPENING = 1152 SQ. IN., WITH A MAXIMUM DIMENSION OF 48".

2. APPLY HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CP 618 FIRESTOP PUTTY STICK, HILTI CP 620 FIRE FOAM, OR HILTI CP 660 FIRESTOP FOAM INTO ANY VOID THAT MAY EXIST (AROUND PENETRANTS, INTO INTERSTICES OF CABLES, OR BETWEEN FIRESTOP BLOCKS), TO MAXIMUM EXTENT POSSIBLE. HILTI CP 618, HILTI CP 620, AND HILTI CP 660 ARE NOT SUITABLE FOR CPVC.

3. L-RATINGS APPLY ONLY WHEN HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT IS USED.

4. IF THE ANNULAR SPACE IS GREATER THAN 4", THEN ATTACH A STEEL WIRE MESH (NOMINAL 2" SQUARES, NO. 16 SWG) WITH 1/4" DIAMETER x 1" LONG STEEL CONCRETE ANCHORS AND 1-1/2" DIAMETER FENDER WASHERS (SPACED MAXIMUM 8" C/C) ON BOTH SIDES OF WALL ASSEMBLY. STEEL WIRE MESH SHALL OVERLAP MINIMUM 3" BEYOND THE PERIPHERY OF THE OPENING. THE JOINTS WITHIN WIRE MESH SHALL OVERLAP A MINIMUM OF 2" AND BE SECURED TOGETHER BY 16 AWG STEEL WIRE SPACED 8" O.C.

5. CALCIUM SILICATE PIPE INSULATION TO BE SECURED WITH STAINLESS STEEL BANDS OR WITH 18 AWG STAINLESS STEEL WIRE LOCATED MAXIMUM 6" FROM EACH FACE OF WALL AND SPACED 12" O.C.

6. FOR BLOCK WALLS, FIRESTOP BLOCKS TO FILL ENTIRE THICKNESS OF WALL UNLESS WALL IS SOLID FILLED.

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