

UL/cUL SYSTEM NO. C-AJ-8313

MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

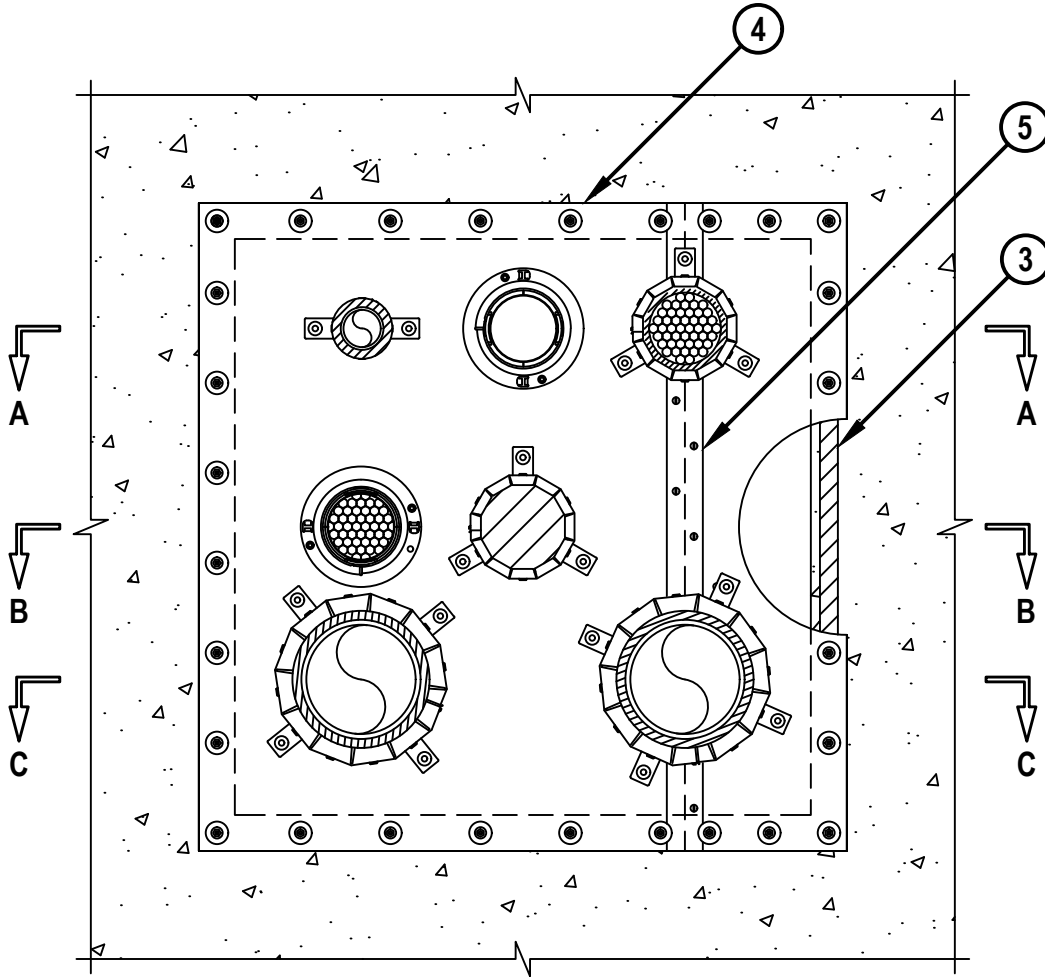
F-RATING = 2-HR.

T-RATING = 0-HR.

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.

TOP VIEW

CAJ8313b.020521



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

Sheet	1 of 4
Scale	5/64" = 1"
Date	Feb. 05, 2021

Drawing No.
CAJ
8313b

Saving Lives through Innovation and Education

MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

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1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEMS TO CONSIST OF ONE OR MORE OF THE FOLLOWING :
 - A. NONMETALLIC PIPE - THE FOLLOWING NONMETALLIC PIPES MAY BE USED :
 - A1. MAXIMUM 6" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40) (CLOSED OR VENTED PIPING SYSTEM).
 - A2. MAXIMUM 6" NOMINAL DIAMETER RIGID NONMETALLIC CONDUIT (RNC) (FORMED OF SCHEDULE 40 PVC).
 - B. CABLES MAY REPRESENT 0% TO 100% VISUAL FILL OF THE FIRESTOP DEVICES WITH RESPECT TO THE MAX 4" DIAMETER OPENING IN COMPOSITE SHEET FOR ITEM 3F. ANY COMBINATION OF THE FOLLOWING TYPES OF CABLES MAY BE USED :
 - B1. MAX 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR TELECOMMUNICATION CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
 - B2. MAX 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.
 - B3. MAX 4/0 AWG TYPE RHH GROUND CABLE.
 - B4. MAX 4 PAIR NO. 22 AWG CAT 6 COMPUTER CABLE.
 - B5. MAX RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.
 - B6. FIBER OPTIC CABLE WITH POLYVINYL CHLORIDE (PVC) OR POLYETHYLENE (PE) JACKET AND INSULATION HAVING A MAX DIAMETER OF 3/8" (10mm).
 - B7. MAX 3/C NO. 12 AWG METAL CLAD CABLE.
3. MINIMUM 1/2" DIAMETER BEAD OF HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, OR ONE LAYER OF HILTI CP 619T FIRESTOP PUTTY ROLL (1/8" THICK x 1" WIDE) POSITIONED BETWEEN COMPOSITE SHEET AND FLOOR OR WALL AROUND THE PERIMETER OF THE OPENING AND POSITIONED OVER BUTTED SEAM OR SLIT MADE IN COMPOSITE SHEET (NOT SHOWN OVER SEAM).
4. HILTI CFS-COS FIRESTOP COMPOSITE SHEET CUT TO OVERLAP FLOOR OR WALL A MINIMUM OF 2". COMPOSITE SHEET INSTALLED WITH THE ALUMINUM FOIL FACING AGAINST THE FLOOR OR WALL AND SECURED WITH MINIMUM 3/16" DIAMETER BY 1-1/4" LONG STEEL ANCHOR SCREWS WITH 1-1/4" DIAMETER STEEL FENDER WASHERS AT MAXIMUM 2" FROM ENDS AND MAXIMUM 6" C/C. COMPOSITE SHEET CUT TO TIGHTLY FOLLOW THE CONTOUR OF THE PENETRANTS WITH A MAX SPACE BETWEEN THE PENETRANTS AND COMPOSITE SHEET OF 1/4". AS AN ALTERNATIVE TO CONCRETE ANCHORS, WHEN COMPOSITE SHEET OVERLAPS A MINIMUM OF 3" ONTO FLOOR OR WALL SURFACES, 1-1/16" (27mm) LONG HILTI X-GN 27 MX NAILS IN CONJUNCTION WITH MIN 1-1/4" (32mm) DIAMETER STEEL FENDER WASHERS MAY BE USED.
5. MINIMUM 2" WIDE STAINLESS STEEL STRIP (MIN. 24 GA.) CENTERED OVER ENTIRE LENGTH OF BUTT SEAM OR SLIT IN THE COMPOSITE SHEET. COVER STRIP SECURED TO COMPOSITE SHEET WITH NO. 10 x 3/4" STEEL SHEET METAL SCREWS WITH 3/4" WASHERS SPACED 6" C/C, ALTERNATING EACH SIDE OF SEAM OR SLIT.



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- 6. HILTI CP 643N FIRESTOP COLLAR ATTACHED TO TOP SURFACE OF HILTI CFS-COS FIRESTOP COMPOSITE SHEET IN FLOORS (OR TO OUTER FACE OF EACH COMPOSITE SHEET ON BOTH SIDES OF A WALL) WITH NO. 10 x 3/4" SELF-DRILLING SCREWS WITH 3/4" WASHERS THROUGH EACH TAB OF COLLAR. FIRESTOP COLLAR SIZED TO MATCH NOMINAL PIPE DIAMETER (SEE TABLE BELOW).
- 6A. MINIMUM 1/2" DIAMETER BEAD OF HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED AT TOP OF HILTI CP 643N FIRESTOP COLLAR AT THE PIPE/COLLAR INTERFACE.
- 7. HILTI CFS-CC 4" FIRESTOP CABLE COLLAR SECURED TO TOP SURFACE OF HILTI CFS-COS FIRESTOP COMPOSITE SHEET IN FLOORS (OR TO OUTER FACE OF EACH COMPOSITE SHEET ON BOTH SIDES OF A WALL) WITH NO. 10 x 3/4" LONG STEEL SHEET METAL SCREWS WITH MIN 3/4" WASHERS THROUGH EACH FASTENING HOOK. A MAXIMUM 4" DIAMETER OPENING MAY BE MADE IN THE COMPOSITE SHEET WHERE CABLE COLLAR IS USED. CABLE COLLAR IS TO BE CENTERED OVER OPENING. INTEGRATED FIRESTOP PLUG WITHIN COLLAR IS CUT TO FIT TIGHTLY AROUND THE CABLE BUNDLE.
- 8. HILTI CP 653 BA 4", CP 653 BA 4" ILS, OR CFS-SL GA L ILS SPEED SLEEVE SECURED TO TOP SURFACE OF HILTI CFS-COS FIRESTOP COMPOSITE SHEET IN FLOORS (OR TO OUTER FACE OF EACH COMPOSITE SHEET ON BOTH SIDES OF A WALL) WITH NO. 10 x 3/4" LONG STEEL SHEET METAL SCREWS WITH MIN 3/4" WASHERS THROUGH EACH FASTENING HOOK. A MAXIMUM 4-1/2" DIAMETER OPENING MAY BE MADE IN THE COMPOSITE SHEET WHERE THE SPEED SLEEVE IS USED. SPEED SLEEVE INSTALLED SO BOTH SMOKE GASKETS PROVIDED ARE LOCATED BETWEEN DEVICE FLANGE AND COMPOSITE SHEET. INNER FABRIC SEAL SHALL BE TWISTED TO CLOSE OFF ANY UNUSED OPENING WITHIN THE DEVICE.

NOMINAL PIPE DIAMETER	PRODUCT DESCRIPTION
1-1/2"	CP 643 50/1.5" N
2"	CP 643 63/2" N
3"	CP 643 90/3" N
4"	CP 643 110/4" N
6"	CP 643 160/6" N

NOTES : 1. MAXIMUM SIZE OF OPENING = 32" x 32".
 2. ANNULAR SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING = MINIMUM 3-3/4".
 3. ANNULAR SPACE BETWEEN PENETRANTS = MINIMUM 3".
 4. HILTI CFS-COS FIRESTOP COMPOSITE SHEET, HILTI CP 619 T PUTTY ROLL, HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CFS-CC FIRESTOP CABLE COLLAR, AND HILTI CP 653/CFS-SL GA L ILS SPEED SLEEVE DEVICES ARE REQUIRED ON BOTH SIDES OF A WALL.



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