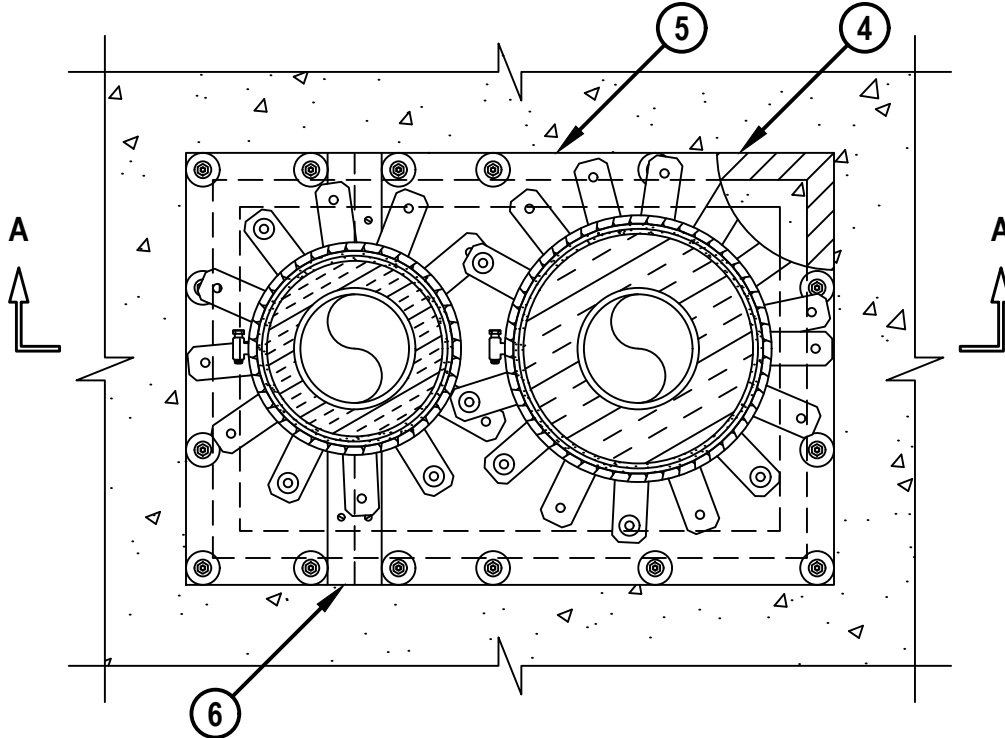


UL/cUL SYSTEM NO. C-AJ-5444
**INSULATED METAL PIPE THROUGH CONCRETE FLOOR/WALL OR
 CONCRETE BLOCK WALL ASSEMBLY**

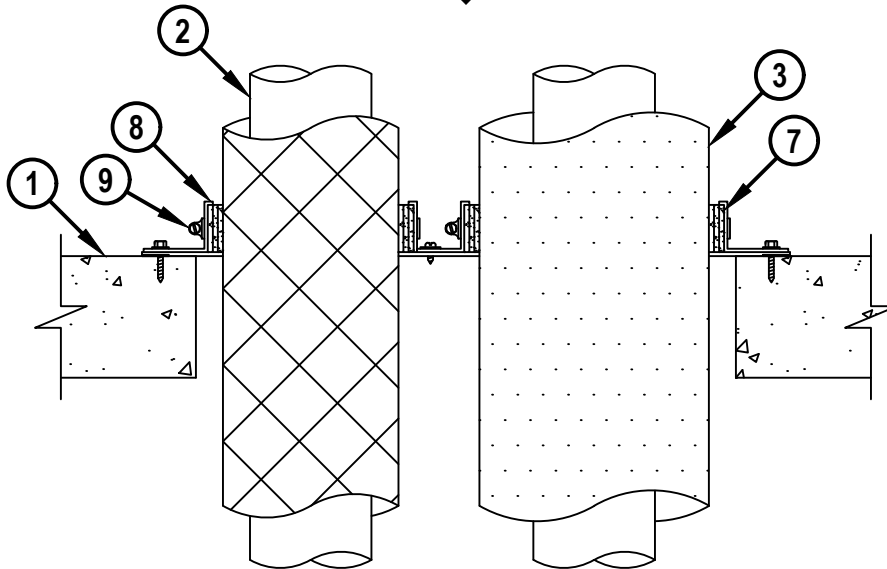
F-RATING = 2-HR.
 T-RATING = 0-HR.

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TOP VIEW



SECTION A-A



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Scale	9/64" = 1"
Date	Jan. 07, 2021

Drawing No.
**CAJ
 5444a**

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**INSULATED METAL PIPE THROUGH CONCRETE FLOOR/WALL OR
CONCRETE BLOCK WALL ASSEMBLY**

F-RATING = 2-HR.
T-RATING = 0-HR.

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1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEMS TO BE ANY OF THE FOLLOWING :
 - A. MAXIMUM 4" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 40 OR HEAVIER).
 - B. MAXIMUM 4" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
 - C. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE OR TUBING (TYPE L OR HEAVIER).
 - D. MAXIMUM 4" NOMINAL DIAMETER STEEL CONDUIT.
3. METALLIC PIPES OR TUBING TO BE INSTALLED WITH ONE OF THE FOLLOWING :
 - A. MAXIMUM 2" THICK GLASS-FIBER PIPE INSULATION (MIN. 3.5 PCF DENSITY) WITH ALL SERVICE JACKET.
 - B. NOMINAL 1/2" TO 1" THICK AB/PVC PIPE INSULATION.
4. MINIMUM 1/2" DIAMETER BEAD OF HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CP 619T FIRESTOP PUTTY ROLL, OR HILTI CP 617 FIRESTOP PUTTY STICK POSITIONED BETWEEN COMPOSITE SHEET AND FLOOR OR WALL AROUND THE PERIMETER OF THE OPENING.
5. 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. 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.
6. MINIMUM 2" WIDE STAINLESS STEEL STRIP (MIN. 26 GA.) CENTERED OVER ENTIRE LENGTH OF BUTT SEAM IN THE COMPOSITE SHEET. COVER STRIP SECURED TO COMPOSITE SHEET WITH STEEL SHEET METAL SCREWS OR STEEL RIVETS 3" C/C ON EACH SIDE OF SEAM.
7. HILTI CP 648E WRAP STRIP (NOMINAL 3/16" THICK x 1-3/4" WIDE) CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE INSULATED PENETRATING ITEM WITH 1" OVERLAP AND ENDS HELD IN PLACE WITH TAPE. WRAP STRIP TO BE TIGHTLY BUTTED TO TOP SURFACE OF COMPOSITE SHEET IN FLOORS, OR TO OUTER SURFACE OF COMPOSITE SHEET ON BOTH SIDES OF THE WALL. INSTALL THREE LAYERS OF WRAP STRIP FOR GLASS-FIBER INSULATED PENETRATING ITEMS AND FOR PENETRATING ITEMS WITH NOMINAL 1" THICK AB/PVC INSULATION. INSTALL TWO LAYERS OF WRAP STRIP FOR PENETRATING ITEMS WITH NOMINAL 1/2" THICK AB/PVC INSULATION.



Hilti Firestop Systems

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**INSULATED METAL PIPE THROUGH CONCRETE FLOOR/WALL OR
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F-RATING = 2-HR.
T-RATING = 0-HR.

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8. HILTI 1-3/4" RETAINING COLLAR TIGHTLY WRAPPED OVER WRAP STRIP MATERIAL. ATTACH EVERY OTHER TAB OF RETAINING COLLAR IS SECURED TO CFS-COS COMPOSITE SHEET WITH ONE NO. 10 x 3/4" SELF-DRILLING SCREW WITH 3/4" WASHER. WHERE TABS OVERLAP ONTO CONCRETE FLOOR, FASTEN EACH TAB INTO COMPOSITE SHEET NEAR, BUT NOT ON, THE CONCRETE BY EITHER FASTENING THROUGH THE TAB OR BY FASTENING NEAR THE TAB SO THAT A STEEL WASHER CAN OVERLAP A MIN 1/2" ONTO THE TAB. AT LOCATIONS WHERE THE PENETRATING ITEM IS IN THE CORNER OF THE OPENING, A MAXIMUM OF TWO ADJACENT TABS MAY BE LEFT UNSECURED.
9. NOMINAL 1/2" WIDE STAINLESS STEEL HOSE CLAMP SECURED AT MID-HEIGHT OF RETAINING COLLAR.

NOTES : 1. MAXIMUM AREA OF OPENING = 240 SQ. IN., WITH A MAXIMUM DIMENSION OF 20".
2. ANNULAR SPACE BETWEEN GLASS-FIBER INSULATED PENETRATING ITEMS AND THE OPENING = MINIMUM 0", MAXIMUM 5".
3. ANNULAR SPACE BETWEEN AB/PVC INSULATED PENETRATING ITEMS AND THE OPENING = MINIMUM 1/4", MAXIMUM 5".
4. ANNULAR SPACE BETWEEN PENETRATING ITEMS = MINIMUM 3".
5. ANNULAR SPACE WITHIN COMPOSITE SHEET [PENETRATING ITEM TO PERIPHERY OF OPENING IN COMPOSITE SHEET] = MINIMUM 0", MAXIMUM 1/4".



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