

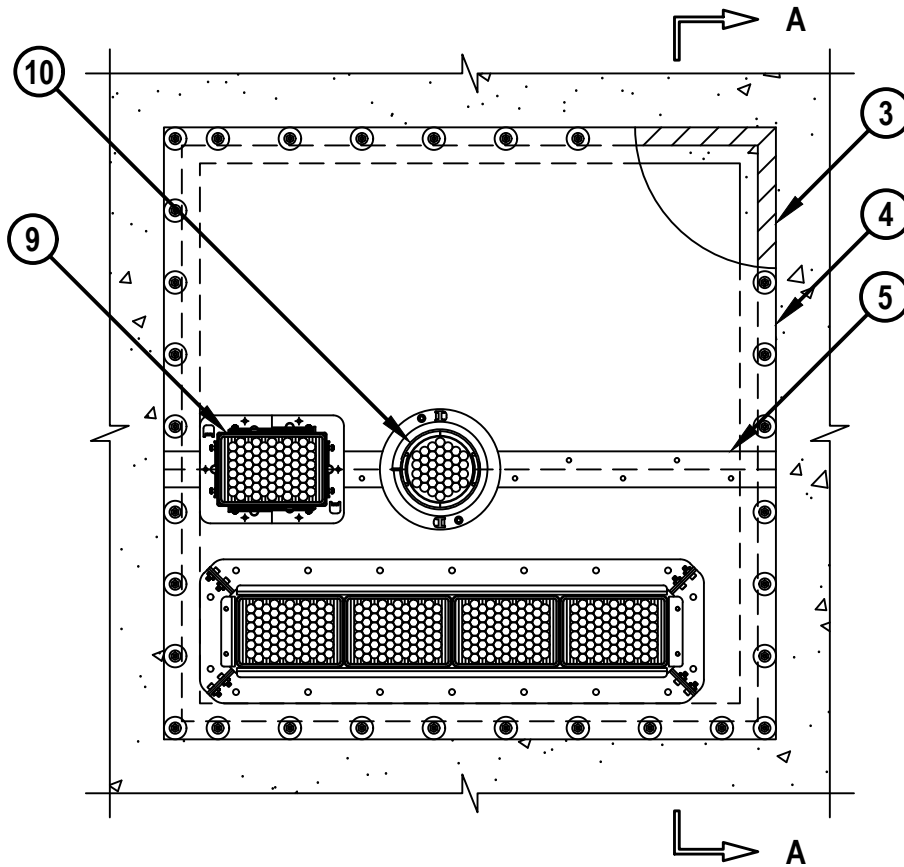
UL/cUL SYSTEM NO. F-A-3088

CABLE BUNDLES THROUGH CONCRETE FLOOR ASSEMBLY

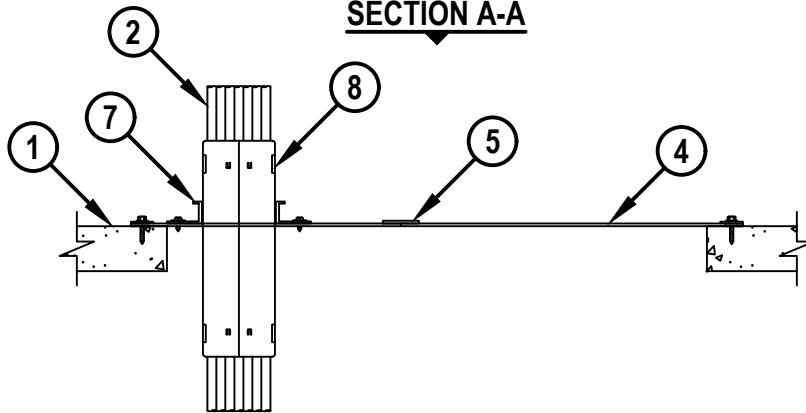
F-RATING = 2-HR.

T-RATING = 0-HR.

TOP VIEW



SECTION A-A



FA3088a.111422



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

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Scale	3/32" = 1"
Date	Nov. 14, 2022

Drawing No.

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CABLE BUNDLES THROUGH CONCRETE FLOOR ASSEMBLY

F-RATING = 2-HR.

T-RATING = 0-HR.

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1. CONCRETE FLOOR ASSEMBLY (2-HR. FIRE RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 2-1/2" THICK).
 - B. STEEL FLOOR UNIT/FLOOR ASSEMBLY - LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 2-1/2" THICK) OVER METAL DECKING (UL/cUL CLASSIFIED D700 OR D900 SERIES).
2. CABLE BUNDLE TO BE A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 100 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET AND INSULATION.
 - B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLPE JACKET AND INSULATION.
 - C. MAXIMUM 4/0 AWG TYPE RHH GROUND CABLE.
 - D. MAXIMUM 4 PAIR NO. 22 AWG CAT 6 COMPUTER CABLE.
 - E. MAXIMUM RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.
 - F. MAXIMUM 1/2" FIBER-OPTIC CABLE WITH PVC OR PE JACKET AND INSULATION.
 - G. MAXIMUM 20/C NO. 22 AWG SHIELDED PRINTER CABLE WITH PVC JACKET.
 - H. MAXIMUM 2/C NO. 18 AWG POWER OR NON-POWER LIMITED FIRE ALARM CABLE WITH OR WITHOUT METAL JACKET (MANUFACTURED BY AFC CABLE SYSTEMS, INC.).
 - I. MAXIMUM 1/4" DIAMETER S-VIDEO CABLE CONSISTING OF TWO MAX 24 AWG 75 OHM COAX OR TWISTED PAIR CABLE WITH PE INSULATION AND PVC JACKET.
 - J. ANY CABLES, METAL-CLAD CABLES, OR ARMORED CABLES CURRENTLY LISTED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY.
 - K. MAXIMUM 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 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 TOP OF FLOOR A MINIMUM OF 2". COMPOSITE SHEET INSTALLED WITH THE ALUMINUM FOIL FACING AGAINST THE FLOOR AND SECURED WITH MINIMUM 3/16" x 1-1/4" LONG STEEL ANCHOR SCREWS WITH 1-1/4" DIAMETER STEEL FENDER WASHERS AT EACH END AND MAXIMUM 4" C/C. AS AN ALTERNATIVE TO CONCRETE ANCHORS, WHEN COMPOSITE SHEET OVERLAPS A MINIMUM OF 3" ONTO FLOOR, 1-1/16" LONG HILTI X-GN 27 MX NAILS IN CONJUNCTION WITH MINIMUM 1-1/4" DIAMETER STEEL FENDER WASHERS MAY BE USED.



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5. MINIMUM 2" WIDE STAINLESS STEEL STRIP (MIN. 24 GA.) CENTERED OVER ENTIRE LENGTH OF BUTT SEAM IN THE COMPOSITE SHEET. COVER STRIP SECURED TO COMPOSITE SHEET WITH NO. 10 BY 3/4" STEEL SHEET METAL SCREWS WITH 3/4" WASHERS SPACED 6" O/C ALTERNATING ON EACH SIDE OF SEAM.
6. [NOT SHOWN] TWO ROWS OF HILTI CP 619T FIRESTOP PUTTY ROLL (1/8" THICK x 1" WIDE) POSITIONED SIDE BY SIDE UNDER PERIMETER OF FLOOR GRID (ITEM 7) AND TIGHT TO GANGED DEVICES. ONE ROW OF HILTI CP 619T FIRESTOP PUTTY ROLL (1/8" THICK x 1" WIDE) POSITIONED UNDER PERIMETER OF SINGLE DEVICE FLANGE (ITEM 9) AND TIGHT TO THE DEVICE.
7. MAXIMUM ONE CFS-MSL FGR FLOOR GRID [24" x 4"] TO BE SECURED TO COMPOSITE SHEET WITH #10 BY 1" STEEL SHEET METAL SCREWS WITH 3/4" STEEL WASHERS AT EACH PRE-DRILLED HOLE WITHIN FLOOR GRID.
8. CFS-MSL MODULAR FIRESTOP SLEEVE(S) [S, M, OR L] TO BE INSTALLED AS A SINGLE DEVICE OR GANGED TOGETHER WITH GANGING CLIPS IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS. WHEN GANGED TOGETHER DEVICES TO BE BOLTED TO FLOOR GRID WITH PROVIDED SUPPORT BRACKET. FIRESTOP DEVICES TO COMPLETELY FILL ACROSS ENTIRE WIDTH OF FLOOR GRID. WHEN INSTALLED AS A SINGLE DEVICE THE DEVICE IS TO BE INSTALLED WITHIN HILTI CFS-MSL P MODULAR SLEEVE FLANGE.
9. CFS-MSL P SINGLE DEVICE FLANGE TO BE SECURED TO COMPOSITE SHEET WITH 1" STEEL SHEET METAL SCREWS WITH 3/4" STEEL WASHERS AT EACH PRE-DRILLED HOLE WITHIN FLANGE.
10. HILTI CP 653 BA 2", CP 653 BA 2" ILS, CP 653 BA 4", CP 653 BA 4" ILS, OR CFS-SL GA L ILS SPEED SLEEVE SLID INTO OPENING IN COMPOSITE SHEET SUCH THAT THE TOP OF THE DEVICE PROJECTS 4" FROM TOP OF COMPOSITE SHEET. DEVICE FLANGE TO BE SPUN CLOCKWISE ONTO DEVICE THREADS OVER SMOKE GASKETS. SECURE DEVICE FLANGE TO TOP SURFACE OF HILTI CFS-COS FIRESTOP COMPOSITE SHEET IN FLOOR WITH NO. 10 x 3/4" LONG STEEL SHEET METALS SCREWS WITH MIN 3/4" WASHERS THROUGH PRE-MADE HOLES IN DEVICE FLANGE. SPEED SLEEVE IS 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 DEVICE.



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DEVICE	MAX OPENING SIZE PER DEVICE
CFS-MSL FGR FLOOR GRID	24-1/4" x 4-1/4"
CFS-MSL L	6-1/4" x 4-1/4"
CFS-MSL M	4-1/4" x 3-1/4"
CFS-MSL S	3-1/4" x 2-1/4"
CP 653 BA 4"	4-1/2"
CP 653 BA 2"	2-1/2"

NOTES : 1. MAXIMUM AREA OF OPENING = 900 SQ. IN., WITH A MAXIMUM DIMENSION OF 30".
2. ANNULAR SPACE CFS-MSL TO PERIPHERY OF OPENING = MINIMUM 1-7/8".
3. ANNULAR SPACE CP 653/CFS-SL GA L ILS TO PERIPHERY OF OPENING = MINIMUM 0".
4. ANNULAR SPACE BETWEEN PENETRANTS = MINIMUM 2".
5. CABLE FILL MAY REPRESENT 0 TO 100% VISUAL FILL OF EACH FIRESTOP DEVICE.



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