

FA3089b.060525

T-RATING = 0-HR, 1/2-HR., OR 1-1/2-HR. (SEE NOTE BELOW)

Technical drawing of a rectangular component, likely a mold or container, shown in a perspective view. The component has a rectangular body with rounded corners and a central horizontal slot. The top surface is divided into a grid of rectangular sections, with the central section shaded with diagonal lines. The bottom surface is divided into four rectangular sections, each filled with a pattern of small circles, suggesting a porous or textured material. The component is mounted on a base, indicated by small circles and lines at the bottom. A cross-section A-A is indicated by a horizontal line with arrows at both ends, labeled 'A'.

A technical cross-sectional drawing of a cable joint assembly. The drawing shows a central cable with multiple conductors, labeled with 'u' and 'n' for phase and neutral. The cable is surrounded by a protective jacket. The assembly is shown in a cross-section, with various components labeled with circled numbers 1 through 7. The components include a central cable (1), a protective jacket (2), a jointing material (3), a jointing sleeve (4), a jointing sleeve (5), a jointing sleeve (6), and a jointing sleeve (7). The drawing is a technical illustration of a cable joint assembly, showing the internal components and their arrangement. The central cable has multiple conductors, labeled with 'u' and 'n' for phase and neutral. The cable is surrounded by a protective jacket. The assembly is shown in a cross-section, with various components labeled with circled numbers 1 through 7. The components include a central cable (1), a protective jacket (2), a jointing material (3), a jointing sleeve (4), a jointing sleeve (5), a jointing sleeve (6), and a jointing sleeve (7). The drawing is a technical illustration of a cable joint assembly, showing the internal components and their arrangement.



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MULTIPLE CABLE BUNDLES THROUGH CONCRETE FLOOR ASSEMBLY

F-RATING = 2-HR.

T-RATING = 0-HR, 1/2-HR., OR 1-1/2-HR. (SEE NOTE BELOW)

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1. CONCRETE FLOOR ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
2. CABLE BUNDLE TO BE ANY COMBINATION 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 23 AWG CAT 7 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 1/4" DIAMETER S-VIDEO CABLE CONSISTING OF 2 MAX 24 AWG 75 OHM COAX OR TWISTED PAIR CABLE WITH PE INSULATION AND PVC JACKET.
 - I. 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.).
 - J. MAXIMUM 3/C NO. 12 AWG METAL CLAD CABLE.
 - K. ANY CABLES, METAL-CLAD CABLES, OR ARMORED CABLES CURRENTLY LISTED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY.
3. HILTI CFS-TTS OS OR CFS-TTS R OS FIRESTOP TOP TRACK SEAL CUT IN HALF LENGTHWISE AT DOTTED LINE OR TEAR STRIP, AND CUT 1" LONGER THAN FLOOR OPENING ON EACH SIDE. ADHESIVE STRIP PLACED ON TOP OF FLOOR WITH FOAM EDGE HANGING OVER EDGE OF CONCRETE INTO OPENING PRIOR TO INSTALLATION OF FLOOR GRID.
4. HILTI CFS-MSL FGR [18" x 9" OR 24" x 9"] FLOOR GRID TO BE PLACED AROUND OPENING OVER CFS-TTS (ITEM 3) AND ANCHORED TO FLOOR WITH TWO 1-1/2" LONG CONCRETE SCREWS AT PRE-DRILLED HOLE IN EACH RAIL.
5. HILTI CFS-MSL [S, M, OR L] MODULAR SLEEVES TO BE GANGED TOGETHER WITH GANGING CLIPS AND BOLTED TO FLOOR GRID WITH PROVIDED SUPPORT BRACKETS, IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS. FIRESTOP DEVICES TO COMPLETELY FILL ACROSS ENTIRE WIDTH OF ONE ROW OF FLOOR GRID.
6. HILTI CFS-BL FIRESTOP BLOCKS (2" THICK x 8" WIDE x 5" DEEP, REFERENCE: TOP VIEW) INSTALLED PROJECTING THROUGH THE OPENING FLUSH WITH TOP OF FLOOR COMPRESSING HILTI TOP TRACK SEAL (ITEM 3). FIRESTOP BLOCKS TO FILL ENTIRE AREA OF OPENING BETWEEN THE FLOOR AND CFS-MSL MODULAR SLEEVES (ITEM 5).
7. HILTI CFS-TTS 358, CFS-TTS OS, OR CFS-TTS R OS FIRESTOP TOP TRACK SEAL CENTERED AND DRAPED OVER STEEL SEPARATION BARS AFTER INSTALLATION OF CFS-MSL MODULAR SLEEVES AND CFS-BL FIRESTOP BLOCKS.

**Hilti Firestop Systems**

HILTI, Inc.
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Scale -

Date June 05, 2025

Drawing No.

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UL/cUL SYSTEM NO. F-A-3089

MULTIPLE CABLE BUNDLES THROUGH CONCRETE FLOOR ASSEMBLY

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CFS-MSL FGR DIMENSIONS	MAXIMUM SIZE OF OPENING IN FLOOR ASSEMBLY	ANNULAR SPACE FROM DEVICE TO PERIPHERY OF OPENING	
		MINIMUM	MAXIMUM
18" x 9"	19" x 10" (483MM x 254MM)	3/16" (4.8MM)	5-1/2" (139.7MM)
24" x 9"	25" x 10" (635MM x 254MM)	3/16" (4.8MM)	5-1/2" (139.7MM)

NOTES : 1. CABLES MAY REPRESENT 0% TO 100% VISUAL FILL OF EACH FIRESTOP DEVICE.
2. THE T, FT, AND FTH RATINGS FOR THE FIRESTOP SYSTEM ARE 1-1/2-HR. WHEN ITEM 2 IS NOT USED.
THE T, FT, AND FTH RATINGS FOR THE FIRESTOP SYSTEM ARE 1/2-HR WHEN 2A THROUGH 2I ARE USED. WHEN CABLE TYPES 2J OR 2K ARE USED, THE T, FT, AND FTH RATINGS ARE 0-HR.



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