

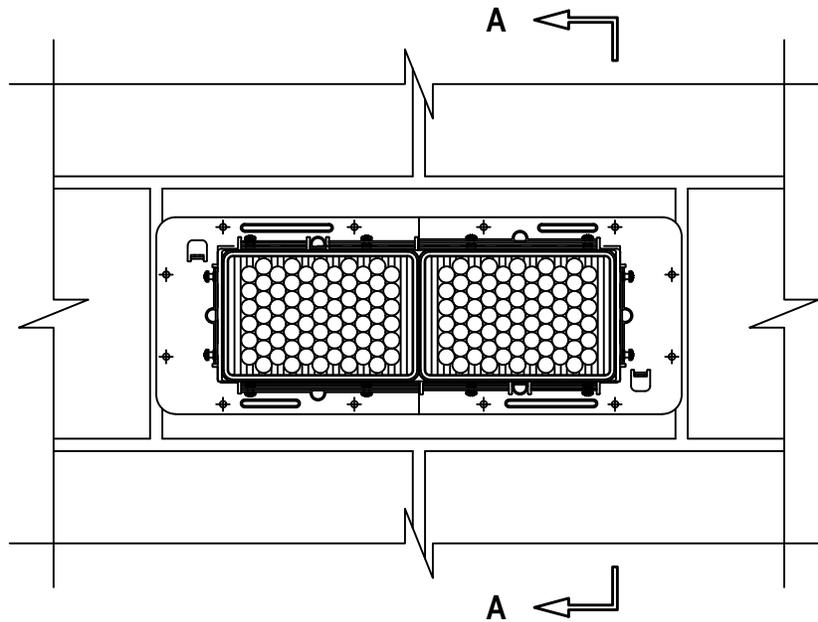
UL/cUL SYSTEM NO. W-J-3277

MULTIPLE CABLE BUNDLES THROUGH CONCRETE WALL OR BLOCK WALL ASSEMBLY

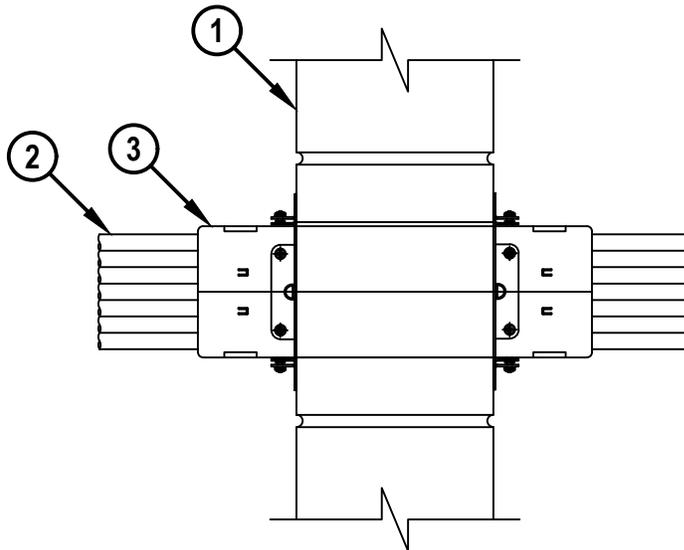
F-RATING = 2-HR.
T-RATING = 1/2-HR., OR 1-HR. (SEE NOTE BELOW)
L-RATING AT AMBIENT = SEE TABLE
L-RATING AT 400°F = SEE TABLE

WJ3277c.050123

FRONT VIEW



SECTION A-A



HILTI, Inc.
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Sheet	1 of 3
Scale	1 1/64" = 1"
Date	May 01, 2023

Drawing No.

**WJ
3277c**

Saving Lives through Innovation and Education

MULTIPLE CABLE BUNDLES THROUGH CONCRETE WALL OR BLOCK WALL ASSEMBLY

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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. 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. TWO OR MORE HILTI CFS-MSL [S, M, OR L] MODULAR SLEEVES TO BE GANGED TOGETHER WITH GANGING CLIPS AND CENTERED IN THE WALL. DEVICES TO BE INSTALLED WITH A GASKET AND HILTI CFS-MSL GPR RETROFIT GANGPLATE [9" x 4" OR 12" x 4"] ON BOTH SIDES OF WALL AND TIGHTENED USING SET SCREWS IN GANG PLATE.



Hilti Firestop Systems

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Sheet	2 of 3
Scale	-
Date	May 01, 2023

Drawing No.

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DEVICE	MAX CABLE FILL	CABLE TYPE	L-RATING CFM/DEVICE	
			AMBIENT	400°F
CFS-MSL S	0%	-	LESS THAN 1	LESS THAN 1
CFS-MSL S	1-25%	2B, 2D, 2E, 2G, 2H, 2L	1.1	1.45
CFS-MSL S	26-50%	2B, 2D, 2E, 2G, 2H, 2L	1.1	LESS THAN 1
CFS-MSL S	51-75%	2B, 2D, 2E, 2G, 2H, 2L	1.8	LESS THAN 1
CFS-MSL S	76-100%	2D, 2E, 2G, 2H, 2L	1.8	1.2
CFS-MSL M	0%	-	1.1	LESS THAN 1
CFS-MSL M	1-25%	2B, 2D, 2E, 2G, 2H, 2L	1.8	LESS THAN 1
CFS-MSL M	26-50%	2B, 2D, 2E, 2G, 2H, 2L	1.9	LESS THAN 1
CFS-MSL M	51-75%	2B, 2D, 2E, 2G, 2H, 2L	1.9	LESS THAN 1
CFS-MSL M	76-100%	2B, 2D, 2E, 2G, 2H, 2L	2.2	1.1
CFS-MSL L	0%	-	1.2	LESS THAN 1
CFS-MSL L	1-25%	2B, 2D, 2E, 2G, 2H, 2L	1.8	1.1
CFS-MSL L	26-50%	2B, 2D, 2E, 2G, 2H, 2L	2.2	1.0
CFS-MSL L	51-75%	2B, 2D, 2E, 2G, 2H, 2L	2.6	1.4
CFS-MSL L	76-100%	2B, 2D, 2E, 2G, 2H, 2L	3.0	1.6

NOTES : 1. MAXIMUM SIZE OF OPENING = 12-1/4" x 4-1/8".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1/4".
 3. CABLES MAY REPRESENT 0% TO 100% VISUAL FILL OF EACH FIRESTOP DEVICE.
 4. T-RATING IS 1-HR. EXCEPT WHEN ITEM 2K IS USED, THE T-RATING IS 1/2-HR.
 5. L-RATINGS ARE DEPENDENT ON TYPE AND NUMBER OF DEVICES WITHIN THE GANG PLATE AND THE CABLE TYPE AND FILL. A RATING OF LESS THAN ONE SHALL BE CONSIDERED 1 CFM WHEN MORE THAN ONE MODULE IS INSTALLED.



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Sheet	3 of 3
Scale	-
Date	May 01, 2023

Drawing No.
WJ
3277c