

UL/cUL SYSTEM NO. W-L-3484b

# MULTIPLE CABLE BUNDLES THROUGH GYPSUM WALL ASSEMBLY

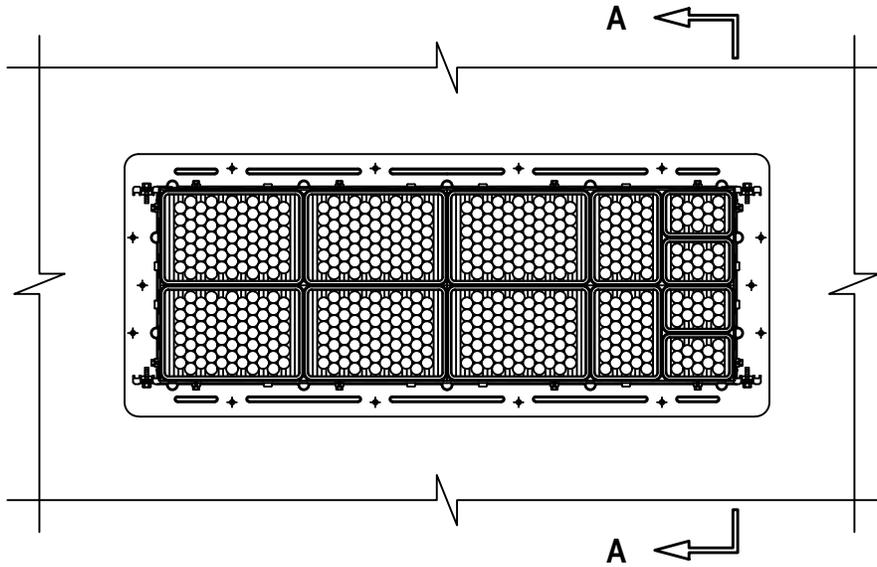
F-RATING = 1-HR. OR 2-HR.

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

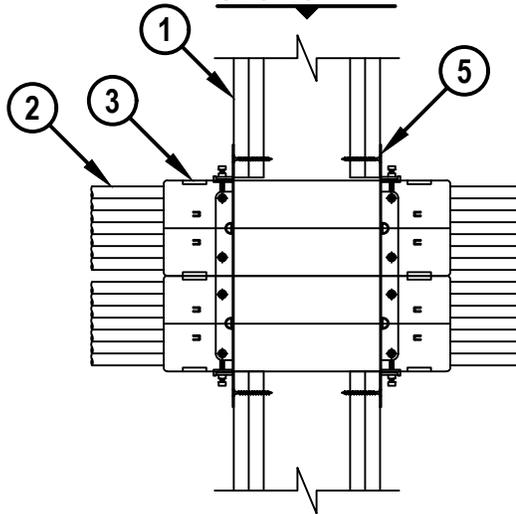
L-RATING AT AMBIENT = SEE TABLE BELOW

L-RATING AT 400°F = SEE TABLE BELOW

FRONT VIEW



SECTION A-A



WL3484b.101022



HILTI, Inc.  
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Scale	1/8" = 1"
Date	Oct. 10, 2022

Drawing No.  
**WL**  
**3484b**

*Saving Lives through Innovation and Education*

**MULTIPLE CABLE BUNDLES THROUGH GYPSUM WALL ASSEMBLY**

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1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, V400, OR W400 SERIES)(1-HR. OR 2-HR. FIRE RATING) (2-HR. SHOWN) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
  - A. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER (SPACED MAXIMUM 16" OC). STEEL STUDS TO BE MINIMUM 3-5/8" WIDE (SPACED MAXIMUM 24" OC). WHEN OPENING WIDTH EXCEEDS THE WIDTH OF THE STUD CAVITY ADDITIONAL FRAMING MEMBER SHALL BE USED TO COMPLETELY FRAME AROUND THE OPENING.
  - B. NOMINAL 5/8" THICK GYPSUM WALLBOARD. TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN. (MINIMUM ONE LAYER OF 3/4" THICK GYPSUM WALLBOARD MAY BE USED AS SPECIFIED IN THE INDIVIDUAL UL DESIGN).
2. CABLE BUNDLES 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 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 SECURED IN FLANGE USING A MINIMUM EVERY OTHER SCREW HOLE IN ADJUSTABLE FLANGE (ITEM 5).
4. [NOT SHOWN] GASKET MATERIAL APPLIED TO BACK OF ADJUSTABLE FLANGE MATERIAL WITH INTEGRATED TAPE PRIOR TO FLANGE BEING INSTALLED TO WALL ASSEMBLY.
5. HILTI CFS-MSL GPA ADJUSTABLE FLANGE [24" x 4" OR 24" x 8"] BOLTED TOGETHER AROUND GANGED DEVICES AND SECURED TO WALL WITH 1-1/2" LONG STEEL SCREWS ALONG TOP AND BOTTOM OF HORIZONTAL FRAME MEMBERS AT MINIMUM EVERY OTHER HOLE. CORNERS OF HORIZONTAL FRAME SECURED WITH 2" LONG STEEL SCREWS INTO STUD MATERIAL.



**Hilti Firestop Systems**

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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	1.1	1.45
CFS-MSL S	26-50%	2B, 2D, 2E, 2G, 2H	1.1	LESS THAN 1
CFS-MSL S	51-75%	2B, 2D, 2E, 2G, 2H	1.8	LESS THAN 1
CFS-MSL S	76-100%	2B, 2D, 2E, 2G, 2H	1.8	1.2
CFS-MSL M	0%	-	1.1	LESS THAN 1
CFS-MSL M	1-25%	2B, 2D, 2E, 2G, 2H	1.8	LESS THAN 1
CFS-MSL M	26-50%	2B, 2D, 2E, 2G, 2H	1.9	LESS THAN 1
CFS-MSL M	51-75%	2B, 2D, 2E, 2G, 2H	1.9	LESS THAN 1
CFS-MSL M	76-100%	2B, 2D, 2E, 2G, 2H	2.2	1.1
CFS-MSL L	0%	-	1.2	LESS THAN 1
CFS-MSL L	1-25%	2B, 2D, 2E, 2G, 2H	1.8	1.1
CFS-MSL L	26-50%	2B, 2D, 2E, 2G, 2H	2.2	1.0
CFS-MSL L	51-75%	2B, 2D, 2E, 2G, 2H	2.6	1.4
CFS-MSL L	76-100%	2B, 2D, 2E, 2G, 2H	3.0	1.6

- NOTES :
1. MAXIMUM SIZE OF OPENING = 24-1/8" x 8-1/8".
  2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1/8".
  3. CABLES MAY REPRESENT 0% TO 100% VISUAL FILL OF EACH FIRESTOP DEVICE.
  4. WHEN HOURLY RATING OF WALL ASSEMBLY EQUALS 1-HR., THE T- RATING IS 0-HR. WHEN THE HOURLY RATING OF THE WALL ASSEMBLY IS 2-HR, THE T-RATING IS 1-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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