

UL/cUL SYSTEM NO. W-L-3482

# CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

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

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

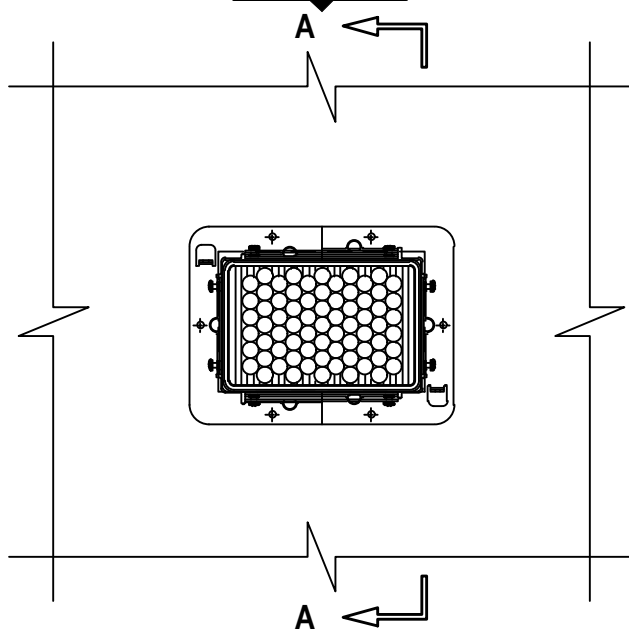
L-RATING AT AMBIENT = SEE L-RATING TABLE

L-RATING AT 400°F = SEE L-RATING TABLE

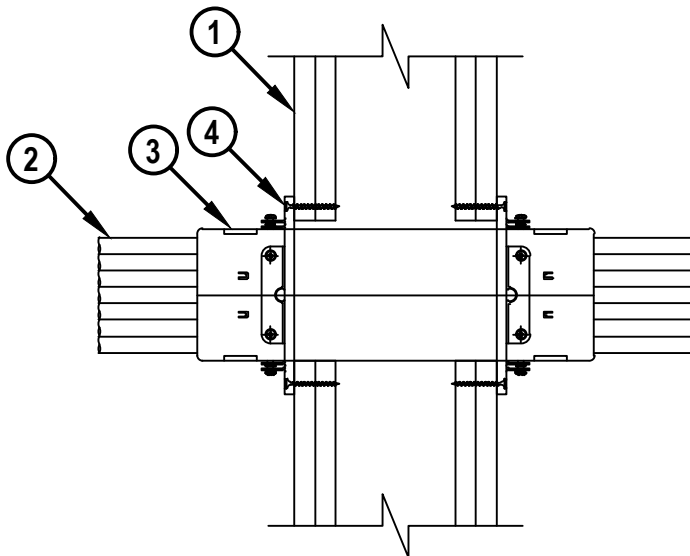
M-RATING = SEE M-RATING TABLE

WL3482c.090823

## FRONT VIEW



## SECTION A-A



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Sheet	1 of 4
Scale	1 1/64" = 1"
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Drawing No.  
**WL  
3482c**

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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).
  - B. NOMINAL 5/8" THICK GYPSUM WALLBOARD. TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN (ALTERNATIVELY, MINIMUM ONE LAYER OF 3/4" THICK GYPSUM WALLBOARD MAY BE USED AS SPECIFIED IN THE INDIVIDUAL UL DESIGN FOR 1-HR. AND 2-HR. RATED WALLS).
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-MSL [S, M, OR L] MODULAR SLEEVE TO BE CENTERED IN THE WALL. DEVICE TO BE INSTALLED WITH A GASKET AND HILTI CFS-MSL P [S, M, OR L] DEVICE FLANGE ON BOTH SIDES OF WALL AND TIGHTENED USING SET SCREWS IN DEVICE FLANGE.
4. SECURE DEVICE FLANGES TO BOTH SIDES OF WALL WITH MINIMUM TWO 1-1/2" LONG STEEL SCREWS THROUGH THE PRE-MADE HOLES.



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M-RATING TABLE					
MOVEMENT DIRECTION	PENETRANT ITEM	NOMINAL PENETRANT DIAMETER	DEVICE SIZE	MOVEMENT	L-RATING
Y	2D	MAX 1 IN. (25 MM) BUNDLE	2"	100%**	N/A
Z	2D	MAX 1 IN. (25 MM) BUNDLE	2"	3.21 IN.	N/A

\*\*PERCENTAGE MOVEMENT BASED ON THE MINIMUM DISTANCE BETWEEN OUTER DIAMETER OF PENETRANT AND INSIDE DIMENSIONS OF THE FIRESTOP DEVICE.

L-RATING TABLE				
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



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- NOTES : 1. MAXIMUM SIZE OF OPENING = 6-1/4" x 4-1/4".  
2. ANNULAR SPACE (FIRESTOP DEVICE TO OPENING) = MINIMUM 0", MAXIMUM 1/4".  
3. CABLES MAY REPRESENT 0% TO 100% VISUAL FILL OF EACH FIRESTOP DEVICE.  
4. WHEN HOURLY RATING OF THE WALL ASSEMBLY IS 1-HR., T-RATING IS 0-HR.  
5. WHEN HOURLY RATING OF THE WALL ASSEMBLY IS 2-HR. AND ITEM 2K IS USED, T-RATING IS 1/2-HR. FOR ALL OTHER PENETRATING ITEMS THE T-RATING IS 1-HR.



Hilti Firestop Systems

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