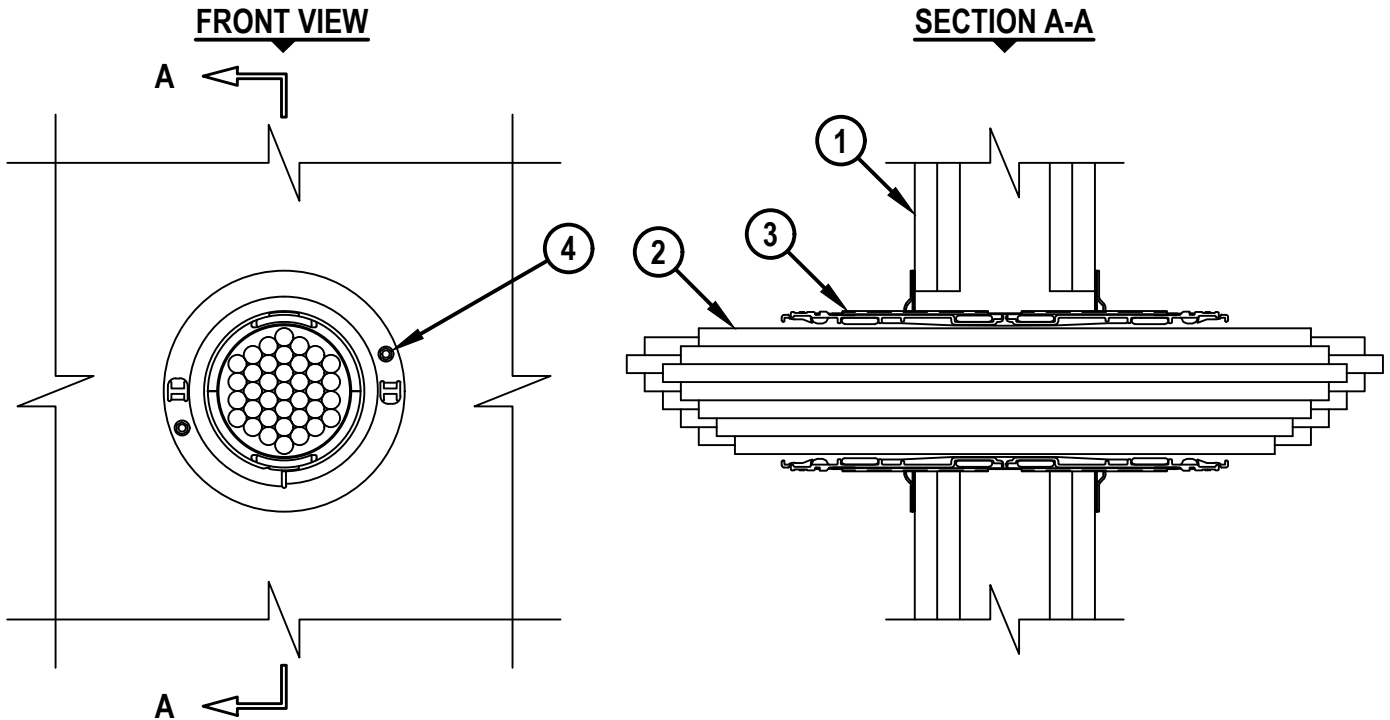


CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
 T-RATING = 0-HR., 1/2-HR., OR 1-HR.
 L-RATING AT AMBIENT = SEE TABLE
 L-RATING AT 400°F = SEE TABLE

WL-3335m-072518



1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400 OR V400 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 2-1/2" WIDE [WHEN 5/8" THICK GYPSUM WALLBOARD IS USED] AND MINIMUM 3-1/2" WIDE [WHEN 3/4" THICK GYPSUM WALLBOARD IS USED] (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 (MINIMUM ONE LAYER 3/4" THICK GYPSUM WALLBOARD MAY BE USED).
2. CABLE BUNDLE TO BE A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 100 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - 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.



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

Sheet	1 of 2
Scale	3/16" = 1"
Date	July 25, 2018

Drawing No.
WL
3335m

CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
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WL-3335m-072518

- D. MAXIMUM 4 PAIR NO. 22 AWG CAT 5 OR CAT 6 COMPUTER CABLE.
 - E. MAXIMUM RG 6/U COAXIAL CABLE.
 - F. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (24 FIBER) 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 MAXIMUM 24 AWG 75 OHM COAX OR TWISTED PAIR CABLE WITH PE INSULATION AND PVC JACKET.
 - 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 CP 653 (BA) SPEED SLEEVE [2" OR 4"] OR HILTI CFS-SL GA L SPEED SLEEVE [4"] SLID INTO AND CENTERED WITHIN WALL. DEVICE FLANGES SPUN CLOCKWISE ONTO DEVICE THREADS, BUTTING TIGHTLY TO BOTH SIDES OF WALL.
4. SECURE DEVICE FLANGES TO BOTH SIDES OF WALL WITH TWO MINIMUM 1-1/2" LONG DRYWALL SCREWS. FOR BLANK DEVICES, MINIMUM FOUR SCREWS ARE REQUIRED.

MAX CABLE FILL	CABLE TYPE	L-RATING, CFM/SQ FT				L-RATING, CFM			
		AMBIENT		400°F		AMBIENT		400°F	
		SEALANT	GASKET	SEALANT	GASKET	SEALANT	GASKET	SEALANT	GASKET
0% FILL	-	LESS THAN 1	1	LESS THAN 1	2.7	LESS THAN 1	LESS THAN 1	LESS THAN 1	LESS THAN 1
100%	ITEM 2D ONLY	4.9	4.9	1.3	3.5	LESS THAN 1	LESS THAN 1	LESS THAN 1	LESS THAN 1
100%	ANY CABLES (ITEM 2) IN ANY COMBINATION	9.2	9.2	9.6	11.8	1.2	1.2	1.3	1.6

NOTES :

1. MAXIMUM DIAMETER OF OPENING = 3" (FOR 2" DEVICE) OR 5" (FOR 4" DEVICE).
2. HILTI CFS-SL GA L SPEED SLEEVE SHALL ONLY BE USED IN WALLS 8" THICK OR GREATER.
3. CABLES MAY REPRESENT 0% TO 100% VISUAL FILL OF DEVICE.
4. ANNULAR SPACE BETWEEN DEVICE AND PERIPHERY OF OPENING = MINIMUM 0".
5. L-RATING APPLIES ONLY WHEN HILTI FS-ONE MAX OR FS-ONE OR CP 606 FIRESTOP SEALANT IS USED AND INNER FABRIC SEAL IS TWISTED CLOSED.
6. [OPTIONAL] INNER FABRIC MAY REMAIN OPEN WHEN L-RATING IS NOT REQUIRED.
7. [OPTIONAL] AS AN ALTERNATE TO SMOKE GASKET, MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CP 606 FLEXIBLE FIRESTOP SEALANT, OR HILTI CP 618 FIRESTOP PUTTY STICK FLUSH WITH BOTH SURFACES OF WALL WITH AN ADDITIONAL 1/4" BEAD OF FIRESTOP SEALANT (NOT REQUIRED FOR PUTTY) APPLIED AT POINT OF CONTACT.

 Hilti Firestop Systems	HILTI, Inc. Plano, Texas USA (800) 879-8000	Sheet	2 of 2	Drawing No. WL 3335m
		Scale	-	
		Date	July 25, 2018	

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