

CABLE BUNDLE THROUGH CONCRETE OR BLOCK WALL ASSEMBLY

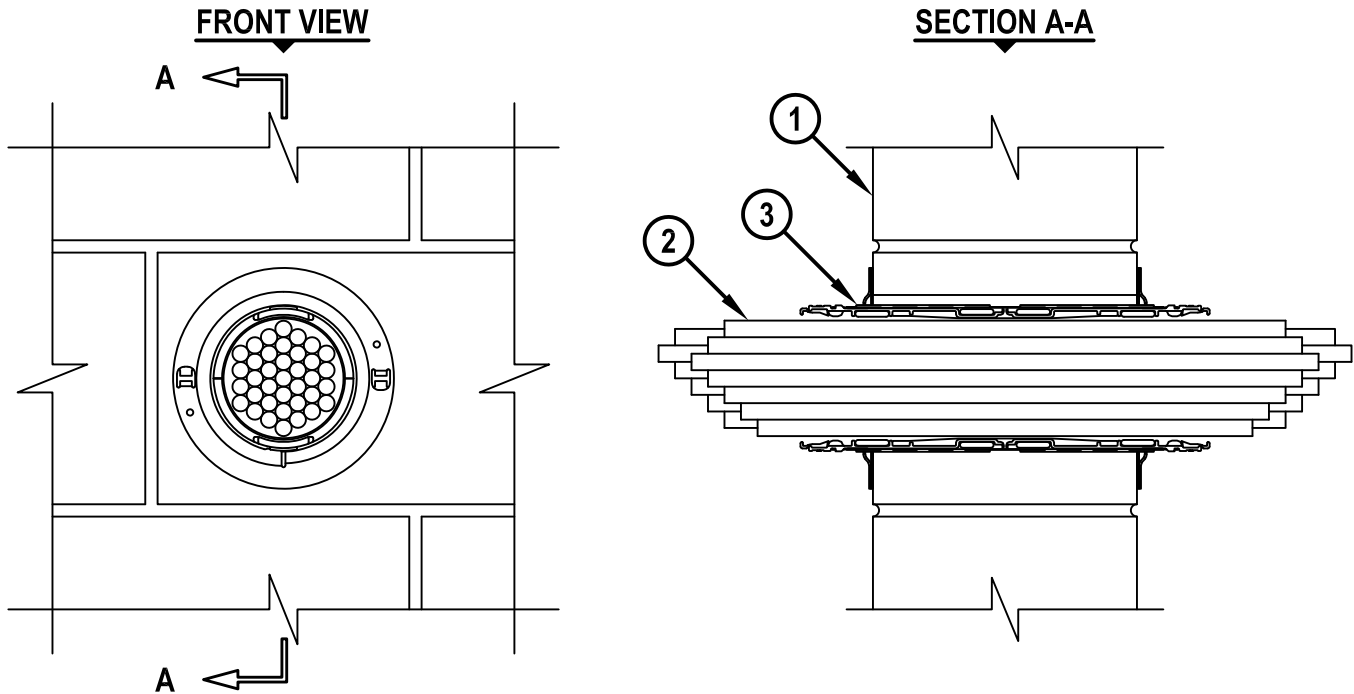
F-RATING = 2-HR., 3-HR., OR 4-HR.

T-RATING = 0-HR., 1/2-HR., 1 1/2-HR., OR 2-HR.

L-RATING AT AMBIENT = LESS THAN 1 CFM (SEE TABLE)

L-RATING AT 400°F = 1 OR LESS THAN 1 CFM (SEE TABLE)

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1. CONCRETE WALL ASSEMBLY (2-HR., 3-HR., OR 4-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MIN. 5" THICK) [FOR 2-HR. FIRE-RATING].
 - B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MIN. 5-5/8" THICK) [FOR 3-HR. FIRE-RATING].
 - C. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MIN. 6-1/2" THICK) [FOR 4-HR. FIRE-RATING].
 - D. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
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.
 - D. MAXIMUM 4 PAIR NO. 22 AWG CAT 5 OR CAT 6 COMPUTER CABLE.



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

Sheet	1 of 2
Scale	11/64" = 1"
Date	July 24, 2018

Drawing No.
WJ
3167h

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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 MC CABLE.

K. ANY CABLES, METAL-CLAD CABLE, OR ARMORED CABLE CURRENTLY CLASSIFIED 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 OVER SMOKE GASKET, BUTTING TIGHTLY TO BOTH SIDES OF WALL (DEVICE FLANGES ARE OPTIONAL) (DEVICE FLANGES REQUIRED WHEN L-RATING IS 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 = 2-1/2" (FOR 2" DEVICE) OR 4-1/2" (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 FLANGES ARE 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 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT OR HILTI CP 606 FLEXIBLE FIRESTOP SEALANT FLUSH WITH BOTH SURFACES OF WALL WITH AN ADDITIONAL 1/4" BEAD APPLIED AROUND PERIPHERY OF DEVICE PRIOR TO SECURING DEVICE FLANGES.



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