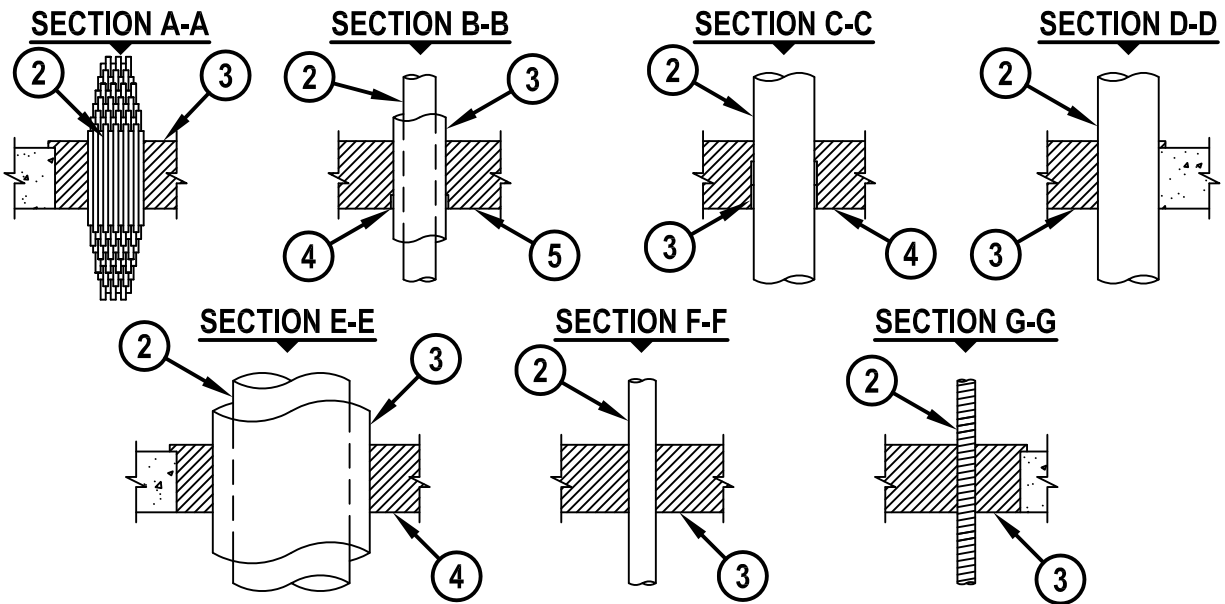
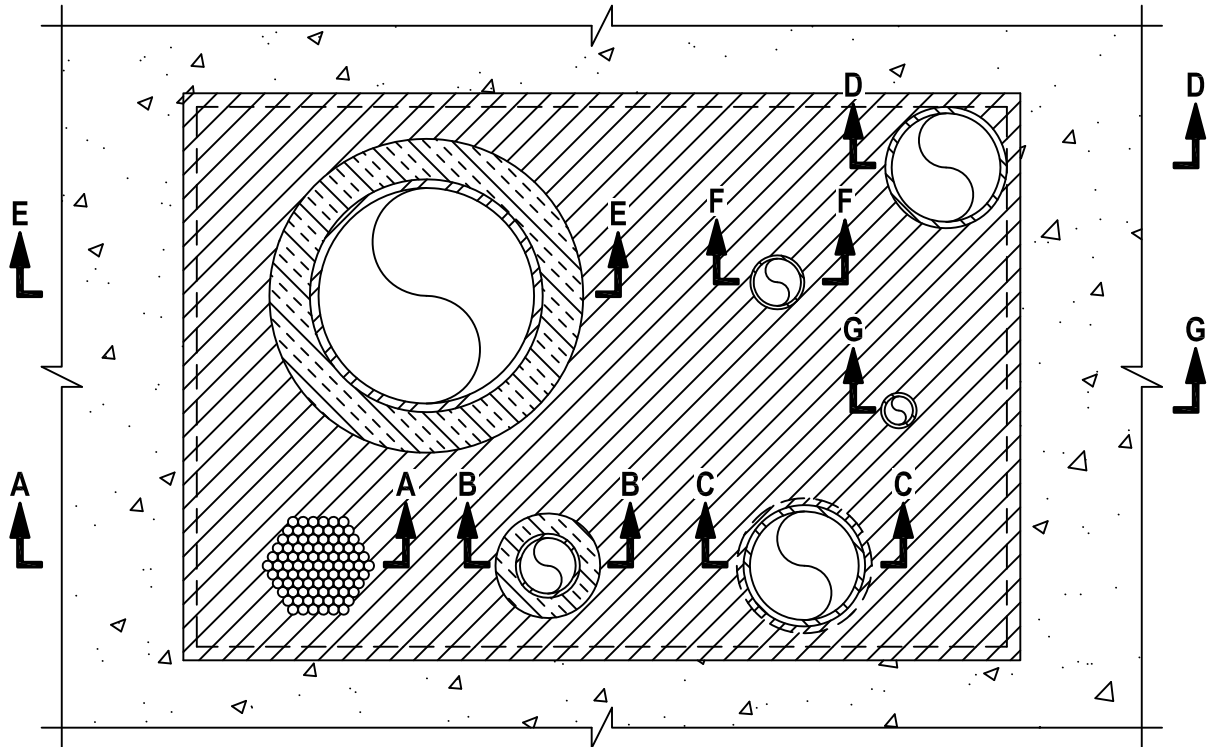


MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR.
FT-RATING = 0-HR., 1/2-HR., OR 2-HR.
FH-RATING = 0-HR.
FTH-RATING = 0-HR.

TOP VIEW

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Scale	9/64" = 1"
Date	Jan. 27, 2016

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**MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL
OR BLOCK WALL ASSEMBLY**

F-RATING = 2-HR.
FT-RATING = 0-HR., 1/2-HR., OR 2-HR.
FH-RATING = 0-HR.
FTH-RATING = 0-HR.

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1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.

FIRESTOP CONFIGURATION A

2. MAXIMUM 4" DIAMETER CABLE BUNDLE CONSISTING OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE.
 - B. MAXIMUM 500 KCMIL POWER CABLE.
 - C. MAXIMUM 7/C NO. 12 AWG POWER CABLE.
 - D. MAXIMUM 3/8" DIAMETER FIBER-OPTIC CABLE.
 - E. MAXIMUM 3/C NO. 12 AWG METAL-CLAD CABLE.
 - F. MAXIMUM 3/C NO. 10 (+ GROUND) ROMEX POWER CABLE.
3. MINIMUM 5" DEPTH HILTI CP 660 FIRESTOP FOAM, EXTENDING 1/2" ABOVE THE TOP SURFACE OF THE FLOOR, OR BOTH SURFACES OF WALL, AND OVERLAPPING THE CONCRETE 1/2" ON ALL SIDES OF OPENING.

NOTE : MINIMUM SPACING BETWEEN CABLE BUNDLE AND PERIPHERY OF OPENING AND ADJACENT PENETRANTS = 1/2" AND 4" RESPECTIVELY.

FIRESTOP CONFIGURATION B

2. MAXIMUM 2" NOMINAL DIAMETER COPPER PIPE.
3. NOMINAL 3/4" THICK AB/PVC PIPE INSULATION.
4. HILTI CP 648E WRAP STRIP (NOMINAL 3/16" THICK x 1" WIDE) CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE PIPE, COVERING ONCE, WITH ENDS HELD IN PLACE WITH TAPE. WRAP STRIP INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR BOTH SURFACES OF CP 660 FIRESTOP FOAM IN A WALL.
5. MINIMUM 5" DEPTH HILTI CP 660 FIRESTOP FOAM, EXTENDING 1/2" ABOVE THE TOP SURFACE OF THE FLOOR, OR BOTH SURFACES OF WALL, AND OVERLAPPING THE CONCRETE 1/2" ON ALL SIDES OF OPENING.

NOTE : MINIMUM SPACING BETWEEN INSULATED PIPE AND PERIPHERY OF OPENING AND ADJACENT PENETRANTS = 1/2" AND 3" RESPECTIVELY.

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		Scale	-	
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**MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL
OR BLOCK WALL ASSEMBLY**

F-RATING = 2-HR.
FT-RATING = 0-HR., 1/2-HR., OR 2-HR.
FH-RATING = 0-HR.
FTH-RATING = 0-HR.

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FIRESTOP CONFIGURATION C

2. MAXIMUM 4" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40) (SOLID OR CELLULAR CORE) (CLOSED OR VENTED PIPING SYSTEMS).
3. HILTI CP 648E WRAP STRIP (NOMINAL 3/16" THICK x 1-3/4" WIDE) CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE PIPE, COVERING ONCE, WITH ENDS HELD IN PLACE WITH TAPE. WRAP STRIP TO BE DOUBLE-STACKED AND INSTALLED FLUSH WITH BOTTOM OF FLOOR OR BOTH SURFACES OF CP 660 IN A WALL.
4. MINIMUM 5" DEPTH HILTI CP 660 FIRESTOP FOAM, EXTENDING 1/2" ABOVE THE TOP SURFACE OF THE FLOOR, OR BOTH SURFACES OF WALL, AND OVERLAPPING THE CONCRETE 1/2" ON ALL SIDES OF OPENING.

NOTE : MINIMUM SPACING BETWEEN PLASTIC PIPE AND PERIPHERY OF OPENING AND ADJACENT PENETRANTS = 1/2" AND 4-1/2" RESPECTIVELY.

FIRESTOP CONFIGURATION D

2. MAX. 4" NOMINAL DIAMETER STEEL PIPE (SCH 10 OR HEAVIER), CAST IRON PIPE, COPPER PIPE, STEEL CONDUIT, OR EMT.
3. MINIMUM 5" DEPTH HILTI CP 660 FIRESTOP FOAM, EXTENDING 1/2" ABOVE THE TOP SURFACE OF THE FLOOR, OR BOTH SURFACES OF WALL, AND OVERLAPPING THE CONCRETE 1/2" ON ALL SIDES OF OPENING.

NOTE : MINIMUM SPACING BETWEEN PIPE AND PERIPHERY OF OPENING AND ADJACENT PENETRANTS = 0" AND 4" RESPECTIVELY.

FIRESTOP CONFIGURATION E

2. MAXIMUM 8" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 40 OR HEAVIER).
3. NOMINAL 1-1/2" THICK GLASS-FIBER PIPE INSULATION.
4. MINIMUM 5" DEPTH HILTI CP 660 FIRESTOP FOAM, EXTENDING 1/2" ABOVE THE TOP SURFACE OF THE FLOOR, OR BOTH SURFACES OF WALL, AND OVERLAPPING THE CONCRETE 1/2" ON ALL SIDES OF OPENING.

NOTE : MINIMUM SPACING BETWEEN INSULATED PIPE AND PERIPHERY OF OPENING AND ADJACENT PENETRANTS = 1/2" AND 3" RESPECTIVELY.



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**MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR/WALL
OR BLOCK WALL ASSEMBLY**

F-RATING = 2-HR.
 FT-RATING = 0-HR., 1/2-HR., OR 2-HR.
 FH-RATING = 0-HR.
 FTH-RATING = 0-HR.

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FIRESTOP CONFIGURATION F

- 2. MAXIMUM 2" DIAMETER TEK CABLE WITH CROSS-LINKED POLYETHYLENE INSULATION.
- 3. MINIMUM 5" DEPTH HILTI CP 660 FIRESTOP FOAM, EXTENDING 1/2" ABOVE THE TOP SURFACE OF THE FLOOR, OR BOTH SURFACES OF WALL, AND OVERLAPPING THE CONCRETE 1/2" ON ALL SIDES OF OPENING.

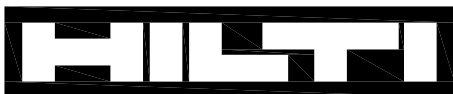
**NOTE : MINIMUM SPACING BETWEEN TEK CABLE AND PERIPHERY OF
OPENING AND ADJACENT PENETRANTS = 1/2" AND 3" RESPECTIVELY.**

FIRESTOP CONFIGURATION G

- 2. MAXIMUM 1" DIAMETER FLEXIBLE ALUMINUM CONDUIT.
- 3. MINIMUM 5" DEPTH HILTI CP 660 FIRESTOP FOAM, EXTENDING 1/2" ABOVE THE TOP SURFACE OF THE FLOOR, OR BOTH SURFACES OF WALL, AND OVERLAPPING THE CONCRETE 1/2" ON ALL SIDES OF OPENING.

**NOTE : MINIMUM SPACING BETWEEN FLEXIBLE CONDUIT AND PERIPHERY OF
OPENING AND ADJACENT PENETRANTS = 1/2" AND 5" RESPECTIVELY.**

**NOTES : 1. MAXIMUM SIZE OF OPENING = 30" x 20".
 2. MAXIMUM OF SEVEN FIRESTOP CONFIGURATIONS MAY BE INSTALLED WITHIN THE OPENING.
 3. FT-RATING IS 0-HR. FOR FIRESTOP CONFIGURATIONS C, D, AND G. FT-RATING IS 1/2-HR. FOR CONFIGURATIONS A, B, AND F. T-RATING IS 2-HR. FOR CONFIGURATION E.**



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