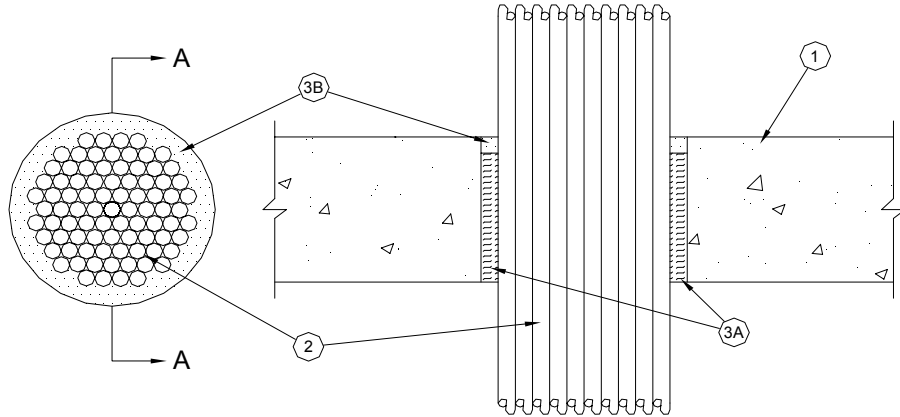


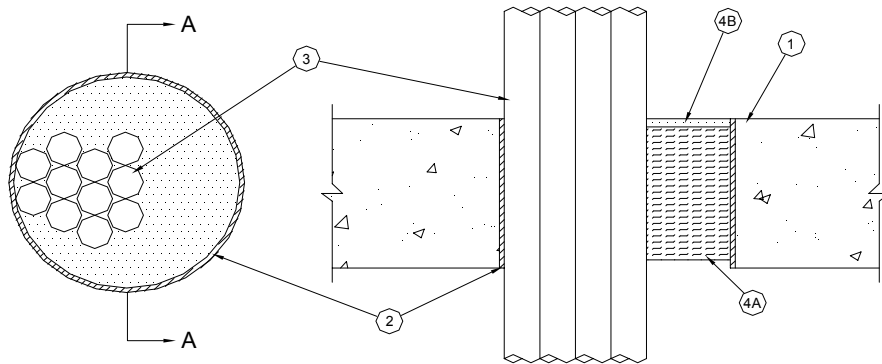
Through-penetration Firestop Systems
UL System No. C-AJ-3272
F Rating - 2 Hr

T Rating - 0, 1/4, 1/2 and 1 Hr (See CONFIGURATION A, Item 2 and CONFIGURATION B, Item 3)



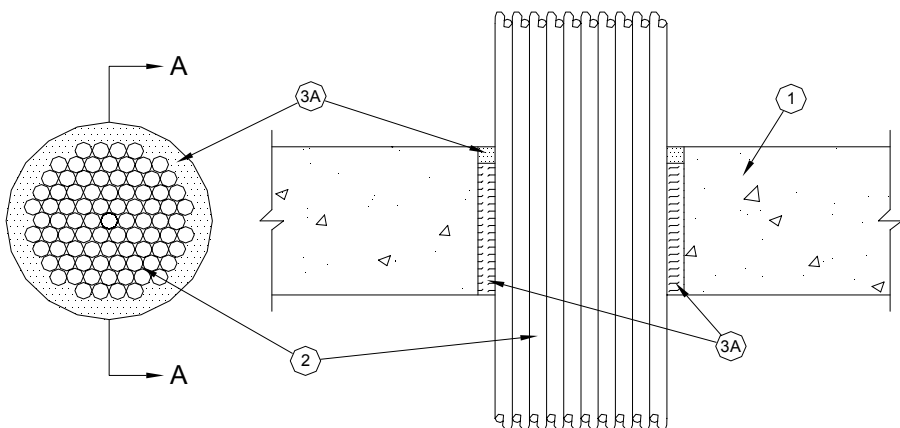
SECTION A-A

CONFIGURATION A



SECTION A-A

Configuration B



SECTION A-A

Configuration A

1. **Floor or Wall Assembly** - Min. 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf (1600-2400kg/m³)) concrete floor or min 5 in. (127 mm) thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Floor may also be constructed of any min. 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units***. Max. dia. of opening is 6 in. (152 mm).

See **Concrete Blocks** (CAZT) and **Precast Concrete Units** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

2. **Cables** - Aggregate cross-sectional area of cables in opening to be max 39 percent of the aggregate cross-sectional area of the opening. The cable bundle shall be centered in opening. Cables to be rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of copper conductor cables may be used:
 - A. Max. 1/C - 500 kcmil cable with polyvinyl chloride (PVC) insulation and jacket.
 - B. Max. 1/C - 350 kcmil cable with polyvinyl chloride cross linked polyethylene (XLPE) insulation and jacket.
 - C. Max. 3/C - No. 6 cable with PVC insulation and jacket.
 - D. Max. 300 pair No. 24 AWG copper conductor telephone cables with polyvinyl chloride (PVC) insulation and jacket.
 - E. Max. 24 fibers - 62.5/125um dielectric duct/aerial fiber optic cable with high density polyethylene (HDPE) jacket.

T Rating is 0 hr for Cables A and B.

T Rating is 1/2 hr for Cables C and D.

T Rating is 1 hr for Cable E.

3. **Firestop System** - The firestop system shall consist of the following:
 - A. **Packing Material** - Min. 4 in. (102 mm) thickness of min. 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall and hollow-core precast concrete unit as required to accommodate the required thickness of fill material.
 - B. **Fill,Void or Cavity Material* - Caulk** - Min. 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall and hollow-core precast concrete unit. Caulk to be forced into interstices of cable group to max. extent possible. When thickness of packing material (Item 3A) increased to 4-1/4 in. (108 mm), min. thickness of fill material is 1/4 in. (6 mm).

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Configuration B

1. **Floor or Wall Assembly** - Min. 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf (1600-2400 kg/m³)) concrete floor or min. 5 in. (127 mm) thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units***. Max. dia. of opening is 6 in. (152 mm).

See **Concrete Blocks** (CAZT) and **Precast Concrete Units** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

2. **Steel Sleeve** . (Optional). Nom. 6 in. (152 mm) dia. (or smaller) Schedule 10 (or heavier) steel pipe cast or grouted into floor or wall assembly. Steel sleeve installed flush with the floor or wall surfaces.

UL System C-AJ-3272continued...

3. **Cables** - Aggregate cross sectional area of cables in opening to be max 44 percent of the cross sectional area of the opening. Tight bundle of cables to be installed in the opening. The annular space between the cable bundle and the periphery of the opening shall be min. 0 in. (point contact) to max. 2 in. (51 mm). Cable bundle to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of cables may be used:
- A. Max. 200 pair No. 24 AWG (or smaller) copper conductor with polyvinyl chloride (PVC) insulation and jacketing material.
 - B. Max. 1/C No. 350 kcmil (or smaller) copper conductor cable with cross-linked polyethylene (XLPE) jacket.
 - C. Max. 7/C No. 12 AWG (or smaller) copper conductor power and control cables with XLPE or PVC insulation with XLPE or PVC jacket.
 - D. Max. 3/C No. 3/0 AWG (or smaller) copper or aluminum conductor SER cables with PVC insulation and jacket.
 - E. Max. 3/C No. 2/0 AWG (or smaller) copper conductor PVC jacketed aluminum clad or steel clad TEK cable.
 - F. Max. 110/125 fiber optic (F.O.) cable with PVC insulation and jacket.
 - G. Max. 3/C with ground No. 8 AWG (or smaller) copper conductor NM cable (Romex) with PVC insulation and jacket.
 - H. Max. RG/U coaxial cable with fluorinated ethylene insulation and jacket.
 - I. Max. 4 pair No. 24 AWG (or smaller) copper conductor data cable with Mylar jacket and insulation.

T Rating is 1/4 hr for above Cables.

4. **Firestop System** - The firestop system shall consist of the following:
- A. **Packing Material** - Min. 4-1/4 in. (108 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation compressed and tightly packed into opening. Packing material recessed from top surface of floor or both surfaces of wall and hollow-core precast concrete unit as required to accommodate the required thickness of fill material.
 - B. **Fill, Void or Cavity Material* - Caulk** - Min. 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall and hollow-core precast concrete unit. Caulk to be forced into interstices of cable group to max extent possible.

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*Bearing the UL Classification Mark