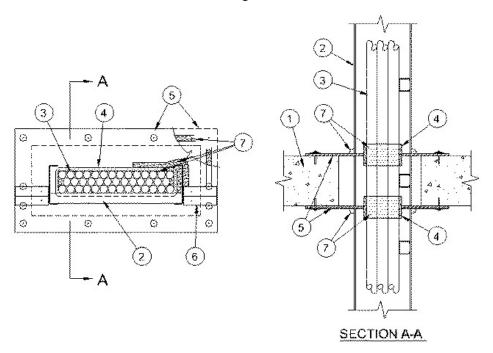**F Ratings — 2, 3 and 4 Hr (See Items 2, 5 and 7)**
T Rating — 0 Hr

SECTION A-A

1. **Floor or Wall Assembly —** Min 4-1/2 in.(114 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening 900 sq in. with max dimension of 30 in.

See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Cable Tray —** When F Rating is 2, 3 or 4 Hr, max 24 in. (610 mm) wide by max 4 in. (102 mm) deep steel open ladder cable tray or when F Rating is 3 Hr, aluminum open ladder cable tray. Cable tray to consist of channel-shaped side-rails with boxed channel rungs spaced 9 in. (229 mm) OC. Cable tray side-rails to be formed of min 0.056 in. (1.5 mm) thick (16 ga) galv steel or min 0.125 in. (3.2 mm) thick aluminum. Cable tray rungs to be formed of min 0.029 in. (0.072 mm) thick (22 ga) galv steel or min 0.080 in. (2.1 mm) thick aluminum. Min annular space between cable tray and edge of opening is 1 in. (25 mm) supported on both sides of floor or wall assembly.

3. **Cables —** Aggregate cross-sectional area of cables in cable tray not to exceed 41 percent of the cross-sectional area of the cable tray based on a max 3 in. (76 mm) cable loading depth within the cable tray. Any combination of the following types and sizes of cables maybe used:

A. Max 750 MCM power cables; THHN or THWN jacketed.

B. Max 8C, No.12 AWG multiconductor power and control cables; jacketed.

C. Max 300 pair No. 24 AWG copper conductor communication cable with polyvinyl chloride insulation and jacket material.

D. Multiple fiber optical communication cable jacketed with polyvinyl chloride.

E. Max 25 pr/24 AWG telephone cable with polyethylene insulation and polyvinyl chloride jacket.

4. **Fill, Void or Cavity Materials* — Putty —** When F Rating is 2 or 3 Hr, nom 2 in. wide by 1/8 in. (3.2 mm) putty strips installed to tightly-follow the contour of the cable tray and cable fill around its entire perimeter. Adjoining lengths of putty strips butt seamed together by hand. One layer of putty required on each side of floor or wall assembly installed to project approx 1 in. (25 mm) beyond each face of the composite sheet (Item 5) on both sides of floor or wall assembly. When F Rating is 3 Hr, as an option to the putty described above, caulk (Item 7) may be used.
RECTORSEAL — Biostop Fire Rated Putty, FSP1000, FSP1077 or FSP1100 Putty

5. **Fill, Void or Cavity Materials* —** Composite Sheet-Rigid aluminum foil-faced intumescent sheet with steel mesh and galv steel sheet backer. Sheets cut to tightly follow the contour of the cable tray and the cable fill with an annular space equal to or less than 1/4 in. (6 mm). Sheets cut to lap a min of 2 in. (51 mm) on the floor or wall surfaces. When sheet installed on both sides of the

floor or wall assembly, F Rating is 3 or 4 Hr. As an option for steel cable tray in floors, the sheet may be installed on only the top surface of the floor to attain a max 2 Hr F Rating. When sheet is installed on only the top surface of the floor, the putty or caulk (Item 7) is also installed on only the top surface of the floor. Sheet to be installed with the galv steel sheet backer exposed (aluminum foil facing against floor or wall surface) and secured to floor or wall surface with min 3/16 in. (4.8 mm) diam by 1-1/4 in. (32 mm) long steel anchor screws in conjunction with min 1-1/4 in. (32 mm) diam steel fender washers. Max spacing of fasteners not to exceed 6 in. (152 mm) with additional fasteners located on each side of butted seams or slits made to permit installation or the sheet around the cable tray.

RECTORSEAL — Biostop Composite Sheet or FlameSafe Composite Sheet

6. **Steel Cover Strip —** Min 2 in. (51 mm) wide strip of min 0.021 in. (0.52 mm) thick (24 ga) galv steel centered over entire length of each butted seam or slit made in the intumescent sheet (Item 5). Prior to installation of the steel strip, the seam or slit in the composite sheet shall be covered with a nom 1/2 in. (13 mm) diam bead of caulk (Item 7) or a 1/2 by 1/8 in. (13 by 3.2 mm) thick strip of putty (Item 7). Steel cover strip secured to galv steel sheet backer of composite sheet with steel sheet metal screws or steel rivets spaced max 3 in. (76 mm) OC on each side of seam or slit.

7. **Fill, Void or Cavity Materials* —** One layer of 1/2 in. (13 mm) wide by 1/8 in. (3.2 mm) thick putty strips, 1/2 in. (13 mm) wide by 1/16 in. (1.6 mm) wide joint strip or 1/2 in. (13 mm) diam bead of caulk positioned under composite sheet around entire perimeter of through opening. When F Rating is 2 or 3 Hr, generous application of putty to be applied around the base of the cable tray and cable fill contour applied putty strips (Item 4) at their egress from the intumescent sheet on both sides of the floor or wall assembly. When F Rating is 4 Hr or as an option to the putty described above and in Item 4 for a 3 Hr rating, generous application of caulk to be applied around the base of the cable tray and cable fill contour on both sides of the floor or wall assembly.

RECTORSEAL — Biostop Fire Rated Putty

RECTORSEAL — Metacaulk Fire Rated Putty Pad

RECTORSEAL — Biostop Joint Strip or FlameSafe Joint Strip

RECTORSEAL — Biostop 500+

*,+ Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.