



- 1. Floor or Wall Assembly Min 6 in. (152 mm) thick reinforced 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 diameter of opening is 3 in. (76 mm).
 - See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers
- 2. Steel Sleeve Nom 3 in. (76 mm) diam Schedule 40 (or smaller) steel pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces.
- 3. Polyvinylidene Fluoride PVDF Pipe Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVDF for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Annular space between pipe and sleeve to be min 0 in. (point contact) and max 5/8 in. (16 mm). Pipe to be rigidly supported on both sides of floor or wall assembly.
- 4. Firestop System The firestop system shall consist of the following:
 - A. Fill, Void or Cavity Materials*-Sealant Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with bottom surface of floor or both surfaces of wall.
 - HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC FS-ONE Sealant or FS-ONE MAX Intumescent Sealant
 - B. Fill, Void or Cavity Material* Wrap Strip Nom 1/4 in. (6 mm) thick by 2 in. (51 mm) wide intumescent wrap strip. Two layers of wrap strip are continuously wrapped around the pipe and held in place with tape. Wrap strip butted tightly against bottom surface of floor or both surfaces of wall.
 - HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC CP648-E- W45/1-3/4"5 Wrap Strip
 - C. Steel Collar Collar fabricated from coils of precut min 0.017 in. thick (No. 28 MSG) galv steel available from the sealant manufacturer. Collar shall be nom 1-3/4 in. (44 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchors tabs on 2 in. (51 mm) centers for securement to floor or wall assembly. The anchor tabs shall be bent 90 degree outward for securement to the floor or wall assembly. The opposite side incorporates retainer tabs, 1/2 in. (13 mm) wide by 3/16 in. (5 mm) long, prebent toward the pipe surface. Collar shall be tightly wrapped over the wrap strip, overlapping min. 1 in at seam. A nom 1/2 in. (13 mm) wide stainless steel hose clamp shall be secured to the collar at its mid-height. Every other anchor tab of collar secured to concrete slab with 1/4 in. (6 mm) diam by 1-3/4 in. (44 mm) long steel expansion type masonry fasteners, 1-1/2 in. (38 mm) long concrete screw anchors or 0.145 in. diam by 1-1/4 in. (32 mm) long powder actuated fasteners utilizing a 1-7/16 in. (36.5 mm) diam by 1/16 in. (1.6 mm) thick steel washer. In floor assemblies, one collar to be used at the bottom of the concrete floor only. In wall assemblies, a collar is used on both surfaces.
- * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

