System No. F-A-2055
May 18, 2005
F Rating - 2 Hr
T Rating - 1 Hr

SECTION A-A

1. Floor Assembly - The fire rated unprotected concrete and steel floor assembly shall be constructed of the materials and be the manner specified in the individual ORD3 Series designs in the UL Fire Resistance Directory and as summarized below:
   A. Concrete - FH 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 psf or 1500-2500 psf) concrete.
   B. Welded Wire Fabric - 6 x 6 - W14 x W14.
   C. Steel Plated Structural Plate Units - Composite or composite 1-1/2 in. (38 mm) deep rolled gussets as specified in the individual Floor-Designing detail. Flange of opening through floor to be 3/8 in. (10 mm) larger than the outside dim of through penetrations. Net size of opening is 5/8 in. (15 mm).

2. Through Penetrations - One nonmetallic pipe or conduit to be located within the opening. The pipe or conduit was rigidly supported on both sides of the floor assembly. The following types and sizes of nonmetallic pipes or conduits may be used:
   A. Polyethylene Chloride (PVC) Pipe - Non UL Listed 2 - 1 in. (25 mm) diam or smaller. Schedule 40 solid core or solid core TPU pipe for use in closed (process or supply) or vented (dirt, waste or vent) piping systems.
   B. Exposed Nonmetallic Cased Pipe - Non UL Listed 2 - 1 in. (25 mm) diam or smaller. Schedule 40 solid core or solid core PVC pipe for use in closed (process or supply) or vented (dirt, waste or vent) piping systems.
   C. Acrylonitrile Butadiene Styrene (ABS) Pipe - Non UL Listed 2 - 1 in. (25 mm) diam or smaller. Schedule 40 solid core or solid core ABS pipe for use in closed (process or supply) or vented (dirt, waste or vent) piping systems.
   D. Fire Resistance Polyethylene (FRP) Pipe - Non UL Listed 2 - 1 in. (25 mm) diam or smaller. Schedule 40 solid core or solid core FRP pipe for use in closed (process or supply) or vented (dirt, waste or vent) piping systems.

3. Pressurization System - This detail of the fire protection system shall be as follows:
   A. Metal Pipe Throat - FH 10 gauge galv steel plate. Width of plate to extend a size of 3 in. (75 mm) beyond both sides of the opening. Length of plate (transverse to floor floor unit direction) to extend to floor floor unit valley beyond each side of core-drilled hole with a hole type of 1-1/2 in. (38 mm) on the floor unit valley at each wall. Circular access to plate to be 3/8 in. to 1/2 in. (10 mm to 32 mm) larger than the outside dim of through penetrations. Net size of opening is 3/8 in. (10 mm) larger than the outside dim of through penetrations. Plate to be cut along the length of plate to permit transmission around the nonmetallic pipe. Plate to be secured to the loyval of the floor using m/h 1/4 in. (6 mm) diam by 1-1/4 to 1-1/2 (24 mm) long stainless steel expansion bolts. Post tensioning to be limited approx 1.5 in. (38 mm) from sidewalls. Each plate to be secured at each corner, at each plate to plate intersection and at both sides of the membrane to prevent movement of the plate under pressure water. When plate seam is located beneath the crest of the steel deck, a 3 in. (75 mm) wide with 10 gauge galv steel plate to be covered over and attached to plate with m/h 10 angled metal screws, 3 in. (75 mm) OC on both sides of plate.
   B. Packing Material - FH 4 psf (54 kg/sq.m) mineral wool blanket firmly packed into flutes of dural for units above metal plate enclosures to completely fill enclosures. Padding material to be removed with a flush from both edges of metal plate enclosures to accommodate the required thickness of 1/3 material. FH 3/8 in. (10 mm) thickness of m/h 4 psf (54 kg/sq.m) mineral wool blanket firmly packed into enclosures. Bond with bottom of floor.
   C. Fire Blanket or Cased Material - Cased or Barrier - 14 in. (5 mm) thickness of calcium silicate applied into flutes of stiff floor units above metal plate enclosures to completely cover packing material (item 3C). Cased may also be used as an optioin with the same usage on the top side of the floor.

3M Company - CP 25W-12, 10W-12 or FR-3000 WT versions.
(Note: CP 25W-12 not suitable for use with PVC pipes.)

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CONTRACTOR/ENGINEER/ARCHITECTURAL DRAWING FOR SYSTEM OR DESIGN REVIEW

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