



1. **Floor or Wall Assembly — Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete floor or min 4-3/4 in. (121 mm) thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks**. See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for Mfgs.
2. **Steel Air Duct** — Min 0.030 in. (No. 22 gauge or 0.71 mm) thick (or heavier) rectangular steel duct having a max width to height ratio of 4 to 1 with max individual dimension of 85 in (2160 mm) and max cross-section area of 14.2 sq ft (1.32 m²), or round steel air duct having a max diameter of 50 in. (1270 mm) constructed in accordance with SMACNA HVAC Duct Construction standards. The sections shall be assembled using bolted flanges or SMACNA approved Transverse Joint Reinforcements. Duct to be rigidly supported in accordance with SMACNA requirement and as specified in Item 4.)
3. **Fire Resistive System** — The fire resistive system shall consist of the following:
 - A. **Duct Wrap Materials* — Batts and Blankets*** — Nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m³) blanket totally encapsulated within foil-scrim facers. **The steel duct shall be wrapped with one layer of duct wrap** installed with 3 in. (76 mm) transverse and longitudinal overlaps, or tightly butted transverse joints, in accordance with the manufacturer's installation instructions. All cut edges and ends shall be sealed with 3 in. (76 mm) wide pressure sensitive aluminum foil tape. For ducts with any dimension greater than 39 in. (991 mm), a second layer of duct wrap shall abut the firestop and extend min 12 in. (305 mm) above and below floor slab or both surfaces of wall.
THERMAL CERAMICS INC — FireMaster FastWrap XL and FastWrap+ or Pyroscat Duct Wrap XL
 - B. **Collars** — Fabricated from Batts and Blankets* — Nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m³), 6 in. (152 mm) wide blanket totally encapsulated within foil-scrim facers. The transverse butt joints shall be wrapped using a collar. The butt joint shall be located nom 3 in. (76 mm) from the edge of the collar. The collar shall be installed with 3 in. (76 mm) longitudinal overlaps. All cut edges and ends shall be sealed with 3 in. (76 mm) wide pressure sensitive aluminum foil tape.
THERMAL CERAMICS INC — FireMaster FastWrap XL and FastWrap+ or Pyroscat Duct Wrap XL

2-Hour Rating; Duct A; Ventilation Duct With or Without Branches

- C. **Steel Banding Straps** — Min 1/2 in. (13 mm) wide by 0.015 in. (0.38 mm) thick stainless or carbon steel banding straps used in conjunction with min 1 in. (25 mm) long stainless steel crimp clips. Banding straps spaced a max 12 in. (305 mm) OC and 1-1/2 in. (38 mm) from edges of collars.
- C1. **Steel Pins** — (Not shown)—As an alternate to steel banding straps, for use with the butt joint collar technique, min 0.135 in. (3.4 mm) thick, 6 in. (152 mm) long steel insulation pins used in conjunction with 1-1/2 by 1-1/2 in. (38 by 38 mm) square or 1-1/2 in. (38 mm) diameter, 0.016 in. (.40 mm) thick, galvanized steel speed clips. Pins spaced 1-1/2 in. (38 mm) either side of the butt joint and 10 in. (254 mm) max, transversely around the duct, to secure the duct wrap and collar. Additional pins spaced 12 in. (305 mm) max between collars, required to support duct wrap on duct underside and to secure longitudinal lap. Pins installed in accordance with the manufacturers installation instructions.
- D. **Firestop System** — When the ventilation duct passes through a fire rated wall or floor assembly, the through openings shall be firestopped in accordance with System No. C-AJ-7012, C-AJ-7095 or W-J-7086. Ducts with a dimension greater than 39 in. (991 mm) shall be firestopped in accordance with System No. C-AJ-7012 or W-J-7086. See Through—Penetration Firestop Systems in Vol. 2 of the Fire Resistance Directory.
4. **Hanger System** — Trapeze support hangers shall be used and spaced a maximum of 60 in. (1500 mm) OC. Hanger rods or straps shall be anchored with steel drop in or wedge expansion type masonry anchors embedded to the depth required by the anchor manufacturer. No additional protection is required for hangers and supports meeting the requirements of the table below.

Hanger Cross Section	Maximum Perimeter of Duct, in. (m)	Trapeze Support
1 in. by 16 ga strap	100 (2.54)	
1/4 in. (6 mm) threaded rod	50 (1.27)	1-1/2 by 1-1/2 by 3/16 in. (38 by 38 by 4.8 mm) angle
3/8 in. (10 mm) threaded rod	150 (3.81)	1-1/2 by 1-1/2 by 3/16 in. (38 by 38 by 4.8 mm) angle
1/2 in. (13 mm) threaded rod	218 (5.54)	2 by 2 by 1/4 in. (51 by 51 by 6 mm) angle

*Bearing the UL Classification Mark