1. **Wall Assembly** - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

   A. **Studs** - Wall framing shall consist of steel channel studs. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC. Additional framing members shall be used to completely frame around opening.

   B. **Gypsum Board** - Min 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual Design. Max size of opening is 64 sq ft. (5.9 m²) with a max dimension of 98 in. (2.5 m).

      The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall in which it is installed.

2. **Steel Duct** - Max 92 by 96 in. (2.34 by 2.44 m) steel duct to be installed within the opening. The annular space between the steel duct and the periphery of the opening shall be min 0 in. (point contact) to max 1 in. (25 mm). The duct shall be constructed and reinforced in accordance with SMACNA construction standards. Steel duct to be rigidly supported on both sides of wall assembly.

2A. **Coated Ducts** - As an alternate to Item 2, max 60 by 60 in. (1524 by 1524 mm) steel duct coated with BW11 coating material. Duct sections shall be assembled using bolted flanges or SMACNA approved Transverse Joint Reinforcements. The annular space between the duct and the periphery of the opening shall be min 0 in. (point contact) to max 1 in. (25 mm). Duct to be rigidly supported on both sides wall assembly.

**FIRESPRAY INTERNATIONAL LTD** - FLAMEBAR BW11 fire rated ductwork
3. **Firestop System** - The firestop system shall consist of the following:

   **A. Fill, Void or Cavity Material** - Factory-supplied intumescent gasket installed and nominally centered to completely cover the outer surfaces of the steel retaining angles (Item 3B) as specified in the accompanying installation instructions.

   **SPECIFIED TECHNOLOGIES INC** - FyreFlange™ Firestop Gasket

   **B. Steel Retaining Angles** - Nom 2 by 2 by 0.035 in. (51 by 51 by 0.9 mm) thick steel angles to be installed flush to max 1/4 in. (6 mm) from each surface of the wall. Firestop angles shall be attached to the steel duct on both sides of wall with min No. 10 self-drilling, self-tapping steel screws spaced max 6 in. (152 mm) OC. As an option, angles may be installed over the optional insulation (Item 5) and attached to the duct by compressing the batt or blanket to the max extent possible using the steel screws. When the duct size is 24 by 48 in. (61 by 122 cm) or smaller, the corner clips (Item 3C) are optional.

   **C. Firestop Device** - A corner clip shall be installed at each corner of the duct on each side of the wall. Corner clips shall be attached to the steel duct and to the perpendicular leg of the abutting firestop angle with two min No. 10 self-drilling, self-tapping steel screws.

   **SPECIFIED TECHNOLOGIES INC** - FyreFlange™ Corner Clip

4. **Firestop Device** - (Not Shown) - As an option to the intumescent gasket and steel angles (Item Nos. 3A and 3B), a firestop device consisting of 2 by 2 by 0.035 in. (51 by 51 by 0.9 mm) thick steel angles furnished with an intumescent gasket material and corner clips may be used. Firestop angles to be installed flush to max 1/4 in. (6 mm) from each surface of the wall in accordance with the accompanying installation instructions. Firestop angles shall be attached to the steel duct on both sides of wall with min No. 10 self-drilling, self-tapping steel screws spaced max 6 in. (152 mm) OC. A corner clip shall be installed at each corner of the duct on each side of the wall. Corner clips shall be attached to the steel duct and to the perpendicular leg of the abutting firestop angle with two min No. 10 self-drilling, self-tapping steel screws. Two short lengths of firestop angle may be joined into a single length of the required size using a splice angle in accordance with the accompanying instructions. As an option, firestop angles may be installed over the optional insulation (Item No. 5) and attached to the duct by compressing the batt or blanket to the max extent possible using the steel screws. When the duct size is 24 by 48 in. (61 by 122 cm) or smaller, the corner clips (Item 3C) are optional.

   **SPECIFIED TECHNOLOGIES INC** - FyreFlange™ Firestop Angle, FyreFlange™ Corner Clip, FyreFlange™ Splice Angle

5. **Batts and Blankets** - (Optional, Not Shown) - Max 2 in. (51 mm) thick light density (min 3/4 pcf or 12 kg/m3) glass fiber insulation jacketed on the outside with a foil-scrim-kraft facing installed around steel duct after installation of the firestop device angles and abutting the wall surfaces. As an alternate, the insulation may be installed along the entire length of the duct, passing through the wall opening and compressed by the firestop angles. Longitudinal and transverse joints of insulation sealed with aluminum foil tape.

   See **Batts and Blankets** (BKNV) category in the Building Materials Directory for names of manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index 50 or less may be used.

   When nominal 2 in. (51 mm) thick nominal 3/4 pcf (12 kg/m3) density insulation is used, T Rating is 3/4 hr. Otherwise, T Rating is 0 Hr.

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