

INDOOR PHENOLIC DUCT SYSTEM SPECIFICATION

PART 1: PRODUCTS

1.0 PHENOLIC FOAM PRE-INSULATED DUCTWORK

- A. Ductwork System materials, including the panel, adhesive, tape, sealant, flanges and gasket to be certified by Underwriters' Laboratory standard as a Class 1 air duct (UL 181)
- B. The panel shall be manufactured of CFC-free phenolic foam thermo-bonded on both sides to a factory applied aluminum foil facing with a minimum thickness of 60 micron internal and 200 micron external. The standard panel is to be no less than 1.2" (30mm) in thickness.

PART 2: LOW AND MEDIUM PRESSURE DUCT CONSTRUCTION (up to 3 in. w.g.)

2.0 PHENOLIC FOAM PRE-INSULATED DUCT CONSTRUCTION

- A. Acceptable Manufacturers: AQC Insutries Pal Duct (www.aqcind.com)
- B. All duct construction shall strictly adhere to the following requirements:
 - 1. All duct segments to be fabricated, handled and installed in accordance with the manufacturer's Installation Instructions.
 - 2. Duct segments are to be constructed utilizing the V-groove method of fabrication which leaves the outer 200 micron aluminum liner in tact. All external seams shall be taped and all internal seams shall be fully sealed with an unbroken layer of adhesive or silicon as detailed by manufacturers Installation Instructions. Each duct segment shall be connected as required by manufacturer guidelines with manufacturer approved connectors in accordance with the manufacturers Installation Instructions. Duct reinforcement shall be applied to protect against side deformation from both positive and negative pressure per the manufacturers Installation Instructions based on ductwork size and system pressure.
 - 3. All fabricated duct segment fittings shall be designed in accordance with "SMACNA HVAC Duct Construction Standards" latest edition for non-metal ducts.

PART 3: DUCT INSTALLATION

3.0 PHENOLIC FOAM PRE-INSULATED DUCT INSTALLATION

- A. The contractor responsible for the fabrication and installation of the Phenolic foam pre-insulated ductwork.
- B. The Contractor shall be certified by the manufacturer of the Phenolic foam pre-insualted ductwork.
- C. Handling: Care shall be exercised in the handling and transport of duct segments in order to prevent objectionable aesthetic damage to the outer surface. Storage of duct segments shall be under cover and all material protected from the environment prior to installation.
- D. Installation: Duct segments shall be installed by authorized contractors in accordance with the manufacturers Installation Instructions. It is the responsibility of the contractor to ensure that the ductwork system is properly and adequately supported. It shall be the responsibility of the contractor to ensure that the chosen connection system is compatible with the specific ductwork system. Supports on straight runs of ductwork shall be positioned at centers

not exceeding 13 feet (3.96 m) for duct sections when fabricated in 13 foot (3.96 m) lengths with sides up to 46" (1168 mm). Larger duct sizes and short segments (4 feet long) (1220 mm) are supported at 6 foot centers or less, in accordance with the manufacturers Installation Instructions. Additionally, ductwork shall be supported at changes of direction, at branch duct connections, tee fittings, and all duct accessories such as dampers, etc. The load of such accessories to the ductwork shall be neutralized by the accessory support.

- E. Air Leakage: Duct air leakage rates to be in compliance with "SMACNA HVAC Duct Construction Standards" latest version per applicable leakage class based on pressure.
- F. Outdoor Installations: All externally mounted ductwork shall be protected against the elements with a weatherproof finish per the "Phenolic System Design Guide." The finish shall be either the standard 200 micron aluminum outer liner or VentureClad 1577CW or equal.
 - 1. Aluminum Clad: Duct segments shall incorporate 0.0079" (0.20 mm) minimum thickness aluminum sheet which is introduced during the fabrication process as detailed in the "Phenolic System Design Guide." All external seams and joints shall be fully sealed with clear silicon and foam tape. Supports and reinforcement shall both be per SMACNA.
 - 2. Duct segments shall incorporate 6.0 mils thickness 5-ply aluminum, zero permeability, absolute vapor barrier self adhesive jacketing. Jacketing can be externally applied after duct installation or introduced during the fabrication process as detailed in the "Phenolic System Design Guide". All external seams and joints shall be fully sealed with jacketing butt strips of equal material in accordance with the manufacturer installation guidelines. Acceptable Manufacturers: VentureClad 1577CW, High Cube HC2515 or approved equal.