

## SECTION 233115 - FLEXIBLE DUCTWORK

## PART 1-GENERAL

## 1.1 SECTION INCLUDES

- A. Flexible insulated HVAC ductwork.
- B. Flexible ductwork joint connections.

## 1.2 SUBMITTALS

- A. Submit shop drawings and product data per applicable Division I Specifications.
- B. Shop drawings shall include material pressure ratings and dimensions.

## 1.3 QUALITY ASSURANCE

- A. SMACNA HVAC Duct Construction Standards-Metal and Flexible.
- B. UL 181
- C. NFPA 90A and 90B.
- D. ASHRAE Handbook, HVAC Systems and Equipment.
- E. UL 191.
- F. Ductwork shall be sealed and leak tested as required by ASHRAE standard 90.1.

## PART 2-PRODUCTS

## 2.1 MANUFACTURERS – FLEXIBLE DUCT CONNECTORS

- A. Duro Dyne
- B. Ventfabrics
- C. Elgen
- D. Ductmate

## 2.2 COMPONENTS

- A. Flexible Duct Connectors
  - 1. Minimum 30 ounce neoprene coated fabric secured by bolted angles or band iron.
  - 2. Metal to metal contact shall not be permitted.

## 2.3 FLEXIBLE DUCTS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Flexmaster U.S.A., Inc.
  - 2. Thermaflex.
  - 3. Hart & Cooley Commercial.
- B. Non-insulated, Flexible Duct: UL 181, Class 1, 2-ply vinyl film supported by helically wound, spring-steel wire.
  - 1. Pressure Rating: 10-inch wg positive and 1.0-inch wg negative.
  - 2. Maximum Air Velocity: 4000 fpm.
  - 3. Temperature Range: Minus 10 to plus 160 deg F.
- C. Insulated, Flexible Duct: UL 181, Class 1, black polymer film supported by helically wound, spring-steel wire; fibrous-glass insulation; fire resistive vapor-barrier film.
  - 1. Pressure Rating: 4-inch wg positive and 0.5-inch wg negative.
  - 2. Maximum Air Velocity: 4000 fpm.
  - 3. Temperature Range: Minus 20 to plus 175 deg F.
  - 4. Insulation R-Value: Comply with ASHRAE/IESNA 90.1.
- D. Insulated, Flexible Duct: UL 181, Class 1, multiple layers of aluminum laminate supported by helically wound, spring-steel wire; fibrous-glass insulation; fire resistive vapor-barrier film.
  - 1. Pressure Rating: 10-inch wg positive and 1.0-inch wg negative.
  - 2. Maximum Air Velocity: 4000 fpm.
  - 3. Temperature Range: Minus 20 to plus 210 deg F.
  - 4. Insulation R-value: Comply with ASHRAE/IESNA 90.1.

## PART 3-EXECUTION

### 3.1 INSTALLATION

- A. Provide the flexible connections at ductwork connections to vibrating or rotating equipment, including fans.
- B. Install in accordance with manufacturer's instructions.
- C. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- D. Provide "Flexible" connections as noted on drawings between ducts and fans with 1" slack.
- E. No pipes or other obstructions shall pass through air ducts.

- F. All ducts at ceilings shall be run in such a manner as to maintain a maximum headroom in all rooms and corridors.
- G. Ducts must be installed at such times as the construction alterations of the building will permit or as required by the Architects.
- H. Connect diffusers to low pressure ducts with 5 feet maximum length of flexible duct held in place with strap or clamp.
- I. Connect flexible ducts to metal ducts with adhesive, plus stainless- steel draw bands. Maximum length shall be 5'-0" with no more than two 90 degrees elbows as installed. Connect to ducts with fittings with integral air extractor and balancing damper.

END OF SECTION 233115

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