

MEA No.: 181001

SECTION 15200 – HVAC - DUCTWORK AND ACCESSORIES

1.1 GENERAL

- A. All applicable requirements of SECTION 15000 - HEATING, VENTILATING AND AIR CONDITIONING, GENERAL shall apply to this entire Section and shall have the same force and effect as if fully included herein.

1.2 SCOPE

- A. This Section of the Specifications covers the furnishing of all labor, materials, equipment and services necessary for and incidental to the installation of all ductwork and accessories.

1.3 DUCTWORK

- A. Ductwork shall be fabricated and supported in accordance with the latest publication of Sheet Metal and Air Conditioning Contractor's National Association, Inc., (SMACNA) manual. All rectangular elbows shall have single thickness turning vanes. All branch ducts shall be constructed with 45 degree take-offs with balancing dampers. All duct joints shall be sealed air-tight with duct sealer manufactured by Hard Cast Incorporated of Dallas, Texas or approved equal. All duct devices shall be constructed of the same material as the duct in which they are installed.
- B. Duct supplies to grilles, registers and diffusers shall be installed to provide uniform airflow to the outlet. Provide control grids, volume extractors and/or turning vanes where two duct diameters of straight ductwork cannot be provided to the outlet.
- C. All supply air, outside air intakes, return air and general exhaust ductwork shall be galvanized steel, constructed and installed for pressures up to two-inches.
- D. Control grids shall be constructed with individually adjustable louvers, shall be spring tensioned to hold their setting and provide rattle-free performance with minimum noise and turbulence. Control grids shall be constructed of the same material as the ductwork and shall be as manufactured by Titus or approved equal.
- E. Volume extractors shall be constructed from two sets of individually adjustable blades to equalize flow and control volume to diffusers or registers. Volume control shall be accomplished by the upstream blades and the downstream blades shall be adjusted for uniform flow to the diffuser or register. Volume extractors shall be constructed of the same material as the ductwork and shall be as manufactured by Titus or approved equal.
- F. Double Wall Ductwork (exposed, spiral ductwork)
 - 1. Solid outer and inner wall as indicated.
 - a. Outer wall shall be galvanized steel designed for 2" pressures in accordance with SMACNA.
 - b. Insulation: One inch thick, three pound density fiberglass acoustical liner with fire resistant fiber bonding coating.
 - c. Inner wall: Minimum 18 gauge.

2. Acceptable manufacturers: McGill Airflow LLC, Semco or approved equal.
3. Perforated inner wall shall not be permitted.
4. Ductwork shall be painted to match adjacent finishes.

G. Flexible ductwork shall be UL 181 Class 1 complete with a 1-1/2-inch thick, R-5, insulating fiberglass blanket, foil faced vapor barrier and designed to withstand pressures up to six-inches positive pressure w.g. Ductwork shall be labeled as "flexible duct". Flexible duct runs shall be a maximum of five feet in length and shall be Type 5M-Insulated as manufactured by Flexmaster USA, Inc. or approved equal.

1.4 DUCT ACCESS DOORS

A. Duct access doors shall be provided at all coils, fire dampers, fire/smoke dampers, balancing dampers, automatic dampers, smoke detectors and other apparatus requiring service or inspection. Doors shall be constructed for the same static pressure class as the duct in which it is installed. Doors shall be 18 x 18 inches unless duct size will not accommodate this size; then, the doors shall be made as large as practical. Doors in insulated ducts shall be of the insulated type with a minimum of one-inch of fiberglass insulation. Doors shall be rigid with neoprene gaskets for frame-to-duct and frame-to-door, continuous piano hinges and cam locks. Doors shall be as manufactured by Ruskin or approved equal. Label all access doors associated with smoke dampers or fire dampers or combined smoke/fire dampers with letters not less than 0.5-inches in height reading: "Smoke Damper," or "Fire Damper," or "Fire/Smoke Damper" respectively.

1.5 DIFFUSERS

A. Ceiling diffusers shall be constructed of steel and be complete with opposed blade dampers. Diffusers shall be of the sizes and configurations as indicated on the Drawings. Diffusers shall have a baked-on enamel finish.

1.6 GRILLES

A. Return and exhaust grilles shall have fixed, heavy duty, horizontal face bars and plaster frames where required. Grilles shall be heavy duty all steel construction and shall have a baked on white enamel finish. Grilles shall be of the configurations and sizes indicated on the Drawings.

1.7 DAMPERS

A. Balancing dampers shall be multiple opposed blade type in square or rectangular ducts and butterfly type in round ducts. Damper shall be complete with locking quadrants and accessible operating mechanisms. Operating mechanisms shall be of the elevated type where located in insulated ducts. Dial regulators shall be Ventlok type, complete with die cast core, heavy gauge dial, 3/32-inch steel handle, 1/4-inch dial, open/shut identification and accessories and be manufactured by Ventfabrics, Inc. or approved equal. Provide elevated standoffs, matching insulation thickness for insulated ducts. Dampers shall be constructed of the same material as the duct in which they are installed except they shall be two gauges heavier. Individual blades in opposed blade dampers shall not exceed eight-inches in width.

B. Backdraft dampers in ductwork shall be extruded aluminum type designed for velocities up to 3500 FPM. Dampers shall have adjustable counterbalances. 0.125-inch wall thickness frame, 0.070-inch wall thickness blades with vinyl edge seals and Zytel bearings. Dampers shall be Ruskin Type CBD6 or approved equal.

- C. Automatic dampers, also referred to as motor operated dampers, shall be as specified in Section: AUTOMATIC TEMPERATURE CONTROLS and shall be installed by the Mechanical Contractor.
- D. Fusible link fire dampers shall be UL labeled dynamic shutter type with the blade storage section completely out of the air stream, conforming to NFPA. Dampers shall be installed in a manner to maintain the integrity of the fire partition. Dampers shall be complete with 22 gauge roll formed steel frame, 22 gauge steel blades, replaceable 165 degrees F fusible link, closure spring, and blade lock. All fire dampers shall be as manufactured by Air Balance Inc. or approved equal.

1.8 LOUVERS

- A. Existing louvers are to remain where indicated. Provide new motorized control dampers as indicated on the drawings.
- B. New louvers shall be as manufactured by Ruskin with model numbers and dimensions as noted on the drawings.

END OF SECTION 15200