

## SECTION 15880 - AIR DISTRIBUTION

### PART I - GENERAL

#### 1.01 DESCRIPTION

- A. Section 15050, Basic Mechanical Materials and Methods and Section 15250, Mechanical Insulation, shall be considered a part of these specifications.
- B. All licenses, stamping, approvals, and arrangements for work shall be obtained by the sheet metal contractor, at his expense, before any work has been started. Should any changes be necessary in the drawings or specifications to insure such approval, this contractor shall include in his base bid all costs for such changes, to comply with these departments before any work has been started, without additional cost to Walgreen Co.
- C. Scope of Work: The ventilation work includes, but is not limited to, the following:
  - 1. Air conditioning outside air ducts, return air ducts, insulation, grilles, supply air unit filters, fans, motors, supply air ducts, diffusers, manual dampers and fire dampers.
  - 2. Exhaust/ventilation system fans, blowers, ducts, grilles, diffusers, dampers, etc.
  - 3. Roof curbs required for duct openings through roof.

### PART II - PRODUCTS

#### 2.01 DUCTWORK

- A. Acceptable manufacturers of round spiral and oval spiral: Lindab, Semco, SSM Industries and United McGill.
- B. All round and oval duct and fittings shall be manufactured by a single company manufacturing these products for at least 10 years.
- C. Provide round spiral and/or oval spiral ductwork. Round spiral and oval spiral ductwork with longitudinal seams are not permitted. Mitered elbows are not permitted.
- D. Rectangular ductwork, sized for an equivalent pressure drop, may only be used in lieu of round or oval, on limited basis, and/or to clear structural interference.
- E. Ducts and fittings shall be constructed of galvanized steel and installed in accordance with the second edition – 1995 with Addendum No.1 dated November 1, 1997 of the "SMACNA HVAC Duct Construction Standards", for a positive static pressure class of 2.0 in. water column.
- F. Fiber ductwork or lined ductwork is not acceptable.
- G. Ductwork shall have sealed transverse joints and meet seal class "C". Rubber seals may be used in lieu of duct sealant.
- H. Ductwork shall comply with leak class 12, not to exceed 12 cfm per 100 sf of duct surface.

- I. For rectangular duct sizes, the first number indicates the side seen. The second number indicates the side not seen.
- J. Duct sizes, indicated on the drawings, are net inside clear dimensions.
- K. Air friction pressure drop shall not exceed 0.1 in WC per 100 linear feet.
- L. Air velocity in ductwork shall not exceed 1500 feet per minute.
- M. Flexible round ductwork shall be pre-insulated type with 1.5" thick insulation. Acceptable manufacturer is Wiremold type WK or Equal by ATCO, Flexmaster, Technaflex, Thermaflex Lindab, Semco and United McGill.
- N. The drawings do not attempt to show all offsets that are necessary for the required installation. Those offsets and similar items shall be provided at no additional cost to Walgreens.
- O. Where offsets are required, the angle of the offsets shall be as small as possible.

## 2.02 GRILLES, REGISTERS, AND DIFFUSERS

- A. Supply grilles, return grilles and ceiling diffusers: Acceptable manufacturers - Carnes, Krueger, Metal-Aire, Nailor, Price, Titus and Tuttle & Bailey.
- B. Supply air diffuser in lay-in ceilings shall not be installed directly adjacent to lighting fixtures.

## 2.03 LOUVERS & HOODS

- A. Fresh air intake, combustion air intake, and exhaust louvers will be furnished and installed by this contractor.
- B. Ducts ending above the roof shall be terminated with Greenheck GRS gravity hood with bird screen. Acceptable alternate manufacturers - Acme, Carnes, Cook, Jenn and Penn.

## 2.04 EXHAUST AND SUPPLY FANS

- A. Exhaust and supply fans and blowers as shown on drawings and schedule shall be furnished and installed by this contractor, unless noted otherwise.

## PART III - EXECUTION

### 3.01 INSTALLATION

- A. Ductwork shall be installed in sizes and in location as indicated on plans. Where square corners are used, they shall be provided with turning vanes. Spiral ductwork joints shall have sheet metal screws in connections.
- B. The ductwork system throughout the building shall be rigidly supported and so constructed as to eliminate vibration or any objectionable noise while the ventilation machinery is in operation.

- C. Where ducts pass through walls or floor openings, they shall be kept free of direct contact of building construction by supporting each side of opening. The space between duct and opening shall be closed by means of felt gaskets caulked in place, to comply with local fire codes, ordinances, etc.
- D. Deflectors: Wherever branches are taken off, provide deflectors or splitters to regulate the airflow. On each deflector, provide a regulator to lock the deflector in a fixed position, where accessible through access panel. Where not accessible through panel, provide a key-operated Young regulator with indicator and ceiling plate.
- E. Flexible Connections: Furnish and install on the suction and discharge side of all fans and units, at least 4 inches of 10 oz. canvas or equivalent vinyl with heavy clamping bands. Canvas connection to all roof-top units shall be as close to unit as possible, just below roof curb.
- F. Fire Dampers: Provide fire dampers in duct locations where required by local authority. Ducts shall be enlarged where fire dampers are installed to maintain the same airflow through damper frame as unobstructed run of duct. Provide access to service fire dampers.
- G. Belt Guards: For each belt drive, furnish a guard consisting of an angle iron frame with 1 inch mesh heavy wire guard supported and securely bolted in place, etc. to comply with local codes.
- H. Access Panels: Provide tight sheet metal access doors (with gasket, hinges, and locks), or where access to plenum spaces or ducts is necessary. Access doors shall be of adequate size and installed per local codes.
- I. Volume Controls for Balancing: Ample provision shall be made for control and for balancing the ventilation systems by installation of dampers, regulators, and controls.
- J. Dampers for exhaust and outside air shall be equipped with motorized dampers with a maximum leakage rate of 3 cfm/ft at 1.0 w.g. when tested in accordance with AMCA Standard 500. Such dampers shall be closed when fans are off.
- K. Painting: Paint all ductwork visible through grilles, registers, and diffusers a flat black.
- L. Duct Sealant: Use RCD #6 mastic with red glasscoat (or equivalent). Install per manufacturer's and UL181A & B recommendations for square and rectangular ductwork. Sealant is not required for spiral gasketed ductwork.

### 3.02 DUCTWORK CLEANING

- A. Ductwork shall be thoroughly cleaned by this contractor.
- B. Cleaning shall be done before any painting is done or acoustic ceiling installed.

END OF SECTION

