SECTION 15890

DUCTWORK

PART 1 GENERAL

1.1 Description

A. Description of the Work

The work to be performed in accordance with this Section includes all work associated with the installation and testing of all ductwork and other accessories associated with the project.

The work shall include the furnishing of all labor, tools, equipment, materials and performing all operations to install all ductwork and other accessories.

B. Related Work Specified Elsewhere

Ductwork Accessories.....Section 15910

1.2 Definitions

A. Duct Sizes: Inside clear dimensions. For lined ducts, maintain sizes inside lining.

B. SMACNA Pressure Class: All ducts are 2-inch w.g. pressure class, unless otherwise indicated on Drawings.

C. Seal Class: Seal Class 'C' for all ducts of pressure class 2-inch w.g. and less.

1.3 Regulatory Requirements

A. Construct ductwork to NFPA 90A and NFPA 91 and NFPA 96 Standards.

1.4 Submittals

A. Submit Shop Drawings and product data under provisions of Division 1, General Requirements, for all products specified in this Section.

B. Indicate duct fittings, particulars such as materials, gauges, sizes, welds, hangers and configuration prior to start of Work for all duct systems.

1.5 Delivery, Storage, and Handling

A. Deliver, store, and protect products under provisions of Division 1, General Requirements.

PART 2 MATERIALS

2.1 General

A. General: Non-combustible or conforming to UL 181 requirements for Class 0 air duct materials, unless otherwise indicated.

B. Aluminum Ducts: ASTM B209; aluminum sheet, Alloy 3003-H14. Aluminum Connectors and Bar Stock: Alloy 6061-T6 or of equivalent strength.

C. Steel Ducts: 316L stainless steel, spiral lockseam type. All welded joints to be pickled and passivated. Rated working pressure 3-inch w.g. positive and 0.5-inch w.g. negative, rated velocity 2,000 fpm minimum.

D. Fasteners: Rivets, bolts, or sheet metal screws, compatible with duct material.

E. Sealant: Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic.

F. Hangers and Hanger Rod: Select hanging system in accordance with SMACNA HVAC Duct Construction Standards; select hanger materials with corrosion resistance equal to or greater than the duct material.

2.2 Sheet Metal Ductwork

A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards and ASHRAE handbooks, except as indicated. Provide duct material, gauges, reinforcing, and sealing for operating pressures indicated.

B. No variation of duct configuration or sizes permitted except by written permission.

C. Construct T's, bends, and elbows with radius of not less than 1-1/2 times the width of the duct on centerline. Where there is insufficient space for radius elbows and where rectangular elbows are shown provide rectangular fittings with single thickness turning vanes.

D. Increase duct sizes gradually, not exceeding 15 degree divergence where possible. Divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.

E. Branch Connections and Take-offs: Rectangular with 45 degree entry or 45 degree diverging wye.

F. Connect flexible ducts to metal ducts using sheet metal collars and tape, plus draw bands. Seal collars to main duct with duct sealant.

G. Use double nuts and lock washers on threaded rod supports.

H. Use crimp joints, with or without bead, for joining round duct sizes 8-inches and smaller with crimp in direction of airflow.

I. Use double nuts and lock washers on threaded rod supports.

J. Construct and seal exterior ductwork in accordance with SMACNA HVAC Duct Construction Standards.

PART 3 EXECUTION

3.1 Installation

A. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

B. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

3.2 Adjusting and Cleaning

A. Clean duct system and force air at high velocity through duct to remove accumulated dust. Protect equipment, which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.

PART 4 MEASUREMENT AND PAYMENT

4.1 Measurement

A. No measurement will be made for this item, Ductwork.

4.2 Payment

A. Payment will be made at the contract lump sum price bid and shall be considered full payment for providing labor and materials to perform this work.

**** END OF SECTION 15890 ****