

## **SPECIFICATIONS**

### **23 31 13 – METAL DUCTS**

#### **TAG: Double Wall Supply Duct**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Factory-built double wall prefabricated supply duct used when supply duct systems are installed in unconditioned space inside and outside the building envelope.
- B. Factory-built prefabricated noise reducer used with supply duct.

##### **1.2 SUBMITTALS**

- A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the requirements of the project and meet Federal, State, and Local codes.
- B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

##### **1.3 QUALITY ASSURANCE**

- A. Double wall supply duct complies with ANSI (American National Standards Institute) and SMACNA (Sheet Metal and Air Conditioning Contractors) best practices.
- B. Supply duct noise reducers comply with ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers), ANSI (American National Standards Institute), and SMACNA (Sheet Metal and Air Conditioning Contractors) best practices.
- C. Noise reducer performance characteristics, including insertion loss, pressure drop, and generated noise, attained through testing in accordance with ASTM-E477 Standard Test Method for Laboratory Measurements of Acoustical and Airflow Performance of Duct Liner Materials and Prefabricated Silencers.
- D. All duct joint connections have been tested to Seal Class A, Leakage Class 1 specifications per SMACNA's HVAC Air Duct Leakage Test Manual. In the absence of local code testing procedures, use SMACNA's HVAC Air Duct Leakage Test Manual for inspection and testing guidelines.

##### **1.4 WARRANTY**

- A. All units shall be provided with the following standard warranties:
  - 1. Supply Duct Systems are warranted to be free from defects in material and workmanship, under normal use and service from the date of shipment. A Lifetime Warranty is included on Double Wall Supply Duct Sections.
  - 2. A 20-Year Warranty period is included for mechanical installation components such as; clamps, access doors, hardware, etc.
- B. This warranty shall not apply if:
  - 1. The equipment is not installed by a qualified installer per this installation guide; the operation manual should be kept with the equipment once installation is complete.

2. The equipment is not installed in accordance with Federal, State, Local codes, and regulations.
  3. The equipment design or sizing is not approved per MANUFACTURER'S specifications.
  4. The equipment is misused, neglected, or not maintained per the MANUFACTURER'S maintenance instructions.
  5. The equipment is exposed to elevated temperatures due to a fire originating in the building, supply duct, or Rooftop Unit (RTU).
  6. The equipment is not operated within its published capacity.
  7. The equipment is operated, tested, or stored in the presence of chlorines, solvents, refrigerant vapors, caustic substances, halogenated compounds, or other conditions that could cause condensation of corrosive materials within or on the system.
  8. The equipment is substituted or connected with parts not manufactured per Original Equipment Manufacturer.
  9. The invoice is not paid within the terms of the sales agreement.
- C. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 20-year warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL**

- A. Intended for use with Rooftop Units (RTU's) or Dedicated Outdoor Air Systems (DOAS) to deliver and diffuse supply air to the space.
- B. Noise reducers are intended for use with Perforated Supply Duct.

### **2.2 CONSTRUCTION – SUPPLY DUCT**

- A. Inner duct shall be constructed of .024" thick stainless steel for diameters 5" through 24" and .036" thick stainless steel for diameters 26" through 36".
- B. Outer duct section wall shall be constructed of stainless steel at a minimum of .024" thickness.
- C. Duct shall include layers of Microlite FSK formaldehyde-free fiberglass insulation between the inner and outer wall to meet specified R value requirements.
- D. Duct sections shall be held together by the means of a formed V clamp. V clamp hardware shall be of the hex-head type with flanged stops and tapered "lead in" threads.
- E. Duct joints shall be sealed with light-duty blended EPDM foam gasket.
- F. Alternate material .036" thick aluminized steel for inner duct diameters 5" through 36".
- G. Alternate material .024" thick aluminized steel for outer duct diameters shells 7" through 42". Failure to paint aluminized steel may result in surface rust build up.

## **2.3 CONSTRUCTION – NOISE REDUCERS**

- A. Inner duct shall be constructed of .030" thick perforated aluminized steel.
- B. Outer duct section wall shall be constructed of stainless steel at a minimum of .024" thickness.
- C. Noise Reducer shall include one layer of acoustic media equal to or less than the combustion ratings noted below when tested in accordance with ASTM-E84 or UL723:
  - 1. Flame Spread Classification: <25
  - 2. Smoke Development Rating: >50
- D. Noise Reducer joints shall be sealed with light-duty blended EPDM foam gasket.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. If unsatisfactory conditions exist, correct conditions prior to installation.

### **3.2 APPLICATION**

- A. Suitable for use in commercial and industrial space requiring double wall supply duct systems.

### **3.3 INSTALLATION**

- A. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.
- B. Double wall supply duct systems and supports should not be used in caustic environments, including coastal applications, consult the factory for additional information.

### **3.4 CONNECTIONS**

- A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of piping, fittings, and specialties. Install the duct system to allow service and maintenance.
- B. Duct installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of ducts.