

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1        Section 23 05 00 – Common Work Results for HVAC.
- .2        Section 23 05 49.01 – Seismic Restraint System (SRS).

**1.2                REFERENCES**

- .1        ANSI/ASHRAE 70-2006 (RA 2011), Standard Method of Testing the Performance of Air Outlets and Air Inlets

**1.3                ACTION AND INFORMATIONAL SUBMITTALS**

- .1        Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2        Product Data:
  - .1        Submit manufacturer's instructions, printed product literature and data sheets for diffusers, registers and grilles and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2        Indicate following:
    - .1        Capacity.
    - .2        Throw and terminal velocity.
    - .3        Noise criteria.
    - .4        Pressure drop.
    - .5        Neck velocity.

**1.4                MAINTENANCE MATERIAL SUBMITTALS**

- .1        Where materials or products are specified by their trademark, consult the Instructions to Bidders document for the procedures to follow regarding the request for approval for materials or product replacement.
- .2        Extra Materials:
  - .1        Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
  - .2        Include:
    - .1        Keys for volume control adjustment.
    - .2        Keys for air flow pattern adjustment.

**1.5                DELIVERY, STORAGE AND HANDLING**

- .1        Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements according to manufacturer's written instructions.
- .2        Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3        Storage and Handling Requirements:

- .1 Store materials off ground, indoors, in dry location or in a clean, dry and well-ventilated area, in accordance with manufacturer's recommendations.
- .2 Store and protect diffuser, registers and grilles from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.

## **Part 2 Products**

### **2.1 SYSTEM DESCRIPTION**

- .1 Performance Requirements:
  - .1 Catalogued or published ratings for manufactured items: obtained from tests carried out by manufacturer or those ordered by manufacturer from independent testing agency signifying adherence to codes and standards.

### **2.2 GENERAL**

- .1 Products to meet capacity, pressure drop, terminal velocity, throw, noise level and neck velocity as indicated.
- .2 Dimensions are in nominal values.
- .3 Crossings fire partitions must be fitted with steel pipe sleeves connected to the frame and secured in accordance with NFPA 90A. Crossings fire walls must be fitted with steel pipe sleeves of 3.4 mm (10 gauge) thick, with built in steel angles, according to NFPA 90A.
- .4 Frames:
  - .1 Full perimeter gaskets.
  - .2 Plaster frames where set into plaster or gypsum board.
  - .3 Concealed fasteners.
- .5 Concealed manual volume control damper operators.
- .6 Colour: as indicated.

### **2.3 MANUFACTURED UNITS**

- .1 Grilles, registers and diffusers of same generic type and from same manufacturer.

### **2.4 SUPPLY GRILLES AND REGISTERS**

- .1 19 mm (¾") border and double deflection louvers, aerodynamically shaped, vertically mounted or on horizontal support rods, opposed louver dampers with concealed control damper operators, with gasket.
- .2 Characteristics : as indicated

### **2.5 RETURN AND EXHAUST GRILLES AND REGISTERS**

- .1 19 mm (¾") border and single deflection louvers, aerodynamically shaped, mounted on horizontal support rods, with 45° opening angle, opposed louver dampers with concealed control damper operators, with rubber gasket.

- .2 Characteristics : as indicated.

## **2.6 DIFFUSERS**

- .1 General: volume control dampers with flow straightening device, blank-off quadrants and gasket.
- .2 Characteristic: as indicated.

## **2.7 LINEAR GRILLES**

- .1 Bar core type with margin as indicated.
- .2 Plaster frame, sealing strip and accessories as indicated. Finish and model as indicated.
- .3 Air volume control damper with concealed adjustment.
- .4 Floor grilles to be capable of supporting 90 kg point load weight between supports with negligible deflection and are heel proof.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for diffuser, register and grille installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.2 INSTALLATION**

- .1 Install in accordance with manufacturers instructions.
- .2 Where fixation elements are visible, install with oval head cadmium plated screws in countersunk holes.

### **3.3 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

- .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**END OF SECTION**