

## SECTION 23 37 13

### DIFFUSERS, REGISTERS, AND GRILLES

#### 1.0 GENERAL

##### 1.01 DESCRIPTION

- A. All work specified in this Section is governed by the Common Work Results for HVAC Section 23 05 00.
- B. This Section 23 37 13 and the accompanying drawings cover the provisions of all labor, equipment, appliances and materials, and performing all operations in connection with the construction and installation of air distribution devices as specified herein and as shown. These units include, but are not limited to the following:
  - 1. Ceiling Diffusers (CD)
  - 2. Return Air Grilles (RAG)
  - 3. Supply Registers (SR)
  - 4. Return Air Registers (RAR)

##### 1.02 INTENT

- A. It is the intent of this Section of the specifications to provide complete, operable, adjusted air distribution devices as shown and specified which are free of excessive noise, vibration and airflow fluctuations.

##### 1.03 SELECTION CRITERIA

- A. All air distribution devices shall be selected in accordance with the following minimum criteria unless otherwise noted below or on the drawings:
  - 1. Method of mounting shall be compatible with the ceiling, wall or duct surface which it mounts on or in; i.e. lay-in, surface mounting, plaster frame, duct collar, etc. The architectural drawings shall be referenced to determine the mounting method for each device. All flanges on surface mounted devices shall be provided with a gasket.
  - 2. Finish of all ceiling mounted devices shall be selected to match the color of the adjacent ceiling. Finish of all wall mounted devices shall be primer which is compatible with the finish coating specified for the adjacent wall; finish coat will be applied under Division 9.

##### 1.04 BASIS OF DESIGN

- A. The basis of design is Titus. Any proposed substitutions shall be proven equal in

all respects to the equipment specified as the basis of design. Any modifications to ductwork, controls, ceilings, building structure, etc., that result from any substitution shall be coordinated with all trades. This coordination shall occur before delivery of equipment and any modifications shall be performed without incurring additions to the Contract.

## 1.05 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers are Price, Carnes, Metal Aire, Krueger, Nailor, and Titus, provided that their units, performance, appearance and physical characteristics are equal in all respects for this specific project.

## 2.0 PRODUCTS

### 2.01 DESCRIPTION

#### A. Ceiling Diffusers (CD)

- 1. Ceiling diffusers shall be perforated face diffusers equipped with fully adjustable pattern controls, capable of providing one-way, two-way, two-way corner, three-way, and four-way air patterns; Titus PAS. Diffuser performance data shall be in accordance with ADC equipment test code 162R4. The perforated face shall be hinged for easy access to pattern controls and duct accessories. The maximum NC level at design airflow shall not exceed 35 when measured in a direct field 5'-0" from the face of the device.
- 2.

#### B. Return Air Grilles (RAG)

- 1. Return air grilles shall match the ceiling diffusers in the area or shall be hollow core, perforated face, lay-in type, selected to match the CDs; with the largest neck size available UON Titus PAR. Opposed blade dampers shall be provided with each RAG. Performance data shall be in accordance with ADC 162R4. All other characteristics shall be equal to the ceiling diffusers.

#### C. Supply Registers (SR)

- 1. Supply registers shall be surface mounted, steel with aluminum blades, adjustable double-deflection type complete with opposed blade dampers for balancing purposes. The outermost set of deflection blades shall be parallel to the long dimension of the SR and the innermost set of deflection blades shall be parallel to the short dimension of the SR. The

registers shall be tested in accordance with ADC standards and shall be selected to provide design airflow at a maximum NC of 35. SRs shall be Titus 272R.

D. Return Air Registers (RAR)

1. Return air registers shall be surface mounted, steel registers with curved hemmed edge blades with an opposed blade damper. Damper blades shall be gang operated by means of a key which can be removed after balancing. RARs shall be Titus 350ZRL (steel), except RARs shown on the return air boot detail with upturned blades shall be Titus 350RL, sized as indicated.

### 3.0 EXECUTION

#### 3.01 INSTALLATION

- A. Air distribution devices shall be installed as indicated and in conformance with the manufacturer's recommendations. The color, frame, and border types shall be coordinated with Architectural requirements and shall be selected to install in the finished surface indicated.
- B. All air distributions devices to be reused shall be installed the same way as indicated for new devices. All existing color, frame, and border types shall modified as required to match new device requirements.
- C. All air distribution devices with blade orientations shall be coordinated with Architect. Specific attention is called to devices in exposed ceiling areas, including wall-mounted.

#### 3.02 ADJUSTMENT

- A. Grilles, registers, diffusers, etc. shall be tested and adjusted to provide the scheduled air flow capacities.
- B. All devices shall have adjustable and accessible volume dampers. Where dampers are not or will not be accessible without access panels, provide and install remote balancing cable control system, Young Regulator or equal. Adjustment shall be from the face of the air distribution device, coordinated with the Air Distribution Manufacturer. Coordinate the location and size of the damper with the installation.
- C. In all slot diffuser applications, the inactive sections of the slot shall be finished with perforated steel, painted flat black, selected to match the SDs. These sections shall be open to the plenum as a return air path. Inactive sections shall have an insulated light shield.

END OF SECTION