

## SECTION 15940 - DIFFUSERS, REGISTERS, AND GRILLES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Square ceiling diffusers.
  - 2. Fixed face registers and grilles.
  - 3. Rectangular VAV diffusers
  - 4. Laminar Flow Diffusers.
- B. Related Sections:
  - 1. Division 15 Section "Air Duct Accessories" for volume-control dampers not integral to diffusers, registers, and grilles.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated, include the following:
  - 1. Data Sheet: Indicate materials of construction, finish, and mounting details; and performance data including throw and drop, static-pressure drop, and noise ratings.
  - 2. Diffuser, Register, and Grille Schedule: Indicate drawing designation, room location, quantity, model number, size, and accessories furnished.

### PART 2 - PRODUCTS

- A. Square Ceiling Diffusers – S-1, S-4:
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. A-J Manufacturing Co., Inc.
    - b. Anemostat Products; a Mestek company.
    - c. Carnes.
    - d. Hart & Cooley Inc.
    - e. Krueger.
    - f. METALAIRE, Inc.
    - g. Nailor Industries Inc.
    - h. Price Industries.
    - i. Titus.
    - j. Tuttle & Bailey.
  - 2. Devices shall be specifically designed for variable-air-volume flows.
  - 3. Material: Steel.
  - 4. Finish: Baked enamel, white.

5. Face Size: 24 by 24 inches (600 by 600 mm) or 12 by 12 inches (300 by 300 mm) – refer to the schedule on the drawings.
6. Face Style: Plaque.
7. Mounting: Surface or T-bar – as dictated by ceiling construction.
8. Pattern: Adjustable.
9. Dampers: None
10. Accessories:
  - a. Plaster ring.
  - b. Sectorizing baffles.

B. Square Heating/Cooling Thermally Powered VAV Ceiling Diffusers – S-2:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. A-J Manufacturing Co., Inc.
  - b. Anemostat Products; a Mestek company.
  - c. Carnes.
  - d. Hart & Cooley Inc.
  - e. Krueger.
  - f. METALAIRE, Inc.
  - g. Nailor Industries Inc.
  - h. Price Industries.
  - i. Titus.
  - j. Tuttle & Bailey.
2. Devices shall be specifically designed for variable-air-volume flows.
3. Device shall be thermally powered to vary the supply air to the space
4. Material: Steel.
5. Finish: Baked enamel, white.
6. Face Size: 24 by 24 inches (600 by 600 mm) – refer to the schedule on the drawings.
7. Face Style: Plaque.
8. Mounting: Surface or T-bar – as dictated by ceiling construction.
9. Pattern: 360 degrees.
10. Dampers: Variable aperture damper (control disc)
11. Accessories:
  - a. Thermal room sensing element (heating/cooling) located behind induction cap in center of diffuser panel.

C. Square Ceiling Laminar Flow Diffuser – S-3,

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. A-J Manufacturing Co., Inc.
  - b. Anemostat Products; a Mestek company.
  - c. Carnes.
  - d. Hart & Cooley Inc.
  - e. Krueger.
  - f. METALAIRE, Inc.
  - g. Nailor Industries Inc.
  - h. Price Industries.
  - i. Titus.
  - j. Tuttle & Bailey.

2. Devices shall be specifically designed for variable-air-volume flows.
3. Material: Steel.
4. Finish: Baked enamel, white.
5. Face Size: 24 by 24 inches (600 by 600 mm) or 12 by 12 inches (300 by 300 mm) – refer to the schedule on the drawings.
6. Face Style: Perforated for laminar flow.
7. Mounting: Surface or T-bar – as dictated by ceiling construction.
8. Pattern: Adjustable.
9. Dampers: None

## 2.2 REGISTERS AND GRILLES

### A. Fixed Face Grille – R-1 & T-1:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. A-J Manufacturing Co., Inc.
    - b. Anemostat Products; a Mestek company.
    - c. Carnes.
    - d. Dayus Register & Grille Inc.
    - e. Hart & Cooley Inc.
    - f. Krueger.
    - g. Nailor Industries Inc.
    - h. Price Industries.
    - i. Titus.
    - j. Tuttle & Bailey.
  2. Material: Steel
  3. Finish: Baked enamel, white.
  4. Face Arrangement: 1/2-by-1/2-by-1/2-inch (13-by-13-by-13-mm) grid core.
  5. Core Construction: Integral.
  6. Frame: 1-1/4 inches (32 mm) wide.
- Mounting: Surface or T-bar – as dictated by ceiling construction.

## 2.3 SOURCE QUALITY CONTROL

- A. Verification of Performance: Rate diffusers, registers, and grilles according to ASHRAE 70, "Method of Testing for Rating the Performance of Air Outlets and Inlets."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas where diffusers, registers, and grilles are to be installed for compliance with requirements for installation tolerances and other conditions affecting performance of equipment.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install diffusers, registers, and grilles level and plumb.
- B. Ceiling-Mounted Outlets and Inlets: Drawings indicate general arrangement of ducts, fittings, and accessories. Air outlet and inlet locations have been indicated to achieve design requirements for air volume, noise criteria, airflow pattern, throw, and pressure drop. Make final locations where indicated, as much as practical. For units installed in lay-in ceiling panels, locate units in the center of panel. Where architectural features or other items conflict with installation, notify Architect for a determination of final location.
- C. Install diffusers, registers, and grilles with airtight connections to ducts and to allow service and maintenance of dampers and air extractors.

### 3.3 ADJUSTING

- A. After installation, adjust diffusers, registers, and grilles to air patterns indicated, or as directed, before starting air balancing.

END OF SECTION 15940