

## **SECTION 23 37 13 - DIFFUSERS, REGISTERS, AND GRILLES**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes ceiling- and wall-mounted diffusers, registers, and grilles.

#### **1.2 SUBMITTALS**

- A. Product Data: For each 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**

#### **2.1 DIFFUSERS, REGISTERS, AND GRILLES**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following or approved equal
1. Anemostat; a Mestek Company.
  2. Carnes.
  3. Krueger.
  4. METALAIRE, Inc.; Metal Industries Inc.
  5. Nailor Industries of Texas Inc.
  6. Price Industries.
  7. Titus.
  8. Tuttle & Bailey.

#### **2.2 GRILLES AND REGISTERS**

- A. Adjustable Bar **[Grille]** **[Register]**:
1. Material: **[Steel]** **[Aluminum]**.
  2. Finish: **[Baked enamel, white]** **[Baked enamel, color selected by Owner's Representative]**.
  3. Face Blade Arrangement: **[Adjustable horizontal]** **[Adjustable vertical]** spaced 3/4 inch apart. Face blade parallel to the **[short]** **[long]** dimension of the grille.
  4. Rear Blade Arrangement: **[Adjustable horizontal]** **[Adjustable vertical]** spaced 3/4 inch apart.

5. Frame: 1-1/4 inch wide.
6. Mounting: Countersunk screw.
7. Damper Type: [**Adjustable opposed-blade assembly**].

B. Fixed Face Bar [**Grille**] [**Register**]:

1. Material: [**Steel**] [**Aluminum**].
2. Finish: [**Baked enamel, white**] [**Baked enamel, color selected by Owner's Representative**].
3. Face Blade Arrangement: Fixed horizontal parallel to the long dimension of the grille spaced 1/2 inch apart.
4. Frame: 1-1/4 inch wide.
5. Mounting: Countersunk screw.
6. Damper Type: Adjustable opposed blade assembly.

C. Eggcrate Fixed Face [**Grille**] [**Register**]:

1. Material: [**Steel**] [**Aluminum**].
2. Finish: [**Baked enamel, white**] [**Baked enamel, color selected by Owner's Representative**].
3. Face Arrangement: [**1/2 by 1/2 by 1 inch grid core**].
4. Frame: 1-1/4 inch wide.
5. Mounting: Countersunk screw.
6. Damper Type: [**Adjustable opposed-blade assembly**].

## 2.3 CEILING DIFFUSER OUTLETS

A. Round Ceiling Diffuser:

1. Material: [**Steel**] [**Aluminum**].
2. Finish: [**Baked enamel, white**] [**Baked enamel, color selected by Owner's Representative**].
3. Face Style: [**Four**] [**Three**] [**Two**] cone.
4. Pattern: [**Fully adjustable**] [**Two position horizontal**].
5. Dampers: [**Radial opposed blade**] [**Butterfly**] [**Combination damper and grid**].
6. Accessories:
  - a. Equaling grid.
  - b. Plaster ring.
  - c. Safety chain.
  - d. Sectorizing baffles.

B. Rectangular and Square Ceiling Diffusers:

1. Material: [**Steel**] [**Aluminum**].
2. Finish: [**Baked enamel, white**] [**Baked enamel, color selected by Owner's Representative**].
3. Face Size: 24 by 24 inches.
4. Face Style: [**Three cone**] [**Four cone**] [**Plaque**].

5. Mounting: [**Surface**] [**T-bar**] [**Snap in**] [**Spline**] [**Mounting panel**].
6. Pattern: [**Fixed**] [**Two position**] [**Adjustable**].
7. Dampers: [**Radial opposed blade**] [**Butterfly**] [**Combination damper and grid**].
8. Accessories:
  - a. Equaling grid.
  - b. Plaster ring.
  - c. Safety chain.
  - d. Sectorizing baffles.

C. Louver Face Diffuser:

1. Material: [**Steel**] [**Aluminum**].
2. Finish: [**Baked enamel, white**] [**Baked enamel, color selected by Owner**].
3. Face Size: 24 by 24 inches.
4. Mounting: [**Surface**] [**Surface with beveled frame**] [**T-bar**] [**Snap in**] [**Spline**] [**Mounting panel**].
5. Pattern: [**One-way**] [**Two-way**] [**Two-way corner**] [**Three-way**] [**Four-way**].
6. Dampers: [**Radial opposed blade**] [**Butterfly**] [**Combination damper and grid**].
7. Accessories:
  - a. Square to round neck adaptor.
  - b. Throw reducing vanes.
  - c. Equaling grid.
  - d. Plaster ring.
  - e. Safety chain.
  - f. Sectorizing baffles.

2.4 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 and grilles are to be installed for compliance with requirements for installation tolerances and other conditions affecting performance of equipment. Do not proceed with installation until 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 practicable. 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 Owner's Representative for a determination of final location.
- C. Duct-Mounted Supply and Exhaust/Return Grilles: Mount to duct branch with 16 gauge steel angle collar. Mounting screws to match grille frame. Screws shall not protrude more than 1/4 inch past angle collar.
- D. Install diffusers, registers, and grilles with airtight connections to ducts and to allow service and maintenance of dampers, air extractors, and fire dampers.

### 3.3 ADJUSTING

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

### 3.4 CLEANING

- A. After installation of diffusers and grilles, inspect exposed finish. Clean exposed surfaces to remove burrs, dirt, and smudges. Replace diffusers and grilles that have damaged finishes.

**END OF SECTION 23 37 13**