

SECTION 23 37 13 – DIFFUSERS, REGISTERS, AND GRILLES



1.1 RELATED DOCUMENTS

- A. The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions) and Division 00 and 01 as appropriate, apply to the Work specified in this Section.
- B. Refer to all Sections, as well as the Specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding all work.

1.2 SCOPE OF WORK

- A. Section Includes:
 - 1. Rectangular and square ceiling diffusers.
 - 2. Louver face diffusers.
 - 3. Linear bar diffusers.
 - 4. Linear slot diffusers.
 - 5. Adjustable bar, registers and grilles
 - 6. Eggcrate Grille with Filter Frames

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.
- B. Samples for Initial Selection: For diffusers, registers, and grilles with factory-applied color finishes.
- C. Samples for Verification: For diffusers, registers, and grilles, in manufacturer's standard sizes to verify color selected.
- D. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from Installers of the items involved:
 - 1. Ceiling suspension assembly members.
 - 2. Method of attaching hangers to building structure.
 - 3. Size and location of initial access modules for acoustical tile.
 - 4. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
 - 5. Duct access panels.
 - a. Source quality-control reports.

2.1 CEILING DIFFUSERS

- A. Rectangular and Square Ceiling Diffusers:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - i. Anemostat Products; a Mestek company.
 - ii. Krueger.
 - iii. METALAIRE, Inc.
 - iv. Nailor Industries Inc.

- v. Price Industries.
 - vi. Titus.
- 2. Devices shall be specifically designed for variable-air-volume flows.
- 3. Material: Aluminum.
- 4. Finish: White baked enamel, unless noted otherwise.
- 5. Face Size: See Plans.
- 6. Face Style: Three cone.
- 7. Mounting: Surface T-bar
- 8. Pattern: Fixed
- 9. Dampers: Radial opposed blade.

2.2 REGISTERS AND GRILLES

A. Adjustable Bar Register:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - i. Anemostat Products; a Mestek company.
 - ii. Krueger.
 - iii. METALAIRE, Inc.
 - iv. Nailor Industries Inc.
 - v. Price Industries.
 - vi. Titus.
- 2. Material: Aluminum.
- 3. Finish: Baked enamel, white.
- 4. Face Blade Arrangement: Horizontal spaced 3/4 inches apart.
- 5. Core Construction: Removable.
- 6. Rear-Blade Arrangement: Vertical spaced 3/4 inch apart.
- 7. Frame: 1 inch wide.
- 8. Mounting Frame: Filter
- 9. Mounting: Countersunk screw or Lay in.
- 10. Damper Type: Adjustable opposed blade.
- 11. Accessories:
 - a. Front-blade gang operator.

B. Adjustable Bar Grille:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - i. Anemostat Products; a Mestek company.
 - ii. Krueger.
 - iii. METALAIRE, Inc.
 - iv. Nailor Industries Inc.
 - v. Price Industries.
 - vi. Titus.
- 2. Material: Aluminum
- 3. Finish: White baked enamel, unless noted otherwise.
- 4. Face Blade Arrangement: Horizontal spaced 3/4 inches apart.
- 5. Core Construction: Integral
- 6. Rear-Blade Arrangement: Vertical spaced 3/4 inch apart.
- 7. Frame: 1 inch wide.
- 8. Mounting: Countersunk screw or Lay in.

C. Eggcrate Grille with Filter Frames:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - i. Anemostat Products

- ii. Krueger
 - iii. METALAIRE, Inc.
 - iv. Nailor Industries Inc.
 - v. Price Industries
 - vi. Titus
2. Material: Aluminum Grid and border with filter frame
 3. Finish: White baked enamel, unless noted otherwise. Finish shall be an anodic acrylic paint, baked at 315°F for 30 minutes.
 4. Mounting: Countersunk screw
 5. Return grilles must provide a free area of at least 90%.
 6. Outer borders shall be constructed of heavy extruded aluminum with a thickness of 0.040-0.050 inch and shall have countersunk screw holes for a neat appearance.
 7. Border width shall be 1¼ inches on all sides and shall be interlocked at the four corners and mechanically staked to form a rigid frame.
 8. Aluminum grid shall be ½ x ½ x ½ inch. Grille shall be provided with a filter frame for a standard 1-inch filter to fit the specified duct size.
 9. The manufacturer shall provide published performance data for the grille.
 10. The grille shall be tested in accordance with ANSI/ASHRAE Standard 70-1991.

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."

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, 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.

END OF SECTION 23 37 13