

SECTION 233713 - DIFFUSERS, AND GRILLES

PART 1 - GENERAL

1.1 STIPULATIONS

- A. The specifications sections “General Conditions of the Construction Contract”, “Special Conditions”, and “Division 1 – General Requirements” form a part of this Section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 RELATED DOCUMENTS

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

1.3 SUMMARY

- A. Section Includes:
 - 1. Square ceiling diffusers.
 - 2. Fixed face Grilles.
 - 3. Transfer Grilles.
- B. Related Sections:
 - 1. Division 08 Section "Louvers and Vents" for fixed and adjustable louvers and wall vents, whether or not they are connected to ducts.
 - 2. Division 23 Section "Air Duct Accessories" for dampers and volume-control dampers not integral to diffusers, registers, and grilles.

1.4 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

2.1 CEILING DIFFUSERS

- A. Square Ceiling Diffusers:

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Carnes.
 - b. Hart & Cooley Inc.
 - c. Krueger.
 - d. METALAIRE, Inc.
 - e. Nailor Industries Inc.
 - f. Tuttle & Bailey.
 - g. Or Approved Equal.
2. Devices shall be specifically designed for variable-air-volume flows.
3. Material: Aluminum.
4. Finish: Baked enamel, white
5. Face Size: 12 by 12 and 24 by 24 inches (See Drawings).
6. Face Style: Three cone.
7. Mounting: Lay-In, Surface Mounted and Duct-Mounted (See Drawings).
8. Pattern: Fixed

B. Drum Louver (Duct Mounted Diffuser):

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Air Research Diffuser Products, Inc.
 - b. Anemostat Inc.
 - c. Carnes.
 - d. Hart & Cooley Inc.
 - e. Krueger.
 - f. METALAIRE, Inc.
 - g. Nailor Industries Inc.
 - h. Price Industries.
 - i. Titus.
 - j. Tuttle & Bailey.
 - k. Or Approved Equal.
2. Airflow Principle: Extended distance for high airflow rates.
3. Material: Aluminum, heavy gage extruded.
4. Finish: White baked acrylic.
5. Border: 1-1/4-inch width with countersunk screw holes.
6. Gasket between drum and border.
7. Body: Drum shaped; adjustable vertically.
8. Blades: Individually adjustable horizontally.
9. Mounting: Surface to duct.
10. Inlet Width: As shown on drawings.
11. Inlet Length: As shown on drawings.
12. Accessories:
 - a. Opposed-blade volume control aluminum damper.
 - b. Duct-mounting collars with countersunk screw holes.
 - c. Pole Operator for vertical adjustment.

2.2 REGISTERS AND GRILLES

A. Fixed Blade Grille:

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Carnes.
 - b. Dayus Register & Grille Inc.
 - c. Anemostat, Inc.
 - d. Hart & Cooley Inc.
 - e. Krueger.
 - f. Nailor Industries Inc.
 - g. Tuttle & Bailey.
 - h. Or Approved Equal.
2. Material: Aluminum.
3. Finish: Baked enamel, white
4. Blade Arrangement: Horizontal, Long, 1/2-inch spacing, 45° deflection.
5. Frame: 1-1/4 inches wide.
6. Mounting: Countersunk screw

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 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.

3.2 ADJUSTING

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

END OF SECTION 233713