

SECTION 15855 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes ceiling- and wall-mounted registers, and grilles.
- B. Related Sections include the following:
 - 1. Division 15 Section "Ducts" for fire dampers and volume-control dampers not integral to registers, and grilles.
 - 2. Division 15 Section "Testing, Adjusting, and Balancing" for balancing diffusers, registers, and grilles.

1.3 DEFINITIONS

- A. Diffuser: Circular, square, or rectangular air distribution outlet, generally located in the ceiling and comprised of deflecting members discharging supply air in various directions and planes and arranged to promote mixing of primary air with secondary room air.
- B. Grille: A louvered or perforated covering for an opening in an air passage, which can be located in a sidewall, ceiling, or floor.
- C. Register: A combination grille and damper.

1.4 SUBMITTALS

- A. Product Data: For each model indicated, include the following:
 - 1. Data Sheet: For each type of air outlet and inlet, and accessory furnished; indicate construction, finish, and mounting details.
 - 2. Performance Data: Include throw and drop, static-pressure drop, and noise ratings for each type of air outlet and inlet.
 - 3. Schedule of diffusers, registers, and grilles indicating drawing designation, room location, quantity, model number, size, and accessories furnished.
 - 4. Assembly Drawing: For each type of air outlet and inlet; indicate materials and methods of assembly of components.
- B. Coordinate locations with reflected ceiling plans and wall elevations as applicable.

1.5 QUALITY ASSURANCE

- A. Product Options: Drawings and schedules indicate specific requirements of diffusers, registers, and grilles and are based on the specific requirements of the systems indicated. Other manufacturers' products with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."

- B. NFPA Compliance: Install diffusers, registers, and grilles according to NFPA 90A, "Standard for the Installation of Air-Conditioning and Ventilating Systems."

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Diffusers, registers, and grilles are scheduled on Drawings.
- B. Testing: Test performance according to ASHRAE 70, "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- C. Square ceiling diffusers shall be TITUS Model TMS (steel) of the sizes and mounting types shown on the plans and outlet schedule. The TMS models shall have three cones, which give a uniform face size and appearance when different neck sizes are used in the same area. All cones shall be one piece precision die-stamped; the back cone shall also include an integrally drawn inlet (welded-in inlets and corner joints are not acceptable). The two inner cones shall be constructed as a single, removable inner cone assembly for easy installation and cleaning. The inner cone assembly must have a hole with removable plug in the center to allow quick adjustment of an optional inlet damper without removing the inner cone assembly. Diffusers shall be constructed of 24 gauge steel (TMS). The finish shall be #26 white. The finish shall be an anodic acrylic paint, baked at 315° F for 30 minutes.
- D. Return/Exhaust Grille
 1. Return/Exhaust Grille, 35-degree angle fixed horizontal blades, 3/4" spacing; surface-mount or lay-in as scheduled; Steel (Titus 350RL) or Aluminum (Titus 350FL). Register version: provide with opposed blade damper.
 2. Return/Exhaust/Transfer Ceiling Grille, 1/2" x 1/2" x 1/2" grid core with a 1-1/4" wide border on all sides; surface-mount or lay-in as scheduled; Steel or Aluminum as scheduled.

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. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install registers, and grilles level and plumb, according to manufacturer's written instructions, Coordination Drawings, original design, and referenced standards.
- B. Ceiling-Mounted Inlets: Drawings indicate general arrangement of ducts, fittings, and accessories. Air 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 the panel. Where architectural features or other items conflict with installation, notify Architect for a determination of final location.

- C. Install registers, and grilles with airtight connection to ducts.

3.3 ADJUSTING

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

3.4 CLEANING

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

END OF SECTION 15855