

Low Flow Diffuser:

SECTION 233713 – DIFFUSERS

PART 1 – GENERAL

* 1. RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division \*\* Specifications Sections, apply to this section
   1. SUMMARY
2. Sections Includes:
   1. Architectural Square Plaque Ceiling Diffuser
3. Related Sections:
   1. None
   2. SUBMITTALS
4. Product Data: For each type of produce indicated, include the following:
   1. Data Sheet: Indicate materials of construction, finish and mounting details and performance data including throw vertical and horizontal, static pressure, sound ratings.
   2. Source quality-control reports.

PART 2 - PRODUCTS

2.1 DIFFUSERS

1. Architectural square plaque ceiling diffusers
2. Manufacturers: Subject to compliance with requirements and performance listed in section 2.2 Source Quality Control, products by one of following manufacturer is acceptable
   1. Titus (Basis Design)
   2. Tuttle and Baily
   3. Krueger
3. Face Plate: shall be 22-gauge steel face panel that captures a secondary 22-gauge panel, removable by means of four hanger brackets, exposed surface shall be smooth, flat, and free of visible fasteners, panel shall project no more than ¼ inch below the outside border of the diffuser backpan, back shall have an aerodynamically shaped, rolled edge to ensure a tight horizontal discharge pattern. A single metal thickness on the edges of the face panel will not be accepted. Ceiling diffusers with a 24 x 24-inch full face shall have no less than an 18 x 18-inch face panel size.
4. Backpan: shall be one piece precision die-stamped and shall include an integrally drawn inlet (welded-in inlets and corner joints are not acceptable). The diffuser backpan shall be constructed of 22-gauge steel.
5. Neck: shall have a minimum of 1¼-inch depth available for duct connection.
6. Finish: shall be #26 white.
   1. The finish shall be an anodic acrylic paint, baked at 315°F for 30 minutes.
   2. The pencil hardness must be HB to H.
   3. The paint must pass a 100-hour ASTM B117 Corrosive Environments Salt Spray Test without creepage, blistering or deterioration of film.
   4. The paint must pass a 250-hour ASTM D870 Water Immersion Test. The paint must also pass the ASTM D2794 Reverse Impact Cracking Test with a 50-inch pound force applied.
7. Optional molded insulation blanket shall be available. The insulation will be R-6, foil-backed, and provide an additional 1-inch gap around the neck to install insulated flex duct.
   1. Source Quality Control
8. The manufacturer shall provide published performance data for rated for the square panel diffuser
   1. The diffuser shall be tested in accordance with ANSI/ASHRAE Standard 70-2006
   2. Throw values are at 20°F cooling temperature delta and
   3. Publish CFM/LF of throw to a terminal velocity 20 fpm and
   4. Horizontal throw Isovels must maintain ceiling adherence with a maximum of 0.91 CFM per linear foot of throw to a terminal velocity of 20 feet per minute, per direction.

PART 3 – EXECUTION

3.1 EXAMINATION

1. 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.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

1. Install Diffusers level and plumb.
2. Verify diffuser air patterns are as indicated on drawings during installation.
3. Ceiling-Mounted Outlets: Drawings indicate general arrangement of ducts, fittings and accessories. Air Outlet and 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. Where architectural features or other items conflict with installation, notify Engineer for determination of final location.
4. Install diffusers with airtight connections to ducts and to allow service and maintenance of dampers, air extractors and fire dampers.

3.3 ADJUSTING

1. After installation, verify diffusers air patterns is as indicated on drawings, or as directed before starting air balance.

END OF SECTION 233713