

SECTION 233713 - DIFFUSERS, REGISTERS, AND GRILLES

PART 1-GENERAL

1.1 SECTION INCLUDES

- A. Return Air, Exhaust Air, and Transfer Air, Grilles and Registers.
- B. Supply Air Registers.
- C. Supply Air Diffusers.
- D. Egg Crate Return Air or Transfer Air Grilles.
- E. Heavy Duty Wall Return Air Grille or Register.
- F. Supply Air Linear Slot Diffusers
- G. High Capacity Drum Louvers
- H. Return Air Linear Slot grilles

1.2 SUBMITTALS

- A. Submit shop drawings and product data per applicable Division I Specifications.
- B. Shop drawings shall be scheduled by room number to include material, sizes, quantities, finishes, and accessories.

1.3 QUALITY ASSURANCE

- A. ASHRAE Standard 70 for performance testing.
- B. NFPA 90A for installation.

1.4 WARRANTY

- A. Contractor shall warranty entire systems and equipment for a period of one (1) year.

PART 2-PRODUCTS

2.1 MANUFACTURERS

- A. Titus
- B. Price
- C. Tuttle & Bailey

2.2 COMPONENTS

- A. Return Air, Exhaust Air, and Transfer Air, Grilles and Registers
 - 1. All aluminum construction.
 - 2. Angled louvers spaced 3/4" on center.
 - 3. One set of fixed louvers parallel to long dimension.
 - 4. Baked white enamel finish or powder paint white finish.
 - 5. Opposed blade volume damper (for registers).

- B. Supply Air Registers
 - 1. All aluminum construction.
 - 2. Double deflection louvers.
 - 3. Front and rear louvers, individually adjustable, horizontal to the front.
 - 4. Baked white enamel finish or powder paint white finish.
 - 5. Opposed blade volume damper for all registers.

- C. Plaque Face Supply Air Diffuser (Square or Round Face)
 - 1. Square Face: All aluminum construction.
 - 2. Round Face: All 18 gauge steel diffuser.
 - 2. Solid face panel with curved back pan designed for VAV usage.
 - 3. Opposed blade volume damper in accessible locations.
 - 4. Baked white enamel finish or powder paint white finish.
 - 5. Provide with equalizing grid.
 - 6. Provide insulation blanket on back pan for above ceiling installations.
 - 7. Provide border/frame for appropriate ceiling installation

- D. Perforated Ceiling Supply Diffuser
 - 1. All 18 gauge steel diffuser for flush face installation
 - 2. Perforated holes shall be 3/16" diameter minimum on 1/4" staggered centers and no less than 51% free area.
 - 3. Opposed blade volume damper in accessible location.

4. Solid one-piece stamped backpan.
 5. Baked white enamel finish or powder paint white finish.
 6. Provide with equalizing grid.
 7. Provide insulation blanket on back pan for above ceiling installations.
 8. Provide border/frame for appropriate ceiling installation
- D. Eggcrate Return Air Grille or Transfer Grille
1. 1/2 inch by 1/2 inch by 1/2 inch aluminum grid.
 2. Aluminum border if required.
 3. Provide frame for appropriate ceiling mounting.
 4. Baked white enamel finish or powder paint white finish.
- E. Heavy Duty Wall Return Air Grille (for use in gymnasiums)
1. Heavy gauge steel construction specifically designed for gym use.
 2. Angled louvers spaced 1/2 inch on center.
 3. Baked aluminum enamel or powder paint aluminum finish.
- F. Supply Air Linear Slot Diffusers
1. 22 gauge, aluminum or heavy gauge steel diffusers assembly with factory baked white enamel finish or powder paint white finish.
 2. 26 gauge, zinc-coated steel inlet boot, maximum 16 inches high (3 slot).
 3. The pattern controller shall be an aerodynamically curved “ice-tong” shaped steel deflector capable of 180° pattern adjustment from the face of the diffuser and shall allow dampering if required.
 4. 1/2 inch glass fiber acoustically insulated inlet plenum/boot.
- G. High Capacity Drum Louvers
1. All heavy gauge aluminum split vane construction.
 2. Minimum 25° rotation from centerline of diffuser.
 3. Heavy extruded aluminum blades shall be individually adjustable.
 4. Baked white enamel finish or powder paint white finish.

- 5. Opposed blade volume damper for all drum louvers constructed of heavy gauge steel – Damper must be operable from the face of the grille.
- H. Return Air Linear Slot grilles
 - 1. Shall be constructed the same as Supply Air Linear Slot Diffusers without the pattern controllers.

PART 3-EXECUTION

3.1 INSTALLATION

- A. The contractor shall be held responsible for the location, size and placing of all openings for grilles, registers and outlets. The contractor shall consult with the Architect before the walls are built and the grounds placed. All outlets, registers and grilles with exposed screw fastener, shall be fastened with Phillips type oval head screws.
- B. Install in accordance with manufacturer’s instructions.
- C. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting.
- D. Install diffusers to ductwork with airtight connection.
- E. Provide balancing dampers on duct take-off to diffusers, grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.
- F. Paint ductwork visible behind air outlets and inlets matte black.

3.2 SCHEDULES

- A. Size and type as shown on drawings.

END OF SECTION 233713