

**SECTION 23 37 00**  
**AIR OUTLETS AND INLETS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

A. Air Outlets and Inlets: Diffusers, Registers, and Grilles.

**1.2 RELATED WORK**

- A. General Mechanical Requirements: Section 23 05 11, COMMON WORK RESULTS FOR HVAC AND STEAM GENERATION.
- B. Noise Level Requirements: Section 23 05 41, NOISE AND VIBRATION CONTROL FOR HVAC PIPING AND EQUIPMENT.
- C. Testing and Balancing of Air Flows: Section 23 05 93, TESTING, ADJUSTING, AND BALANCING FOR HVAC.

**1.3 QUALITY ASSURANCE**

- A. Refer to article, QUALITY ASSURANCE, in Section 23 05 11, COMMON WORK RESULTS FOR HVAC AND STEAM GENERATION.
- B. Fire Safety Code: Comply with NFPA 90A.

**1.4 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES.
- B. Manufacturer's Literature and Data:
  - 1. Diffusers, registers, grilles and accessories.
- C. Coordination Drawings: Refer to article, SUBMITTALS, in Section 23 05 11, COMMON WORK RESULTS FOR HVAC AND STEAM GENERATION.

**1.5 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Air Diffusion Council Test Code:
  - 1062 GRD-84.....Certification, Rating, and Test Manual 4<sup>th</sup> Edition
- C. American Society of Civil Engineers (ASCE):
  - ASCE7-05.....Minimum Design Loads for Buildings and Other Structures
- D. American Society for Testing and Materials (ASTM):
  - A167-99 (2004).....Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip
  - B209-07.....Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

- E. National Fire Protection Association (NFPA):  
90A-09.....Standard for the Installation of Air  
Conditioning and Ventilating Systems
- F. Underwriters Laboratories, Inc. (UL):  
181-08.....UL Standard for Safety Factory-Made Air Ducts  
and Connectors

**PART 2 - PRODUCTS**

**2.1 AIR OUTLETS AND INLETS**

- A. Materials:
  - 1. Steel, Exhaust air registers located in combination toilets and shower stalls shall be constructed from aluminum. Provide manufacturer's standard gasket.
  - 2. Exposed Fastenings: The same material as the respective inlet or outlet. Fasteners for aluminum may be stainless steel.
  - 3. Contractor shall review all ceiling drawings and details and provide all ceiling mounted devices with appropriate dimensions and trim for the specific locations.
- B. Performance Test Data: In accordance with Air Diffusion Council Code 1062GRD. Refer to Section 23 05 41, NOISE AND VIBRATION CONTROL FOR HVAC PIPING AND EQUIPMENT for NC criteria.
- C. Air Supply Outlets:
  - 1. Ceiling Diffusers: Suitable for surface mounting, exposed T-bar or special tile ceilings, off-white finish, square or round neck connection as shown on the drawings. Provide plaster frame for units in plaster ceilings.
    - a. Square, louver, fully adjustable pattern: Round neck, surface mounting unless shown otherwise on the drawings. Provide equalizing or control grid and volume control damper.
    - b. Louver face type: Square or rectangular, removable core for 1, 2, 3, or 4 way directional pattern. Provide equalizing or control grid and opposed blade damper.
- D. Return and Exhaust Registers and Grilles: Provide opposed blade damper without removable key operator for registers.
  - 1. Finish: Off-white baked enamel for ceiling mounted units. Wall units shall have a prime coat for field painting, or shall be extruded aluminum with manufacturer's standard aluminum finish.
  - 2. Standard Type: Fixed horizontal face bars set at 30 to 45 degrees, approximately 30 mm (1-1/4 inch) margin.
  - 3. Perforated Face Type: To match supply units.

4. Grid Core Type: 13 mm by 13 mm (1/2 inch by 1/2 inch) core with 30 mm (1-1/4 inch) margin.

## **2.2 WIRE MESH GRILLE**

- A. Fabricate grille with 2 x 2 mesh 13 mm (1/2 inch) galvanized steel or aluminum hardware cloth in a spot welded galvanized steel frame with approximately 40 mm (1-1/2 inch) margin.
- B. Use grilles where shown in unfinished areas such as mechanical rooms.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Comply with provisions of Section 23 05 11, COMMON WORK RESULTS FOR HVAC AND STEAM GENERATION, particularly regarding coordination with other trades and work in existing buildings.
- B. Protection and Cleaning: Protect equipment and materials against physical damage. Place equipment in first class operating condition, or return to source of supply for repair or replacement, as determined by COR. Protect equipment during construction against entry of foreign matter to the inside and clean both inside and outside before operation and painting.

### **3.2 TESTING, ADJUSTING AND BALANCING (TAB)**

Refer to Section 23 05 93, TESTING, ADJUSTING, AND BALANCING FOR HVAC.

### **3.3 OPERATING AND PERFORMANCE TESTS**

Refer to Section 23 05 11, COMMON WORK RESULTS FOR HVAC AND STEAM GENERATION

- - - E N D - - -