

## **SECTION 08 90 00 LOUVERS AND VENTS**

### **PART 1 - GENERAL**

#### **1.1 DESCRIPTION**

- A. This section specifies fixed wall louvers, and wall vents in mechanical rooms.
- B. The existing wall louvers are connected to air handling units plenums and may be damaged during equipment replacement. Damaged louvers shall be replaced in kind.

#### **1.2 RELATED WORK**

- A. Color of finish: Section 09 06 00, SCHEDULE FOR FINISHES.

#### **1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
  - 1. Each type, showing material, finish, size of members, method of assembly, and installation and anchorage details.
- C. Manufacturer's Literature and Data:
  - 1. Each type of louver and vent.

#### **1.4 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. The Master Painters Institute (MPI):  
Approved Product List – September 2011
- C. American Society for Testing and Materials (ASTM):  
A167-99(R2009) .....Stainless and Heat-Resisting Chromium - Nickel Steel Plate, Sheet, and Strip

A1008/A1008M-10..Steel, Sheet, Carbon, Cold Rolled, Structural, and High Strength Low-Alloy with Improved Formability

B209/B209M-03(R2007) Aluminum and Aluminum Alloy, Sheet and Plate

B221-08 .....Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes

B221M-07 .....Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire Shapes, and Tubes

D. National Association of Architectural Metal Manufacturers (NAAMM):

AMP 500-06.....Metal Finishes Manual

E. National Fire Protection Association (NFPA):

90A-12 .....Installation of Air Conditioning and Ventilating Systems

F. American Architectural Manufacturers Association (AAMA):

2605-11 .....High Performance Organic Coatings on Architectural Extrusions and Panels

G. Air Movement and Control Association, Inc. (AMCA):

500-L-07 .....Testing Louvers

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Aluminum, Extruded: ASTM B221/B221M.
- B. Stainless Steel: ASTM A167, Type 302B.
- C. Carbon Steel: ASTM A1008/A1008M.
- D. Aluminum, Plate and Sheet: ASTM B209/B209M.
- E. Fasteners: Fasteners for securing louvers and wall vents to adjoining construction, except as otherwise specified or shown, shall be toggle or expansion bolts, of size and type as required for each specific type of installation and service condition.

1. Where type, size, or spacing of fasteners is not shown or specified, submit shop drawings showing proposed fasteners, and method of installation.
  2. Fasteners for louvers, louver frames, and wire guards shall be of stainless steel or aluminum.
- F. Inorganic Zinc Primer: MPI No. 19.

## 2.2 EXTERIOR WALL LOUVERS

### A. General:

1. Provide fixed type louvers of size and design shown.
2. Heads, sills and jamb sections shall have formed caulking slots or be designed to retain caulking. Head sections shall have exterior drip lip, and sill sections an integral water stop.
3. Furnish louvers with sill extension or separate sill as shown.
4. Frame shall be mechanically fastened or welded construction with welds dressed smooth and flush.

### B. Performance Characteristics:

1. Weather louvers shall have a minimum of 60 percent free area and shall pass 300/s (fpm) free area velocity at a pressure drop not exceeding 0.125 mm (inch) water gage and carry not more than 10 g (ounces) of water per m<sup>2</sup> (square foot) of free area for 15 minutes when tested per AMCA Standard 500-L.
2. Louvers shall bear AMCA certified rating seals for air performance and water penetration ratings.

### C. Aluminum Louvers:

1. General: Frames, blades, and mullions (sliding interlocking type); 2 mm (0.081-inch) thick extruded aluminum. Blades shall be drainable type and have reinforcing bosses.
2. Louvers, fixed: Make frame sizes 13 mm (1/2-inch) smaller than openings. Single louvers frames shall not exceed 1700 mm (66 inches) wide. When openings exceed 1700 mm (66 inches), provide twin louvers separated by mullion members.

### D. Stainless Steel Louvers: From stainless steel louvers using 1.6 mm (0.063-inch) thick sheet for frames, blades, sills and mullions.

1. Louver shall have fixed 45 degree drainable blades with water baffle. Make overall frame size 13 mm (1/2-inch) less than opening, unless otherwise shown.
2. Single louver sections shall not exceed 1700 mm (66 inches) in width. For openings larger than 1700 mm (66 inches) wide, provide multiple sections not larger than 1700 mm (66 inches) wide separated by mullions.

### **2.3 CLOSURE ANGLES AND CLOSURE PLATES**

- A. Fabricate from 2 mm (0.074-inch) thick stainless steel or aluminum.
- B. Provide continuous closure angles and closure plates on inside head, jambs and sill of exterior wall louvers.
- C. Secure angles and plates to louver frames with screws, and to masonry or concrete with fasteners as specified.

### **2.4 WIRE GUARDS**

- A. Provide wire guards on outside of all exterior louvers, except on exhaust air louvers.
- B. Fabricate frames from 2 mm (0.081-inch) thick extruded or sheet aluminum designed to retain wire mesh.
- C. Wire mesh shall be woven from not less than // 1.6 mm (0.063-inch) diameter aluminum wire in 13 mm (1/2-inch) square mesh.
- D. Miter corners and join by concealed corner clips or locks extending about 57 mm (2-1/4 inches) into rails and stiles. Equip wire guards over four feet in height with a mid-rail constructed as specified for frame components.
- E. Fasten frames to outside of louvers with aluminum or stainless steel devices designed to allow removal and replacement without damage to the wire guard or the louver.

### **2.5 EXTERIOR DOOR LOUVERS**

- A. Fabricate of 1.6 mm (0.063-inch) thick extruded aluminum. Miter frames at corners and join by concealed corner brackets.
- B. Equip louvers on outside with wire guards, except omit wire guards for louvers in doors located completely below enclosed areaways.

## 2.6 WALL VENTS

- A. Fabricate exterior wall vents from either 4.7 mm (0.187-inch) thick aluminum plate or 6 mm (1/4-inch) thick cast iron, perforated in diamond lattice pattern, with not over 19 mm (3/4-inch) openings.
- B. Vents shall have aluminum screen frame with aluminum alloy insect screening mounted on back of vent by means of 19 mm x 5 mm (3/4-inch by 3/16-inch) top and bottom bars screwed to grille.
- C. Vent Frames In Masonry: Fabricate of 45 mm x 30 mm x 5 mm (1-3/4 inch by 1-1/4 inch by 3/16-inch) steel angles bolted with 6 mm (1/4-inch) diameter expansion bolts at jams.

## 2.7 AIR INTAKE VENTS

- A. Fabricate exterior louvered wall ventilators for fresh air intake for air conditioning units from extruded aluminum, ASTM B221. Form with integral horizontal louvers and frame, with drip extending beyond face of wall and integral water stops.
- B. Provide 0.8 mm (0.032-inch) thick aluminum sleeves.

## 2.8 FINISH

- A. In accordance with NAAMM Metal Finishes Manual: AMP 500-505
- B. Aluminum Louvers Air Intake Vents Wire Guards:
  - 1. Anodized finish
    - a. AA-M1X Mill finish, as fabricated.
    - b. AA-C22A41 Chemically etched medium matte, with clear anodic coating, Class I Architectural, 0.7 mils thick.
    - c. AA-C22A42 Chemically etched medium matte, with integrally colored anodic coating, Class I Architectural, 0.7 mils thick.
  - 2. Organic Finish: AAMA 2605 (Fluorocarbon coating).
- C. Aluminum Wall Vents: Sand blasted satin finish.
- D. Stainless Steel: Mechanical finish No. 4 in accordance with NAAMM Metal Finishes Manual.
- E. Sheet Steel: Baked-on or oven dried shop prime coat.

1. Paint interior surfaces of lightproof louvers with two additional finish shop coats of baked-on flat black enamel.
  2. Finish painting of exposed surfaces of shop primed louvers is specified in Section 09 91 00, PAINTING.
- F. Steel: Surfaces of steel work, for which no other finish is specified, shall be cleaned free from scale, rust, oil and grease, and then given a light colored prime paint after fabrication, except ferrous metals concealed in finished work. Paint all contact surfaces of assembled work (except welded contact surfaces) with an additional shop coat of similar paint.

## **2.9 PROTECTION**

- A. Provide protection for aluminum against galvanic action wherever dissimilar materials are in contact, by painting the contact surfaces of the dissimilar material with a heavy coat of bituminous paint (complete coverage), or by separating the contact surfaces with a performed synthetic rubber tape having pressure sensitive adhesive coating on one side.
- B. Isolate the aluminum from plaster, concrete and masonry by coating aluminum with zinc-chromate primer.
- C. Protect finished surfaces from damage during fabrication, erection, and after completion of the work.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Set work accurately, in alignment and where shown. Items shall be plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.
- B. Furnish setting drawings and instructions for installation of anchors and for the positioning of items having anchors to be built into masonry construction. Provide temporary bracing for such items until masonry is set.
- C. Provide anchoring devices and fasteners as shown and as necessary for securing louvers and vents to building construction as specified. Power actuated drive pins may be used, except for removal items and where members would be deformed or substrate damaged by their use.

### **3.2 CLEANING AND ADJUSTING**

- A. After installation, all exposed prefinished and plated items and all items fabricated from stainless steel and aluminum shall be cleaned as recommended by the manufacturer and protected from damage until completion of the project.
  
- B. All movable parts, including hardware, shall be cleaned and adjusted to operate as designed without binding or deformation of the members, so as to be centered in the opening of frame, and where applicable, to have all contact surfaces fit tight and even without forcing or warping the components

**END OF SECTION 08 09 00**