

**SECTION 08 90 00
LOUVERS AND VENTS**

SPEC WRITER NOTES:

1. Use this section only for NCA projects.
2. Delete between //----// if not applicable to project. Also delete any other item or paragraph not applicable in the section and renumber the paragraphs.

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies fixed and operable wall louvers, door louvers and wall vents.

1.2 RELATED WORK

- A. Louvers in steel doors: Section 08 11 13, HOLLOW METAL DOORS AND FRAMES.
- B. Color of Finish: Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 SUSTAINABILITY REQUIREMENTS

- A. Materials in this section may contribute towards contract compliance with sustainability requirements. See Section 01 81 11, SUSTAINABLE DESIGN REQUIRMENTS, for project // local/regional materials, // low-emitting materials, // recycled content, // _____// requirements.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings: For each type of product.
1. Show material, finish, size of members, // operating devices, // method of assembly, and installation and anchorage details.
 2. Show weep paths, gaskets, flashing, sealant, and other means of preventing water intrusion.
- C. Manufacturer's Literature and Data: For each type of louver and vent.
1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by the basic designation only. Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

SPEC WRITER NOTES:

1. Remove reference citations that do not remain in Part 2 or Part 3 of edited specification.
2. Verify and make dates indicated for remaining citations the most current at date of submittal; determine changes from date indicated on the TIL download of the section and modify requirements impacted by the changes.

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

500-L-12 Testing Louvers

C. American Architectural Manufacturers Association (AAMA):

2605-05 Performing Organic Coatings on Architectural
Extrusions and Panels

D. American Society for Testing and Materials (ASTM):

A167-99 Stainless and Heat-Resisting Chromium-Nickel
Steel Plate, Sheet, and Strip

A1008/A1008M-12a Steel, Sheet, Carbon, Cold Rolled, Structural,
and High Strength Low-Alloy with Improved
Formability

B209/B209M-10 Aluminum and Aluminum Alloy, Sheet and Plate

B221-13 Aluminum and Aluminum Alloy Extruded Bars,
Rods, Wire, Profiles, and Tubes

E. The Master Painters Institute (MPI):

Approved Product List - Current Year

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

AMP 500-505 Metal Finishes Manual

G. National Fire Protection Association (NFPA):

90A-12 Installation of Air Conditioning and
Ventilating Systems

PART 2 - PRODUCTS

SPEC WRITER NOTES:

1. Make material requirements agree with applicable requirements specified in the referenced Applicable Publications. Update and specify in both only that, which applies to the project.

2.1 MATERIALS

- A. Aluminum, Extruded: ASTM B221.
- B. Stainless Steel: ASTM A167, Type 302B.
- C. Carbon Steel: ASTM A1008.

- D. Aluminum, Plate and Sheet: ASTM B209.
- E. Fasteners: Provide toggle or expansion bolt fasteners for securing louvers and wall vents to adjoining construction, except as otherwise specified or shown, 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 to be of stainless steel or aluminum.
- F. Inorganic Zinc Primer: MPI No. 19.

SPEC WRITER NOTES:

1. Louvers in acid fume areas such as battery rooms, and chlorinate rooms must be of stainless steel. Verify existence of such spaces with Mechanical and Electrical Engineers. Specify all louvers required or shown, including those shown in connection with mechanical work.

2.2 EXTERIOR WALL LOUVERS

A. General:

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

SPEC WRITER NOTES:

1. Obtain percent free area, free area velocity, pressure drop and amount of water passage for insertion in following paragraph from the Mechanical Engineer.

B. Performance Characteristics:

1. Provide weather louvers with a minimum of _____ percent free area and pass ____ mm/s (fpm) free area velocity at a pressure drop not exceeding ____ mm (inch) water gage and carry not more than ____ g (ounces) of water per m² (square foot) of free area for 15 minutes when tested per AMCA Standard 500-L.

2. Louvers must bear AMCA certified rating seals for Air Performance and Water Penetration ratings.

C. Aluminum Louvers:

SPEC WRITER NOTES:

1. Consult Mechanical Engineer to determine if standard or drainable type blades are required.
1. General: Frames, blades, // sills // and mullions (sliding interlocking type); 2 mm (0.081-inch) thick extruded aluminum.
2. Blades to be // standard // or // drainable // type and have reinforcing bosses.
3. Louvers, Fixed:
 - a. Make frame sizes 13 mm (1/2-inch) smaller than openings.
 - b. Single louvers frames not to exceed 1700 mm (66 inches) wide.
 - c. When openings exceed 1700 mm (66 inches), provide twin louvers separated by mullion members.
4. Louvers, Operable: Louver frame opening sizes, single louver sizes and mullion requirements to be as specified for fixed louvers.
 - a. Blades: Attach blades to frame with aluminum pivot pins through nylon bearings. Fasten each blade to stainless steel operation arms that are connected to minimum 3 mm (1/8-inch) thick stainless steel operating // bar // handle // arranged for simultaneous operation of blades.
 - //b. Spring/Chain Operation: Exposed operator activated by spring attached to operating // bar // handle // and mounted on frame. //Control of louver provided by pull chain of required length, to be operable from floor. Provide pulleys and brackets as required.//
 - //c. Hand Crank Operation: Hand crank operator activated by case hardened gears concealed in aluminum housing. Operators to be removable and located at jambs. Provide one right-handed operator for each louver. //
 - //d. Motor Operation: Motor operated by approved electric motor. Motors to be removable and located at jambs of louver. Connect motor operator lever arm to operating bar by means of stainless steel connecting rod. //
 - //e. Automatic Operation: Louvers to be complete with // weights, // pull chain, // chain holder and brackets, // cables, // sheaves, // spring, // 70°C (160°F) fusible link, // and other

related items meeting requirements of NFPA 90A. Provide non-ferrous bearings and spindles of replaceable type. //Control louver provided by pull chain of required length, to be operable from floor. // Louvers must close automatically in case of fire. //

- D. Stainless Steel Louvers: Form stainless steel louvers using 1.6 mm (0.063-inch) thick sheet for frames, blades, sills and mullions.
1. Louver to have fixed 45 degree // standard // drainable // blades with water baffle; make overall frame size 13 mm (1/2-inch) less than opening, unless otherwise shown.
 2. Single louver sections 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 // 1.5 mm (0.059-inch) thick stainless steel // designed to retain wire mesh.
- C. Provide wire mesh woven from minimum // 1.6 mm (0.063-inch) diameter aluminum wire // 1.3 mm (0.05-inch) diameter stainless steel 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 minimum 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 INTERIOR DOOR LOUVERS

- A. Fabricate louvers for interior doors // and partitions of // 1.2 mm (0.0478-inch) thick steel // 1.6 mm (0.063-inch) thick extruded aluminum//.
- B. Make louvers sight-proof type with stationary blades, // except where light-proof louvers are required.//
- //C. Provide lightproof louvers with stationary blades and designed to exclude passage of light but permit free ventilation. //

2.7 WALL VENTS

- A. Fabricate exterior wall vents from 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 to have aluminum screen frame with aluminum alloy insect screening mounted on back of vent.
- 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 minimum 6 mm (1/4-inch) diameter expansion bolts at jambs.

2.8 AIR INTAKE VENTS

- A. Fabricate exterior louvered wall ventilators for fresh air intake for air conditioning units from extruded aluminum, ASTM B221.
- B. Form with integral horizontal louvers and frame, with drip extending beyond face of wall and integral water stops.
- C. //Provide aluminum closures where shown for inside face of dummy vents.//
- D. Provide 0.8 m (0.032-inch) thick aluminum sleeves // in cavity walls // where shown //.

2.9 BRICK VENTS

- A. Vents to be of size shown formed of approximately 3 mm (0.125 inch) thick cast aluminum, or 3 mm (0.125) inch extruded aluminum.
- B. Provide vents complete with aluminum screen frame with corrosion resistant insect screening mounted on back of vent.
- C. Provide vents with required anchors.

SPEC WRITER NOTES:

1. On most projects, specify finish of aluminum by using description, do not use Aluminum Association's designation. If more than one finish is used on project, precede finish spec with "Finish for (list items):"

2.10 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-C22A41 Chemically etched medium matte, with clear anodic coating, Class I Architectural, 0.7 mils thick.//
 - b. //AA-C22A42 Chemically etched medium matte, with integrally colored anodic coating, Class I Architectural, 0.7 mils thick.//
 - c. //AA-C22A44 Chemically etched medium matte, with electronically deposited metallic compound, Class I Architectural, 0.7 mils thick may be provided as an option for AA-C22A42 color anodic coating. Dyes will not be accepted.//
 2. Organic Finish: AAMA 2605 (Fluorocarbon coating).
- C. Aluminum // Wall Vents // and Brick 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:
 1. Surfaces of steel work, for which no other finish is specified, to 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.
 2. Paint all contact surfaces of assembled work (except welded contact surfaces) with an additional shop coat of similar paint.

2.11 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. // Strippable plastic coating on // colored anodized // organic // finish is not approved.//

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set work accurately, in alignment and where shown; 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.
- D. Generally set wall louvers // and vents // in masonry walls during progress of the work. If wall louvers // and vents // are not delivered to job in time for installation in prepared openings, make provision for later installation.
- E. Set in cast-in-place concrete in prepared openings.

3.2 CLEANING AND ADJUSTING

- A. After installation, clean exposed prefinished and plated items and items fabricated from stainless steel and aluminum as recommended by the manufacturer and protected from damage until completion of the project.
- B. Clean and adjust movable parts, including hardware, 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

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