SECTION 08 9000

LOUVERS AND VENTS

PART 1 GENERAL

1.1 SUMMARY

A. Work of this Section consists of fixed, extruded-aluminum louvers, including accessories necessary for a complete working installation as follows:

1. Extruded aluminum architectural louvers.

B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:

1. General provisions of the Contract, including General and Supplementary Conditions, and Division 01 General Requirements Specification Sections.
2. Section 05 5000 - METAL FABRICATIONS.
3. Section 07 6200 - SHEET METAL FLASHING AND TRIM.
4. Section 08 4000 - ALUMINUM-FRAMED FACADE SYSTEMS.
5. Section 08 4113 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONT.
6. Division 23 for louvers that are a part of mechanical equipment Division 26 for electrical power connections for motor-operated adjustable metal louvers.

1.2 SYSTEM DESCRIPTION

A. Definitions:

1. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.
2. Drainable-Blade Louver: Louver with blades having gutters that collect water and drain it to channels in jambs and mullions, which carry it to bottom of unit and away from opening.

B. Performance Criteria:

1. Structural Performance: Provide louvers capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act on vertical projection of louvers.
   a. Wind Loads: Determine loads based on pressures as indicated on Drawings.
2. Seismic Performance: Provide louvers capable of withstanding the effects of earthquake motions determined according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads," and per IBC.
   a. Seismic Design Criteria: Seismic Design Category D.
3. Thermal Movements: Provide louvers that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   a. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

4. Air-Performance, Water-Penetration, Air-Leakage, and Wind-Driven Rain Ratings: Provide louvers complying with performance requirements indicated, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.
5. Airborne Sound Transmission Loss: Provide acoustical louvers complying with airborne sound transmission loss ratings indicated, as demonstrated by testing manufacturer's stock units identical to those specified, except for length and width according to ASTM E90.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's printed descriptions of materials and systems, performance criteria, use limitations, recommendations and installation information for each manufactured product specified or called out by the Drawings and this Section. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other Work. Show blade profiles, angles, and spacing.

1. For installed louvers and vents indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
2. For custom fabricated louver doors furnish coomplete shop drawing showing frame, door and hardware integration.

C. Samples

1. Initial for Selection: Submit printed color charts or sample chains indicating manufacturer’s complete range to determine color, texture, shape, and/or composition for each type of material finish exposed to view.
2. Items Chosen for Final Selection: Submit products for acceptance, those required prior to manufacturing to verify close tolerances, shapes and/or specifically required aesthetics.
    a. Sample to exhibit:
        1). Finish.
        2). Corner detail.

D. Quality Assurance Submittals

1. Certificates: Mill Test Reports that indicate the physical and chemical characteristics, and certify that the product meets the requirements of the applicable standards specified.

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: A firm experienced in producing specified products similar to those indicated for this Project and with a record of successful in-service performance.
2. Fabricator Qualifications: A firm experienced in producing louvers and vents similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
3. Installer Qualifications: Perform installation with experienced and trained Installers supervised by trained personnel who shall have a record of successful experience in installations of similar size and scope.

B. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal

Manual" for fabrication, construction details, and installation procedures.

C. Welding Standards: As follows:

1. Comply with AWS D1.2, "Structural Welding Code--Aluminum."
2. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification

1.5 WARRANTY

A. Contractor shall provide manufacturer’s warranty against defective materials for a period of five (5) years.

PART 2 PRODUCTS

2.1 EXTRUDED ALUMINUM ARCHITECTURAL LOUVERS

A. Manufacturers: Subject to compliance with requirements, provide Louver products by one of the following:

1. Airline Products Co.
2. Airolite Company (The).
3. Construction Specialties, Inc. (CS Group).
4. Greenheck.
5. Architect acceptable equivalent.

2.2 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), alloy 6063-T5 or T-52.

B. Aluminum Sheet: ASTM B209 (ASTM B209M), alloy 3003 or 5005 with temper as required for forming, or as otherwise recommended by metal producer for required finish.

C. Bird Screens: Screens to be 5/8” mesh, 0.050” thick expanded and flattened aluminum bird screen secured within 0.055” thick extruded aluminum frames. Frames to have mitered corners and corner locks.

D. Fasteners: Of same basic metal and alloy as fastened metal or 300 Series stainless steel, unless otherwise indicated. Do not use metals that are incompatible with joined materials.

1. Use types and sizes to suit unit installation conditions.
2. Use Phillips or Roberts flat-head screws for exposed fasteners, unless otherwise indicated.

E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187.

2.3 BLANK-OFF PANELS

A. Uninsulated, Blank-Off Panels: Metal sheet attached to back of louver.

1. Aluminum sheet for aluminum louvers, not less than 0.050-inch nominal thickness.
2. Panel Finish: Same finish applied to louvers[, but black in color].

2.4 FABRICATION, GENERAL

A. Exterior stormproof louvers shall be continuous blade, with 50% minimum free air area and channel frame.

1. Heads, sills, jambs and mullions to be one-piece structural aluminum members with integral caulking slot and retaining beads. Fixed-blade construction shall be designed to collect and drain water to exterior at sill by means of multiple gutters in blades and channels in jambs and mullions. Louvers to be supplied with 4" high by full depth sill flashings formed from minimum 0.050" thick aluminum. Sill flashings to have welded side panels. Louvers and sill flashings to be installed in accordance with the manufacturer's recommended procedures to ensure complete water integrity performance of the louver system.

B. Construction:

1. Provide blank-off panels, structural supports and accessories as specified and/or shown on the Drawings. Materials, sizes, depths, arrangements and material thickness to be as indicated or as required for optimal performance with respect to strength; durability; and uniform appearance.
2. Louvers to be mechanically assembled using stainless steel or aluminum fasteners.
3. Include supports, anchorage, and accessories required for complete assembly.
4. Manufacturer shall provide all necessary structural supports and bracing to carry wind load of not less than 40 psf.

C. Screens: Provide louvers with 1/2 in. mesh, 0.063 in. diameter aluminum wire intercrimp bird screens secured in removable extruded aluminum frames.

2.5 FABRICATION - LOUVER SCREENS

A. Performance: Fabricate as required for optimum performance with respect to strength, durability, and appearance.

B. Size: Fabricate equipment screens to meet dimensions indicated on Contract Documents.

C. Field Measurement: Verify size, location, and placement of equipment screens before fabrication.

D. Shop Assembly:

1. Fabricate to minimize field adjustments, splicing, mechanical joints and field assembly of units.
2. Preassemble units in shop to greatest extent possible and disassemble as necessary for shipping and handling.
3. Clearly mark units for reassemble and coordinated installation.

E. Accessories: Include supports, anchorages and accessories required for complete assembly.

F. Vertical Mullions: Provide vertical mullions of type and spacing indicated but not further apart than recommended by the manufacturer.

G. Horizontal Mullions: Provide horizontal mullions at horizontal joints between louver units except where continuous vertical assemblies are indicated.

H. Connections: Join frame and blade members to one another by mechanical fastener, except where field bolted connections between frame members are made necessary by size of louvers.

I. Spacing: Maintain equal blade spacing to produce uniform appearance.

2.6 FINISH

A. General: Comply with the NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.

B. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.

C. High-Performance Organic Coating: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: chemical conversion coating, acid chromate-fluoride-phosphate pretreatment; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's instructions.

1. Fluorocarbon 3-Coat Coating System: Manufacturer's standard 3-coat thermo-cured system, complying with AAMA 2605, composed of specially formulated inhibitive primer and fluorocarbon color coat and topcoat containing not less than 70 percent polyvinyldene fluoride resin by weight.
2. Color: As selected by Architect.

PART 3 EXECUTION

3.1 PROJECT CONDITIONS

A. Field Measurements: Verify louver openings by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating louvers without field measurements. Coordinate construction to ensure that actual opening dimensions correspond to established dimensions.

3.2 ADJUSTING, CLEANING, AND PROTECTING

A. Periodically clean exposed surfaces of louvers and vents that are not protected by temporary covering to remove fingerprints and soil during construction period. Do not let soil accumulate until final cleaning.

B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

C. Protect louvers and vents from damage during construction. Use temporary protective coverings where needed and approved by louver manufacturer. Remove protective covering at the time of Substantial Completion.

D. Restore louvers and vents damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Designer, remove damaged units and replace with new units.

1. Clean and touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION

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