

**SECTION 089000 LOUVERS**

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the louvers as shown on the drawings and/or specified herein, including, but not necessarily limited to, the following:

- 1. Aluminum louvers.
- 2. Blank-off panels.
- 3. Bird screens.

1.3 RELATED SECTIONS

- A. Joint Sealers - Section 079200.
- B. Louvers connected to ductwork - Division 23.

1.4 QUALITY ASSURANCE

- A. Structural Performance: Provide exterior metal louvers capable of withstanding the effects of loads and stresses from wind and snow and normal thermal movement without evidencing permanent deformation of louver components including blades, frames, and supports; noise or metal fatigue caused by louver blade rattle or flutter or permanent damage to fasteners and anchors.
  - 1. Wind Load: As required by the New Jersey Building Code, as based on ASCE 7.
- B. 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, and other detrimental effects.
  - 1. Temperature Change (Range): 120 deg. F., ambient; 180 deg. F, material surfaces.
- C. Comply with SMACNA "Architectural Sheet Metal Manual" recommendations for fabrication, construction details and installation procedures, except as otherwise indicated.
- D. Field Measurements: Verify size, location and placement of louver units prior to fabrication.
- E. Shop Assembly: Coordinate field measurements and shop drawings with fabrication and shop assembly to minimize field adjustments, splicing, mechanical joints and field assembly of units. Preassemble units in shop to greatest extent possible and disassemble as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- F. Louvers shall be tested and certified AMCA 500-L, AMCA 540 and AMCA 550 compliant.

**1.5 SUBMITTALS**

- A. Product Data: Submit manufacturer's specifications, certified test data, where applicable, and installation instructions for required products, including finishes.
- B. Shop Drawings: Submit shop drawings for fabrication and erection of louver units and accessories. Include plans, elevations and details of sections and connections to adjoining work. Indicate materials, finishes, fasteners, joinery and other information to determine compliance with specified requirements.
- C. Samples: Submit six (6) inch square samples of each required finish. Prepare samples on metal of same gauge and alloy to be used in work. Where normal color and texture variations are to be expected, include two (2) or more units in each sample showing limits of such variations.

**1.6 PRODUCT HANDLING**

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

**1.7 WARRANTY**

- A. Finish shall be warranted for a period of 20 years, starting from date of Substantial Completion of the Project.

**PART 2 - PRODUCTS**

**2.1 LOUVER MATERIAL**

- A. Provide storm-resistant, drainable-blade, fixed, horizontal louvers as manufactured by Construction Specialties or equal made by Airolite, Greenheck, Ruskin, or approved equal meeting these specifications.
- B. Heads, sills, jambs, blades and mullions to be one-piece structural members of 6063-T6 alloy, with integral caulking slot and retaining beads. Closed cell PVC compression gaskets to be provided between bottom of mullion or jamb and top of sill to insure lead tight connections. Concealed structural supports to be designed by the louver manufacturer to carry a wind load of not less than forty (40) lbs. per square foot. All fasteners to be stainless steel.
- C. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: Cleaned with inhibited chemicals; Chemical Finish: Acid-chromate-fluoride-phosphate conversion coating; Organic Coating: As specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
  - 1. Fluoropolymer Three-Coat System: Manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer and intermediate fluoropolymer color coat, both containing not less than 70 percent polyvinylidene fluoride resin by weight; and clear top coat; complying with AAMA 2605.
  - 2. Color: As selected by the Architect.

**D. Bird Screens**

1. All louvers to be furnished with bird screens, finish to match louvers.
2. Screens to be 5/8" mesh, 0.050" thick expanded and flattened aluminum bird screen secured with 0.055" thick extruded aluminum frames. Frames to have mitered corners and corner locks.

**E. Provide aluminum blank-off panels behind louvers where shown on mechanical drawings, fabricated from 1/8" thick aluminum face sheets, finish to match louvers; reinforce as required to form rigid assembly. Blank-off panels shall be insulated with Thermafiber insulation of thickness needed to insure an R value of eleven (11).**

**F. Fastenings: Fasteners for exterior application shall be stainless steel. Provide types, gauges and lengths to suit unit installation conditions. Use Phillips flat head machine screws for exposed fasteners, unless otherwise indicated.**

**G. Anchors and Inserts: Use non-ferrous metal or hot dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use steel or lead expansion bolt devices for drilled in place anchors. Furnish inserts, as required, to be set into concrete or masonry work.**

**H. Bituminous Paint: SSPC-Paint 12 (cold applied asphalt mastic).**

**2.2 LOUVER FABRICATION, GENERAL**

**A. Fabricate frames including integral sills to suit adjacent construction with tolerances for installation, including application of sealants in joints between louvers and adjoining work.**

**B. Include supports, anchorages, and accessories required for complete assembly.**

**C. Provide sill extensions made of same material as louvers, where indicated, or required for drainage to exterior and to prevent water penetrating to interior.**

**D. Join frame members to one another and to stationary louver blades by welding, except where indicated otherwise or where field bolted connections between frame members are necessary by size of louvers. Maintain equal blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.**

**PART 3 - EXECUTION**

**3.1 INSPECTION**

**A. Examine the areas and conditions where louvers are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.**

**3.2 PREPARATION**

**A. Coordinate setting drawings, diagrams, templates, instructions and directions for the installation of anchorages which are to be embedded in masonry construction. Coordinate the delivery of such items to the project site.**

### **3.3 INSTALLATION**

- A. Comply with manufacturer's instructions and recommendations for installation of the work.
- B. Verify dimensions of supporting structure at the site by accurate field measurements so that the work will be accurately designated, fabricated and fitted to the structure.
- C. Anchor louvers to the building substructure.
- D. Erection Tolerances:
  - 1. Maximum variation from plane or location shown on the approved shop drawings: 1/8" per 12 feet of length, but not exceeding 1/2" in any total building length or portion thereof (non-cumulative).
  - 2. Maximum offset from true alignment between two members abutting end to end, edge to edge in line or separated by less than 3": 1/16" (shop or field joints). This limiting condition shall prevail under both load and no-load conditions.
- E. Cut and trim component parts during erection only with the approval of the manufacturer or fabricator, and in accordance with his recommendations. Restore finish completely. Remove and replace members where cutting and trimming has impaired the strength or appearance of the assembly.
- F. Do not erect warped, bowed, deformed or otherwise damaged or defaced members. Remove and replace any members damaged in the erection process as directed.
- G. Set units level, plumb and true to line, with uniform joints.

### **3.4 PROTECTION**

- A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

### **3.5 ADJUSTING AND CLEANING**

- A. Immediately clean exposed surfaces of the louvers to remove fingerprints and dirt accumulation during the installation process. Do not let soiling remain until the final cleaning.
- B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to the material finishes. Thoroughly rinse surfaces and dry.
- C. Restore louvers and accessory components damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by the Architect, remove damaged materials and replace with new materials.
  - 1. Touch up minor abrasions in finishes with a compatible air-dried coating that matches the color and gloss of the factory applied coating.

END OF SECTION 089000