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SECTION 10210 - METAL WALL LOUVERS

**PART 1 GENERAL**

1.01 SUMMARY

- A. Work Included: Exterior Fixed Wall Louvers and Louver Screens.
- B. Related Sections:
  - 1. Section 07920 - Sealants and Caulking.
  - 2. Section 09210 – Lathing, Plastering and Stucco.
  - 3. Section 09900 – Painting.
  - 4. Division 15 – Mechanical

1.02 REFERENCE STANDARDS

- A. Except as otherwise specified herein or shown on the Drawings, comply with the latest editions of all applicable codes and regulations including the applicable requirements of the following Reference Standards and Codes which are hereby made a part of this Section, as they relate to the aluminum louvers.
  - 1. BOCA Building Code, latest Edition.
  - 2. The Occupational Health and Safety Administration (OSHA) Code of Federal Regulations(CFR), Volume 29.
  - 3. Air Movement and Control Association (AMCA) – Certified Ratings Seals for air performance and water penetration ratings.
    - a. AMCA Standard 500: Air performance, water penetration and air leakage ratings shall be determined in accordance with Air Movement and Control Association International Inc (AMCA) Standard 500, “Test Method for Louvers, Dampers and Shutters,” latest revision.
    - b. AMCA Standard 511: Air performance, water penetration and air leakage ratings shall be licensed in accordance with Air Movement and Control Association International Inc. (AMCA) Standard 511, “Certified Ratings Program for Air Control Devices,” latest edition.
  - 4. Welding Standards: As follows:
    - a. AWS D1.2, "Structural Welding Code-Aluminum."
    - b. AWS D1.3, "Structural Welding Code-Sheet Steel."
  - 5. HEVAC Technical Specification: Weather louver effectiveness ratings shall be determined in accordance with The HEVAC Technical Specification, “Laboratory Testing and Rating of Weather Louvers When Subjected to Simulated Rain,” latest

- edition.
6. BSRIA: Weather louver effectiveness ratings shall be certified by the Building Services and Research Information Association (BSRIA), Bracknell, UK.
  7. SMACNA Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" recommendations for fabrication, construction details, and installation procedures. Delete below if no motor-operated adjustable louvers.
  8. UL and NEMA Compliance: Provide motors and related components for motor-operated adjustable louvers that are listed and labeled by UL and comply with applicable NEMA standards.

#### 1.03 QUALITY ASSURANCE

- A. Provide test data, testing lab certification, engineering data signed and sealed by a State of Maine registered professional engineer.
- B. Source Limitations: Obtain louvers and vents through one source from a single manufacturer where alike in one or more respects regarding type, design, or factory-applied color finish.
- C. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

#### 1.04 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide exterior metal louvers capable of withstanding the effects of loads and stresses from wind 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: Uniform pressure (velocity pressure) as required by BOCA Code acting inward or outward.
  2. 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:
    - a. Temperature Change (Range): 120 deg F ambient; 180 deg F material surfaces.
- B. Air-Performance, Water-Penetration, and Air-Leakage Ratings: Provide louvers complying with performance requirements indicated, as demonstrated by testing manufacturer's stock units 48 inches wide by 48 inches high. Test units according to AMCA 500.
  1. Perform testing on unpainted, cleaned, degreased units.
  2. Perform water-penetration testing on louvers without screens.

- C. Airborne Sound Transmission Loss: Provide acoustical louvers complying with airborne sound transmission loss ratings indicated, as demonstrated by testing manufacturer's stock units according to ASTM E 90.
- D. Weather Louver Effectiveness: Provide louvers complying with performance requirements indicated, as demonstrated by testing manufacturer's stock units at an exterior wind velocity of 29.1 mph and rainfall rate of 2.95 inches per hour for a 60 minute test in accordance with the HEVAC Technical Specification.

1.05 SUBMITTALS

- A. Shop Drawings: Show complete opening design including mullions and other framework needed for support of individual louver panels and to resist specified wind load; details of assembly and installation, and work required from other trades.
- B. Product Data: Catalog cuts of louvers, structural and performance characteristics signed and sealed by a State of Florida registered professional engineer.
- C. Color charts for selection by the Resident.
- D. Submit appropriate Air Performance and Weather Louver Effectiveness certificates and test reports from AMCA, BSRIA.
- E. Certificates: Provide the following:
  - 1. Certification of the manufacturer showing that each type, grade and size of louver unit complies with requirements where the manufacturer's standard louver units have been tested in accordance with specified tests and meet performance requirements specified in the BOCA Building Code for wind resistance, and wind driven rain. Where such testing has not been accomplished, perform required tests through a recognized testing laboratory or agency and provide certified test results.

**PART 2 PRODUCTS**

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide aluminum louvers with louver screens as manufactured by Ruskin, Kansas City, MO.
- B. The following manufacturers are accepted subject to requirements of this Section.
  - 1. Airolite Company.
  - 2. Construction Specialties, Inc.

- C. Products of other manufacturers which meet the requirements of the Drawings and this Section will be accepted, provided approval is obtained from the Resident.

## 2.02 WALL LOUVERS

- A. Louver Model No. ELF6375DXD Drainable Stationary Louver and screen as manufactured by Ruskin. Fixed continuous 37-1/2 degrees storm resistant louvers with extruded aluminum frames and blades, reinforcing bosses and corners and of the appropriate alloy for the finish specified. Sizes as indicated on Drawings. Provide integral caulking slot and retaining bead in frames. Wall louvers shall be complying with the following:

1. Louver Depth: 6 inches.
2. Frame Thickness: 0.081 inch.
3. Blade Thickness: 0.081 inch.
4. Performance Requirements: Maximum standard air flow not less than 5800 cfm with not more than 0.12 inch wg static pressure loss.
5. Free air space: 67 percent minimum free area.
6. Mullions: Integral or separate, capable of resisting design wind forces on louvers with a maximum deflection of 1/175 of span.
7. Corner construction: Coped and screwed, or welded.

## 2.04 MATERIALS

- A. Aluminum Extrusions: ASTM B221(ASTM B221M), alloy 6063-T5.
- B. Fasteners: Of same basic metal and alloy as fastened metal. Do not use metals that are incompatible with joined materials. All sheet metal work adjacent to louvers shall be 0.040 in. aluminum minimum.
1. Use types and sizes to suit unit installation and conditions.
  2. Use Phillips flat-head screws for exposed fasteners, unless otherwise indicated.
- C. Anchors and Inserts: Of type, size, and material required for loading and installation indicated. Use aluminum, stainless steel or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as needed for corrosion resistance. Use toothed steel or expansion bolt devices for drilled-in-place anchors. Provide adjustable anchors at each jamb, spaced not to exceed 24 in. vertically.
- D. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12 but containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D1187.
- E. Sealant and backing material: Refer to Section 07920.
- F. Screens: Provide each exterior louver with an expanded, flattened aluminum bird screen in

removable frame secured to interior face of louver frames with stainless-steel machine screws, spaced a maximum of 6 inches from each corner and at 12 inches o.c. Comply with the following requirements:

1. Frames: 10 gauge extruded aluminum with mitered corners reinforced with clips. Non-rewirable, U-shaped for permanently securing screen mesh.
  2. Frame Finish: Clear aluminum mill finish in accord with NAAMM AA-C22RI.
  3. Screen Material: Aluminum 1/2 inch square mesh, 0.063 inch diameter aluminum bird screen.
- G. Screens for Louvers at mechanical ducts: Provide 1/2 in. sq. mesh, 14 gauge hardware steel cloth, galvanized after weaving, secured within an independent (removable) 10 gauge extruded aluminum frame.

## 2.05 FINISH

### A. General:

1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
2. Acid etch and shop prime coat for field applied finish coat in accord with NAAMM AA-MIXC41RIX.

### B. Aluminum Finish: Coil coated KYNAR®500 or HYLAR®5000 based polyvinylidene fluoride (PVDF) resin in conformance with general requirements of AAMA 605.2-92.

1. Color: As selected by the Resident, to match color of the preformed metal wall panels.

## **PART 3 EXECUTION**

### 3.01 INSTALLATION

- A. Locate and place louver units level, plumb, and at indicated alignment with adjacent work. Install each louver in accord with manufacturer's printed instructions and approved shop drawings.
- B. Use concealed anchorages and fastenings. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weather tight connection.
- C. Form closely fitted joints with exposed connections accurately located and secured.
- D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated. Install in such a way that a rabbet 1/4 to 1/2 in. wide is left for application of sealant. Seal perimeter with specified sealant. Apply sealant in accord with Section 07920.

- E. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.
- F. Protect galvanized and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.
- G. Install concealed gaskets, flashings, joint fillers, and insulation, as louver installation progresses, where weathertight louver joints are required. Comply with Division 7 Section "Joint Sealants" for sealants applied during louver installation.

3.02 ADJUSTING, CLEANING, AND PROTECTING

- A. Test operation of adjustable louvers and adjust as needed to produce fully functioning units that comply with requirements.
- B. 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.
- C. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- D. 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.
- E. 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 Resident, remove damaged units and replace with new.
  - 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\*\*\*