

SECTION 10532

LOUVERED OPENING ROOFS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Extruded, prefinished aluminum louvers.
- B. Louver support tracks and pivot pins.
- C. Supporting structure.
- D. Flashings, guttering, and downspouts.
- E. Electric control system and wiring.
- F. Manual control system.
- G. Accessories.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete: Concrete structural framework.
- B. Section 05120 - Structural Steel: Steel structural framework.
- C. Section 05140 - Structural Aluminum: Aluminum structural framework.
- D. Section 05500 - Metal Fabrications: Miscellaneous metal.
- E. Section 06100 - Rough Carpentry: Wood structural framing and decking.
- F. Section 06181 - Glued-Laminated Structural Units: Laminated wood structural framework.
- G. Section 07361 - Gutters and Downspouts.
- H. Section 07620 - Sheet Metal Flashing and Trim.
- I. Section 07900 - Joint Sealers.
- J. Division 16 - Electrical: General requirements for electrical installation.

1.3 REFERENCES

- A. AAMA 603.8 - Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum; American Architectural Manufacturers Association.
- B. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.

1.4 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Design opening roof assemblies to withstand ___ psf (___ kPa) live load, plus weight of assembly.
 - 1. Maximum allowable deflection: 1/100th of span, after installation (wind loading).
 - 2. Maximum allowable deflection: 1/40th of span, after installation (snow loading).
 - 3. Maximum allowable deflection: 1/___th of span, after installation.
- B. Finish Performance: No cracking, blistering, peeling, or loss of adhesion after 1,000 hours of testing in accordance with ASTM D 2247.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's product specifications, standard details, installation instructions, general recommendations, and maintenance requirements as applicable to components specified.
- C. Shop Drawings: Dimensioned drawings showing plans and elevations of structure and opening roof panels, sections and details, in addition to standard details and wiring diagram.
- D. Selection Samples: Color chips or charts for selection from range of standard or custom colors and finishes.
- E. Verification Samples: Actual section of louver in selected finish, not less than 6 inches (150 mm) long.

- F. Related Materials: Listing of products and materials required for complete installation not supplied by manufacturer of louvered opening roofs.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company with not less than two years of experience in design and installation of extruded aluminum louver opening roof systems similar to those required for this project.
- B. Installer Qualifications: Installer with not less than three years of experience in installing similar roofing framework, and holding certificate from manufacturer as a qualified installer.
- C. Field Measurements: Where possible, especially with existing framework or substrate, take field measurements of structural framing and substrate to receive the system, prior to manufacture of louvers, gutters, and other customized components.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver all components to the project site properly packaged to provide reasonable protection against damage to material and finishes from transport or adverse weather.
 - 1. Inspect packaging upon arrival at site for external signs of impact or water damage.
 - 2. Photograph damaged packaging prior to opening.
 - 3. Open damaged packages for close inspection of contents
 - 4. Notify manufacturer of any damaged packaging or product.
- B. Storage: Store all material above ground on suitable platforms or dunnage. Elevate one end to allow for moisture runoff. Store under waterproof covering. Provide for proper ventilation to avoid build-up of condensation.
- C. Handling: Exercise extreme care in handling, loading and unloading, storing and installing components to prevent surface damage, bending, and twisting. Set individual louvers in protective racks during preparation work prior to installation, to prevent damage.

1.8 WARRANTY

- A. Manufacturer's Limited Warranty:
 - 1. Provide manufacturer's written warranty that aluminum louvers, tracks, lock angles, and pivot pins will be free of defects in materials and workmanship for a period of five years after installation.
 - 2. Provide manufacturer's written warranty that other components will be free of defects in materials and workmanship for a period of one year after installation.
 - 3. Provide manufacturer's written warranty against cracking, blistering, peeling, or loss of adhesion of finishes for a period of five years from the date of installation.

- B. Installer's Warranty: Provide installer's written warranty against defective installation for a period of ____ years after installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Eclipse Opening Roof USA; 1050 Kansas Avenue, Suite D; Modesto, California 95351. ASD. Tel: (209) 527-4987; Fax: (209) 527-1347.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

- C. Substitutions: Not permitted.

2.2 SYSTEM

- A. Louvered opening roof system made to order and comprised of the following components:
 - 1. Extruded aluminum louvers.
 - 2. Pivot pins and support tracks; louver interconnecting links.
 - 3. Structural framework.
 - 4. Custom guttering and downspouts.
 - 5. Sheet metal flashing and trim.
 - 6. Customized insect screening.
 - 7. Customized electronic motor control system.

8. 12 volt geared electric motor, with 12 volt solar rechargeable battery power supply, wiring, and switching.
9. 12 volt geared electric motor, 110 volt AC/12 volt DC power supply, wiring, and switching.
10. Manual louver control mechanism.

2.3 ALUMINUM COMPONENTS

- A. Louvers: Solid extruded aluminum, nominal thickness 0.07 inches (1.78 mm), cover 5-7/16 inches (138 mm), width 6-1/2 inches (165 mm), incorporating 2-1/2 sq in (1613 sq mm) water drainage channel in each louver.
 1. Length: As indicated on drawings.
 2. Length: As scheduled.
 3. Length: _____.
- B. Gutters and Downspouts: Sheet aluminum formed to manufacturer's standard profiles.
- C. Standard Finish: Provide manufacturer's standard thermosetting polyester coating for aluminum components, complying with AAMA 603.8, and as follows:
 1. Color: As selected from manufacturer's standard color range.
 2. Color: Custom color, as scheduled.
 3. Color: _____.
- D. Non-Standard Finish: Baked on powder coating, with color as scheduled.
- E. Non-Standard Finish: PVDF finish, with color as scheduled.
- F. Non-Standard Finish: _____.

2.4 STRUCTURAL FRAMING

- A. Provide structural support for louvered opening roof as detailed, and as follows:
 1. Aluminum framing system, as specified in Section 05140.
 2. Wood framing as specified in Section 06100.
 3. Steel framing as specified in Section 05120.
 4. Laminated timber framing, as specified in Section 06181.
 5. Concrete structure, as specified in Section 03300.

- B. Coordination: Provide coordination as required for proper installation of louvered opening roofs in structural support.

2.5 ELECTRICAL COMPONENTS

- A. Manufacturer's standard 12 volt electric motors, with maximum of 200 sq ft (18.4 sq m) of louvers per motor, subject to manufacturer's design confirmation.
- B. Controller: Manufacturer's standard toggle switch.
- C. Controller: Customized electronic motor control system.
- D. Battery: 12 volt DC rechargeable battery with solar panel.
- E. Battery: 12 volt DC rechargeable battery with 110 volt AC/12 volt DC battery charger.

2.6 ACCESSORIES

- A. Fasteners, sealants, and miscellaneous components as recommended by manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that installation areas conform with dimensions and tolerances shown on approved shop drawings.
- B. Examine area of installation to verify that substrates are ready to receive installation of opening roof components.
- C. Verify locations for gutter downspouts.
- D. Verify that appropriate power source is available for electric motor.
- E. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install components to be plumb, level, and straight, and make all connections rigid and secure, in conformance with the design indicated.
- B. Install custom guttering to be rigid, secure, and free from leaks, providing proper and adequate drainage.
- C. Install extruded aluminum louvers and associated components so they are parallel and secure and operate correctly and freely, providing adequate fall for louver drainage, in compliance with manufacturer's instructions.
- D. Install electrical components and make electrical connections in conformance with governing codes and manufacturer's instructions.

3.3 ADJUSTING AND CLEANING

- A. Verify that all movable components are operating properly and that installation is complete. Make any adjustments needed to bring installation into conformance with manufacturer's specifications.
- B. Remove excess materials and debris caused by work of this section from the project site.
- C. Clean structure, gutters, louvers, and other components in accordance with manufacturer's recommendations.
- D. Touch up minor scratches and abrasions with paint provided or approved by manufacturer or material finisher.
- E. Protect finished work against damage. Replace any work that becomes damaged prior to final inspection and acceptance.

END OF SECTION