PART 1 GENERAL

1.1. SECTION INCLUDES

A. Material: Extruded Aluminum sightproof stationary louver system.
Manufacturer: ES Metals

B. Exterior extruded aluminum profiles for the louver system and accessories required for a louver system designed to protect air intake and exhaust openings in building's exterior walls.

C. The louver has been tested and qualified per Florida test protocols No. FL 31288:

- TAS 201 (Large Missile Impact)
- TAS 202 (Loads)
- TAS 203 (Cyclic Wind Loading)
- Designed and tested to comply with the requirements of the 8th Edition Florida Building Code (2023) including High Velocity Hurricane Zone (HVHZ)

CI ES Metals certifies that the model ESM-5LS shown herein is licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings seal applies to air performance, water Penetration and wind-driven rain ratings.

Finishes: ES Metals standard colors from the palette, two coats: Primer and Color coat.

1.2. REFERENCED STANDARDS

A. Air Movement and Control Association (AMCA) International:

- AMCA 501 - Louver Application Manual and Design Guide
- AMCA 500L – Laboratory Methods of Testing Louvers for Rating.
- AMCA 511 – Certified Ratings Program Product Rating Manual for Air Control Devices.

B. AAMA 2605 - Superior Performance

C. AAMA 2604 - High Performance

D. AAMA 2603 - Standard Performance

E. American Society of Civil Engineers/ Structural Engineering Institute (ASCE/SEI)

1.3. SUBMITTALS

A. General: Submit under conditions of the contract and provisions.

B. Product Data: Manufacturers information on each product to be used, including product data sheets, specifications, product details, and installation instructions.

C. Shop Drawings:

- Louver layout plan, elevations, opening and dimensions, tolerances and anchorage, accessories, finish colors, patterns and textures.

- Head, jamb, and sill details.
- Blade configuration, blank-off panel areas, and frames.

D. Engineering Calculations: Submit engineering calculations as required by the local building code, showing that the installed louver and attachments systems meet the wind load requirements for the project.

E. Samples: Submit selection and verification samples for finishes, colors and textures.

1. Selection Samples: Manufacturers color charts or chips illustrating full range of colors, finishes and patterns available. Please note that samples are only representative of color and pattern and not for thickness or edge finish. Metallic colors may also show a slight variation in appearance due to the metal flake orientation from batch production
2. Verification Samples: For each finished product specified, two samples representing actual product, color and patterns.

1.4. INFORMATION SUBMITTALS

A. Test Data: Certified test data showing published test results for specified performance, based on AMCA 500-L and AMCA 511.

B. Manufacturer's Instructions: Include installation instructions, rough-in dimensions, special procedures, and perimeter conditions requiring special attention.

1.5. QUALITY ASSURANCE

A. Manufacturer Qualifications: Primary extruded aluminum products specified in this section will be supplied by a single manufacturer with a minimum of five (5) years' experience. Products covered under the Work listed in this section are to be manufactured in an ISO 9001 certified facility.

B. Installer Qualifications: All products listed in this section are to be installed by an installing firm who can prove 3 years in business and exemplary workmanship. The installation firm must have evidence of installing louvers and is suitable for the execution of the work.

C. Mock-Up: Provide a mock-up for evaluation of the product and application workmanship. Scope and finish are to be described by architects on architectural drawings. Do not proceed with the remaining work until workmanship, color, and finish are approved by architect.

D. Pre-installation Meetings: Conduct a pre-installation meeting of the contractor and installer to verify project requirements, substrate conditions, manufacturers installation instructions and manufacturer's warranty requirements.

1.6. DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver products in fabricator or manufacturer's unopened, undamaged containers with identification labels intact.
2. During transportation, use stable pallets that are at least the same dimension as the extrusion pack.
3. Materials shall be packaged to minimize or eliminate the possibility of damage during shipping.
4. Moving extrusions that are stacked on pallets should be done with a forklift or a crane. Exercise care in unloading, storing and installing planks to prevent bending, warping, twisting, and surface damage.

B. Storage:

1. Store products in an enclosed area protected from direct sunlight, moisture and heat. Maintain consistent temperature and humidity.
2. Store products in fabricator or manufacturer's unopened crates until ready for installation.

C. Handling:

1. When moving extrusions, lift evenly to avoid dragging materials across each other and scratching the decorative surface.
2. Remove all labels and stickers immediately after installation.

1.7. WARRANTY

Manufacturer Warranty: At project closeout, provide Manufacturer's limited **[3 years]** warranty covering defects in aluminum materials from date of shipment. Warranty is only available when material is fabricated and installed by companies trained by the Manufacturer or Manufacturer's representative.

PART 2 PRODUCT

2.1. Extruded Aluminum Louvers

A. Design basis: The louvers and related material herein specified and indicated on the drawings shall be manufactured by: ES Metals, Carrera 72A # 107-33, Barranquilla, Colombia.

B. Product: Drawings and specifications are based on manufacturers' literature from ES Metals. Louvers combine effective ventilation, solar control and wind-driven rain protection with modern architectural aesthetics.

Aluminum material is used to extrude profiles to construct a louver. In a wide variety of colors, ensuring an excellent appearance for a long period of time. Ideal for

environments exposed to strong weather conditions, such as rain, winds and impacts from flying elements in tornadoes and hurricanes

Louvers: High Performance.
Single section Area: 50sqft
Louvers dimensions : Maximum 60 “x120” or 120 “x60”
Minimum 12” x 12”
Louver’s location: aligned
Louvers orientation: Horizontal

C. Trims and other components:
Accessories: Bird Screen, Blank Off, Back Pan
D. Substructure and other components: aluminum mullions, Brackets and angles.
E. Fastenings: Non-corrosive stainless-steel hardware. The fastener color and finish is mill.

2.2. Wind Driven Rain Resistant Horizontal Blade Louvers

A. Louver depth: 5” inch deep 0.081” nominal wall thickness.
B. Percent Free Area: 50%
C. 150 PSF max design pressure.
D. Blade: 0.081 inches (2.06 mm)
E. Frame (head and sill): 0.081 inches (2.06 mm). Jambs: 0.081 inches (2.06 mm).
F. Effectiveness Ratio: AMCA Class D, 70 percent effective at 29 mph (13 m/s) wind velocity and 3.0 inch (76.2 mm) per hour rainfall.
G. Effectiveness Ratio: AMCA Class D, 35.6 percent effective at 50 mph (22 m/s) wind velocity and 8.0 inch (203.2 mm) per hour rainfall.
H. Intake Core Velocity: 985 fpm (5.0 m/s) at 29 mph (13 m/s) wind velocity and 3.0 inch (76.2 mm) per hour rainfall.
I. Intake Core Velocity: 990 fpm (5.0 m/s) at 50 mph (22 m/s) wind velocity and 8.0 inch (203.2 mm) per hour rainfall.
J. Beginning Point of Water Penetration:
   a. Free Area Velocity: 1037,5 (5.27 m/s).
   b. Max Intake Volume: 8287 cfm (3.911 m3/s).
K. Performance at 6,000 CFM (2.832 m3/s).
   a. Pressure Drop: 0.142-inch wg (0.035 kPa).
L. Wind Resistance: Designed to withstand 100 PSF (4.78 kPa).

2.3. FABRICATION

A. Aluminum materials: all major louvers components shall be architectural grade aluminum. Alloy 6063 T6 which provides good corrosion resistance and ease of extrusion. The aluminum sheets used are 5052 H32.
B. The louvers shall be fabricated in accordance with the dimensions, configuration and layout shown in the Shop Drawings.
C. The louvers shall be marked to coordinate their approval of the Shop Drawings.
D. Mechanical assembly: use of stainless steel or corrosion resistant aluminum fasteners (hardware). Each louver unit shall include all structural supports, anchoring elements and accessories necessary for complete field assembly.
E. Component Design: The head, sill and side jambs and vertical mullions shall be fabricated from a single piece of extruded aluminum structural.

PART 3 EXECUTION

MANUFACTURERS INSTRUCTIONS

A. Compliance: Comply with manufacturer's and fabricator's product data, including product technical bulletins, product catalog installation instructions and project specific installation instructions.

EXAMINATION

B. Do not begin installation until the substrate is properly prepared.
C. The openings to receive the louvers must be uniform, smooth, dry and free of defects detrimental to the installation of the louver. Notify the contractor in case of conditions that may cause detriment to the performance of the work.
D. If substrate preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding. Do not proceed with installation until unsatisfactory conditions have been corrected.

INSTALLATION

A. Install siding system plumb, level and accurately spaced in accordance with manufacturer's recommendations and approved shop reports and drawings.
B. Install the system on a plumb, flat, true and dry substrate in accordance with ASTM E330.
C. Securely anchor louvers and substructures per engineering recommendations and in accordance with approved shop drawings to allow for necessary movement and structural support.
D. Do not install louvers or components that are observed to be defective or damaged, including, but not limited to: warped, bowed, worn, scratched and broken members.

E. Attach louvers with fasteners approved for use with the supporting substrate.

F. Install louvers with fasteners suitable for use with adjacent construction as indicated on shop drawings and as recommended by the manufacturer.

G. Do not cut or trim components during installation in a manner that will damage the finish, reduce strength, or result in visual imperfections or performance failures. Return components requiring alteration to the shop for remanufacturing or replacement.

ADJUSTING AND CLEANING

H. Remove masking or protection as soon as possible after installation. Any masking intentionally left in place after installation on an elevation, shall become the responsibility of the General Contractor to remove.

I. Adjust final installation so that all joints are true and even. Planks out of plane shall be adjusted with the surrounding planks to minimize any imperfection.

J. Repair planks with minor damage. Remove and replace planks damaged beyond repair as a direct result of the installation. After installation, repair and replacement shall become the responsibility of the General Contractor.

K. Clean finished surfaces as recommended by fabricator. After installation cleaning, cleaning during construction shall become the responsibility of the General Contractor.

PROTECTION

L. Protect installed products and surfaces from damage during construction.