

SECTION 08520

ALUMINUM WINDOWS

1. PART 1 – GENERAL

1.1 WORK INCLUDED:

1. Provide labor, material, equipment and services to furnish and install aluminum windows shown on drawings and specified herein. Window shapes and accessories specified and detailed will establish the unit and materials to be used to provide the functional performance and aesthetic requirements desired. Drawings indicate the required depth and profile.
2. Anchors, brackets, and attachments.
3. Hardware.

1.2 RELATED WORK:

1. Section 07900. Joint Sealers.
2. Section 08800. Glass and Glazing.

1.3 REFERENCES:

1. AAMA/WDMA/CSA 101/I.S.2/A440 – North American Fenestration Standard/Specifications for Windows, Doors and Skylights
2. AAMA 2603 - Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2604 - Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
4. AAMA 2605 - Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
5. AAMA 1302.5 – Voluntary Specification for Forced-Entry Resistant Aluminum Prime Windows.
6. ASTM B 221 – Aluminum and Aluminum-Alloy Extruded Bar, Rod, Wire, Profiles, and Tube.
7. ASTM B 209 – Aluminum and Aluminum-Alloy Sheet and Plate.
8. ASTM E 283 – Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.

9. ASTM E 330 – Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
10. ASTM E 331 – Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
11. ASTM E 547 – Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.
12. FS TT-P-645 – Primer, Paint, Zinc Chromate, Alkyd Type.
13. NFRC-100: 2001 – Procedure for Determining Fenestration Product U-Factors.

1.4 PERFORMANCE:

1. Manufacturers bidding this project must submit certified test reports by an independent third party AAMA certified testing laboratory documenting that a comparable window of approximately the same size as the windows on this job has been tested to AAMA/WDMA/CSA 101/I.S.2/A440 or NAFS-1 or NAFS-2 standard or equivalent ASTM testing criteria:

1.5 SUBMITTALS:

1. All shop drawings and product data to be provided by window installer. Prior to the submission of shop drawings, window installer must field verify existing window openings. Prior to manufacturing, the window installer must submit complete shop drawings showing installation details for architect's approval.
2. These drawings must show elevations of windows, full sized details of all sections of windows, collateral materials, details of anchorage and hardware. Supplemental data must include instructions for storage, handling and erection of windows. Calculations for window anchors shall be based upon window design pressure of 40 pounds per square foot.
3. Submit four samples, 1 X 4 inches in size minimum, illustrating prefinished aluminum surface.

1.6 DELIVERY, STORAGE AND HANDLING:

1. Deliver and handle system in accordance with industry standards.
2. Store and protect system components in accordance with industry standards.
3. Provide wrapping to protect prefinished aluminum surfaces.

1.7 WARRANTY:

1. Tradewind standard warranty or approved equal.

2. PART 2 – PRODUCTS

2.1 MANUFACTURERS

1. Basis of Design: Characteristics of specific products, where named in this Section, are indicated to establish required level of quality, appearance, and performance. The Architect will consider comparable products by alternate manufacturers listed, and request for substitutions, under the provisions of Section 01610.

2.2 ALUMINUM WINDOWS – JALOUSIE/LOUVER

1. Manufacturer: RMA Sales or approved equal.
2. Type: Louvered Jalousie Window.
3. Series: Tradewind Aluminum.
4. Material: Principal frame and sash sections must be 6063-T5 alloy produced from architectural grade homogenized aluminum primary billet.
5. Construction:
 1. Size/Profile: 4 5/8" nominal frame depth.
 2. Frame Construction: Extruded sill with weeping system that allows for complete water drainage to the exterior.
 3. Weatherstripping: Manufacturer's standard.
 4. Glazing: Glass to be field installed per manufacturer's specifications.
 5. Hardware: Manufacturer's standard.
6. Performance Rating:
 1. Air Infiltration: Assembly limited to 1.2 CFM/SQ. FT. at 1.57 PSF when tested in accordance with ASTM E 283.
 2. Water Infiltration: No water penetration of assembly when subjected to 5 gallons per SQ.FT. per hour at 3.0 PSF when tested in accordance with ASTM E 547.
 3. Uniform Structural Test Pressures: No glass breakage, permanent fastener or hardware damage or permanent deformation of any member in excess of 0.4 % of its span at 45 PSF when tested in accordance with ASTM E 330.
7. Hardware and Accessories:
 1. Locking Device: Manufacturers standard locking mechanism.
 2. Screens: Manufacturers standard aluminum, flush with exterior of frame, not surface mounted. Spring clips, fasteners and other items securing screens shall be totally concealed, 18 x 14 charcoal mesh. Finish shall match window.
8. Finish and Color:
 1. Anodized aluminum coatings to be Class I finish professionally applied to mill finish aluminum (Alloy 6063-T5), which has been

properly cleaned and pretreated. The anodizing process must meet the performance requirements and standards of AAMA 611-98.

2. Anodized aluminum surfaces shall have a minimum oxide coating thickness of 18 microns (0.7 mil) for Architectural Class I finish when tested in accordance with ASTM B 244 or ASTM B 487.
3. Sealant shall be compatible with anodic coatings and meet the performance requirements of AAMA 800 sealant specification.
4. Concealed Steel Items: Primed with iron oxide paint.

-----OR-----

9. Finish and Color:

1. Fluoropolymer Coating Specifications (Meeting AAMA 2605).

The 70% Fluoropolymer coating for extruded aluminum and aluminum sheet will be professionally applied, oven baked and applied in compliance with the manufacturer's specifications. The coating must be applied to mill finish aluminum, which is properly cleaned and pretreated. The pretreatment must meet ASTM D1730 Type B, methods and processing and must meet ASTM 8849, Section 5. Conversion coating weight must be a minimum of 30 mg. Per square foot.

2. The film thickness of the fluoropolymer system must be 1.2 mils minimum. Recessed areas are to be covered to the extent possible. The manufacturer will approve the coating applicator for the fluoropolymer coating specified.
3. The color to be selected by architect.

2.3 FABRICATION:

ALUMINUM WINDOWS

1. Construction – Frames: Frames must be constructed of continuous extrusions. All corners should be square cut and butt-joined to ensure a tight joint. Overall frame depth must be 4 5/8" deep.
2. Construction – Sealants: The window manufacturer must seal exposed screws that could cause water leakage with a high quality seam sealer. All joints that could cause the unit to leak need to be sealed with an appropriate sealant during assembly by the window manufacturer.
3. All fixed windows to be factory-glazed by the manufacturer and shipped fully-assembled to the job site to ensure product integrity, quality and warranty. Louver/Jalousie blades to be installed at the jobsite to minimize damage.

3. PART 3 – EXECUTION

3.1 SURFACE CONDITIONS:

1. Prior to work in this section, carefully inspect previously installed work. Verify all such work is complete to the point where this installation may properly commence.

2. Verify that the work of this section may be installed in strict accordance with the original design, shop drawings and all pertinent codes, regulations, and all pertinent portions of the referenced standards.
3. In the event of discrepancy, immediately notify the Architect.
4. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 INSTALLATION:

1. Install windows, frames, glazing and hardware in accordance with approved shop drawings and/or manufacturer's instructions.
2. Use appropriate anchorage devices to securely attach frame assembly to structure. Anchorage devices to be located no closer than 6" from frame corners and at a spacing of not more than 16" on center. It may be necessary to drill pilot holes in the frames to allow fasteners to be installed. All penetrations to the frame and anchorage devices should be sealed with an approved sealant. See Section 3.3.
3. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
4. Install hardware using templates if not already factory installed.
5. Install perimeter sealant, backing materials, in accordance with Sealant Section 3.3.
6. Adjust operating hardware.
7. It is imperative that the installer takes all precautions to keep construction materials containing dissimilar metals from coming in contact with each other. It may be necessary to isolate dissimilar metals by using blocking, bituminous paint, or other appropriate measures. All fasteners used for the installation are to be non-metallic stainless steel.

3.3 SEALANTS:

1. Seal joints between windows and surrounding construction.
2. Joints and surfaces to receive sealants must be clean, free from loose material, free of efflorescence or mortar leaking, and dry. Sealants will not be applied when temperature is below manufacturer's recommendations.
3. Clean joints and surfaces before sealing or priming in conformance with manufacturer's instructions.
4. Prime joints in conformance with material manufacturer's instructions.
5. Provide joint backing in all joints where a suitable backstop to receive sealant is otherwise not available.
 1. Pack joints with joint backing to provide depth equal to 50% of width. Caulk joint width will not be less than ¼" and not more than ½" unless recommended otherwise by the manufacturer.

3.4 CLEANING:

1. The general contractor will be responsible for protection of the work from damage by other trades and final cleaning.
2. Remove protective material from prefinished aluminum surfaces.

3. Wash down exposed surfaces using a solution of mild detergent in warm water, applied with soft clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
4. Remove excess sealant by moderate use of VOC approved cleaner acceptable to sealant manufacturer.

END OF SECTION