constructconnect™ manu-spec®

All Weather Architectural Aluminum

All Weather Architectural Aluminum
777 Aldridge Road
Vacaville, California 95688
Phone: (707) 452-1600
Fax: (707) 452-1616
Email: randy.agno@allweatheraa.com
Website: www.allweatheraa.com

This Manu-Spec® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A Manu-Spec is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets [ ]; delete optional text in final copy of specification. Specifier Notes precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate product model numbers, styles and types are used in Specifier Notes and in the specification text Article titled "Acceptable Material." Metric conversion, where used, is soft metric conversion.

This Manu-Spec specifies thermally broken aluminum framed windows and is based upon Series 6000 Aluminum Windows by All Weather Architectural Aluminum.

SECTION 08 51 13

ALUMINUM WINDOWS

PART 1 GENERAL

1.1 SUMMARY

Specifier Note: Retain and edit the following paragraph to meet project requirements and the types of aluminum windows specified. If multiple types of aluminum windows are specified, delete the option types.

A. Section Includes: This section specifies **Series 6000 Windows by All Weather Architectural Aluminum** as [fixed,] [casement,] [awning,] [hopper] [and] [combination] type windows with integral glazing units and accessories.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI MasterFormat and specifiers practice.

B. Related Requirements:

Specifier Note: Include in this paragraph only those sections and documents that directly affect the work of this section. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is specified elsewhere, then the related section number(s) should be listed in the Subparagraph below. Do not include Division 00 documents or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 documents and Division 01 sections to some degree. Refer to other documents with caution since referencing them may cause them to be considered part of the Contract.

1. Section [07 26 00 – Vapor Retarders].
2. Section [07 27 00 – Air Barriers].
3. Section [07 60 00 – Flashing and Sheet Metal].
4. Section [07 92 00 – Joint Sealants].
5. Section [08 11 16 – Aluminum Doors and Frames].
6. Section [08 40 00 – Entrances, Storefronts, and Curtain Walls].

7. Section [08 80 00 - Glazing].

1.2 REFERENCES

Specifier Note: Define terms unique to this Section and not provided elsewhere in the contract documents. Include in this article terms that may not be commonly known in the construction industry. Delete the following paragraph if no definitions are required.

A. Definitions:
   1. [____].

Specifier Note: Paragraph below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References paragraph when specifying products and installation by an industry reference standard. List retained standard(s) referenced in this section alphabetically. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced and update as applicable. Contract Conditions Section 01 42 00 - References may be used to establish the edition date of standards. This paragraph does not require compliance with standard(s). It is a listing of all references used in this section. Only include here standards that are referenced in the body of the specification in PARTS 1, 2 and/or 3. Do not include references to building codes at any level.

B. Reference Standards:
   1. American Architectural Manufacturer's Association (AAMA):
      a. AAMA/WDMA/CSA101/I.S.2/A440, North American Fenestration Standard/Specification for Windows, Doors, and Skylights, Includes Update No. 1.
      b. AAMA 502-12 Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
      c. AAMA 609 Cleaning and Maintenance Guide for Architecturally Finished Aluminum.
      d. AAMA 611 Voluntary Standards for Anodized Architectural Aluminum.
      e. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix).
   2. Glass Association of North America (GANA):
      a. GANA 01-0300 Proper Procedures for Cleaning Architectural Glass Products.
   3. ASTM International (ASTM):
      a. ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
      b. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
      c. ASTM E547 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
      d. ASTM F588 Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.
   4. National Fenestration Rating Council (NFRC):
      a. NFRC 100A Procedure for Determining Fenestration Attachment Product U-Factors.
      b. NFRC 200A Procedure for Determining Attachment Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
      c. NFRC 500 Procedure for Determining Fenestration Product Condensation Resistance Values.
   5. US Green Building Council (USGBC):
      a. LEED NC Version 2.2, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package for New Construction and Major Renovations.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Contract Conditions and Section 01 33 00 - Submittal Procedures.

1.3 SUBMITTALS

A. Make submittals in accordance with [Section 01 33 00 - Submittal Procedures].

B. Product Data: Manufacturer's standard specifications and descriptive literature, including:
   1. Certified test laboratory reports to show compliance with requirements.
      a. Windows with sizes exceeding the gateway sizes do not qualify under these tests.
      b. Windows manufactured with configurations different than the tested configurations do not qualify under these tests; windows can be tested for performance outside the already tested gateway sizes.
      c. Windows with hardware different from what is referenced on the test reports do not qualify under these tests.
   2. Manufacturer's standard head, jamb and sill details.
   3. Installation methods.
      a. Submit manufacturer's written installation instructions.

C. Manufacturer's Certificates: Submit certified independent testing agency reports indicating window unit meets or exceeds specified performance requirements.

D. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.
   1. Provide shop drawings indicating details of construction and installation including, but not limited to, window location chart, window schedule, size, muntin type and design, sections and details of multiple window assemblies, hardware, glazing details, frame type, STC, glass types, screens and handing operation.

E. Samples
   1. Window Section:
      a. Submit 8 × 8 inch minimum corner section sample of frame for each glazing type specified.
      b. Sample will be used to verify construction, corner joint, frame finish and color.
      c. Quantity [5].
   2. Glazing:
      a. Insulated Glazing [12 × 12 inch].
   3. Finish: AAMA 611 Anodized Architectural Coatings; AAMA 2605 for Organic Coatings on Aluminum Extrusions.
      a. [Class 1 Anodized].
      b. [Kynar].

Specifier Note: Specify submittals intended to document manufacturer storage, installation and other instructions.

F. Manufacturer's written instructions, including:
   1. Delivery, storage and handling recommendations.
   2. Preparation and installation recommendations.

G. Installer's Experience: Submit verification of evidence of work similar to work of this section.

Specifier Note: Coordinate Article below with Contract Conditions and with Section 01 78 36 - Warranties.

H. Warranty: Fully executed, issued in [Owner's] name and registered with manufacturer, including:
   1. Manufacturer's [1 year] warranty, from date of accepted delivery, covering defects in materials.

Specifier Note: Retain the following only if specifying for a LEED project. Specify only the technical submittal requirements necessary to achieve the credits desired for this Project.

I. Sustainable Design (LEED) Submittals:
   1. LEED Submittals: In accordance with Section [01 35 21 – LEED Requirements].
   2. Submit verification for items when appropriate as follows:
      a. MR 5 - Regional Materials.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 10 years experience in producing aluminum windows of the type specified.
   1. Manufacturer must be certified through the PPG Certified Window Fabricator Program.

B. Installer Qualifications: Licensed contractor with a minimum 3 years experience installing similar windows.

C. Mock-ups: Provide and install at job site a mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color and workmanship standard.
   1. Size: [____] .
   2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
   3. Incorporation: Mock-up may be incorporated into final construction upon Owner's and Architect's approval.
   4. Modify mock-up as required to produce acceptable work.

1.5 DELIVERY, STORAGE AND HANDLING

A. Delivery
   1. Deliver materials in accordance with manufacturer's written instructions and labeling.
   2. Deliver materials in manufacturer's original, unopened, undamaged containers or packaged with identification labels intact, and product name and manufacturer clearly visible and in sizes to suit project.

B. Storage
   1. Store materials upright and protected from exposure to harmful environmental conditions, clean, dry, frost-free and at manufacturer's recommended temperature and humidity levels.

C. Handling:
   1. Exercise care during off-loading and installation to avoid damage and marring of finishes.
   2. Handle in a manner to evenly distribute material load and prevent twisting, ending and cracking of windows doors and associated parts.
   3. Replace materials damaged during handling.

1.6 WARRANTY

A. Manufacturer's warranty:
   1. Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.
   2. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes performance characteristics, material standards and descriptions in other articles as applicable. Use of such phrases as or equal, approved equal or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining or equal products.

2.1 MANUFACTURER

A. Acceptable Manufacturer: **All Weather Architectural Aluminum**, 777 Aldridge Road, Vacaville, California 95688; Phone: (707) 452-1600; Fax: (707) 452-1616; Email: randy.agno@allweatheraa.com; Website: www.allweatheraa.com.

B. Basis for Design: **Series 6000 Windows by All Weather Architectural Aluminum**.

C. Related Requirements:
   1. Section [01 60 00 Product Requirements] for submitting comparable submittals for products by listed manufacturers.

2. Information, including sample (size and configuration per Architect's requirements) must be submitted for consideration a minimum of 10 days before project bid date.

Specifier Note: Retain and edit the following paragraph to meet the project requirements.

2.2 PERFORMANCE REQUIREMENTS

A. Design pressure, air infiltration and water penetration.
   1. Comply with AAMA /WDMA/CSA 101/I.S.2/A440 [AW-PG80].

B. Uniform Load Deflection and Uniform Load Structural to ASTM E330.

C. ASTM E283, Air Leakage: 6.27 psf: 0.1 cfm/ft2 maximum.

D. ASTM E547, Water Penetration: at 12.11 psf: No leakage.

E. ASTM F588, Forced Entry Resistance: Type B grade 10: pass for no entry.

F. U-Value [____].

G. Solar Heat Gain Coefficient (SHGC) [____].

H. Acoustical Performance: STC [____].

2.3 DESCRIPTION

Specifier Note: Retain and edit the following paragraph to meet the project requirements and the types and configurations of aluminum windows specified. If multiple types and configurations of aluminum windows are specified, edit the paragraphs below to meet project requirements. Window types and configurations can be incorporated into various combinations which should be chosen in consultation with the window manufacturer. Visit www.allweatheraa.com for assistance in window combination selections and descriptions.

A. Acceptable Material: **Series 6000 Outside Glazed Windows by All Weather Architectural Aluminum**.
   1. Aluminum framed [fixed,] [casement,] [awning,] [hopper] [and,] [combination] windows [as indicated] [single glazing] [insulating glazing units (IGU)] and accessories.
   2. Window Dimensions:
      a. See drawings for window types and configurations.

2.4 MATERIALS

A. Frames: 2 1/2 inches thermal strut, outside glazed, thermally broken extruded aluminum, Type 6063 age hardened to T-6 rating for strength and durability.
   1. Include full perimeter exterior snap in glazing stops.
   2. Corners of Frame and Ventilators: Mitered, corner keyed and crimped; muntin and intermediate bars attached to cross joints and abutting sash sections.

Specifier Note: Retain and edit one of the following two paragraphs to meet window finishes required. If the frames are to be custom anodized, insert the color in the "blank" square brackets.

   3. Finish Types:
      a. Aluminum to AA DAF-45, [Class 1, clear anodized] [Class 1, bronze anodized] [Custom anodized color [____].

Specifier Note: If a specific Kynar paint color is required, insert the color name in the "blank" square brackets and then edit the rest of the paragraph to suit.

      b. 70% Kynar paint color [____] [custom] [selected by Architect from manufacturer's standard range].
      c. Dual Finish: [Inner frame color [____]; Outer frame color [____].

Specifier Note: Retain and edit the following paragraph to glazing options available.

B. Glazing in accordance with Section [08 80 00 – Glazing].
   1. [Single] [1/2] inch.
   2. [Insulated Glass] [1 inch].

2.5 FABRICATION

A. Mitered, corner keyed and crimped on frames and ventilators.

B. Attach muntin and intermediate bars to cross joints and abutting sections.

C. Ensure sill, vents and intermediate bars have weep holes and are sloped for positive drainage to exterior.

D. Pre-drill and tap frames to receive screen attachment hardware as required.

E. Ensure surfaces to be glazed include bead retaining notch.

F. Ensure operable windows include two rows of weatherstripping in extruded slot at perimeter of vent or opening.

G. Install hardware specified.

2.6 ACCESSORIES

Specifier Note: Retain and edit the following paragraph to match window types and configurations specified. Delete the following paragraph if project only includes fixed windows.

A. Hardware:
   1. For casement windows: [4 bar heavy duty stainless steel concealed hinges], [die cast zinc cam handles with pole ring] [worm gear rotary control operator with butt hinges and side mounted multi-locking handle].
   2. For hopper windows: 4 bar heavy duty stainless steel hinges, [cam handle with pawl] [snaplock].
   3. For awning windows: [4 bar heavy duty stainless steel concealed hinges, die cast zinc cam handles with pole ring] [worm gear rotary hardware with loose pin concealed hinges and side mounted locking handles].

Specifier Note: Delete the following paragraph if project consists of only fixed windows. Contact manufacturer directly for assistance in choosing the most appropriate screen type for the project.

B. Screens: Painted roll formed aluminum frames finished to match window frames factory-drilled/tapped to receive screen attachment hardware.
   1. Screen hardware:
      a. Charcoal fiberglass.
      b. Wire.
      c. Ultraview™.

Specifier Note: Retain the following paragraph when cam handle hardware is selected for casements and awning windows.

      d. Plastic wicket doors.

Specifier Note: Delete the following paragraph if project consists of only fixed windows.

C. Weatherstripping: 64A durometer black santoprene bulb insert.

2.7 SOURCE QUALITY CONTROL

A. Use only fabricators who have training and experience with similar work of this Section.

B. Ensure all window framing materials come from single manufacturer.

PART 3 EXECUTION

3.1 INSTALLER

A. Use only licensed installers who have training and experience with similar work of this Section.

3.2 EXAMINATION

A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for aluminum window installation in accordance with manufacturer's written recommendations.
   1. Visually inspect substrate.
   2. Verify openings are dimensionally correct and within allowable tolerances, and substrates are plumb, level and clean.
   3. Verify in the presence of the Architect that anchoring surface is in accordance with approved shop drawings.
   4. Inform Architect of unacceptable conditions immediately upon discovery.
   5. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Architect.
   6. Starting window installation implies substrate conditions are acceptable for Work of this Section.

Specifier Note: Retain and edit the following paragraph to meet project requirements. Retain only those paragraphs that are appropriate to the project.

3.3 INSTALLATION

A. Install aluminum windows in accordance with manufacturer's written recommendations.
   1. Ensure operable windows are closed and locked during installation.

3.4 SEALANTS

A. Apply sealant in accordance with manufacturer's written installation guidelines.

3.5 FIELD QUALITY CONTROL

A. Comply with AAMA 502-12.

B. Field Testing Performance:
   1. To AAMA 502-12, Section 1.1.

C. Proper Execution of the Field Test:
   1. Ensure window is plumb, level and square.
      a. If conditions fall outside the +/-1/8 inch tolerance, do not test product.
      b. Test at a pressure greater than 2/3 the fenestration product laboratory test pressure.

D. Qualification of the agency performing the test:
   1. Ensure agency is an AAMA accredited independent testing agency.

Specifier Note: Edit the following paragraph to meet project requirements. Coordinate site visits with manufacturer or delete the paragraph and all subparagraphs if site visits are not required.

E. Site Visits:
   1. Schedule site visits to review work at stages listed:
      a. After delivery and storage of aluminum windows and when preparatory work on which Work of this Section depends is complete, but before application begins.
      b. Twice during progress of work at 25% and 60% complete.
      c. Upon completion of work, after cleaning is carried out.
      d. Obtain reports within three days of review and submit immediately to Architect.

3.6 CLEANING

A. Clean sealants, caulking and other materials from surfaces, including adjacent work.

B. Clean window frames, casings and glass using materials and methods recommended by the window and glass manufacturer that do not cause defacement of work.
   1. Clean using methods which comply with AAMA 609.
   2. Clean glass using methods which comply with GANA 01-0300.

C. Protect installed products until completion of project.

D. Touch-up, repair or replace damaged products before Substantial Completion.

Specifier Note: Specify protection methods completed after installation, but prior to acceptance by the owner. Include only statements unique to this Section. Coordinate the following Article with Section 01 76 00 - Protecting Installed Construction.

3.7 PROTECTION

A. Protect installed aluminum windows from damage during construction.

B. Repair or replace adjacent materials damaged by installation of aluminum windows.

END OF SECTION