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# Zero Sightline Series 30P

# SECTION 08 51 13

**ALUMINUM WINDOWS**

PART 1 GENERAL

* 1. SUMMARY
1. Related Documents: Conditions of the Contract, Division 1 - General Requirements, and Drawings apply to Work of this Section.

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*Edit this paragraph to briefly describe the contents of the section. After editing section, refer back to this paragraph to verify no conflicts exist.*

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1. Section Includes:
	1. Aluminum Prime Windows
		1. Type:\_\_\_\_\_\_\_\_\_\_\_ **[Choose all that apply:**  **Outward Projected, Outswing Casement]**
		2. Category: Architectural (AW)
		3. Designation:\_\_\_\_\_\_\_\_\_\_\_ **[Choose all that apply:** **AP-AW75, C-AW75]**
2. Related Sections
	1. Drawings, General and Supplementary Conditions of the Contract, Division 1 and the following Specification Sections, apply to this Section.
	2. Section 01 41 00 – Regulatory Requirements
	3. Section 01 43 00 – Quality Assurance
	4. Section 07 92 00 – Joint Sealants
	5. Section 08 51 13 – Aluminum Windows
	6. Section 08 81 00 – Glass Glazing
	7. REFERENCES

*(Note: Delete all reference standards that are not actually required and add any additional standards required by the municipality and/or state where the project is located. The Contracting Requirements or Division 1, Section 01420 – References, may establish the edition date of standards not otherwise indicated. Division 1 may include full names and addresses of the organizations whose standards are referenced.)*

1. American Architectural Manufacturers Association (AAMA):
	1. AAMA/WDMA/CSA 101/I.S.2/A440–Standard Specifications for Windows, Doors, and Skylights
	2. AAMA 910 – Voluntary “Life Cycle” Specifications and Test Methods for AW Class Architectural Windows and Doors
	3. 1503 – Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections
2. American National Standards Institute (ANSI)
	1. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.
3. ASTM International
	1. 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.
	2. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
	3. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
	4. ASTM E2188 - Standard Test Method for Insulating Glass Unit Performance.
	5. ASTM E2189 - Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units.
	6. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
4. Consumer Product Safety Commission (CPSC)
	1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
5. Glass Association of North America (GANA)
	1. Glazing Manual (current edition)
	2. SYSTEM DESCRIPTION
6. Test Procedures and Performance
	1. Specifications for Windows, Doors and Unit Skylights: AAMA 101.
	2. Air Infiltration Test: ASTM E 283, at6.24 psf static air pressure differential. Air infiltration shall not exceed 0.10 CFM per sq. ft.
	3. Water Resistance Test: ASTM E 331, no water leakage at 15 psf static air pressure differential.
	4. Operation and Cycling Performance: AAMA 910, life cycled and retested for air and water. **[Delete 1.02, A., 4. if ventilators are not required.]**
	5. Uniform Load Deflection Test: ASTM E 330, at static air pressure of +/- 75 psf. No member shall deflect more than 1/175 of its span.
	6. Uniform Load Structural Test:ASTM E 330, at static air pressure difference of +/- 112.5 psf.
	7. Condensation Resistance Test: AAMA 1503.1, CRF shall be not less than 55.
	8. Thermal Transmittance Test: AAMA 1503.1, U-Value shall not exceed .60 BTU/HR/SQ.FT/°F.
	9. Acoustical Test: ASTM E 90 / ASTM E 413, reference 2.02, D. for acoustical glass type, or Section 08 81 00 **[Delete 1.02, A., 9. if there are no sound abatement requirements.]**
	10. SUBMITTALS
7. Provide submittals in a timely manner to meet required construction completion schedule and in accordance with specifications.
	1. Shop Drawings
		1. Shop drawings will be prepared by the window manufacturer. Shop drawings prepared by window distributor, installer, representative/dealer of outside drafting firm are not acceptable.
		2. Show components complete with dimensions, material and details of anchoring and fastening.
		3. Show finishes, sealants and other information indicating compliance with specifications.
		4. Submit test report per 1.03 SYSTEM DESCRIPTION A. Test Procedures and Performance.
	2. Samples
		1. Components: submit samples of anchors, fasteners, hardware, assembled corner sections and other materials and components if requested by architect.
		2. Finish: submit full range color samples for approval by architect.
	3. Warranties: submit written copies in accordance with - 1.08 WARRANTIES
	4. DELIVERY, STORAGE AND HANDLING
8. Protect materials from damage before installation per instructions and in accordance with specifications.
	1. QUALITY ASSURANCE
9. Installer Qualifications: An experienced installer that has completed the same or similar projects in size and scope.
10. Source Limitations: Obtain aluminum windows from single source manufacturer.
11. In-House Testing: Conduct air and/or water testing of 2% windows prior to shipping.
12. Detailed documentation on in-house testing is available upon request.
	1. PROJECT / SITE CONDITIONS
13. Ensure ambient and surface temperatures and joint conditions are suitable for installation of materials.
	1. WARRANTY
14. Window System
	1. Qualified window manufacturer, with proven financial responsibility and years of experience of at least the length of the warranty period shall provide written \_\_\_\_ **[2, 5, or 10]** year warranty against defects in materials and workmanship.

PART 2 PRODUCTS

* 1. MANUFACTURERS
1. Subject to compliance with requirements indicated, provide products by one of the following:
	1. Oldcastle BuildingEnvelope®. Drawings and Specifications are based on Zero Sightline Series 30P
	2. MATERIALS
2. Aluminum: 6063-T5 alloy shall have 0.125” wall thickness.
	1. Extrusions: comply with ASTM B 221. Extrusion tolerances shall meet ANSI H35.2.
	2. Sheet: comply with ASTM B 209.
	3. Frame Depth:3"
	4. Ventilators: **[Delete 2.02, A., 4. if ventilators are not required.]**
		1. Depth: 3"
		2. Design: Zero sightline, structural glazed, flush with frame, mitered, crimped with aluminum gussets, nominal vent frame exposure.
	5. Thermal Barrier: ¼” poured-in-place and debridged polyurethane. Extrusions shall be prepared utilizing a mechanical locking device prior to the pouring and debridging process to improve adhesion.
3. Hardware: material shall be corrosion resistant and compatible with aluminum. Hardware must prove its strength and suitability by being installed on units that are tested in accordance with specifications.
	1. Fasteners: provide non-magnetic stainless steel screws, epoxy adhesives, or other material warranted by the manufacturer.
	2. Operating Hardware: Window Type:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **[Choose those that apply and create B., 3. for multiple window types: i.e. Projected, Casement, ] [Delete 2.02, B., 2. if ventilators are not required.]**
		1. Ventilator hinge type: \_\_\_\_\_\_\_\_\_
		2. Ventilator locks type: \_\_\_\_\_\_\_\_\_
		3. Ventilator handles type: \_\_\_\_\_\_\_\_\_
		4. Ventilator operators type: \_\_\_\_\_\_\_\_\_
		5. Hold-open and limit devices type: \_\_\_\_\_\_\_\_\_
4. Sealants: color of exposed sealants shall be compatible with adjacent window materials. Comply with AAMA 803.3.
5. Glazing: windows shall be factory glazed unless too large or unsafe for handling.
	1. Glass: provide in accordance with Section 08 81 00.
	2. Glazing Materials: units shall be exterior wet glazed using structural silicone, setting blocks, edge blocks and accessories as recommended by and in accordance with GANA Glazing Manual.
6. Weatherstripping: shall be non-shrinking, resistant to ultraviolet degradation, and replaceable closed cell elastomer shall meet ASTM C 509. Dense elastomer shall meet ASTM C 864
	1. Ventilators: provide two rows of compression type neoprene / EPDM alloy or Santoprene. **[Delete 2.02, E., 1. if ventilators are not required.]**
7. Access Panels: shall be \_\_\_\_\_\_\_\_\_\_\_\_ **[Choose the one that applies: hinged, lift-off]** mitered, epoxied, mechanically crimped over gussets and sealed to form a hairline joint. **[Delete 2.02 F. if access panels are not used.]**
8. Blinds: shall be 5/8” or 1”with pull cord, slip clutch and tilt control. **[Delete 2.02 G. if blinds are not used.]**
	1. Aluminum surfaces shall be coated with baked enamel. Blind color shall be: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[Choose those that apply: Reference Blind Color Selection chart]**.
9. Muntins: shall be \_\_\_\_\_\_\_\_\_\_\_ **[Choose the type that applies: true, glazed in, interior face applied, exterior face applied, between-the-glass] [Between-the-glass muntins specified in Section 08 80 00] [Delete 2.02, H. if Muntins are not used**
10. Screens: shall be \_\_\_\_\_\_\_\_\_\_\_\_ **[Choose all that apply: flat, inside removable, hinged or wicket]** with frames the same finish as window surface. 18 x 16 black aluminum mesh, standard. **[Delete 2.02, I. if ventilators are not required.]**
	1. FABRICATION
11. Frames: shall be machined, mechanically fastened and sealed to form a watertight joint.
12. Ventilators: shall be mitered, epoxied, mechanically crimped over solid aluminum gussets and sealed to form a watertight joint. **[Delete 2.03, B. if ventilators are not required.]**
13. Component Forming: all aluminum components shall be formed, free of scratches and burrs, before application of finish.
	1. FINISHES
14. Cover all exposed areas of aluminum windows and components. Overall finish shall be**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. [Choose one that applies: Clear Anodized, Color Anodized, 70% Polyvinylidene Fluoride.]**
	1. **[Clear Anodized]**
		1. Type: Architectural Class I clear anodizing
		2. AAMA Specification: Comply with AAMA 611
		3. Aluminum Association Designation: AA‑M10‑C22‑A41
		4. Color: Clear 215-R1
	2. **[Color Anodized]**
		1. Type: Architectural Class I for color anodizing
		2. AAMA Specification: Comply with AAMA 611
		3. Aluminum Association Designation: AA‑M10‑C22‑A44
		4. Color: \_\_\_\_\_\_\_\_\_\_ **[ Champagne bronze, light bronze, medium bronze, dark bronze, or black]**
	3. **[70% Polyvinylidene Fluoride]**
		1. Type: high performance baked-on organic coating
		2. AAMA Specification: Comply with AAMA 2605
		3. Color: \_\_\_\_\_\_\_\_\_\_

PART 3 EXECUTION

* 1. EXAMINATION
1. Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface and are in accordance with approved shop drawings.
	1. INSTALLATION
	2. Install windows with skilled tradesman in accordance with approved shop drawings and specifications.
	3. Unfinished aluminum shall be insulated from direct contact with steel, masonry concrete, and non-compatible materials by bituminous paint, zinc chromate primer or other suitable insulating material.
	4. Install vapor retarder/air barrier in accordance specifications between window perimeter and adjoining collateral materials and existing wall barriers to assure continuity.
	5. Plumb window faces in a single plane for each wall plane. Erect square and true. Anchor to maintain position when subjected to normal thermal and building movement, seismic forces and specified wind loads.
	6. Apply sealants at joints and intersections and at opening perimeters in accordance with approved shop drawings and Section 07 93 13 to provide watertight installation.
	7. FIELD QUALITY CONTROL
2. Conduct on-site air and water infiltration tests in accordance with AAMA 502, ASTM E 783, ASTM E 1105, and with architect and window manufacturer's representative present. Architect will select units to be tested. Air infiltration shall not exceed 1.5 x air infiltration amount specified for laboratory testing.
3. Tested units not meeting specified requirements and units having similar deficiencies shall be corrected at no cost to owner.
4. Cost for successful tests shall be paid by owner. Unsuccessful tests shall be paid by contractor.
5. Testing shall be by agency acceptable to architect and window manufacturer and employed by contractor.
	1. CLEANING
6. After installation and testing, windows and glazing shall be inspected, adjusted, and left clean and free of labels and dirt. Protect finished installation against damage.
7. Final cleaning of anodized finish shall be in accordance with AAMA 609.1; painted finish shall be in accordance with AAMA 610.1.

END OF SECTION