SECTION 085653

ICC 500-2014 Certified Windows

\*\* NOTE TO SPECIFIER \*\* Winco Window Company; Aluminum Windows.

 This section is based on the products of Winco Window Company, which is located at:
 Winco Window Co.
 6200 Maple Ave.
 St. Louis, MO 63130-3305
 Toll Free: 800-525-8089
 Tel: 314-725-8088
 Fax: 314-725-1419
 Email: [Send Message to Winco Window Co.](http://admin.arcat.com/users.pl?action=UserEmail&company=Winco%20Window%20Co.&coid=36570&rep=146&fax=314-725-1419&mf=)
 Web: [www.wincowindow.com](http://www.wincowindow.com)

 Winco, the country's oldest aluminum window manufacturer has been designing, developing and manufacturing windows that are used by schools, colleges, universities, businesses and institutions. Our windows are designed to offer protection from the elements, noise, hurricanes, tornados, and terrorism.We have a great deal of experience meeting the unique criteria of the school environment as well as the differing demands of an institutional, commercial or industrial setting. Whether you need windows for an historical school renovation, a large high-rise or an architecturally exacting design, every Winco window meets the same stringent standards of uncompromising quality.

 In addition to meeting the HC (Heavy Commercial) standard, most Winco windows are also AW (architectural Window) rated (the most stringent rating given by the AAMA).

 When you are looking for a window company that really understands your needs, that can deliver windows on your time schedule, to meet your budget, that isn't afraid to take a custom approach....then there really is only one choice...Winco, clearly.

1. GENERAL
	1. SECTION INCLUDES
		1. Fixed FEMA ICC500-2014 Aluminum Windows
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 07900: Joint Sealers.
		2. Section 08800: Glazing.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section. Contact your local code officials for assistance and/or Winco for performance testing.

* + 1. AAMA/WDMA/CSA 101/I.S.2/A440 - Voluntary Specification for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.
		2. AAMA 1503.1 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
		3. AAMA 512-11 – Voluntary Specifications for Tornado Hazard Mitigation Fenestration Products.
		4. FEMA 361 - Design and Construction Guidelines For Community Safe Rooms
		5. ICC 500-2014 ICC/NSSA Standard for the Design and Construction of Storm Shelters
		6. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
		7. ASTM E 330; 1997 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
		8. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
	1. SUBMITTALS
		1. Submit under provisions of Section 01300.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings:
			1. Elevation for each style window specified indicating its size, glazing type, muntin type and design.
			2. Manufacturer's head, jamb and sill details and section views for each window type specified.
		4. Schedules:
			1. Provide a window schedule indicating the type, size, color, and operation of each unit specified. Coordinate with window mark types found in the Contract Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if a pre-construction meeting is not scheduled.

* + 1. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns. Samples may be subsequently installed on the project.
		2. Test Reports: Submit certified independent testing agency reports indicating window units meet or exceed specified performance requirements.

\*\* NOTE TO SPECIFIER \*\* Retain applicable paragraphs below for projects intended to be LEED-certified. Verify credits required with project LEED coordinator.

* 1. SYSTEM DESCRIPTION
		1. Test Units:
			1. Air, water and structural test unit shall conform to requirements set forth in AAMA/WDMA/CSA 101/I.S.2/A440.
		2. Test Procedures and Performance:
			1. Windows shall conform to AAMA/WDMA/CSA 101/I.S.2/A440 requirements for each window type.
			2. Air Infiltration Test:
				1. Test unit in accordance with ASTM E 283 at static air pressure of 6.24 psf.
				2. Air infiltration shall not exceed that specified for each Product.
			3. Water Resistance Test:

\*\* NOTE TO SPECIFIER \*\* Contact Manufacturer for pressure differential test requirements and insert below.

* + - * 1. Test unit in accordance with ASTM E 331 and ASTM E 547 at static air pressure difference of 12 psf.
				2. There shall be no uncontrolled water leakage.
			1. Uniform Load Deflection Test:

\*\* NOTE TO SPECIFIER \*\* Contact Manufacturer for pressure differential test requirements and insert below.

* + - * 1. Test unit in accordance with ASTM E 330 at static air pressure (positive and negative) difference of100% design pressure.
				2. During testing, no member shall deflect more than 1/175 of its span.
			1. Uniform Load Structural Test:
				1. Test unit in accordance with ASTM E 330 at static air pressure (positive and negative) difference 150% of design pressure.
				2. At conclusion of test, there shall be no glass breakage; no permanent damage to fasteners, hardware parts, support arms, or actuating mechanisms; no other damage which would cause window to be inoperable.
			2. Condensation Resistance Test (CRF):
				1. With window sash closed and locked, test unit in accordance with AAMA 1503.1.
				2. Condensation Resistance Factor (CRF) shall not be less than that specified for each Product.
			3. Thermal Transmittance Test (Conductive U-Value):
				1. With window sash closed and locked, test unit in accordance with AAMA 1503.1.
				2. Conductive thermal transmittance (U-Value) shall not exceed that specified for each Product.
			4. Life Cycle Test:
				1. Test window in accordance with AAMA 910.
				2. At conclusion of test, there shall be no damage to fasteners, hardware parts, support arms, or actuating mechanisms; no other damage which would cause window to be inoperable. Subsequent air infiltration and water resistance tests shall not exceed specified requirements.
			5. Forced Entry Resistance Test: ASTM F 588, Type and Grade as indicated for each Product.
			6. Tornado Hazard Mitigating:
				1. Test window in accordance with ICC 500-2014
				2. Window must be factory labeled and certified as ICC 500-2014 Compliant
				3. Furnish windows capable of providing protection from winds as specified in ICC-500 Tornado Hazard Map.
				4. Furnish window that will resist 3-second 180 mph design wind speed and tornado missile speed of 100 mph (15-lb 2X4)
				5. A “Pass” test as identified in ICC-500 Chapter 8. Missile did not perforate the glazing; The glazing remained attached to the glazing frame; Glass fragments or shards remained within the glazing unit.
				6. Anchors, clips, stops and other accessories shall be provided to comply with AAMA 101.1.S.2 and AAMA 907. Provide units and anchorage mechanism with sufficient strength to withstand required design pressure and strength for specified load conditions.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: All windows and window hardware specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years’ experience.
		2. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing windows of the same type and scope as specified.
		3. Provide test reports from AAMA accredited laboratory certifying that window units are found to be in compliance with AAMA/WDMA/CSA 101/I.S.2/A440-97 and performance standards listed above.
			1. Test reports shall be accompanied by the window manufacturer's letter of certification stating that the tested window meets or exceeds criteria for the appropriate AAMA/WDMA/CSA 101/I.S.2/A440 test.
		4. Code Compliance: Provide windows that comply with regulations of the code bodies having jurisdiction.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* 1. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation in accordance with manufacturer's recommendations.
		2. Protect units against damage from the elements, construction activities and other hazards before, during, and after installation.
	2. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
	3. WARRANTY
		1. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Winco Window Co., which is located at: 6200 Maple Ave. St. Louis, MO 63130-3305; Toll Free Tel: 800-525-8089;[www.wincowindow.com](http://www.wincowindow.com)
		2. Requests for substitutions will be considered in accordance with provisions of Section 01600 and supply a complete window sample test data and other information deemed necessary by the owner and Architect.
	2. MATERIALS
		1. Aluminum:
			1. Frame: Extruded aluminum, 6063-T6 alloy and temper, tensile strength of 25,000 psi.
		2. Thermal Barrier:
			1. Poured-in-place structural thermal barrier shall transfer shear during bending and provide composite action between frame components.
			2. Thermal barrier pocket on aluminum extrusions shall be Azo-Braded to create a mechanical lock to improve the adhesion properties between the polyurethane polymer and the surface of the thermal barrier pocket.
			3. Window manufacturer must provide a warranty from the manufacturer of the polyurethane thermal barrier that warrants against product failure as a result of thermal shrinkage beyond 1/8 inch (3.2 mm) from each end and fracturing of the polyurethane for a period not to exceed ten years from the date of window manufacture.
	3. THERMAL FIXED ICC 500-2014 WINDOWS - WINCO 3350 SERIES
		1. Acceptable Product:
			1. Winco 3350 Series: 3-1/2 inch Heavy Commercial Thermally Improved Window.
		2. Performance: AAMA/WDMA/CSA 101/I.S.2/A440.
			1. Architectural Window: AW-80.
			2. FEMA 631/ICC 500-14
			3. Water Resistance, ÅSTM E 547: 12 psf (575 Pa) for AW rated windows.
			4. Air Infiltration, ASTM E 283 at static air pressure of 6.24 psf: 0.05 cfm/sf.
			5. Uniform Load Structural Test, ASTM E 330: 300 psf (5748 Pa).
			6. Impact sample with 15lbs 2X4 162” long at 100mph.
			7. Forced Entry Resistance, ASTM F 588: Grade 10.
			8. Condensation Resistance Factor (CRF), AAMA 1503.1:
				1. Frame: 63.
			9. Thermal Performance ("U" Value), AAMA 1503.1: 0.41 BTU/Hr-F°-Ft2.
	4. FINISH
		1. Anodic Finish: All exposed areas of aluminum windows and components shall receive a two-step finish: clear anodize components, then color coat with electrostatically deposited finish in accordance with Aluminum Association Designation AA-M12-C22-A, color as indicated.

\*\* NOTE TO SPECIFIER \*\* Select color requirement. Delete six of the following seven paragraphs. Insert a custom color where required.

* + - 1. Color: To be selected by the Architect from the manufacturer’s standard colors.
			2. Color: As noted in the Window Schedule.
			3. Color: A41, Class I clear anodized at 0.7 mils or greater in accordance with AAMA 611-98 (WINCO Finish 215).
			4. Color: A31, Class II clear anodized at 0.4 mils or greater in accordance with AAMA 611-98 (WINCO Finish 204).
			5. Color: A44, Class I color anodized at 0.7 mils or greater in accordance with AAMA 611-98 (WINCO Finish 311, 312 or 313).
			6. Color: \_\_\_\_\_\_\_\_\_\_\_\_\_.
		1. Paint Finish: Finish all exposed areas of aluminum windows and components with the following:
			1. 70 percent Kynar in accordance with AA-M12-C42-R1X, AAMA 2605-98
			2. 50 percent Kynar in accordance with AA-M12-C42-R1X, and AAMA 2604-98.

\*\* NOTE TO SPECIFIER \*\* Select color requirement. Delete two of the following three paragraphs. Insert a custom color where required.

* + - 1. Color: To be selected by the Architect from the manufacturer’s standard colors.
			2. Color: As noted in the Window Schedule.
			3. Color: \_\_\_\_\_\_\_\_\_\_\_\_\_.
	1. GLAZING

\*\* NOTE TO SPECIFIER \*\* Retain the following paragraph if glass and glazing will be specified in Division 8 Section, Glazing (recommended). Transfer glass data from this Section to Section

* + 1. Refer to Section 08800, Glazing: Glass and installation.

\*\* NOTE TO SPECIFIER \*\* If glass will be specified in this Section, coordinate with Section

* + 1. Refer to Section 08800, Glazing: Glass installation.
		2. Glazing Bead, for Tornado Resistant Windows:
			1. Window Series: Winco 3350 Series 3-1/2 inch Heavy Commercial.
				1. Glazing Bead: 1-11/16 inch (43 mm) with screwed-in glazing bead.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
	4. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION