**SECTION 08 51 13**

**ALUMINUM WINDOWS**

Window Technologies Inc. dba WinTech

Single Hung Window

Series G/M 225 LC-PG30-H

**PART 1 – GENERAL**

1. **SUMMARY**
	1. Section Contents
		1. Factory glazed aluminum windows complete with hardware and related components
	2. Related Sections
		1. Glass and Glazing – Section 08800
		2. Sealant and Caulking – Section 07900
	3. Single Source Requirement
		1. Glass and glazing for aluminum windows are required as work for this section. All aluminum window are to be factory glazed by the window manufacturer
2. **TEST AND PERFORMANCE REQUIREMENTS**
	1. Test Units and Test Criteria
		1. Test units should follow the requirements set forth in AAMA/WDMA/CSA 101/I.S.2/A440-11 and size will be 44” x 75” (1118 x 1905)
		2. Testing shall be performed by an AAMA qualified independent testing agency
		3. Current test reports are to be submitted, checked, and certified by an approved independent certification entity
	2. Performance Requirements
		1. Air Infiltration
			1. Not to exceed .30 cfm/SF of unit per ASTM E283 at static air pressure different of 1.57 PSF (75 Pa)
		2. Water Resistance Test
			1. No uncontrolled water leakage per ASTM E547 at static air pressure difference of 7.5 PSF
		3. Uniform Load Deflection Test
			1. No glass breakage or damage to render the unit inoperable per ASTM E330 at 30 PSF positive and negative pressure

**Optional Item for Windows 36” x 60” and Smaller**

* + - 1. No glass breakage or damage to render the unit inoperable per ASTM E330 at 50 PSF positive and negative pressure
		1. Uniform Load Structural Test
			1. No glass breakage, permanent damage to fasteners, hardware parts, support arms, or actuating mechanisms, nor any other damage that would cause the unit to be inoperable per ASTM E330 at 45 PSF positive and negative pressure

**Optional Item for Windows 36” x 60” and Smaller**

* + - 1. No glass breakage, permanent damage to fasteners, hardware parts, support arms, or actuating mechanisms, nor any other damage that would cause the unit to be inoperable per ASTM E330 at 75 PSF positive and negative pressure
		1. Forced Entry Resistance
			1. Conform to Performance Level 10 requirements per ASTM F588
		2. Condensation Resistance Factor Test (CRF).
			1. Condensation Resistance Factor (CRF) shall not be less than 31 when glazed with .26 center of glass U-Factor when tested in accordance with AAMA 1503-09
		3. Thermal Transmittance Test (Conductive U-Factor)
			1. U-Factor shall not be more than .47 BTU/hr●ft2 ●F⁰ when glazed with .26 center of glass U-Factor when tested in accordance with NFRC 102-2014
1. **SUBMITTALS**
	1. Product Data
		1. Submit manufacturer’s specifications and certified test reports from an AAMA accredited laboratory
		2. Submit standard aluminum window details
		3. Included information for glass and glazing components, accessories, and hardware
	2. Shop Drawings
		1. Submit shop drawings including floor plans, window elevations, detail sections with dimensions, glazing details, and sealant application. Also show anchors, hardware, and other components as applicable.
	3. Samples
		1. Submit finish samples
		2. Submit samples of anchors, fasteners, hardware, corner sections, or other components if required by the architect.
2. **DELIVERY, STORAGE, AND HANDLING**
	1. Store windows in a vertical position off the ground
	2. Protect window units and other accessories against damage from construction and other hazards prior to, during, and after installation
3. **WARRANTIES**
	1. Window Material and Workmanship
		1. Submit a written warranty against defects in material and workmanship for one (1) year from date of final shipment
	2. Insulated Glass
		1. Submit a written warranty for visual obstruction of vision due to dust, film formation, or moisture on the internal glass surfaces caused by defects in material and workmanship for five (5) years from the date of final shipment

**PART 2 – PRODUCTS**

1. **MANUFACTURERS**
	1. WinTech Series G/M 225 Single Hung Window manufactured by WinTech, Inc., Monett, MO
	2. Alternate Manufacturers
		1. Products of alternate manufacturers will be considered upon written authorization from the architect. Their product information, test reports documenting compliance with Section 1.2, and a sample window must be submitted fifteen (15) days prior to project bid date.
2. **MATERIALS**
	1. Aluminum Extrusion
		1. 6063-T6 alloy and tempered
		2. Extrusion tolerances should be in accordance with the Aluminum Associations “Drafting Standards for Aluminum Extruded and Tubular Products”.
	2. Nail Fin
		1. Provide window frame with integrated nail fin
	3. Fasteners
		1. Provide aluminum, stainless steel, or other corrosion resistant material as warranted by the manufacturer. Fasteners should be compatible with aluminum
		2. Provide concealed fasteners wherever possible
	4. Hardware
		1. Provide class 2 spiral balances with corrosion resistant components
		2. Provide sweep locks or pawl locks
		3. Continuous, integral sash lift handle
	5. Weather-Strip
		1. Provide weather-stripping that is compatible with aluminum, ultraviolet degradation resistant, and weather resistant.
		2. Provide woven pile weather-stripping with wool and a polypropylene center fin to comply with AAMA 701
	6. Sealant
		1. Provide sealant product that complies with AAMA 800
		2. Sealant is to be appropriate for window application and approved by the window manufacturer
		3. Refer to Division 7 for perimeter sealants between window units and surrounding conditions
	7. Insect Screens
		1. Provide 18x16 Choose an item. mesh
3. **FABRICATION**
	1. General
		1. Aluminum window and accessories shall be provided per the manufacturer’s standard fabrication and comply with specifications.
	2. Aluminum Window Material
		1. All aluminum window frame and sash extrusions will have a minimum wall thickness of .047”
		2. Any mechanical fasteners, components, and/or hardware should not bridge the thermal barrier
		3. Frame depth should not be less than 2-1/4”
	3. Aluminum Window Frame
		1. Frame members are to be mechanically fastened
		2. Frame joints should be coped and joined neatly
	4. Aluminum Window Sash
		1. Sash components are to be mechanically fastened
	5. Screens
		1. Screen frames are to be roll formed aluminum
		2. Screen mesh is to be aluminum or fiberglass
	6. Glazing
		1. Fixed and operable sash should be interior glazed with vinyl glazing stops
			1. Typical insulated glass thickness = 5/8”
		2. Wrap around or marine glazing is unacceptable
	7. Weep System
		1. Provide method of drainage for water which may collect in sill track
4. **ALUMINUM WINDOW FINISHES**
	1. Paint
		1. Provide manufacturer’s standard baked enamel coating to all exposed surfaces of aluminum window units
		2. Finish must meet AAMA 2603
		3. Color Options: Mill, White, or Bronze

**PART 3 – EXECUTION**

1. **INSPECTION**
	1. Job Conditions
		1. Verify all window openings are dimensionally within allowable tolerances, plumb, level, and clean. Provide solid anchoring surfaces in accordance with the approved shop drawings.
		2. Verify all window openings are the correct size to allow for installation of new windows per the manufacturer’s installation instructions
		3. Do not install windows into unsatisfactory openings
2. **INSTALLATION**
	1. Install windows using only skilled tradesmen in exact accordance with the approved shop drawings
	2. Plumb and align window faces in a single plane for each wall plane. Erect windows square and true. Adequately anchor window units to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.
	3. Perimeter Sealing
		1. Seal joints at perimeters in accordance with approved shop drawings and/or installation instructions to provide a watertight installation.
		2. Wipe excess sealant and leave all exposed surfaces and joints clean and smooth
3. **ADJUST AND CLEAN**
	1. After installation, windows and glazing should be inspected and adjusted to provide smooth operation and a weathertight window.
	2. After installation, leave windows clean and free of labels, dirt, sealant, etc.
	3. Initiate all protection and precautions to ensure window units will be without damage.

**END OF SECTION**