

SPECIFICATIONS

The Wintech Series 5000 consists of 2 1/2" frame heavy commercial aluminum windows with poured urethane thermal barriers. Series 5000 consists of Outswing and Inswing casements, Awning, Hopper and Fixed Lite windows. All windows have the versatility of mulling and stacking. Windows may be supplied pre-assembled with common jamb mullions and continuous headers and sills. These windows are available with equal leg frames and 1" new construction fin frames for replacement or new construction applications. The windows are supplemented with a complete line of panning, trim, mullions, and other accessories.

SECTION 08520 ALUMINUM WINDOWS

PART 1 – GENERAL

1.01 GENERAL PROVISIONS:

- A. All Contract Documents and Drawings apply to the Work in this Section.
- B. The Work shall be coordinated with that of all construction contractors affected by this Contract to assure the steady progress of the project.
- C. All bids shall be based on pre-qualified products. To qualify, the bidder must furnish one complete window unit and additional information as shown below prior to the bid date.
 - 1. This sample shall be identical to the model of the window on which the bid is based, with the finish being the only exception.
 - 2. The prospective bidder shall include the following in the qualification package.
 - a. The independent laboratory test reports, which certify that the proposed window product meets or exceeds the classification CW.
 - b. A Notice of Product Certification from the Administrator/Validator of a Certification Program. This certification shows continuing compliance of the window with the specification requirement.
 - c. An independent laboratory test report, indicating that the insulated glass units have been tested to the CBA level.

1.02 DESCRIPTION OF WORK:

- A. The Work of this Section includes all labor, materials, tools, and equipment needed to furnish and install aluminum windows as shown in the Drawings and as specified.
- B. The building shall be kept dry, secure, and weather tight throughout the Work.
- C. The Work shall include:
 - 1. Field observation and measurements of existing openings and conditions. Replacement of all remaining deteriorated structures.
 - 2. Removal and disposal of existing window components and construction materials.
 - 3. Installation of new factory glazed aluminum windows and accessories in existing rough openings. Application of treated wood blocking, shims, and nailers, as required for a secure installation
 - 4. Insulation of fiberglass between window frames and adjacent construction.
 - 5. Proper sealing of the exterior of window units, including any required panning, after installation per AAMA 808.

1.03 RELATED WORK:

- A. The Contract Documents for requirements, which affect the Work of this Section, shall be carefully examined. All stated functions shall be performed.
- B. The Work includes the following related Sections.
 - 1. Section 01730 – Selective Demolition
 - 2. Section 06100 – Rough Carpentry
 - 3. Section 07900 – Joint Sealers
 - 4. Section 08800 – Glass and Glazing

1.04 ITEMS FURNISHED BUT NOT INSTALLED:

- A. Architect and/or Specifier should add any applicable requirements to this Section as deemed necessary.

1.05 ITEMS INSTALLED BUT NOT FURNISHED:

- A. Architect and or Specifier should add any applicable requirements to this Section as deemed appropriate.

1.06 TESTING AND PERFORMANCE REQUIREMENTS:

- A. Standards: Except as otherwise indicated, requirements for all aluminum windows, terminology and standards of performance, and fabrication workmanship are those specified and recommended in AAMA 101/I.S.2/A440-08 and published by AAMA.
- B. Performance and Testing: Except as otherwise indicated, air infiltration test, water resistance test and applicable load test shall meet the AAMA 101/I.S.2/A440-08 requirement for type, rating and classification of the window units.
- C. Testing: For manufacturer's standard window units, independent certification shall be provided to indicate compliance with specified test procedures.
 - 1. Test reports shall be no more than four years old.
 - 2. Windows submitted for tests shall be of manufacturer's standard construction.
 - a. Test windows shall comply with the following structural requirements.

<u>Class</u>	<u>Product Type</u>	<u>Test Window Size</u>	<u>Rating</u>
AW	Casement	3'0" x 5'0"	C-AW100
AW	Awning	5'0" x 3'0"	P-AW100
AW	Fixed	5'0" x 9'3"	F-AW80

- b. Procedures set forth by AAMA 101/I.S.2/A440-08 shall apply.

D. Specific Requirements: Windows shall conform to specified AAMA 101/I.S.2/A440-08 standards or those specified herein, whichever are the more stringent:

1. Air Infiltration Test: The sash shall be in a closed and locked position. The windows shall be subjected to an air infiltration test in accordance with ASTM E283. Air infiltration shall not exceed 0.02 cubic foot per minute, per foot of crack length, when tested at 6.24 psf.

2. Water Resistance Test: The sashes shall be in the fully closed and locked position. The window units shall be subjected to a water resistance test in accordance with ASTM E 547-86. At water test pressures of 12.0 psf, no water shall pass the interior plane of the window frames as defined in the ASTM E 547 test procedure.

3. Uniform Structural Load Test: The following minimum exterior and interior uniform loads shall be applied to the entire surface of the test units.

<u>Class</u>	<u>Window</u>	<u>Test Window Size</u>	<u>Minimum Load</u>
AW	Casement	3'0" x 5'0"	150.0 psf
AW	Awning	5'0" x 3'0"	150.0 psf
AW	Fixed	5'0" x 8'3"	120.0 psf

Tests shall be conducted in accordance with ASTM E 330-90. At the conclusion of tests, there shall be no glass breakage, permanent damage of fasteners, hardware, or any other damage causing the window to be inoperable.

4. Forced Entry Resistance: The operable and fixed windows shall be tested to the requirements of ASTM F 588-85 and shall achieve the performance level 10.

5. Condensation Resistance Factor: The operable and fixed windows shall be tested in accordance with the AAMA 1503-98 and ASTM C 236-91 thermal performance standards and shall yield a condensation resistance factor of no less than CR35.

6. Thermal Transmittance "U-Factor" Test: For both the operable and fixed windows, Thermal Transmittance shall be tested to AAMA 1503-98 and shall produce U Factors no greater than ___ for clear glazed. Operable shall produce ___ for Low-E/Argon glazed windows. Fixed shall produce .___ for Low-E/Argon glazed windows.

1.07 QUALITY ASSURANCE:

- A. The standards set forth in AAMA 101/I.S.2/A440-08 and other referenced standards shall be met.
- B. Test Reports shall be provided from an independent laboratory certifying that the performance for air infiltration, water resistance, uniform structural load, condensation resistance and thermal transmittance has been met or exceeds the criterion required by the standards.

1.08 REFERENCES:

- A. American Architectural Manufacturers Assoc. (AAMA)
 American Society for Testing and Materials (ASTM)
 American National Standards Institute (ANSI)
 Aluminum Association (AA)

1.09 SUBMITTAL REQUIREMENTS:

- A. General: The following submittals shall be furnished.
 - 1. Product Data: Manufacturer's specifications, suggestions and standard product details for aluminum window units, including independent laboratory certified test report to show compliance with requirements.
 - 2. Shop Drawings: Shop drawings that include typical unit elevations, details of the head, jamb and sill of each product and

typical installation features. Drawings are to show anchor locations, type of glazing, screening, and window finish that will be supplied.

3. Samples: Samples of each required finish of an extruded shape or flat aluminum stock. Additional samples, as requested by Architect, to show fabrication techniques, workmanship, component parts and design of hardware.

1.10 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Windows, hardware and all related items shall be stored and handled in strict compliance with the manufacturer's instruction.
- B. Windows, accessories and related materials shall be adequately protected against damage from the elements, construction activities and other hazards before, during and after installation.

1.11 PROJECT WARRANTIES:

- A. Manufacturer's Warranties: Written warranties from window manufacturer shall be submitted for the following:
 - 1. Windows: Windows furnished shall be certified as fully warranted against any defects in material or workmanship, under normal use and service, for a period of one year from date of installation.
 - 2. Weather Stripping: All weather stripping shall be warranted for a period of one year from date of window installation.
 - 3. Finish: The pigmented organic finishes on the aluminum profiles and component parts shall comply with the requirements of AAMA 2603. Painted aluminum profiles are to be fully warranted for five years whereas anodized aluminum profiles are to be fully warranted for one year against chipping, peeling, cracking, and blistering from date of installation.
 - 4. Glazing: Insulated glass unit shall be warranted from visual obstruction, due to internal moisture, for a period of five years from date of installation.

1.12 EXTRA MATERIAL

- A. Specified extra material shall be furnished and delivered to Owner at the project location for potential future maintenance or replacement.

PART 2 – PRODUCTS

2.01 GENERAL:

- A. Manufacturer: Subject to compliance with Contract Documents and Specifications, window products are to be manufactured by Window Tech Systems, Inc.
 - 1. Products: Wintech Model 5000 Casement, Awning, & Fixed Lite Window– Architectural Window Rated, Thermally Broken.
- B. Window Construction: Manufacturer's standard construction, which has been in use on similar window units for a period of not less than ten years and has been tested to the thermal conductance, condensation, and strength requirements of this application, shall be supplied.

2.02 MATERIALS:

- A. Frame and Sash Members: Aluminum alloy 6063-T5 extruded shapes, with a minimum tensile strength of 22,000 psi and a minimum yield strength of 16,000 psi. Extrusions to meet requirements of ASTM B 221.
- B. Hardware:
 - 1. Locking handles shall be cam type manufactured from white bronze alloy with a US25D brushed finish or equal.
 - 2. Operator arms shall consist of 4-bar stainless steel or equal.
 - 3. Tilt Pivot Bar: Heat-treated, type 410 stainless steel with high strength and rigidity.
- C. Weather Stripping:
 - 1. All weather strip shall be thermo plastic rubber or equal
- D. Thermal Break: The thermal barrier shall provide a continuous uninterrupted thermal break around the entire perimeter of the frame and sash casements and awnings and frame of the fixed windows. All members shall not be bridged by any metal conductors
- E. Glazing: 1" thick sealed insulated glass, consisting of clear or Low-E annealed or tempered flat glass, hot melt butyl sealant, molecular sieve desiccant, anodized aluminum spacers and plastic corner keys. Insulated glass units with CBA level certification.
- F. Grid Muntins:
 - 1. Internal: Painted aluminum roll formed rectangular bars.
 - 2. External: Painted aluminum extruded trapezoidal bars.
- G. Anchor, Clips and Window Accessories:
 - 1. Fabricated aluminum or stainless steel.
 - 2. Fabricated zinc plated or cadmium plated steel to ASTM B 633 and B 766 respectively.
- H. Sealant: Permanently elastic, non-shrinking, and non-migrating sealant to ASTM 803.
- I. Insulation: Fiberglass to ASTM C 665 Type 1.

2.03 WINDOW CLASSIFICATION:

- A. AAMA 101/I.S.2/A440-08:
 - 1. Casements-C-AW100
 - 2. Awnings-P-AW100
 - 3. Fixed-F-AW80,complying with requirements for AAMA's Classification "AW" for "Architectural Window" type windows.

2.04 WINDOW CONFIGURATIONS:

- A. General: Operating arrangements for types of sash required in window units and the minimum provisions for each type are hereby specified.
 - 1. AW rated Casement, Awning & Hopper aluminum windows have Project-In or out sash, with 4 Bar hinges which appropriately hold the sash in a stationary position when opened to any distance. Crank operable and Cam mechanisms are available to secure and operate.
 - 2. AW rated fixed aluminum windows with insulated glazed glass units or insulated panels have no operating hardware or equipment.

2.05 FABRICATION AND ACCESSORIES:

- A. General Manufacturer's standard fabrication and accessories, which comply with the specifications indicated, shall be provided.
 - 1. Aluminum frame and sash extrusions shall have a minimum wall thickness of 0.125"
 - 2. Master frame shall not be less than 2 1/2"
- B. Frame
 - 1. Master frame shall be hollow extruded profiles shall be assembled by hydraulically crimping. Joinery shall be sealed with small joint sealant.
 - 2. The master frame shall be no less than 2 1/2" in-depth.
- C. Ventilator
 - 1. The vent extrusions shall be hollow extruded profiles shall be assembled by hydraulically crimping. Joinery shall be sealed with small joint sealant.
- D. Screens:(when required) Aluminum alloy 6063-T5 frame full screens with aluminum 18 x 16 mesh or fiberglass mesh
 - 1. Screen mounting holes shall be pre-drilled at the factory
 - 2. Screen mesh shall be aluminum or fiberglass as required
- E. Glazing: All glazing units and insulated panels shall be assembled at the factory. The dimension of the dehydrated air space is dependent on the glass thickness and aluminum spacer used to produce the overall minimum thickness of 1" for the sealed insulated glass unit.
- F. Grid Muntins: Colonial or diamond internal muntins are available to instill a decorative appearance. These painted aluminum muntins, when installed between the glass panes, improve the ease of cleaning. Colonial exterior muntins may be applied on the outer surface of the insulated glass units to meet historical standards.

2.06 CASING COVER SYSTEM:

- A. Exterior Panning: Aluminum panning sections shall be of a one-piece design, which locks around the entire window frame to form a weather-tight connection. Assembly shall allow unrestricted expansion and contraction of panning and window frames. Panning extrusions shall be site assembled and secured at the corners with stainless steel screws in integral screw boss with the joints back sealed per AAMA Spec 803.
- B. Mullions: Internal H, 3 Piece, and Self mull frame Mullions and exterior Mull cover shall be made of aluminum extrusions or break metal. The covers shall be sealed against panning sections with continuous vinyl bulb weather stripping interlocked within the mullion cover.
- C. Interior Trim: Aluminum trim shall be made from extruded profiles. Snap trim shall be supplied in required lengths and attached with clips located within 24" space intervals. No exposed screws are allowed.
- D. Receptor Systems: If required, the receptor shall be of two piece construction designed to anchor the windows in place. The receptor shall be made from aluminum extrusions and finished to match the window with the polyurethane thermal break.

2.07 ALUMINUM WINDOW FINISHES:

A. Manufacturer's standard electrostatically applied baked enamel coating, as selected by the Architect, shall be supplied. Application of finish shall be made by extrusion manufacturer for all components to ensure match. Manufacturer's standard substrate preparation shall include cleaning, degreasing, and appropriate pretreatment.

1. The Polycron pigment organic coating shall comply with the AAMA 2603 standard.

2. High performance Kynar paints to the AAMA 2604 (50% Kynar) & 2605 (70% Kynar) standard are available.

3. 215R1, Clear anodized finish and 215 R-1 Bronze anodized finishes are available.

PART 3 – EXECUTION

3.01 PREPARATION:

A. For replacement applications, existing windows shall not be removed until new windows are on site and ready for immediate installation. All openings shall be protected at the end of the work day, or for extended periods during wind-driven rains or excessively cold weather.

For new construction applications, new windows shall be supplied in sufficient quantities in advance of contractor's building schedule to permit orderly installation.

B. Replacement work shall be removed carefully, avoiding damage of remaining structures.

C. All other functions shall be performed as necessary to prepare openings for proper installation and operation of new windows.

D. Any shipping damages to windows shall be reported to manufacturer within 72 hours of receipt of delivery.

3.02 DISPOSAL:

A. Existing window debris and other materials shall be removed from the site and disposed by the Contractor.

B. Contractors shall comply with applicable laws, regulations, and governing specifications for proper disposal of all debris.

3.03 INSTALLATION:

A. Contractor installers shall comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators and other components. Any attachments to the structure or to components of the window system shall not adversely affect thermal barriers of the windows.

B. Existing window frames, jambs, sash stop and parting strip shall be removed without causing damage to adjacent materials and surfaces. New windows are to be installed as detailed on Drawings specified herein and recommended by manufacturer.

C. Window finish shall be protected to prevent damage during the course of the construction operations. The finish protection shall be removed before final inspection of the windows.

D. Insulation shall be fitted solid in sill, jamb, head, stool, and mullion areas before the window assemblies are installed.

3.04 SETTING AND ANCHORING:

A. Window frames shall be anchored at jambs, head, and sill as detailed on Drawings and as recommended by window manufacturer.

B. Window units shall be set plumb, level and true to line, without warp or rack of frames or sash and anchored securely in place. Aluminum and other corrodible surfaces are to be separated from sources of corrosion or electrolytic action.

C. Window panning and trim shall be properly anchored in a plumb and level condition.

3.05 ADJUST AND CLEAN:

A. Operating sash and hardware of the windows shall be adjusted to provide tight fit at contact points and at weather stripping to attain smooth operation and weather-tight closure.

B. All aluminum surfaces shall be cleaned promptly after installation, exercising care to avoid damage to protective coatings and finishes.

C. All glass shall be cleaned after installation. The contractor has the responsibility to remove labels, excess sealant compounds, dirt and foreign substances.

D. All protection and precautions shall be initiated to ensure that the window systems will be free of damage or deterioration, other than normal weathering, until time of acceptance by Owner.

END OF SECTION

01/01/19