

# SERIES 2000 SPECIFICATION GUIDE

## COMMERCIAL FIXED WINDOWS

### For impact glazing applications

#### SECTION 08520

#### PART 1 – GENERAL

##### 1.01 SECTION INCLUDES:

- A. Material: Aluminum architectural fixed windows as shown on the drawings and specified in this section.
- B. Installation; Labor, tools, and materials needed to install windows complete with related components.
- C. Glass and glazing.

##### 1.02 PRODUCTS FURNISHED BUT NOT INSTALLED:

[enter description]

##### 1.03 PRODUCTS INSTALLED BUT NOT FURNISHED:

[enter description]

##### 1.04 RELATED SECTIONS:

- A. Section 07900 – Sealants

##### 1.05 REFERENCES:

- A. AAMA – American Architectural Manufacturers Association.
  - 1. AAMA/NWWDA 101/I.S.2-97 “Voluntary Specifications for Aluminum, Vinyl (PVC), and Wood Windows”.
  - 2. AAMA 502-90 “Voluntary Specifications for Filed Testing of Window and Sliding Glass Doors”.
  - 3. AAMA 800-92 “Voluntary Specifications and Test Methods for Sealants”.
  - 4. AAMA 611-98 “Voluntary Specifications for Anodized Architectural Aluminum”.
  - 5. AAMA 2603-98 “Voluntary Specifications, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels”.
  - 6. AAMA 2604-98 “Voluntary Specifications, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels”.
  - 7. AAMA 2605-98 “Voluntary Specifications, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels”.
  - 8. AAMA CW-10-97 “Care and Handling of Architectural Aluminum from Shop to Site”.
  - 9. AAMA/NWWDA 1303.5 Forced Entry.
- B. ASTM – American Society for Testing and Materials:
  - 1. ASTM E 283 “Voluntary Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors”.
  - 2. ASTM E 330 “Voluntary Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference”.
  - 3. ASTM E 331 “Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference”.
  - 4. ASTM E 547 “Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Difference”.

5. ASTM E 774 "Specification for Sealed Insulated Glass Units".
  6. ASTM E 987 "Standard Test Method for Deglazing of Exterior Windows, Curtain Walls, and Doors".
  7. ASTM E 588 "Standard Test Method for Forced Entry Resistance".
  8. ASTM E 1300 "Standard Practice for Determining Glass Loads".
  9. ASTM E 1886 "Standard Test Method for Cyclic Pressure Differentials"
  10. ASTM E 1996 " Standard Test Method for Windows and Doors impacted by windborne Debris."
- C. Miami Dade Protocol for Hurricane Windborne Debris Impact Testing, including;
1. TAS 201 Large and Small Missile Impact Tests.
  2. TAS 202 Air infiltration, Water infiltration and Static Air pressure Tests.
  3. TAS 203 Positive and Negative Loads, Cycle Tests.

**1.06 SYSTEM DESCRIPTION:**

- A. AAMA Description: F-C 100 and F-C 110
- B. Windows: Aluminum extrusions 6063-T6 alloy and temper, minimum wall thickness .080" Frame depth of 3", width of 1-3/4", factory glazed.
- C. Configurations: Fixed, [with flush frame], [5/8" flange frame], or [1-1/2" fin frame].
- D. Glazing: Wet glazed with extruded aluminum stops with vinyl cushioning seal. Glazing bite is 1". Glazing stops accept 9/16" monolithic laminated and 1" insulated glass; see glass description in Paragraph 2.04.

**1.07 PERFORMANCE REQUIREMENTS:**

- A. Conformance to F-C specifications in AAMA/NWWDA 101/I.S.2-97 when test are performed on 60"x 96" or 48"x 120" test size with the following results.
  1. Air infiltration maximum allowable per AAMA is .30 at 6.24 psf when tested to ASTM E 283-91 at a static air pressure difference of 6.24 psf. Equal to wind at 50 mph.
  2. Air Filtration for this project: maximum .10 cfm/square foot when tested per ASTM E 283-91 at a static air pressure difference of 6.24 psf. Air infiltration measured on independent laboratory tests of WinDoor's Fixed Window are at .002 at 6.24 psf
  3. Water penetration: No uncontrolled water leakage when tested per ASTM E 547-93 and ASTM 331-93 at a static air pressure difference of 25 psf for impact rated windows.
  4. Uniform Structural Load: No glass breakage, permanent damage to fasteners, and a maximum 4% permanent deformation of the span of any frame member when tested per ASTM E 330-90 at a static air pressure difference of + and - 150 psf and + and - 165 psf.
  5. Uniform Structural Load: No glass breakage, permanent set or damage to the fasteners as tested per ASTM E 330-90 at a static air pressure difference of:

Tested Size	Impact (Heat Strengthened)		Impact (Tempered)		Impact (Tempered Insulated glass)	
	PSF	DP's	PSF	DP's	PSF	DP's
5 ft. x 8 ft.	+150 -150	= +100 -100	+225 -263	= +150 -175	+210 -210	= +140 -140
4 ft x 10 ft.	+165 -165	= +110 -110	+225 -263	= +150 -175	+210 -210	= +140 -140

6. The fixed window sizes listed above are for reference only in determining the Design Pressures that are available. Job specific DP's are provided on the drawings for this project and are the responsibility of the Engineer of record. Manufacturers providing products for this project must provide certified test reports showing compliance with the structural requirements.
7. Comparative analysis was developed from the largest size tested. Reports submitted for this project are allowed to the extent that impact and cycle testing are available to support the data.

**1.08 SUBMITTALS:**

- A. Shop drawings: window location chart, typical window elevations, detail of assemblies, and glazing details for factory glazed windows [job specific engineering as required].
- B. Product data: manufacturers specifications and test reports from an AAMA-accredited laboratory.
- C. Samples: specified finish for aluminum and other samples as requested.

**1.09 QUALITY ASSURANCE:**

- A. All windows shall be series 2000 as manufactured by WinDoor, Inc, 7500 Amsterdam Drive, Orlando, Florida 32832, Tel: 407.481.8400, Fax: 407.481.0505, or approved equal.
- B. Other manufacturers desiring approval shall furnish a window representing the bid window and valid test reports from an AAMA-accredited laboratory conforming to the test result paragraph 1.07 at least ten (10) days prior to the bid date.
- C. Acceptance: by written addendum only as verbal approvals will not be allowed.
- D. Submit bid on pre-qualified products. Bidder must identify manufacturer and model of product on which his bid is based.
- E. Manufacturer's warranties:
  1. Windows: warrant for three (3) year against defects in material or workmanship under normal use.
  2. Insulating glass units: warrant seal for five (5) years against visual obstruction from film formation or moisture collection between internal glass surfaces, excluding that caused by glass breakage or abuse.
  3. Warrant glass lamination for five (5) years against de-lamination, film integrity.
  4. Paint finish: Electrostatic paint finish meeting AAMA 2603, 2604 and 2605, shall be warranted as listed in paragraph 5 below, Finishes as provided by PPG Ind. Duracron, Acrynar and Duranar in std. white and bronze or any custom color to be selected by architect.
  5.
 

AAMA 2603	Std. Warrantee, 5 years	In coastal locations, 1 year
AAMA 2604	Std. Warrantee, 10 years	In coastal locations, 5 years
AAMA 2605	Std. Warrantee, 15 years	In coastal locations, 10 years

**PART 2 – PRODUCTS**

**2.01 MANUFACTURERS:**

- A. WinDoor Series 2000 Fixed Heavy Commercial Windows.
- B. Other acceptable manufacturers.  
[enter names as selected]

## **2.02 MATERIALS:**

- A. Aluminum Extrusions: 6063-T6 alloy and temper with minimum wall thickness of 0.080" at frame Members and stops, trim 0.062".
- B. Trim – Head, Sill and Jamb: snap in covers conceal all anchor fasteners.

## **2.03 FABRICATION:**

- A. Frame: coped corner construction secured with two stainless steel screws per corner. Corners are to be Factory sealed.

## **2.04 GLAZING: Monolithic or Insulated Glass in Impact Glazing Configurations.**

### **IMPACT GLAZING:**

- A. The drawings shall indicate the specific glazing for this project. Listed below are some of the available systems that meet the impact glazing codes.
  - 1. Single glazed 9/16 inch laminated, Heat strengthened or fully tempered glass, clear or tinted, to meet large and / or small missile impact requirements.
  - 2. If Turtle Code requirements must be met, the tinted glass shall block 44% of the visible light transmittance.
  - 3. 1 inch insulated glass meeting IGCC-CBA rating. As indicated by the drawings, the Small Missile glazing shall comprise an exterior lite of clear or tinted, 7/16 inch, fully tempered laminated glass and an interior lite of 3/16 inch clear, fully tempered glass.
  - 4. 1 inch insulated glass meeting IGCC-CBA rating. As indicated by the drawings, the Large Missile glazing shall comprise an exterior lite of clear or tinted, 3/16 inch, fully tempered glass and an interior lite of 7/16 inch, fully tempered laminated glass.
- B. Performance:
  - 1. Seal durability: conformance to ASTM E 774.92
  - 2. Meets IGCC-CBA rating.

## **2.07 FINISH ON ALUMINUM EXTRUSIONS:**

- A. Application: On clean extrusions free from serious surface blemishes on exposed surfaces.
- B. Coating: Select from PPG Duracron, AAMA 2603, Acrynar, AAMA 2604 or Kynar, AAMA 2605 in std. white, bronze or any custom color selected by the architect.
- C. Alternate, high performance finishes, PPG Acrynar AAMA 2604, 50% Kynar or PPG Duranar, AAMA 2605 with 70% Kynar (fluoropolymers) in std. white, bronze or any custom color selected by the architect.

## **PART 3 – EXECUTION**

### **3.01 PREPARATION:**

- A. Prepare openings to be in tolerance, plumb level, provide for secure anchoring, and in accordance with approved shop drawings.

### **3.02 INSTALLATION:**

- A. Install windows in accordance with manufacturers recommendations and approved shop drawings with skilled craftsmen who have demonstrated a successful history of installing windows.
- B. Provide required support and securely fasten and set window frames plumb, square, and level without twist or bow.

- C. Apply sealant per specifications and sealant manufacturers recommendations and approved shop drawings, wipe off excess and leave exposed sealant surfaces clean and smooth.

**3.03 FIELD TESTING:**

- A. Test installed units in conformance with AAMA 502.90 for air and water infiltration with window manufacturer, contractor, and owner present.
- B. Select test units as directed by the owner's representative and use an AAMA-accredited laboratory provided by the owner or contractor.

**3.04 CLEANING:**

- A. Leave windows clean and free of construction debris.