

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, as described in *The Project Resource Manual—CSI Manual of Practice*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all "Specifier Notes" when editing this section.

Section numbers are from *MasterFormat 1995 Edition*, with numbers from *MasterFormat 2004 Edition* in parentheses. Delete version not required.

Specifier Notes: Edit the section title as required.

SECTION 08551 (08 52 13)

ALUMINUM-CLAD WOOD [TILT AND TURN] [AND] [FIXED] WINDOWS

Specifier Notes: This section covers Bildau aluminum-clad wood windows in all formats.

PART 1 GENERAL

1.1 SECTION INCLUDES

Specifier Notes: Edit the following sentence as required for the project.

- A. Aluminum-clad wood [Tilt and turn] [and] [fixed] windows.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section. Verify section numbers and titles.

- A. Section 07270 (07 27 00) - Air Barriers: Water-resistant barrier. [**WRBs should be completely joined to window frame with SIGA Fentrim IS2(vapor open), IS20(vapor closed) or equivalent.**]
- B. Section 07920 (07 92 00) - Joint Sealants: [**tape should be used and NOT backer rod and caulk to take advantage of the superior air sealing of European tilt and turn windows. SIGA Fentrim IS2 and IS20 or equivalent**]

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. American Architectural Manufacturers Association (AAMA):
1. AAMA 502 - Voluntary Specification for Field Testing of Windows and Sliding Doors.
 2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
 3. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- B. American Society for Testing and Materials (ASTM):
1. ASTM C 1036 - Flat Glass.
 2. ASTM C 1048 - Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
 3. ASTM D 1149 - Rubber Deterioration – Surface Ozone Cracking in a Chamber.
 4. ASTM D 2803 - Filiform Corrosion Resistance of Organic Coatings on Metal.
 5. ASTM D 3656 - Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns.
 6. ASTM D 4060 - Abrasion Resistance of Organic Coatings by the Taber Abraser.
 7. ASTM E 283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen.
 8. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
 9. ASTM E 547 - Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.
 10. ASTM E1300-04 – **BILDAU HURRICANE** program combines this test with FBS test protocols TAS 201, 202, 203-94. Glazing that meets these standards for HVHZ (high velocity hurricane zone) **MUST be clearly specified HURRICANE**
(All standard 79mm frame profiles will mate with these glazing units) These tests qualify installs within all of the Florida State Building Code area including Miami Dade County for: Large Missile Impact (Wind-Borne Debris); Wind Zone 4 (basic wind speed >170mph); Design Pressure + 70psf / - 70psf
- C. Screen Manufacturers Association (SMA):
1. SMA 1201 - Specifications for Insect Screens for Windows, Sliding Doors and Swinging Doors.
- D. Window and Door Manufacturers Association (WDMA):
1. WDMA I.S.4 - Industry Standard for Water-Repellent Preservative Non-Pressure Treatment for Millwork. [Flow coating base is standard for all opaque coatings and translucent stains]

1.4 PERFORMANCE REQUIREMENTS

Specifier Notes: Performance ratings for Bildau windows vary by product and size. Performance information is found in each quote listed in Imperial u-values.

- A. Window Unit Air Leakage, ASTM E 283, 1.57 psf (25 mph): 0.05 cfm per square foot of frame or less.
- B. Window Unit Water Penetration: No water penetration through window unit when tested in accordance with ASTM E 547, under static pressure of 7.5 psf (52 mph) after 4 cycles of 5 minutes each, with water being applied at a rate of 5 gallons per hour per square foot.

1.5 SUBMITTALS

- A. Comply with Division 1 requirements.
- B. Product Data: Submit manufacturer's product data, including installation instructions.

Specifier Notes: Delete the following sentence if shop drawings are not required.

- C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections and locations, anchorage methods and locations, hardware locations, and installation details.

Specifier Notes: Delete the following sentence if samples are not required.

- D. Samples: Submit full-size or partial full-size sample of window illustrating glazing system, quality of construction, and color of finish.
- E. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

Specifier Notes: Edit the following paragraph as required for inclusion of field testing.

- A. Mockup:
 - 1. Provide sample installation for field testing window performance requirements and to determine acceptability of window installation methods.
 - 2. Approved mockup shall represent minimum quality required for the Work.

Specifier Notes: Edit the following sentence as required for inclusion of the mockup.

- 3. Approved mockup shall [not] remain in place within the Work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site undamaged in manufacturer's or sales branch's original, unopened packaging, with labels clearly identifying manufacturer and product name. Include installation instructions.
- B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities.
- C. Handling: Protect materials and finish during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Bildau & Bussman North American GmbH, Gerichstrasse 23, DE 13347 Berlin, GERMANY. Phone: +49(0)30-469007-0 or (800) 883-7005 www.bildau.de

Specifier Notes: Edit the following article title as required.

2.2 ALUMINUM-CLAD WOOD [TILT AND TURN] [AND] [FIXED] WINDOWS

Specifier Notes: Specify BILDAU profile size: 69, 79, 90mm and then the aluminum profile: Finger jointed Spruce wood is standard in quotes. Finger joints will be visible through clear stains, plane joints will not. Finger jointed Siberian Larch, plain jointed spruce, plane jointed larch, finger jointed American White Oak and Plane jointed American White Oak, and plain jointed Meranti are options in increasing prices respectively.

- A. Aluminum-Clad Wood [Tilt and turn] [and] [fixed] Windows: [69 mm] [79mm] [90mm] factory-assembled aluminum-clad wood windows with [**INWARD**-opening sash installed in frame but removable] [fixed unit].
- B. Frame:
1. Select woods, water-repellent, preservative-treated in the flow coater with an architect specified top coat
 2. Interior Exposed Surfaces: [Spruce] [Siberian Larch] [American White Oak] [Meranti] painted RAL colors or stained SIKKENS Cetol or Joinery Color Classics or clear.
 3. Exterior Surfaces: Clad with aluminum profiles in RAL colors or wood with RAL colors, SIKKENS Joinery Classic or SIKKEN CETOL options if no cladding is desired.
 4. Overall Frame Depth: varies by profile size and custom profiles for historical jobs must have signed shops or architect profiled CAD details. All frames can be custom at inside of fixed units; specify A, B, or C. See EcoSupply Bildau brochure or see profile CAD or PDF
 5. Aluminum clad profiles either: **Mira; Mira Swiss Mira Classic, Mira Therm; Contour VFM, Contour VF, Contour FL; Contour Integral; IV standard; Spree**
- C. Sash:
1. Select woods, water water-repellent, preservative-treated in the flow coater with an architect specified top coat
 2. Interior Exposed Surfaces: [Spruce] [Siberian Larch] [American White Oak] [Meranti] painted RAL colors or SIKKENS Cetol or SIKKENS Joinery Color Classics or clear.
 3. Exterior Surfaces: Clad with aluminum profiles in RAL colors or wood with RAL colors, SIKKENS Joinery Classic or SIKKEN CETOL options if no cladding is desired.
 4. Sash can be custom at the inner corner; specify A, B, or C. See EcoSupply Bildau brochure or see profiles CAD or PDF

Specifier Notes: Specify European single hung, simulated double hung tilt and turn; or simulated double hung French casement. ALL historical windows will have a wood drip edge unless specified otherwise. These wood units should be Larch or Meranti

5. Sash Thickness: Variable depending on profile thickness and/or custom specification and approved on shop drawings.

- D. Weather Stripping:
1. Dual or triple weather stripping.
 2. Continuous, flexible, and user replaceable.
 3. Locking plastic fix points with rails for aluminum frame, providing for expansion and contraction in dissimilar materials.
 4. Mira classic are double wood wet glazed joints, all other full aluminum clad wood are wood on one side and glazed to the aluminum profile on the other. Please see profile PDF or CAD file.
 5. Any On-site mulling or wet glazing to be supervised by company representative.

2.3 GLAZING

Specifier Notes: St. Gobain is the standard glazing package

A. Glazing:

1. Float Glass: ASTM C 1036, Quality 1.
 - a. Tempered Glass: ASTM C 1048.
 - b. Security laminated
 - c. Hurricane rated
2. Specify single, double or triple pane.
3. Specify desired center or glass u-value. [(90%+) argon or krypton fill will be listed]
4. Specify desired solar heat gain co-efficient.
 - a. low-E or other coating combinations are built based on u-value and SHGC desired.
5. 4, 6 or 10mm glass is dictated by the size, tempering and configuration of the glazing unit and frame TBD by the manufacturer and listed on all quotes and proposals.
6. Frosted or patterned glass on inner pane to be specified by architect and listed in quote, shop drawings or proposals.

Specifier Notes: Custom and high-altitude (4000') glazing is also available. High Altitude deliveries and removal of breather tubes to be supervised by factory representative.

C. Glazing:

1. Float Glass: ASTM C 1036, Quality 1.
 - a. Tempered Glass: ASTM C 1048.
2. Type: [multi-layer Low-E coated with argon] [obscure] dual-seal insulating glass, silicone-glazed.
3. Simulated-Divided-Light Glazing and Grilles:
 - a. Room Side Grilles if any: To architect specification
 - b. Insulating glass contains non-glare spacer between the panes of glass.
 - c. Exterior Grille if any: To architect specification
 - d. Finish: Finish color matches interior and exterior finish colors.

2.4 OPTIONS

A. Insect Screens: Standard.

1. Compliance: ASTM D 3656 and SMA 1201.
3. Complete with necessary hardware.
4. Screen Frame Finish: Color to order.
5. See: <http://www.neher.com/> for more options

B. Insect Screens Rollscreens: See <http://www.neher.com/> for more options

C. Motorized operators, and shutters to order; both folding and roll down security shutters in metal or PVC.

2.5 HARDWARE

- A. Operator:
1. Standard Roto Tilt and Turn hardware with standard or RAL color handles.

Specifier Notes: Specify color and locking system if needed

2.6 TOLERANCES

- A. Windows shall accommodate the following opening tolerances:
1. Vertical Dimensions Between High and Low Points: Plus 1/4 inch, minus 0 inch.
 2. Width Dimensions: Plus 1/4 inch, minus 0 inch.
 3. Building Columns or Masonry Openings: Plus or minus 1/4 inch from plumb.

2.7 FINISH

- A. Exterior Finish System:
1. Exterior aluminum surfaces shall be finished with the following multi-stage system:
 - a. Clean and etch aluminum surface of oxides.
 - b. Pre-treat with conversion coating.
 - c. Top coat with baked-on polyester enamel.
 2. **Color: RAL or DECORAL patterned aluminum**
 3. Performance Requirements: Exterior aluminum finishes shall meet or exceed the following performance requirements of AAMA 2605:
 - a. Dry Film Hardness: Eagle Turquoise Pencil, F minimum.
 - b. Film Adhesion: 1/16-inch crosshatch, dry, wet, boiling water.
 - c. Impact Resistance: 1/10-inch distortion, no film removal.
 - d. Abrasion Resistance: Falling sand coefficient value of 20 minimum.
 - e. Chemical Resistance: 10 percent Muriatic acid, 15 minutes. Mortar pat test, 24 hours.
 - f. Detergent Resistance: 3 percent at 100 degrees F, 72 hours.
 - g. Corrosion Resistance: Humidity, 3,000 hours. Salt spray exceeds 3,000 hours.

2.8 INSTALLATION ACCESSORIES

- A. Flashing/Sealant Tape: SIGA Fentrim [acrylic, water based, non-solvent zero-VOC]
1. SIGA Fentrim IS2 pan or equivalent
 2. SIGA IS2/20 exterior/interior tape. IS2 (black) is vapor open; IS20 (white) is vapor closed
 3. UV resistant.
 4. Verify other sealant or finish compatibility with sealant manufacturer [SIGA acrylic]
- B. Interior Insulating-Foam Sealant: Low-expansion, low-pressure polyurethane insulating window and door foam sealant allowed, cork shims, Thermabuck or expanding tape.
- C. Exterior Perimeter Sealant: Fentrim IS2 joined from window frame to WRB or masonry
- D. Company provided brackets screwed through frame if needed as per installation instructions.

2.9 SOURCE QUALITY CONTROL

- A. Factory Testing: Factory is single point and all windows are factory tested for operation

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive windows. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. Install windows in accordance with manufacturer's instructions and approved shop drawings.
- B. Install windows to be weather-tight and freely operating.
- C. Maintain alignment with adjacent work.
- D. Secure assembly to framed openings, plumb and square, without distortion.
- E. Integrate window system installation with exterior water-resistant barrier using flashing/sealant tape. Apply and integrate flashing/sealant tape with water-resistant barrier using watershed principles in accordance with window manufacturer's instructions.
- F. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using [tape] [insulating-foam sealant, expanding tape or other as per drawings].
- G. Seal window to exterior wall cladding with tape at perimeter of assembly.
- H. Leave windows closed and locked.

3.3 FIELD QUALITY CONTROL

Specifier Notes: Field testing is optional. Delete Field Quality Control if field testing is not required. If Field Quality Control is deleted, delete AAMA 502 from Article 1.3 References in this section.
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- A. Field Testing: Field-test windows in accordance with AAMA 502, Test Method A. Manufacturer's representative shall be present.

3.4 CLEANING

- A. Clean window frames and glass in accordance with Division 1 requirements.
- B. Do not use harsh cleaning materials or methods that would damage finish.
- C. Remove labels and visible markings.

3.5 PROTECTION

- A. Protect installed windows to ensure that, except for normal weathering, windows will be without damage or deterioration at time of substantial completion.

END OF SECTION