

SECTION 085213 – ALUMINUM-CLAD WOOD CIRCLE WINDOWS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aluminum-clad wood circle windows.

1.2 RELATED SECTIONS

- A. Section 07270 (07 27 00) - Air Barriers: Water-resistant barrier.
- B. Section 07920 (07 92 00) - Joint Sealants: Sealants and caulking.

1.3 REFERENCES

- 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 B 117 - Operating Salt Spray (Fog) Apparatus.
  - 2. ASTM C 1036 - Flat Glass.
  - 3. ASTM C 1048 - Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
  - 4. ASTM D 1149 - Rubber Deterioration – Surface Ozone Cracking in a Chamber.
  - 5. ASTM D 2803 - Filiform Corrosion Resistance of Organic Coatings on Metal.
  - 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.
  - 11. ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
  - 12. ASTM G 85 - Modified Salt Spray (Fog) Testing.
- C. Window and Door Manufacturers Association (WDMA):
  - 1. AAMA/WDMA/CSA 101/I.S.2/A440 – North American Fenestration Standard/Specification for windows, doors and skylights
  - 2. WDMA I.S.4 - Industry Specification for Preservative Treatment for Millwork.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Windows shall be Hallmark certified to a rating of FW-[CW] [AW]-PG[\_\_\_\_] specifications in accordance with ANSI/AAMA/WDMA 101/I.S.2/A440-08 or ANSI/AAMA/WDMA 101/I.S.2/A440-11.
- B. Window Unit Air Leakage, ASTM E 283, 6.24 psf (50 mph): 0.05 cfm per square foot of frame or less.
- C. Window Unit Water Penetration: No water penetration through window unit when tested in accordance with ASTM E 547, under static pressure of 14.2 psf (75 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.
- C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections and locations, anchorage methods and locations, hardware locations, and installation details.
- 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

- 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.
  - 3. Approved mockup **shall 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 containers and 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. Pella Corporation, 102 Main Street, Pella, Iowa 50219. Toll Free (800) 54-PELLA. Phone (641) 621-1000. Website [www.pella.com](http://www.pella.com).

### 2.2 ALUMINUM-CLAD WOOD CIRCLE WINDOWS

- A. Aluminum-Clad Wood Fixed-Frame Windows: Pella "Clad Frame" factory-assembled, aluminum-clad wood, fixed-frame windows.
- B. Frame (Sill):
1. Select woods, water-repellent, preservative-treated with EnduraGuard® in accordance with WDMA I.S.-4. EnduraGuard includes water-repellency, three active fungicides and an insecticide applied to the frame.
  2. Interior Exposed Surfaces: Clear Pine with no visible fastener holes.
  3. Exterior Surfaces: Clad with aluminum.
  4. Sill Assembly: Mitered at ends where joined to curved head member.
  5. Overall Frame Depth: 5 inches (127 mm).
- C. Frame (Curved Head Member):
1. Select woods, water-repellent, preservative-treated with EnduraGuard in accordance with WDMA I.S.-4. EnduraGuard includes water-repellency, three active fungicides and an insecticide applied to the frame.
  2. Solid-wood-core blocks bonded with water-resistant glue to stabilized cellulose fiber.
  3. Two sheets laminated with veneers at interior.
  4. Interior Exposed Surfaces: Clear Pine with no visible fastener holes.
  5. Exterior Surfaces: Clad with aluminum.
  6. Curved Head Assembly: Mitered at ends where joined to sill, screwed and sealed.
  7. Overall Frame Depth: 5 inches (127 mm).

### 2.3 GLAZING

- A. Glazing:
1. Float Glass: ASTM C 1036, Quality 1.
    - a. Tempered Glass: ASTM C 1048.
  2. Type: Urethane-glazed, [11/16] [1]-inch, dual-seal, [annealed] [tempered] insulating glass [clear] [multi-layer Low-E coated with argon] [bronze air-filled multi-layer, Low-E coated] [gray air-filled multi-layer, Low-E coated] [green air-filled multi-layer, Low-E coated].
  3. Type: Silicone-glazed 1" triple-pane, dual-seal, [annealed] [tempered] insulating glass, [clear] [multi-layer Low-E coated with [argon] [krypton]] [bronze air-filled multi-layer, Low-E coated] [gray air-filled multi-layer, Low-E coated] [green air-filled multi-layer, Low-E coated].
  4. Integral Light Technology Glazing and Grilles:
    - a. Insulating glass contains non-glare spacer between the panes of glass.

- b. Grid: Adhered to glass on double pane and a metal spacer on triple pane.
- c. Room Side Grilles: **2"** wide ogee profile that are solid **WD-1**
- d. Exterior Grilles: Extruded aluminum **2" ogee profile**. Dimension to match room side grilles.
- e. Bars shall be adhered to both sides of insulating glass with VHB acrylic adhesive tape and aligned with foam grid.
- f. Finish: Finish color matches interior and exterior finish colors.

## 2.5 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.

## 2.6 FINISH

- A. Exterior Finish System: Pella EnduraClad.
  - 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: **Custom Refer to Drawings.**
  - 3. Performance Requirements: Exterior aluminum finishes shall meet or exceed all performance requirements of AAMA 2603 and the following performance requirements of AAMA 2605:
    - a. Dry Film Hardness: Eagle Turquoise Pencil, H minimum.
    - b. Film Adhesion: 1 mm crosshatch, dry, wet, boiling water.
    - c. Impact Resistance: 1/10-inch distortion, no film removal.
    - d. Chemical Resistance: 10 percent Muriatic acid, 15 minutes. Mortar pat test, 24 hours.
    - e. Detergent Resistance: 3 percent at 100 degrees F, 72 hours.
    - f. Corrosion Resistance: ASTM G85-A5, 2000 hours. Humidity, 3,000 hours. Salt spray exceeds 3,000 hours.
- C. Interior Finish: **Factory-primed with 1 coat acrylic latex**

## 2.7 INSTALLATION ACCESSORIES

- A. Flashing/Sealant Tape: Pella SmartFlash.
  - 1. Aluminum-foil-backed butyl window and door flashing tape.
  - 2. Maximum Total Thickness: 0.013 inch.
  - 3. UV resistant.
  - 4. Verify sealant compatibility with sealant manufacturer.
- B. Interior Insulating-Foam Sealant: Low-expansion, low-pressure polyurethane insulating window and door foam sealant.

- C. Exterior Perimeter Sealant: "Pella Window and Door Installation Sealant" or equivalent high quality, multi-purpose sealant as specified in the joints sealant section.

### 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.
- 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 backer rod and sealant.
- G. Seal window to exterior wall cladding with sealant and related backing materials at perimeter of assembly.

#### 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 085213