Section 085212
Aluminum Clad Ultimate Double Hung Window

Part 1 General

1.1 Section Includes

A. Aluminum Clad Wood Ultimate Double Hung – Next Generation, Single Hung, Transom, Picture window complete with hardware, glazing, certified mulls, weather strip, insect screen, removable grille, grilles-between-the-glass, simulated divided lite, jamb extension, combination storm/screen, and standard or specified anchors, trim, attachments, and accessories

1.2 Related Sections

A. Section 013300 – Submittal Procedures

B. Section 017300 - Execution

1.3 References

A. American Society for Testing Materials (ASTM):

1. E283: Standard Test method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors

2. E330: Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Door by Uniform Static Air Pressure Difference

3. E547: Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential

4. E2190: Specification for Sealed Insulated Glass Units

5. C1036: Standard Specification for Flat Glass

6. E2068: Standard Test Method for Determination of Operating Force of Sliding Windows and Doors

7. E 1996: Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Windborne Debris in Hurricanes

8. E 1886: Standard Test method for Performance of Exterior Windows, curtain Walls, and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials

9. F 2090-10: Standard Specifications for Windows Fall Prevention Devices with Emergency Escape (egress) Release Mechanisms

B. American Architectural Manufacturer's Association/Window and Door Manufacturer's Association (AAMA/WDMA/CSA):

1. AAMA/WDMA/CSA 101/I.S.2/A440-08, Standard/Specification for windows, doors and skylights

2. AAMA/WDMA/CSA 101/I.S.2/A440-11, Standard/Specification for windows, doors and skylights

3. AAMA 450-10, Voluntary Performance Rating Method for Mulled Fenestration Assemblies

C. WDMA I.S.4: Industry Standard for Water Repellant Preservative Treatment for Millwork

D. Window and Door Manufacturer's Association (WDMA): 101/I.S.2 WDMA Hallmark Certification Program

E. Sealed Insulating Glass Manufacturer's Association/Insulating Glass Certification Council (SIGMA/IGCC)

F. American Architectural Manufacturer's Association (AAMA): 2605: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels

G. National Fenestration Rating Council (NFRC):

1. 101: Procedure for Determining Fenestration Product thermal Properties

2. 200: Procedure for Determining Solar Heat Gain Coefficients at Normal Incidence

H. Window Covering Manufacturer's Association

1. A100.1: American National Standard for Safety of Corded Window Coverings Products

1.4 System Description

A. Design and Performance Requirements:

Product	Air Test to PSF	Water Tested to psf	Structural Tested to psf	Certification Rating	Design Pressure	Overall Width	Overall Height
Clad Ultimate Double Hung Next Generation (4040)	1.57	7.5	75	LC-PG50	DP50	45.25	87.5
Clad Ultimate Double Hung Next Generation (4044)	1.57	7.5	75	LC-PG50	DP50	45.25	95.5
Clad Ultimate Double Hung Next Generation (4450)	1.57	7.5	75	LC-PG50	DP50	49.25	107.5
Clad Ultimate Double Hung Next Generation (4450-HP)	1.57	9.75	97.5	LC-PG65	DP65	49.25	107.5
Clad Ultimate Double Hung Next Generation (5456)	1.57	6	60	LC-PG35	DP35	59.25	119.5

Clad Ultimate Double Hung Picture Next Generation (6668)	1.57	7.5	75	CW-PG50	DP50	67.25	69.5
Clad Ultimate Double Hung Picture Next Generation (60102)	1.57	7.5	75	CW-PG50	DP50	61.25	103.5
Clad Ultimate Double Hung Picture Next Generation (60102-HP)	1.57	9.75	97.5	CW-PG65	DP65	61.25	103.5
Clad Ultimate Double Hung Transom Next Generation (4020)	1.57	7.5	75	LC-PG50	DP50	45.25	27.6875
Clad Ultimate Double Hung Transom Next Generation (6820)	1.57	7.5	75	LC-PG50	DP50	73.25	27.6875
Clad Ultimate Double Hung Transom Next Generation (6820-HP)	1.57	9.75	97.5	LC-PG65	DP65	73.25	27.6875

A. Design and Performance Requirements: Continued

Clad Ultimate Double Hung Next Generation (4036 - IZ3)	1.57	9.75	97.5	LC-PG65	DP65	45.25	79.5
Clad Ultimate Double Hung Next Generation (4450 - IZ3)	1.57	9.75	97.5	LC-PG65	DP65	49.25	107.5
Clad Ultimate Double Hung Transom Next Generation (6820-IZ3)	1.57	9.75	97.5	LC-PG65	DP65	73.25	27.6875
Clad Ultimate Double Hung Picture Next Generation (602-IZ3)	1.57	9.75	97.5	CW-PG65	DP65	61.25	102.5

1.5 Submittals

A. Shop Drawings: Submit shop drawings under provision of Section 01 33 23

B. Product Data: Submit catalog data under provision of Section 01 33 23

C. Samples:

1. Submit corner section under provision of section 01 33 23

2. Include glazing system, quality of construction and specified finish

D. Quality Control Submittals: Certificates: submit manufacturer's certification indicating compliance with specified performance and design requirement under provision of section 01 33 23

1.6 Quality Assurance

A. Requirements: consult local code for IBC [International Building Code] and IRC [International Residential Code] adoption year and pertinent revisions for information on:

1. Egress, emergency escape and rescue requirements

2. Basement window requirements

3. Windows fall prevention and/or window opening control device requirements

1.7 Delivery

A. Comply with provisions of Section 01 65 00

B. Deliver in original packaging and protect from weather

1.8 Storage and Handling

A. Prime and seal wood surfaces, including to be concealed by wall construction, if more than thirty (30) days will expire between delivery and installation

B. Store window units in an upright position in a clean and dry storage area above ground to protect from weather under provision of Section 01 66 00

1.9 Warranty

Complete and current warranty information is available at marvin.com/warranty. The following summary is subject to the terms, condition, limitations and exclusions set forth in the Marvin Windows and Door Limited Warranty and Products in Coastal Environments Limited Warranty Supplement:

A. Clear insulating glass with stainless steel spacers is warranted against seal failure caused by manufacturing defects and resulting in visible obstruction through the glass for twenty (20) years from the original date of purchase. Glass is warranted against stress cracks caused by manufacturing defects from ten (10) years from the original date of purchase.

B. Standard exterior aluminum cladding finish is warranted against manufacturing defects resulting in chalk, fade and loss of adhesion (peel) per the American Architectural Manufacturer's Association (AAMA) Specification 2605-11 Section 8.4 and 8.9 for twenty (20) years from the original date of purchase.

C. Factory-applied interior finish is warranted to be free from finish defects for a period of five (5) years from the original date of purchase.

D. Hardware and other non-glass components are warranted to be free from manufacturing defects for ten (10) years from the original date of purchase.

Part 2 Products

2.1 Manufactured Units

A. Description: Aluminum Clad Ultimate Double Hung – Next Generation (and related stationary units) as manufactured by Marvin Windows and Doors, Warroad, Minnesota.

B. Description: Aluminum Clad Ultimate Double Hung – Next Generation Bow unit, (and related stationary units) as manufactured by Marvin Windows and Door, Warroad, Minnesota.

1. Available in 3, 4, 5, and 6 wide assemblies
2. 6 degree angle
3. With and w/out head and seat board

C. Description: Aluminum Clad Ultimate Double Hung – Next Generation Bay Assemblies as manufactured by Marvin Window and Doors, Warroad, Minnesota

1. Available 30 degree, 45 degree, and 90 degree
2. With and w/out head and seat board

2.2 Frame Description

A. Interior: Non Finger-Jointed Pine or finger-jointed core with non finger-jointed Pine veneer.

1. Kiln-dried to moisture content no greater than 12 percent at the time of fabrication
2. Water repellant, preservative treated in accordance with ANSI/WDMA I.S.4.

B. Frame exterior aluminum clad with 0.050" (1.3mm) thick extruded aluminum

C. Frame thickness: 1 25/32" (45mm) head and jambs

D. Frame depth: Frame depth had an overall 5 21/32” jamb (144mm). 4 9/16” (116mm) jamb depth from the nailing fin plane to the interior face of the frame for new construction.

E. Sill assembly including the sill liner: 2 7/32” (56mm)

2.3 Sash Description

A. Interior: Non Finger-Jointed Pine or finger-jointed core with non finger-jointed Pine veneer.

1. Kiln-dried to moisture content no greater than 12 percent at the time of fabrication

2. Water repellant preservative treated with accordance with WDMA I.S.4.

B. Sash exterior aluminum clad with 0.050” (1.3mm) thick extruded aluminum

C. Sash thickness: 1 3/4” (44mm). Corner slot and tenoned.

D. Operable sash tilt to interior for cleaning or removal

E. Exterior Cope Profile: Putty

F. Interior Sash Sticking

1. Standard: Ogee

2.4 Glazing

A. Select quality complying with ASTM C1036. Insulating glass SIGMA/IGCC certified to performance level CBA when tested in accordance with ASTM E2190.

B. Glazing method: Insulating glass

C. Glazing seal: Silicone bedding on interior and exterior

D. Glass Type: Low E2 with Argon. Tempered where indicated on drawings.

2.5 Certified Mulling

A. Directional mull limits: 1 High (can be 2 or more units wide in an assembly)

1. Max mullion span is 71 ½” (1816mm); max tributary width 45 ¼” (1149mm)

2. CUDH NG to CUDH NG only

3. Certified to Design Pressure 50

B. Directional mull limits: 1 Wide (can be 2 or more units high in an assembly)

1. Max mullion span is 69 ¼” (1759mm); max tributary height 53 19/32” (1361mm)

2. CUDH NG over CUDH NG only

3. Certified to Design Pressure 50

C. Multiple Wide x Multiple High assemblies with 1” LVL

1. Max mullion span is 75 11/16” (1922mm); max tributary width is 45 1/4” (1149mm)

2. LVL must be in vertical mull

3. Certified to Design Pressure 50

D. Multiple Wide x Multiple High assemblies with 3/8” (10mm) MRF

1. Max mullion span is 83 11/16” (2125mm); max tributary width 45 1/4” (1149mm)

2. CUDH NG over CUDH NG only

3. Certified to Design Pressure 65

E. If any units have a lower design pressure the entire assembly will have the lowest design pressure of any unit or mull in the assembly.

2.6 Finish

A. Exterior: Aluminum clad. Fluoropolymer modified acrylic topcoat applied over primer. Meets AAMA 2605 requirements.

1. Aluminum clad color options: As selected by Architect from manufacturer’s standard.

B. Interior Finish options:

2. Painted Interior Finish: Manufacturer’s standard White

2.7 Hardware

A. Multi-point locking system that provides locking, unlocking, venting, balancing, and tilting of the sash members

B. Lock Actuator Assembly

1. Material

a. Zinc die cast

b. Standard finish: Manufacturer’s Standard - White

2. Design Feature and Components

a. To unlock unit, turn the handle 135°

b. When bottom sash is operated first, top sash remains locked

c. To open top sash, unlock bottom sash while leaving it in the closed position; once top sash is open, bottom may be opened

d. Each sash automatically locks independent of the other, therefore, one sash may be open while the other is locked in closed position

e. To tilt the bottom sash for wash mode, the bottom sash must be open; push the button on top of the lock handle and rotate the handle 180°

f. To tilt the top sash for wash mode, the bottom sash must be tilted and/or removed from the frame; lower the top sash to a good working height, retract the tilt latches on the top rail and tilt sash out of the frame

g. Vent Mode: standard on all product, position is 4” (102mm) net clear opening.

C. Balance System (balance system determined by sash weight)

1. Block & tackle balances

2. Spiral balances

3. Hybrid spiral balances

2.8 Weather Strip

A. Operating units:

1. Jambs and header: Foam-filled bulb

2. Bottom rail and check rail: Hollow bulb

B. Stationary units:

1. Jambs: Foam for picture units; foam-filled bulb for transom unit

2. Header and bottom rail: Hollow bulb

2.9 Insect Screen

A. Factory-installed full or half screen. Half screen covers sash opening.

1. Screen Mesh: Charcoal Fiberglass

B. Aluminum frame finish:

1. Color: Matches exterior aluminum clad color

2.10 Simulated Divided Lites (SDL)

A. 7/8” (22mm) wide with internal spacer bar

B. Exterior muntins: 0.050” (1.3mm) thick extruded aluminum

C. Interior muntins: Pine Muntins adhere to glass with closed-cell copolymer acrylic foam tape

D. Exterior sticking: Putty

E. Interior Sticking:

1. Standard: Ogee

F. Patterns: Rectangular or as indicated on drawings.

G. Finish – exterior matches exterior aluminum clad colors, interior matches interior wood species and color

2.11 Accessories and Trim

A. Installation Accessories:

1. Factory-installed vinyl nailing/drip cap

2. Installation brackets: 6 3/8” (162mm), 9 3/8” (283mm), 15 3/8” (390mm)

3. Masonry brackets: 6” (152mm), 10” (254mm)

B. Aluminum Extrusions:

1. Casing Profile: Ridgeland Casing end cap at the A1453 subsill.

2. Aluminum clad Extrusion: Mullion Cover, Subsill.

3. Finish: Fluoropolymer modified acrylic topcoat applied over primer. Meets AAMA 2605 requirements

4. Available in all exterior aluminum clad colors

Part 3 Execution

3.1 Examination

A. Verification of Condition: Before installation, verify openings are plumb, square and of proper dimensions as required in Section 01 71 00. Report frame defects or unsuitable conditions to the General contractor before proceeding.

B. Acceptance of Condition: Beginning on installation confirms acceptance of existing conditions.

3.2 Installation

A. Comply with Section 01 73 00.

B. Assemble and install window/door unit(s) according to manufacturer's instruction and reviewed shop drawing.

C. Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants.

D. Install accessory items as required.

E. Use finish nails to apply wood trim and mouldings.

3.3 Cleaning

A. Remove visible labels and adhesive residue according to manufacturer's instruction.

B. Leave windows and glass in a clean condition. Final cleaning as required in Section 01 74 00.

3.4 Protecting Installed Construction

A. Comply with Section 07 76 00.

B. Protecting windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.

End of Section