# Part 1 General

# Section Includes

## Ultimate Casement/Awning Crank Out: Operators, Stationary and Picture units complete with hardware, glazing, weather strip, insect screen, removable screen, simulated divided lite, jamb extension, and standard or

## specified anchors, trim and attachments

# Related Sections

## Section 01 33 00 – Submittal Procedures; Shop Drawings, Product Data and Samples

## Section 01 62 00 – Product Options

## Section 01 65 00 – Product Delivery

## Section 01 66 00 – Storage and Handling Requirements

## Section 01 71 00 – Examination and Preparation

## Section 01 73 00 - Execution

## Section 01 74 00 – Cleaning and Waste Management

## Section 01 76 00 – Protecting Installed Construction

## Section 06 22 00 – Millwork: Wood trim other than furnished by window manufacturer

## Section 07 92 00 – Joint Sealant: Sill sealant and perimeter caulking

## Section 09 90 00 – Painting and Coatings: Paint and stain other than factory-applied finish

# References

## American Society for Testing Materials (ASTM):

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

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

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

### E2112: Standard Practice for Installation of Exterior Windows, Doors, and Skylights

### E2190: Specification for Sealed Insulated Glass Units

### C1036: Standard Specification for Flat Glass

### E1996: Standard Specification or Performance of Exterior Windows, Curtain Walls, Door and Storm Shutters Impacted by Windborne Debris in Hurricanes

### E1886: Standard Test Method for Performance Windows, Curtain Walls, Doors and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials

### F2090: Standard Specifications for Windows Fall Prevention Devices with Emergency Escape (egress) Release Mechanisms

## American Architectural Manufacturer’s Association/Window and Door Manufacturer’s Association (AAMA/WDMA/CSA):

### AAMA/WDMA/CSA 101/I.S.2/A440-05 Standard/Specification for Window, Skylights and Doors

### AAMA/WDMA/CSA 101/I.S.2/A440-08, NAFS – North American Fenestration Standard/Specification for Windows, Doors and Skylights

### AAMA/WDMA/CSA 101/I.S.2/A440-11, NAFS 2011 – Northern American Fenestration Standard/Specification for Windows, Doors and Skylights

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

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

## Sealed Insulating Glass Manufacturer’s Association/Insulating Glass Certification Council (SIGMA/IGCC)

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

## National Fenestration rating Council (NFRC):

### 101: Procedure for Determining Fenestration Product Thermal Properties

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

# 1.4 System Description

## Design and Performance Requirements:

### Window units shall be designed to comply with ASTM E1996 Wind Zone 3 Missile Level D Rating +65/-65 psf

### Air leakage shall not exceed the following when tested at 1.57 psf according to ASTM E283: 0.30 cfm per square foot of frame

### No water penetration when tested at the following pressure according to ASTM E547: 9.75 psf

### Assembly shall withstand a positive or negative uniform static air pressure difference of psf without damage when tested according to ASTM E330

### Impact and Cycling per ASTM E1996 and E 1886 with passing results for Missile Level D and Pressure Cycling of +65/-65 psf

# Submittals

## Shop Drawings: Submit shop drawings under provision of Section 01 33 00.

## Product Data: Submit product data for certified options under provision of CSI MasterFormat Section 01 33 00. Product performance rating information may be provided via quote, performance rating summary (NFRC Data), or certified performance grade summary (WDMA Hallmark data).

## Samples:

1. Submit section under provision of CSI MasterFormat Section 01 33 00.
2. Specified performance and design requirements under provisions of CSI MasterFormat Section 01 33 00.

# Quality Assurance

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

### Egress, emergency escape and rescue requirements

### Basement window requirements

### Windows fall prevention and/or window opening control device requirements

# Delivery

## Comply with provisions of Section 01 65 00

## Deliver in original packaging and protect from weather

# Storage and Handling

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

## Store window units in an upright position in a clean and dry storage area above ground to protect from weather under provision of Section 01660

# 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 Limited Warranty and Products in Coastal Environments Limited Warranty Supplement:**

## 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.

## 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.

## 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.

## 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

# Manufactured Units

## Description: Factory-assembled Ultimate Casement/Awning as manufactured by Marvin, Warroad, Minnesota.

# Frame Description

## Interior: Non Finger-Jointed Pine or finger-jointed core with non finger-jointed Pine veneer; optional non finger-jointed Douglas Fir or finger-jointed core with non finger-jointed Douglas Fir veneer; optional non finger-jointed White Oak or finger-jointed with non finger-jointed Oak veneer; non finger-jointed Cherry or finger-jointed core with Cherry veneer; non finger-jointed Mahogany or finger-jointed core with non finger-jointed Mahogany veneer; non finger-jointed Vertical Grain Douglas Fir or finger-jointed with non finger-jointed Vertical Grain Douglas Fir veneer.

### Kiln-dried to moisture content no greater than twelve (12) percent at the time of fabrication

### Water repellant preservative treated in accordance with WDMA I.S.4.

## Frame exterior aluminum clad with 0.050 inch (1.3mm) thick extruded aluminum

## Frame thickness: 1 3/16” (30mm)

## Frame depths for full frame units have 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.

# Sash Description

## Interior: Non Finger-Jointed Pine or finger-jointed core with non finger-jointed Pine veneer; optional non finger-jointed Douglas Fir or finger-jointed core with non finger-jointed Douglas Fir veneer; optional non finger-jointed White Oak or finger-jointed with non finger-jointed Oak veneer; non finger-jointed Cherry or finger-jointed core with Cherry veneer; non finger-jointed Mahogany or finger-jointed core with non finger-jointed Mahogany veneer; non finger-jointed Vertical Grain Douglas Fir or finger-jointed with non finger-jointed Vertical Grain Douglas Fir veneer.

### Kiln-dried to moisture content no greater than twelve (12) percent at the time of fabrication

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

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

## Sash thickness: Sash thickness is 1 5/8” (41mm) and 1 7/8” (48mm)

## Stiles and Rails: 2 1/16” (52mm)

## Sash Option: Optional tall bottom rail: 3 9/16” (90mm)

## Glazing Profiles:

### Interior Glazing Profile:

### Standard: Ogee

### Optional: Square

### Exterior Glazing Profile:

### Standard: Putty

### Optional: Square (applies to rectangle and polygon units. Option not offered on round top and full radius units.)

# Glazing

## Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC certified to performance level CBA when tested in accordance with ASTM E 2190.

## Glazing method: Insulating glass, consisting of inboard lite of laminated glass. Exterior glass is standard annealed glass with optional tempered glass available.

## Glass fill: Air with capillary tubes, Argon

## Glazing seal: Silicone bedding at interior and exterior

## Glass Type: Clear, Tempered, Obscure, Laminated, Low E2, Low E3, Low E1

# Finish

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

### Aluminum clad color options: Stone White, Bahama Brown, Bronze, Pebble Gray, Evergreen, Sierra White, Coconut Cream, Cashmere, Cadet Gray, Ebony, Cascade Blue, Hampton Sage, Wineberry, Bright Silver (pearlescent), Copper (pearlescent)

### Custom colors: Contact your Marvin representative

## Interior Finish options:

### Prime: Factory-applied water-borne acrylic primer. Meets WDMA TM-11 requirements.

### Painted Interior Finish.Factory-applied water-borne acrylic enamel. Available on Pine product only. Available in White or Designer Black. Meets WDMA TM-14 requirements.

### Factory-applied water-borne acrylic enamel clear coat. Applied on two coats with light sanding between coats. Available on Pine, Mahogany, Mixed Grain Douglas Fir, Vertical Grain Douglas Fir, Cherry, White Oak. Meets WDMA TM-14 requirements.

### Factory-applied water-borne urethane stain. Stain applied over a wood (stain) conditioner. A water-borne acrylic enamel clear coat applied in two separate coats, with light sanding between coats, applied over the stain. Available on Pine, Mahogany, Mixed Grain Douglas Fir, Vertical Grain Douglas Fir, Cherry, White Oak. Colors available: Wheat, Honey, Hazelnut, Leather, Cabernet, and Espresso. Meets WDMA TM-14 requirements.

# Hardware

## Casement operating hardware:

### Locks: Multi-point sequential concealed locking system in the jamb opposite the hinge side for casement units. Lock handles are removable, non-handed and are available in the same finishes as the handles. Standard tie bars, cams and keepers – steel coated with E-Gard ™. Keeper features a roller for reducing average lock force and does not easily disengage with the cam even under severe loading. Stainless steel packages are available for coastal applications.

### Handles: Standard operating handle is a folding handle, zinc painted with the standard folding cover being molded plastic. Available colors: standard is Satin Taupe (painted), White (painted), Bronze (painted), Matte Black (painted), Satin Chrome (plated), Satin Nickel (plated), Oil Rubbed Bronze (plated), Brass (plated), Antique Brass (plated)

### Hinges: One at the sill to bottom rail, one at the head jamb to top rail. Hinges are steel coated with E-Gard™. Hinge track is stainless steel. Unit with a frame OM of 20 inches (508mm) and greater use an 18-inch (457mm) wash/egress hinge to allow the sash to slide across the frame opening which causes the sash exterior to rotate towards the user for easy wash ability. Units under a frame OM of 20 inches (508mm) width use a standard 2 bar hinge which will position the sash when fully open to 90degrees for the user to wash but does not include the feature of sliding the sash across the opening and rotating the exterior towards the user.

### Optional Factory Installed Window Opening Control Device (WOCD): The standard operation of the WOCD limits the operation of the sash to an opening of less than 4” (102mm). The sash arm detaches from the lock housing by a two-step function actuation to allow the normal operation of the unit. The WOCD re-engages when the unit is fully closed. WOCD is Coastal-compliant. Hardware meets ASTM F2090-17.

### Minimum frame OSM 20” (508mm) x 19 1/8” (486mm);

### Maximum frame

### 44” (1118mm) width

### If the width is greater than 36” (914mm) or less than 44” (1118), then 92” (2337mm) maximum height

### If the width is less than or equal to 36” (914), then 96 1/8” (2442mm).

### The WOCD hardware is handed. The Lock Housing and Sash Arm are comprised of multiple stainless steel, injection molded components, and a single stainless steel spring. The Lock Housing fits within a pocket of the jamb. The Sash Arm will fit within a pocket between the jamb/sill cover and the locking hardware.

## Awning hardware:

### Locks: Uses a multipoint sequential concealed locking system in both jambs. Lock handles are removable, non-handed and are available in the same finishes as the handles. Standard tie bars and cams – steel coated with E-Gard™. Standard keepers – steel coated with E-Gard™. Keeper features a roller for reduce average lock force and dies not easily disengage with the cam even under severe loading

### Handles: Standard operating handle is a folding handle, zinc painted with the standard folding cover being molded plastic. Available colors: standard is Satin Taupe (painted), White (painted), Bronze (painted), Matte Black (painted), Satin Chrome (plated), Satin Nickel (plated), Oil Rubbed Bronze (plated), Brass (plated), Antique Brass (plated)

### Hinges: two hinges that connect the stiles of the sash to the jambs of the frame. Hinges are steel coated with E-Gard ™ and the hinge track is stainless steel.

# Weather Strip

## Weather strip at the frame is a hollow foamed material bent around 90-degree corner to allow for seamless corner joints

### Color: Beige

## Sash weather strip bulb shaped glass filled material

### Color: White, beige or black

# Jamb Extension

## Jamb extensions are available for various wall thickness factory-applied up to a 12” (305mm) wide.

## Finish: Match interior frame finish

# Insect Screen

## Aluminum frame finish is available in Satin Taupe, Bronze, Stone White, or Ebony

## Screen Frame

1. Window Frame Height less than or equal to 54 ½” Aluminum Screen Frame. Option: Extruded Aluminum Screen Frame
2. Window Frame Height greater than 54 ½” Extruded Screen Frame. Option: None.

## Screen mesh: Standard is Marvin Bright ViewTM. Optional Charcoal Aluminum Wire, Black Aluminum Wire, Bright Bronze Aluminum Wire, Bright Aluminum Wire.

## Optional Wood Screen Surround with Marvin Bright ViewTM. Species will match unit species.

# Simulated Divided Lites (SDL)

## 5/8” (16mm) wide, 7/8” (22mm) wide, 1 1/8” (29mm) wide, 1 15/16” (49mm) wide, 2 13/32” (61mm) wide with or w/out internal spacer bar

## Exterior muntins: 0.055” (1.4mm) thick extruded aluminum

## Interior muntins: Pine, Douglas Fir, White Oak, Cherry, Mahogany, Vertical Grain Douglas Fir

## Muntins adhere to glass with closed-cell copolymer acrylic foam tape

## SDL Profiles:

### Interior SDL Profile:

### Standard: Ogee

### Optional: Square

### Exterior SDL Profile:

### Standard: Putty

### Optional: Square (applies to rectangle and polygon units. Option not offered on round top and full radius units.)

## Patterns: Rectangular, diamond, custom lite cut

## Finish – exterior matches exterior aluminum clad colors, interior matches’ interior wood species and color

# Grilles-Between-the–Glass (GBG)

## Offered on 1” glazing only

## 23/32” (18mm) contoured aluminum bar.

### Exterior Colors: exterior matches exterior aluminum clad colors. The exterior GBG color is designed to best match the Marvin aluminum clad color when used with Low E glass. The use of different types of glazing may alter the exterior GBG color appearance

### Interior Colors: Stone White, Bronze, Pebble Gray, Sierra, White, Ebony (only available with Ebony exterior)

## Optional flat aluminum spacer bar. Contact your Marvin representative.

## Pattern: Rectangular, Cottage, Custom lite layout

# Accessories and Trim

## Installation Accessories:

### Factory-installed vinyl nailing/drip cap

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

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

## Aluminum Extrusions:

### Profile: Brick mold casing, flat casing, various special casing, frame expander, jamb extender, mullion cover, mullion expander, subsill, subsill end cap and lineal cap

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

### Available in all exterior aluminum clad colors

# Lock Status Sensor (Optional)

## Lock Status Sensor

### Unit is factory-prepared for an integrated lock status sensor system. Sensor and Magnet mounted inside the boundaries of the overall frame size. Refer to **Lock Status Sensor Installation Instructions**.

1. Lock Status Sensor may be wired or wireless.
   1. For wired option, check with local codes on potential contractor requirements for low voltage networking connections.
   2. Wireless option available. Requires purchase of secondary transmitter for operation. Marvin will prep for this option.

### For IZ3 UCA, the **sensor** will always be attached to the top of the tie bar on the locking/jamb side.

1. For IZ3 UAWN, the sensor will always be attached to the top of the tie bar on the right-handed locking jamb side (from the exterior).
2. Actuator (magnet) for the sensor always located on same side as sensor. Located on the stile of the operating sash.

## Lock Status Sensor Option Includes:

### Sensor - Reed

### Actuator – Neodymium Magnet

### Actuator Cover (Casement and Double Only)

* 1. Colors: Black: Bare, stain and designer black; White: PIF-White and Prime

# Part 3 Execution

# Examination

## 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.

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

# Installation

## Comply with Section 01 73 00.

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

## Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants. Do not use expansive foam sealant.

## Install accessory items as required.

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

# Field Quality Control

## Remove visible labels and adhesive residue according to manufacturer’s instruction.

## Unless otherwise specified, air leakage resistance tests shall be conducted at a uniform static pressure of 75 Pa (~1.57 psf). The maximum allowable rate of air leakage shall not exceed 2.3 L/sm2 (~0.45 cfm/ft2).

## Unless otherwise specified, water penetration resistance testing shall be conducted per AAMA 502 and ASTM E1105 at 2/3 of the fenestration products design pressure (DP) rating using “Procedure B” – cyclic static air pressure difference. Water penetration shall be defined in accordance with the test method(s) applied.

# Cleaning

## Remove visible labels and adhesive residue according to manufacturer’s instruction.

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

# Protecting Installed Construction

## Comply with Section 07 76 00.

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

End of Section