# Part 1 General

# Section Includes

## Essential® Casement/Awning window complete with hardware, glazing, mulling options including PTAC, weather strip, insect screen, grilles-between-the-glass, jamb extension, sheet rock return, j-channel, and standard or specified anchors, trim and attachments

# 1. 2 Construction Specification Institute (CSI) MasterFormat Numbers and Titles

1. Section 01 33 00 – Submittal Procedures: Shop Drawings, Product Data, and Samples
2. Section 01 62 00 – Product Options
3. Section 01 25 15 – Product Substitution Procedures
4. Section 01 65 00 – Product Delivery
5. Section 01 66 00 – Product Storage and Handling Requirements
6. Section 01 71 00 – Examination and Preparation
7. Section 01 73 00 - Execution
8. Section 01 74 00 – Cleaning and Waste Management
9. Section 01 75 00 – Starting and Adjusting
10. Section 01 76 00 – Protecting Installed Construction
11. Section 06 22 00 – Millwork: Wood trim other than furnished by door and frame manufacturer
12. Section 07 92 00 – Joint Sealants: Sill sealant and perimeter caulking
13. Section 08 71 00 – Door Hardware: Hardware other than furnished by door and frame manufacturer
14. Section 09 90 00 – Paints and Coatings: Paint and stain other than finish

# 1.3 References

## ASTM, International:

1. E283: Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
2. E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference
3. E547: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls, by Cyclic Air Pressure Difference
4. E2190: Standard Specification for Insulating Glass Unit Performance and Evaluation
5. C1036: Standard Specification for Flat Glass
6. E2112: Standard Practice for Installation of Exterior Windows, Doors, and Skylights
7. North American Fenestration Standard (NAFS) - American Architectural Manufacturer’s Association/Window and Door Manufacturer’s Association/Canadian Standards Association (AAMA/WDMA/CSA 101/I.S.2/A440):

### AAMA/WDMA/CSA 101/I.S.2/A440-17: NAFS: North American Fenestration, Standard/Specification for windows, doors, and skylights

1. Window and Door Manufacturers Association (WDMA)
2. WDMA I.S.4: Industry Standard for Water Repellent Preservative Treatment for Millwork
3. WDMA I.S.2: Hallmark Certification Program
4. Insulating Glass Certification Council (IGCC) and Fenestration Glazing Industry Alliance (FGIA) Glass Products Council (GPC)
5. Fenestration Glazing Industry Alliance (FGIA) – note: AAMA combined with IGMA and formed FGIA as of 08/01/2019
6. AAMA 2605: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels
7. National Fenestration Rating Council (NFRC):
8. NFRC 101: Procedure for Determining Fenestration Product Thermal Properties
9. NFRC 200: Procedure for Determining Solar Heat Gain Coefficients at Normal Incidence
10. Window Covering

### WCMA A100.0: American National Standard for Safety of Window Covering Products

# 1.5 Submittals

1. Shop Drawings: Submit shop drawings under provision of CSI MasterFormat Section 01 33 00.
2. 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).
3. Samples:

### Submit corner section under provision of CSI MasterFormat Section 01 33 00.

### Specified performance and design requirements under provisions of CSI MasterFormat Section 01 33 00.

# 1.6 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.

# 1.7 Delivery

## Comply with provisions of CSI MasterFormat Section 01 65 00.

## Deliver in original packaging and protect from weather.

# 1.8 Storage and Handling

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

# 1.9 Warranty

# **The following limited warranty is subject to conditions and exclusions. There are certain conditions or applications over which Marvin has no control. Defect or problems as a result of such conditions or applications are not the responsibility of Marvin. For a more complete description of the Marvin limited warranty, refer to the complete and current warranty information is available at http://www.marvin.com/support/warranty.**

## 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.

## 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

## Description: Essential® Casement/Awning and related stationary or picture units as manufactured by Marvin Windows and Doors, Roanoke, Virginia.

# 2.2 Frame Description

## Interior:

### Pultruded reinforced fiberglass (Ultrex®), 0.075”-0.077” (2mm) thick wall.

## Frame depth: 3 3/32” (79mm).

## Jamb Depth: 2” (51mm)

## Frame Expander accessory is an insert kit shipped as ready-to-install.

### Insert kit includes four fabricated frame expander components, including head-jamb, sill and both jamb components.

### Included in both 1” and 3” frame expander options.

# 2.3 Sash Description

## Pultruded reinforced fiberglass (Ultrex®), 0.075”-0.077” (2mm) thick wall.

## Composite sash thickness: 15/16” (24mm)

# 2.4 Glazing

## Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC when tested in accordance with ASTM E 2190. STC/OITC ratings are tested to the stated performance level in accordance with ASTM E 90-09.

## Glazing Method: 11/16” (17mm) insulating glass.

## Glass fill: Air with capillary tubes, Argon

## Glass Type: Low E1, E2, E3, or E3/ERS

## Glass Type Options: Obscure Glass or California Fire Glass (Annealed exterior and tempered interior glazing configuration), Rain Glass, Glue Chip, Narrow Reed, Reed, Frost, Bronze Tint, Gray Tint, Green Tint.

## Glazing Seal: Silicone bead at exterior; interior has glazing boot inserted.

## Perimeter Spacer: Default color is mill finish (stainless). An optional black perimeter spacer color is available for all interior color selections.

## Glazing Option: STC/OITC upgrade.

# 2.5 Mulling

## Standard Mulling

### Ribbon mull limits: 6 wide by 1 unit high; Rough Opening not to exceed 114” x 72” (2896mm x 1829mm)

### Stacked mull limits: 1 wide by 5 unit high; Rough Opening not to exceed 72” x 114” (1829mm x 2896mm)

### Multi-Wide/Multi-High mull limits: 5 units wide by 5 units high: Rough Opening not to exceed 72” x 96” (1829mm x 2438mm)

## Reinforced Mulling

### Ribbon mull limits: 6 wide by 1 unit high; Rough Opening not to exceed 114” x 72” (2896mm x 1829mm)

### Stacked mull limits: 1 wide by 5 unit high; Rough Opening not to exceed 72” x 114” (1829mm x 2896mm)

### Multi-Wide/Multi-High mull limits: 5 units wide by 5 units high: Rough Opening not to exceed 96” x 96” (2438mm x 2438mm)

# 2.6 Packaged Terminal Air Conditioner (PTAC) Mulling

## Essential Casement frame profile for use with PTAC; Factory-mulled below an Essential Casement Picture Unit.

## Mull configuration: 1 wide by 2 high; maximum Rough Opening 72” x 96” (1829mm x 2438mm).

## Essential Casement Picture sizes to be standard sizes only.

### Width Call Number: 40, 50, and 60.

### Height Call Number: 40, 46, 50, 56, and 60.

## PTAC and mulled assembly are currently non-rated; non-certified for air, water and structure.

## Height of PTAC window frame will accommodate all PTAC sizes.

### Standard PTAC height: 19 1/4”; standard PTAC width to match upper unit width.

## Color

### Exterior: Stone White, Cashmere, Pebble Gray, Bronze, Gunmetal, or Ebony.

### Interior: Stone White, Bronze, Gunmetal, or Ebony (split finishes not available on Bronze and Ebony interior options)

## PTAC grill/louver not ordered, stocked or installed by Marvin Windows and Doors.

### Reliable Products Inc. is recommended as manufacturer – color match, fit, form, and functionality.

## Maintain all current product attribute options except the following:

### Interior accessories: sheetrock return, ¾” receiver, jamb extension (all depths), and frame filler not available factory installed.

### Exterior accessories: Flush fin not available.

# 2.7 Finish

## Exterior: Pultruded fiberglass

### Factory baked on acrylic urethane.

### Meets AAMA 624-10 requirements.

## Interior: Pultruded fiberglass

### Factory baked on acrylic urethane.

## Color: Stone White exterior with Stone White interior, Pebble Gray exterior with Stone White interior, Bronze exterior with Stone White interior, Cashmere exterior with Stone White interior, Gunmetal exterior with Stone White interior, Ebony exterior with Stone White interior. Bronze exterior with Bronze interior, Gunmetal exterior with Gunmetal interior, Ebony exterior with Ebony interior. (Split finishes not available on Dark Interior options)

# 2.8 Hardware

## Lock: Multipoint locking mechanism is actuated from a single point of operation. The lock mechanism is concealed with only the actuator handle and escutcheon being visible to the interior.

## Hinges: Concealed stainless steel track and injection molded shoe.

## Handle: Die cast detachable folding handle.

## Roto-gear Operator: E-Gard™ coated hinge arm and housing mechanism.

## Snubber: Pulls the sash tight to the frame and provides engagement to keep the sash in place under structural loads.

## Color: Applies to handle and locking hardware:

### Standard Color: Stone White on Stone White Interior, Oil Rubbed Bronze on Bronze interior, Matte Black on Gunmetal and Ebony Interior.

### Optional Colors: Stone White, Almond Frost, Oil Rubbed Bronze, Satin Nickel, Bright Brass, Matte Black

# **2.9 Optional Hardware**

## Coastal hardware is available.

## Casement Window Opening Control Device – Factory applied.

### Minimum frame OSM: 18 9/16” x 23 ½” (471mm x 597mm); Maximum frame OSM: 35 ½” x 71 ½” (902mm x 1816mm).

## WOCD locking assembly: Die cast. Color: White, Almond Frost, Oil Rubbed Bronze, Matte Black.

## WOCD tether assembly: glass filled nylon. Color: E-Guard™ color match.

## Awning Limiter Device: Factory or Field applied.

### Limiter Clip: Tumbled stainless steel.

# 2.10 Weather Strip

## Primary weather strip is a one-piece, continuous, extruded “Ultra Cell” Micro Cellular Foam Bulb attached to all four sides of the frame by a kerf and provides seal between sash and frame.

## Secondary weather strip is an extruded TPE hollow bulb that attaches to a kerf in the sash and provides seal between sash and frame.

## Standard weather strip color: black.

# 2.11 Jamb Extension

## Standard: 2” (51mm) jambs. Optional factory-installed jamb extension: 4 9/16” (116m) and 6 9/16” (167mm).

## Available in Stone White, Bronze, Gunmetal, or Ebony. Default color will match the unit interior selection.

* 1. Split finishes are not available for Dark Interior options.
  2. Stone White jamb extension is available for all interior color selections.

# 2.12 Insect Screen (Remove for fixed windows)

## Factory-installed screen

### Screen mesh, 18 by 16: Charcoal fiberglass.

### Aluminum frame finish: Stone White, Bronze, Gunmetal, Ebony.

# 2.13 Grilles-Between-the–Glass (GBG)

## Manufactured from aluminum in a 23/32” (18mm) wide contoured profile placed between the two panes of glass.

## 1. Colors:

## Interior: White. Bronze, Gunmetal, or Ebony. (Matches unit interior finish)

## Split finishes are not available for Ebony, Gunmetal and Bronze interior colors

## Exterior: White, Pebble Gray, Bronze, Gunmetal, Cashmere, or Ebony

## 2. Pattern:

## Rectangular;

## 9 lite Prairie cut with 4” DLO corners

## 6 lite top or bottom Prairie cut with 4” DLO corners

## 6 lite left or right Prairie cut with 4” DLO corners

## Cottage style up to 2H with the specified DLO height (3” min)

## Size limitations may apply to Prairie and Cottage lite cut availability

# 2.14 Accessories and Trim

## Exterior Casing:

### Non-integral to the unit. Fastened to the exterior wall with barb and kerf.

### 2” (51mm) Brick Mould available as a full surround or with sill nosing.

### 3 ½” (89mm) Flat Casing available as a full surround or with sill nosing. Also available with 1” (25mm) ranch style header and sill overhang.

### Available colors: Stone White, Bronze, Pebble Gray, Cashmere, Gunmetal, or Ebony.

## Installation Accessories:

### Factory-installed vinyl nailing fin/drip cap at head, sill and side jambs.

### Installation brackets: Brackets for 4 9/16” (116mm); 6 9/16” (167mm) jambs.

### Mullion kit: standard mullion kit for field assembly of related units available in horizontal, vertical and 2-wide and/or 2-high configurations. Kit includes instructions, interior and exterior mull covers, mull plugs, kerf weather strip, and brackets.

### Sheet rock return

### Available colors: Stone White, Bronze, Gunmetal, or Ebony. Default color will match unit interior selection. Stone White is available for all interior color selections.

### J-channel

### Available colors: Stone White, Pebble Gray, Cashmere, Bronze, Gunmetal, or Ebony

### Flush fin

### Available colors: Stone White, Pebble Gray, Cashmere, Bronze, Gunmetal, or Ebony

### 3/4” (19mm) receiver

### Available colors: Stone White, Bronze, Gunmetal or Ebony. Default color will match unit interior selection. Stone White is available for all interior color selections.

### Frame expander (1 inch or 3 inch options available)

* 1. Available colors: Stone White, Pebble Gray, Cashmere, Gunmetal, Bronze or Ebony.

# Part 3 Execution

# 3.1 Examination

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

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

# 3.2 Installation

## Comply with CSI MasterFormat 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 CSI MasterFormat 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.

# 3.3 Field Quality Control

## Remove visible labels and adhesive residue according to manufacturers’ 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.

# 3.4 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 CSI MasterFormat Section 01 74 00.

# 3.5 Protecting Installed Construction

## Comply with CSI MasterFormat Section 07 76 00.

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

End of Section