**Part 1 General**

* 1. **Section Includes**

1. Elevate Bi-Fold door top hung system and frame complete with hardware, glazing, weather strip, grilles-between-the-glass, simulated divided lite, trim, and accessories

# Construction Specification Institute (CSI) MasterFormat Numbers and Titles

1. Section 01 33 23 – 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. **References**
15. ASTM, International:

### 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

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

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

### E2190: Standard Specification for Insulating Glass Unit Performance and Evaluation

### C1036: Standard Specification for Flat Glass

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

1. 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):
2. AAMA/WDMA/CSA 101/I.S.2/A440-17: NAFS: North American Fenestration, Standard/Specification for windows, doors, and skylights
3. Window and Door Manufacturers Association (WDMA)
4. WDMA I.S.4: Industry Standard for Water Repellent Preservative Treatment for Millwork
5. WDMA I.S.2: Hallmark Certification Program
6. Insulating Glass Certification Council (IGCC) and Fenestration Glazing Industry Alliance (FGIA) Glass Products Council (GPC)
7. Fenestration Glazing Industry Alliance (FGIA) – note: AAMA combined with IGMA and formed FGIA as of 08/01/2019
8. AAMA 2605: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels
9. National Fenestration Rating Council (NFRC):
10. NFRC 101: Procedure for Determining Fenestration Product Thermal Properties
11. NFRC 200: Procedure for Determining Solar Heat Gain Coefficients at Normal Incidence
12. Window Covering

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

* 1. **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:
4. 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. **Quality Assurance**

1. Requirements: consult local code for IBC [International Building Code] and IRC [International Residential Code] adoption year and pertinent revisions
   1. **Delivery**
2. Comply with provisions of CSI MaterFormat Section 01 65 00
3. Deliver in original packaging and protect from weather
   1. **Storage and Handling**
4. Prime and seal wood surfaces, including to be concealed by wall construction, if more than thirty (30) days will expire between delivery and installation. Seal unfinished top and bottom edges of door panels if panels are stored at the job site more than one (1) week.
5. Store door panels flat on a level surface in a clean and dry storage area above ground to protect from weather under provision of Section 01660
   1. Condition doors to local average humidity before hanging
   2. **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 available at 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 for ten (10) years from the original date of purchase.

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

**Part 2 Products**

* 1. **Manufactured Units**

1. Description: Elevate Bi-fold Door/s, as manufactured by Marvin Windows and Doors, West Fargo, North Dakota.
2. 1 to 7 panel options
3. 30 configurations including: Left, right, center operation, or stationary
4. Rectangular doors only
5. Some configurations include an access panel like traditional swinging door
   1. **Frame Description**
6. Interior: Pine. Exterior: Fiberglass reinforced Ultrex®
7. Jamb
   1. Sealing points for panel perimeter. Provides locking point for applicable configurations.
   2. Width of 1 11/16” (43mm) by depth of 5 11/16” (144mm)
8. Head Jamb
   1. Suspends the panels for smooth operation. Sealing points for panel perimeter.
   2. Aluminum head track.
   3. Width of 3 39/64” (92mm) by depth of 5 11/16” (144mm)
   4. Frame depth: 5 11/16 inches (144mm).
9. Sills
   1. Ultrex with aluminum sill liner to the interior. Extruded aluminum sill insert. 5 11/16” (144mm) wide x 2 3/16” (55mm) high
   2. Beige/Bronze fiberglass reinforced pultrusion (Ultrex®) sill with color matched interior sill liner.
   3. **Panel Description**
10. Panels provide visibility through the passageway and separation from the elements. Operator panels provide a means of passage through swinging and/or folding to the exterior.
11. Interior: Pine is available in Bare, White, Clear Interior Finish, Painted Interior Finish (Designer Black).
12. Exterior: Fiberglass reinforced pultrusion (Ultrex®) is available in Stone White, Pebble Gray, Bronze, Cashmere, Gunmetal, or Ebony.
13. Composite panel thickness: 1 3/4 inches (43mm)
14. Ultrex® panel corners have corner keys and sealant injection
15. Stile dimensions: 3-5/8 inches (92mm)
16. Rail height dimensions: 3 5/8 inches (92mm)
17. On bi-parting configurations and unidirectional configurations with access panel, Astragals are used for structure and sealing. They are pine-based with pine cap, 1 11/16” wide (42mm) by 1 7/16” depth (37mm)
    1. **Glazing**
18. Select quality complying with ASTM C1036. Insulating glass is manufactured and tested level ASTM E2190 and is IGCC certified. STC and OITC ratings are certified to the level in accordance with ASTM E90-09
19. Glazing Method: 3/4" (19mm) tempered insulating glass
20. Dual-pane insulating glass thickness: 3/4”
21. Optional Glazing: Low E1 Tempered, Low E2 Tempered, Low E3 Tempered, Low E3/ERS Tempered, Clear (no coating), Obscure, Glue Chip, Frost, Bronze Tint, Gray Tint, Green Tint
22. Gas Fill: Air or Argon
23. Glazing Seal: Silicone bedding, interior and exterior
24. Glazing Option: STC/OITC upgrade
    1. **Finish**
25. Exterior:
26. Frame and Panel are Ultrex with a cross-head extrusion
27. Ultrex Colors: Stone White, Pebble Gray, Cashmere, Ebony, Gunmetal, and Bronze.
28. Interior:
29. Frame is pine to the interior.
30. Pine is available in Bare, White, Clear Interior Finish, Painted Interior Finish (Designer Black).
    1. **Hardware**
31. Hinges contain both horizontal and vertical adjustment feature
32. Two or Three hinges on all operator panels
33. Finish: Black or brushed stainless steel
34. Handle Set: Lever operated
35. Keyed Interior and Exterior finishes are selected separately
36. Northfield and Cambridge designs.
37. Colors:
    1. Powder Coat finishes: Black
    2. PVD finishes: Brushed Stainless.
38. Locking System:
39. Multi-point locking system, stainless steel
40. Standard deadbolt, top and bottom shoot bolt are operated by the handle set
41. Secondary lock, stainless steel.
42. Standard top and bottom shoot bolt are operated by the handle set
43. Twin bolt (on folding panels), stainless steel.
44. Shoot bolt (accessible from internal only) and handle set.
45. Color: Black or brushed stainless.
46. Magnetic Catch
47. Exterior magnets to secure panels in the open position
48. Material: Non-corrosive materials, high-strength earth magnet
49. Standard offering for folding panels, spring loaded cushion resists door impact
50. Colors: PVD Bronze, Stainless Steel
    1. **Insect Screen (optional)**
51. Sliding screen interior, retractable pleated screen.
52. Extruded aluminum sliding frame
53. Dimensions:
54. Max Screen OM height for all configurations: 118” (2997mm)
55. Single (opens from either side): Max Width, 177” (4496mm)
56. Double (opens from both ends and meets in center): Max width, 315” (8001mm)
57. Screen mesh: pleated, charcoal, polypropylene with UV surface treatment
58. Frame finish: White, Desert Tan, Brownstone, Black
59. Handles on both sides of screen
60. Handle finish: matches frame finish
    1. **Weather Strip**
61. All units are constructed with vinyl weather strip at all panel perimeter joints. Weather strip exposed to the exterior will be a UV (ultraviolet) resistant material.
62. Sill weather strip seals against the panel
63. Foam-filled leaf
64. Colors: Beige for beige sill, Black for bronze sill
65. Jamb weather strip seals against the interior of the panel
66. Dual, hollow bulb applied to jamb, seals against interior of panel
67. Colors: Black
68. Head Jamb weather strip
69. Foam-filled leaf is applied to the interior head jamb and seals against panel
70. Single, Hollow bulb is used to seal against the exterior of the top rails
71. Color: Black
72. Panel weather strip
73. Stile weather strip
74. Between panels, each opposing stile has two rows of single bulb weather strip to seal against each other.
75. Between the jamb and panel, there are locking stiles and pivot stiles. Locking stiles have a single row of single bulb weather strip. Pivot stiles use two rows of single bulb weather strip
76. Color: Black
77. Bottom rail weather strip
    1. Under each panel, there is one row of single hollow bulb weather strip to seal against the exterior of the sill.
78. Astragal weather strip
79. Dual hollow bulb
80. Single hollow bulb on exterior
81. Color: Black

# Simulated Divided Lites (SDL)

1. 7/8” (22mm) wide. Available with optional spacer bars
2. Exterior muntins: Ultrex finished to color match exterior
3. Interior muntins: Bare pine wood or optional white, clear interior, or design black interior finish
4. Patterns:
5. Rectangular
6. 9-lite Prairie cut with 4” DLO corners
7. 6 lite top or bottom Prairie cut with 4” DLO corners
8. 6 lite left or right Prairie cut with 4” DLO corners
9. Cottage style up to 2H with specified DLO height (4” min)
10. Size limitations may apply to Prairie and Cottage lite cut availability
11. Simulated Check rail option: 2 11/32” (60mm). Available with optional spacer bars

# Grilles-Between-the–Glass (GBG)

1. Manufactured from aluminum in a 23/32 inch (18mm) wide contoured profile placed between the two panes of glass
2. Colors:
3. Interior: White, Bronze, Black
4. Exterior: White, Pebble Gray, Bronze, Cashmere, Gunmetal, or Ebony
5. Patterns:
6. Rectangular
7. 9 lite Prairie cut with 4” DLO corners
8. 6 lite top or bottom Prairie cut with 4” DLO corners
9. 6 lite left or right Prairie cut with 4” DLO corners
10. Cottage style up to 2H with specified DLO height (3” min)
11. Size limitations may apply to Prairie and Cottage lite cut availability
    1. **Jamb Extension**
12. Extension Thickness: 9/16" (14)
13. Multiple depths available from 1/8" (3), 1/4" (6), and depths varying between 1/2" (13) and 4" (102) at 1/16" (2) increments
14. Maximum jamb depth is 8 9/16" (217)
15. All jamb extension is shipped loose
16. Material: Bare Pine
17. Option: factor-applied white, designer black, and clear lacquer interior finish
    1. **Accessories and Trim**
18. Exterior Casing:
19. Non-integral to the unit – fastened to the exterior wall with barb and kerf
20. 2” Brick Mould Casing available as a header and jamb surround
21. 3 ½” Ultrex Flat casing as a header and jamb surround – also available with 1inch Ranch Style header overhang
22. Color: Stone White, Pebble Gray, Bronze, Cashmere, Gunmetal, Ebony
23. Installation Accessories:
24. Optional factory installed nailing fin at side jambs
    1. Head jamb nailing fin shipped loose.
25. Optional Installation Brackets: 6 ¾” (171mm)

**Part 3 Execution**

* 1. **Examination**

1. 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.
2. Acceptance of Condition: Beginning on installation confirms acceptance of existing conditions.
   1. **Installation**
3. Comply with Section 01 73 00.
4. Assemble and install window/door unit(s) according to manufacturer’s instruction and reviewed shop drawing.
5. 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.
6. Install accessory items as required.
7. Use finish nails to apply wood trim and mouldings.
   1. **Field Quality Control**
8. Remove visible labels and adhesive residue according to manufacturer’s instruction.
9. 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).
10. 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.
    1. **Cleaning**
11. Remove visible labels and adhesive residue according to manufacturer’s instruction.
12. Leave windows and glass in a clean condition. Final cleaning as required in Section 01 74 00.
    1. **Protecting Installed Construction**
13. Comply with Section 07 76 00.
14. Cover doors and frames during painting or other construction operations that may cause damage
15. Protect doors from damage by chemicals, solvents, paint or other construction operations that may cause damage.

End of Section