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CSI PRODUCT SPECIFICATION

Specifier note: This CSI product specification is written using the Construction Specifications Institute (CSI) Manual of Practice (Fifth Edition), including MasterFormat™, SectionFormat™ and PageFormat™. Edit all sections to suit project requirements.

Specifier note: Information contained in this CSI product specification is accurate as of December 2021. Due to ongoing product changes, this information is subject to change. Consult manufacturer for complete product details.

PART 1 GENERAL

1.1 SECTION INCLUDES

 A. Aluminum Clad Exterior / Wood Interior Bi-Fold Patio Doors with Hardware.

 B. Glazing.

 C. Accessories.

1.2 RELATED SECTIONS

1. Section 01 33 00 – Submittal Procedures.
2. Section 01 65 00 – Product Delivery Requirements.
3. Section 01 66 00 – Product Storage and Handling Requirements.
4. Section 06 10 00 – Rough Carpentry.
5. Section 06 20 00 – Finish Carpentry.
6. Section 07 90 00 – Joint Protection.
7. Section 08 71 00 – Door Hardware.
8. Section 08 80 00 – Glazing.
9. Section 09 90 00 – Painting and Coating.

1.3 REFERENCES

 A. American Society for Testing and Materials (ASTM):

 1. ASTM C1036 – Standard Specification for Flat Glass.

1. ASTM C1048 – Standard Specification for Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
2. ASTM E283 – Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
3. ASTM E330 – Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
4. ASTM E547 – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cyclic Static Air Pressure Difference.
5. ASTM E2190 – Standard Specification for Insulating Glass Unit Performance and Evaluation.
	1. American Architectural Manufacturers Association/Window and Door Manufacturers Association/Canadian Standards Association (AAMA/WDMA/CSA):
6. AAMA/WDMA/CSA 101/I.S.2/A440-11/NAFS – North American Fenestration Standard/Specification for Windows, Doors and Skylights.
	1. Window and Door Manufacturers Association (WDMA):
7. WDMA I.S.2 – Hallmark Certification Program.
8. WDMA I.S. 4-05 – Industry Standard for Water Repellent Preservative Non-Pressure Treatment for Millwork.
	1. American Architectural Manufacturers Association (AAMA):
	2. AAMA 611 – Voluntary Specification for Anodized Architectural Aluminum.
	3. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
	4. AAMA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
9. National Fenestration Rating Council (NFRC):
	1. NFRC 102 – Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.
	2. NFRC 200 – Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
	3. NFRC 500 – Procedure for Determining Fenestration Product Condensation Resistance Values.
	4. ENERGY STAR® Compliant Models available.
10. Insulating Glass Certification Council (IGCC).
11. Safety glass tested in accordance with ANSI Z97.1.
12. Forest Stewardship Council® (FSC®):

1. FSC-STD-40-003 V1-0 – Standard for Multi-site Certification of Chain of Custody

 Operations.

2. FSC-STD-40-004 V2-1 – Standard for Chain of Custody Certification.

* 1. PERFORMANCE REQUIREMENTS

Specifier note: Product performance is dependent upon size and style. For further information see [www.weathershield.com](http://www.weathershield.com) or contact your Weather Shield territory manager.

 A. Design and performance requirements:

 1. French door units shall be Hallmark certified in compliance with AAMA/WDMA/CSA 101/I.S.2/A440-11:

 [Class-PG30-SP]

 2. Air infiltration shall not exceed 0.30 cfm/ft2 [1.5 L/s•m2] when tested at 1.57 psf [75 Pa]

 according to ASTM E283.

1. No water penetration when tested at the following pressure according to ASTM E547:

[Class-PG30-SP – 4.50 psf (215 Pa)]

1. Door units must withstand the following positive/negative structural test pressure without damage when tested according to ASTM E330:

[Class-PG30-SP - +/-45.0 psf (2150 Pa)]

* 1. SUBMITTAL PROCEDURES
	2. Shop drawings: submit shop drawings according to Section 01 33 23 – Shop Drawings, Product Data and Samples.
	3. Product data: submit manufacturer's product catalog data and installation guides.
	4. Samples: submit samples including the following:

1. Corner cutaway: submit corner cutaway, including glazing system, quality of construction and specified exterior/interior finishes.

2. Exterior: submit color samples of exterior color finishes.

3. Hardware: submit samples indicating typical hardware finishes.

* 1. Quality control reporting: submit manufacturer’s test results reported by independent laboratory indicating compliance with specified performance and design requirements, as listed in 1.4 Performance Requirements, according to Section 01 33 26 – Source Quality Control Reporting.

1.6 QUALITY ASSURANCE

 A. Single source responsibility: except for hardware mechanisms, weather strip, aluminum extrusions and insulated glass, the door manufacturer is responsible for fabrication of all components and materials including treatment of wood with acceptable wood preservatives, millwork of door panel and frame members and manufacture of all panels and frames.

 B. Regulatory requirements:

1. Emergency escape and rescue: comply with requirements for sleeping units of
[IBC International Building Code] [IRC International Residential Code] [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].
	1. PRODUCT DELIVERY REQUIREMENTS

 A. Comply with the product delivery requirements specified in Section 01 65 00 - Product Delivery Requirements.

* 1. PRODUCT STORAGE AND HANDLING REQUIREMENTS
		1. Comply with the requirements for storage and handling of products as specified in Section 01 66 00 – Product Storage and Handling Requirements.
		2. Store units in a dry location, off the ground, under cover, protected from weather and construction activities.

1.9 WARRANTIES

1. Workmanship and materials: 20-year limited warranty.
2. Wood rot: 30-year warranty.
3. Insulating glass: 20-year warranty.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

1. Weather ShieldPremium SeriesTM Aluminum Clad Exterior / Wood Interior 8622 Bi-Fold Patio Doors as manufactured by Weather Shield Mfg., Inc. of Medford, Wisconsin.

2.2 ALUMINUM CLAD EXTERIOR / WOOD INTERIOR BI-FOLD PATIO DOOR MATERIALS

* 1. Frame:
		+ 1. Exterior frame members milled from pine, kiln dried to a moisture content of 6-12% at the time of fabrication and treated with a water-repellent preservative. Top corners shall be rabbeted, butted, chemically and mechanically fastened. Head to include aluminum track for roller hardware.
			2. Exterior frame is clad with .050” [1.3mm] thick extruded aluminum, with an integral extruded nailing fin. Top corners shall be mitered, chemically and mechanically fastened.
			3. Interior frame materials to be milled from [pine fingerjoint (standard)] [pine no fingerjoint] [oak] [maple] [character alder] [cherry] [mahogany] [vertical grain fir] [mixed grain fir] [white oak] [FSC®-certified FSC-C095408 (specify species)] kiln dried to a moisture content of 6-12% at the time of fabrication and treated with a water-repellent preservative.
			4. Choose one of the following sill options:
* [Extruded aluminum [Bronze] [Clear] anodized sill with hardwood threshold (standard); sill height 2-1/8” [54mm].
* [Extruded aluminum anodized U-channel sill]
* [ADA-compliant extruded aluminum [Bronze] [Clear] anodized sill; sill height 1/2” [13mm]].
	+ - 1. Frame shall have standard overall jamb depth of 6-9/16” [167mm] with 5-5/16” [135mm] from backside of nailing fin to interior of door.
			2. Options:
				1. Frame provided with [factory applied (standard)] [shipped loose] jamb extensions for \_\_\_\_ wall depth]. Jamb extensions shall be to the interior at head and side jambs and shall match interior frame finish.
				2. Interior saw kerf
	1. Door panel:
1. Panel shall be composed of two materials, an extruded aluminum exterior with a .055” [1.4mm] thickness, chemically and mechanically bonded to interior wood substrate.
2. Interior door panel materials shall be milled from [pine (standard)] [oak] [maple] [character alder] [cherry] [mahogany] [vertical grain fir] [mixed grain fir] [white oak] [FSC®-certified FSC-C095408 (specify species)] veneer over wood substrate, kiln dried to a moisture content of 6-12% at the time of fabrication and treated with a water-repellent preservative.
3. Laminated lock stile and block core hinge stile and rails shall be chemically and mechanically fastened at joints with hardwood dowels.
4. Door panel shall be 2-1/4” (58mm) thick.
5. [two] [three] [four] [five] [six] [seven] [eight]-panel configurations.
6. Top rail is 5” [127mm] wide; stiles are 5-1/4” [133mm] wide; bottom rail [10” (254mm) (standard)] [12” (305mm)] wide;

Option: 5-3/16” [132mm] center rail.

1. Option: raised panels:

 a. [One panel] [Two panels] shall be two medium density fiberboard (MDF) panels consisting of an exterior and interior panel glazed into door panel.

 b. Exterior raised panel shall be [prefinished poly wood (standard)] [extruded aluminum clad]; color to match exterior door panel.

 c. Interior raised panel wood species to match interior door panel.

* 1. Finish:
1. Exterior aluminum finish: silicone-modified polyester topcoat over high performance primer meets AAMA 2604 requirements. Colors: [to be selected from one of the manufactures standard colors] [custom color as selected by the Architect].
2. Exterior aluminum finish: fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements. Colors: [to be selected from one of the manufactures standard colors] [custom color as selected by the Architect].
3. Exterior anodized aluminum finish: electrolytic two-step coloring method meets AAMA 611 Class I requirements. Finishes: to be selected from one of the manufactures standard finishes.
4. Interior finish: [clear treated wood (standard)] [primed [white] [black]] [prefinished [white] [black] latex] [polyurethane painted with color selected from one of the manufactures standard colors] [stained and sealed with color selected from one of the manufactures standard colors].

Specifier note: Copy this section for as many glass types that are required. Product thermal performance is dependent upon glass type. For further information see [www.weathershield.com](http://www.weathershield.com) or contact your Weather Shield territory manager.

* 1. Glazing: select quality complying with ASTM C1036. Insulating glass IGCC certified to performance level CBA when tested in accordance with ASTM E2190.
1. Glass type:
	1. Insulated glass consisting of two lites of clear tempered glass.
	2. Triple insulated glass consisting of three lites of clear tempered glass.
2. Thermal performance:

U-value - total, NFRC 100 [\_\_\_\_\_]

Solar Heat Gain Coefficient (SHGC), NFRC 200 [\_\_\_\_\_]

Visible Light Transmittance (VLT), NFRC 200 [\_\_\_\_\_]

Condensation Resistance Rating (CRR), NFRC 500 [\_\_\_\_\_]

1. Insulated glass airspace:
	1. Insulated glass shall be sealed with a [black (standard)] [silver] spacer system to meet thermal performance.
2. Glass shall be silicone glazed at exterior to allow reglazing from the interior with [colonial (standard)] [putty] [square] [raised] glazing bead. Back side of glazing bead to be finished black.
	1. Hardware:
		1. Lock systems:
3. Twin-Bolt lock mechanism with folding handle at exterior folding panels.
4. [Three-point (standard)] [Single-point] locking mechanisms at service panel shall be handle-activated and include mortise lock, rods, shootbolts and strike plate. Backset shall be 2-3/4” [70mm].
	* 1. Service panel handle set styles:
5. Solid brass handle with 2” x 12” [51mmx305mm] one-piece [arch top (standard)] [square top] escutcheon plates.
* Finish: [brushed nickel pvd (standard)] [bright brass pvd] [chrome] [antique brass] [black] [oil-rubbed bronze].
1. Keyed lock options: [keyed random (standard)] [keyed alike].
	* 1. Hinges:
	1. To include carrier, guide, flat and pivot hinges as required per configuration.
	2. Exterior folding panel flat hinge to include handle
	3. Finish: [oil-rubbed bronze] [stainless steel].
		1. [Black PVD] [Stainless Steel] magnetic catch to be field applied.
		2. All provisions of this section shall conform to requirements of Section 08 71 00 – Door Hardware.

* 1. Weather stripping:
1. Doors shall have vinyl/pile weather stripping providing two points of contact with the panel.

Optional accessories. Edit as required.

* 1. Grilles-between-glass:
		+ 1. Aluminum grilles in sealed airspace: [5/8" (16mm) flat] [11/16" (18mm) sculptured]
			2. Pattern: [custom configuration as noted on drawings (lite cut subject to approval of Weather Shield)].
			3. Color: to be selected from one of the manufactures standard colors.
	2. Simulated divided lites:
	3. Exterior aluminum and interior wood muntins adhered to glass with double-coated acrylic foam tape:
	4. Putty profile exterior simulated divided lite bar options: [5/8” (16mm)] [7/8” (22mm)]

[1-1/8” (29mm)] [2” (51mm)].

* 1. [Colonial (standard)] [putty] [square] profile interior simulated divided lite bar options: [5/8” (16mm)] [7/8” (22mm)] [1-1/8” (29mm)] [2” (51mm)].
	2. [Adobe aluminum grilles-between-the-glass] [no grilles-between-the-glass].
	3. Pattern: [custom configuration as noted on drawings (lite cut subject to approval of Weather Shield)].
	4. Finish: matches exterior/interior sash finish.

2.3 ACCESSORIES AND TRIM

1. Interior installation clips [shipped loose] [factory applied (standard)]: [5-1/2” (140mm)]

[11” (279mm)].

1. Aluminum drip cap: [factory applied] [shipped loose]. Color to match exterior frame.

1. Exterior aluminum casings [factory applied (standard)] [shipped loose]: [size and profile from manufactures standard catalog]. Color to match exterior frame.
2. Interior trim style: [size and profile from manufactures standard catalog]. Wood species: [match interior frame] [to be selected from one of the manufactures standard]. Finish: [clear pine] [primed [white] [black]] [prefinished [white] [black] latex] [stained and sealed with color selected from one of the manufactures standard colors].
3. Wood rosettes: [2-1/2”x2-1/2”x5/8” (64mmx64mmx16mm)] [3-5/8”x3-5/8”x5/8” (92mmx92mmx16mm)]. Wood species: [match interior frame] [to be selected from one of the manufactures standard]. Finish: [clear pine] [primed [white] [black]] [prefinished [white] [black] latex] [stained and sealed with color selected from one of the manufactures standard colors].

PART 3 EXECUTION

3.1 INSTALLATION

* + 1. Install doors according to manufacturer's instructions and reviewed shop drawings to ensure proper installation and operation.
		2. Install door unit plumb, level and square with no distortion of frame members.

* + 1. Fill perimeter frame to wall opening cavity per manufacturer’s installation instructions.
		2. Apply approved sealant in accordance with Section 07 90 00 - Joint Protection.
		3. Do not puncture aluminum cladding.
		4. Manufacturer does not recommend installation clips alone for installation of doors.

3.2 ADJUSTING AND CLEANING

1. Adjust operating panel and hardware to provide tight fit at contact points and at the weather stripping for smooth operation.
2. Remove excess sealant materials and visible labels from glass. Clean glass surfaces promptly after installation.
3. Initiate and maintain all protection and other precautions required to ensure doors are in acceptable condition at time of substantial completion.

END OF SECTION