MANUFACTURER

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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 April 2020. Due to ongoing product changes, this information is subject to change. Consult manufacturer for complete product details.

PART 1 GENERAL

1.1 SECTION INCLUDES

1. Aluminum Clad Exterior / Wood Interior Impact-Resistant [Double-Hung Windows] [Double-Hung Picture Windows] [Double-Hung Transom Windows] with Hardware.
2. Glazing.
3. 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 80 00 - Glazing.
8. Section 09 90 00 - Painting and Coating.
	1. REFERENCES
9. American Society for Testing and Materials (ASTM):
10. ASTM C1036 - Standard Specification for Flat Glass.
11. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
12. ASTM D3656 – Standard Specification for Insect Screening and Louver Cloth Woven From Vinyl-Coated Glass Yarns.
13. 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.
14. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
15. ASTM E547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cyclic Static Air Pressure Difference.
16. ASTM E1886 – Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
17. ASTM E1996 – Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
18. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
19. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.
20. American Architectural Manufacturers Association/Window and Door Manufacturers Association/Canadian Standards Association (AAMA/WDMA/CSA):
21. AAMA/WDMA/CSA 101/I.S.2/A440-11/NAFS – North American Fenestration Standard/Specification for Windows, Doors and Skylights.
22. Window and Door Manufacturers Association (WDMA):
23. WDMA I.S.2 – Hallmark Certification Program.
24. WDMA 4-05 - Industry Standard for Water Repellent Preservative Non-Pressure Treatment for Millwork.
25. American Architectural Manufacturers Association (AAMA):
	1. AAMA 450 – Voluntary Performance Rating Method for Mulled Fenestration Assemblies.
	2. AAMA 611 – Voluntary Specification for Anodized Architectural Aluminum.
	3. AAMA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
26. 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.
27. Insulating Glass Certification Council (IGCC).
28. Safety glass tested in accordance with ANSI Z97.1.
29. Screen Manufacturers Association (SMA):
30. SMA-1201-2013 – Specifications for Insect Screens for Windows, Sliding Doors and Swinging Doors.

1. 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.

1.4 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.

1. Design and performance requirements:
2. Double-hung windows shall be Hallmark certified in compliance with AAMA/WDMA/CSA 101/I.S.2/A440-11:

[LC-PG50-H]

[CW-PG55-FW]

1. Vertical mull, mulled and applied rating: [LC50] [LC55].
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.
3. No water penetration when tested at the following pressure according to ASTM E547:

[LC-PG50-H – 7.50 psf (360 Pa)]

[CW-PG55-FW – 8.25 psf (395 Pa)]

1. Double-hung windows must withstand the following positive/negative structural test pressure without damage when tested according to ASTM E330:

[LC-PG50-H – +/-75.0 psf (3600 Pa)]

[CW-PG55-FW - +/-82.5 psf (3950 Pa)]

1. Double-hung windows shall be capable of resisting impact from windborne debris according to ASTM E1886, ASTM E1996.

[+50/-70 psf (+2400/-3360 Pa) Missile D, Wind Zone 3]

[+55/-70 psf (+2600/-3360 Pa) Missile D, Wind Zone 3]

1. Double-hung tilt windows must pass a forced entry resistance test of at least Grade 10 to meet requirements set forth in ASTM F588.
	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.
5. 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

1. Single source responsibility: except for hardware mechanisms, weather strip, insulated glass and aluminum extrusions, the window manufacturer is responsible for fabrication of all components and materials including treatment of wood with acceptable wood preservatives, millwork of sash and frame members and manufacture of all sash and frames.
2. Regulatory requirements:
	* + 1. Emergency escape and rescue: comply with requirements for sleeping units o
			[IBC International Building Code] [IRC International Residential Code] [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].
	1. PRODUCT DELIVERY REQUIREMENTS
		* + 1. Comply with the product delivery requirements specified in Section 01 65 00 - Product Delivery Requirements.
	2. PRODUCT STORAGE AND HANDLING REQUIREMENTS
	3. Comply with the requirements for storage and handling of products as specified in Section 01 66 00 – Product Storage and Handling Requirements.
	4. Store units in a dry location, off the ground, under cover, protected from weather and construction activities.

1.9 WARRANTIES

1. Workmanship and materials: 10-year limited warranty within one mile of a corrosive environment and 20-year limited warranty.
2. Wood rot: 30-year warranty.
3. Insulating glass: 20-year warranty.
4. Laminated glass: 5-year warranty.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

1. Weather Shield Premium Coastal™ Aluminum Clad Exterior / Wood Interior Impact Resistant [Double-Hung] [Double-Hung Picture] [Double-Hung Transom] Windows as manufactured by Weather Shield Mfg., Inc. of Medford, Wisconsin. Product ID: [1104 – IG Double-Hung] [1109 – IG Double-Hung Picture] [1111 – IG Double-Hung Transom] [1105 – SG Double-Hung] [1108 – SG Double-Hung Picture] [1110 – SG Double-Hung Transom].

2.2 ALUMINUM CLAD EXTERIOR / WOOD INTERIOR IMPACT-RESISTANT DOUBLE-HUNG WINDOW MATERIALS

1. Frame:
2. 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. Frame corners shall be square cut, rabbeted at head, dadoed at sill, chemically and mechanically fastened.
3. Frame is clad with .050” [1.3mm] extruded aluminum, with an integral extruded nailing fin. Top corners shall be mitered, include internal aluminum corner keys, and be chemically and mechanically fastened. Sill shall include a vinyl thermal break sill riser that interlocks into extruded aluminum sill cover.
4. Interior frame materials to be milled from [pine (standard)] [oak] [cherry] [maple] [mahogany] [vertical grain fir] [mixed grain fir] [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.
5. Frame shall have standard 5-3/16” [148mm] overall jamb depth with 4-9/16” [116mm] from backside of nailing fin to interior of window.
6. Options:
	1. [Frame provided with [factory applied (standard)] [shipped loose] jamb extensions for \_\_\_\_ wall depth]. Jamb extensions match interior frame finish.
	2. [Interior saw kerf].
7. Sash:
8. Sash shall be composed of two materials, an extruded aluminum exterior of .050” [1.3mm] thickness, butt joined at corners, chemically and mechanically bonded to the interior wood substrate. Interior sash corners shall be mortised, tenoned and mechanically fastened.
9. Interior sash materials to be milled from [pine (standard)] [oak] [cherry] [maple] [mahogany] [vertical grain fir] [mixed grain fir] [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.
10. Stiles and rails shall be
	1. Double-Hung bottom rail shall be 3-1/2” [89mm] tall. Top sash top rail shall be 2-3/4” [70mm] tall; stiles for both sash shall be 1-1/2” [38mm] wide.
	2. Double-Hung Picture bottom rail shall be 3-1/2” [89mm] tall. Top rail shall be 2-7/16” [62mm] tall; stiles shall be 2-1/4” [57mm] wide.
	3. Double-Hung Transom bottom rail shall be 1-11/16” [43mm] tall. Top rail shall be
	2-7/16” [62mm] tall; stiles shall be 2-1/4” [57mm] wide.
11. Both top and bottom double-hung sash shall interlock together using extruded aluminum interlocking cladding at the meeting rail.
12. Operating top and bottom double-hung sash must tilt in from the inside for cleaning purposes without removal of screens (standard). Top sash stationary with non-tilting bottom sash with extended side sash stops when Class 5 balances are required.
13. Finish:
14. 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].
15. 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.
16. 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.
2. Glass type:
	1. Insulated glass consisting of one lite of clear [annealed (standard)] [tempered] glass and one lite of annealed laminated glass with .090” polyvinylbutyral interlayer.
	2. Single glaze glass consisting of one lite of annealed laminated glass with .090” polyvinylbutyral interlayer.
3. 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] glazing bead. Back side of glazing bead to be finished black.
3. Operating Hardware:
	1. Sash counter-balance system to be comprised of an inverted, constant-force, stainless steel coil system (standard) that is contained in pivot, locking shoe. Balance system must meet AAMA 902-07 Class 3 requirements. Jamb liner shall be [wood-wrapped] [tan] [white] vinyl extruded by window manufacturer.
	2. Class 5 spiral rod balances with extended side sash stops and non-tilt bottom sash for heavier sash applications. Jamb liner shall be [wood-wrapped] [tan] [white] vinyl extruded by window manufacturer with exterior aluminum jamb liner cover.
	3. Locking mechanism is concealed tilt-release latch hardware with nylon tilt pins. Upper sash has two tan zinc die-cast flush-mounted tilt latches factory applied.
	4. Sash locks [contemporary] [historical] shall be zinc die cast, recessed mounted at bottom sash check rail and factory applied. Sash lock/keeper finishes: [tan (standard)] [white] [rustic bronze] [brushed nickel] [bright brass] [black].
	5. Options: Sash lifts [no applied lift hardware (standard)] [field-applied [contemporary] [historic] sash lift] [Window Opening Control Device (WOCD)].

1. Weather stripping:
2. Flexible vinyl weather strip shall have contact to the frame around each sash.
3. Screens:
4. Full screen consisting of .019” [0.5mm] thick formed aluminum frame with baked-on acrylic coating with injection molded vinyl corner keys, [20x20 high-visibility vinyl-coated charcoal fiberglass (standard)] [18x16 black aluminum non-glare] mesh.
5. Frame finish: matches exterior frame/sash.

Optional accessories. Edit as required.

1. Interior removable grilles:
	* + 1. Full perimeter 7/8” (23mm) colonial profile wood grilles with no exposed fastening devices [factory applied (standard)] [shipped loose].
			2. Pattern: [custom configuration as noted on drawings (lite cut subject to approval of Weather Shield)].
			3. Finish: to match sash interior.
2. 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.
3. Simulated divided lites:
	1. Exterior aluminum and interior wood muntins adhered to glass with double-coated acrylic foam tape:
	2. 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 (factory-mulled units only)] [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

 A. Install windows according to manufacturer's instructions and reviewed shop drawings to ensure proper installation and operation.

 B. Install window unit plumb, level and square with no distortion of frame members.

 C. Fill perimeter frame to wall opening cavity per manufacture’s installation instructions.

 D. Apply approved sealant in accordance with Section 07 90 00 – Joint Protection.

 E. Do not puncture aluminum cladding.

3.2 ADJUSTING AND CLEANING

 A. Adjust operating sash and hardware to provide tight fit at contact points and at the weather stripping for smooth operation.

 B. Remove excess sealant materials and visible labels from glass. Clean glass surfaces promptly after installation.

 C. Initiate and maintain all protection and other precautions required to ensure windows are in acceptable condition at time of substantial completion.

END OF SECTION