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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™.*

Specifier note: Information contained in this CSI product specification is accurate as of November 2018. 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. Wood Casement Windows 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 80 00 – Glazing.
8. 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.
2. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
3. ASTM D3656 – Standard Specification for Insect Screening and Louver cloth Woven From Vinyl-coated Glass Yarns.
4. 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.
5. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
6. ASTM E547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cyclic Static Air Pressure Difference.
7. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
8. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.
	1. American Architectural Manufacturers Association/Window and Door Manufacturers Association/Canadian Standards Association (AAMA/WDMA/CSA):
9. AAMA/WDMA/CSA 101/I.S.2/A440-11/NAFS – North American Fenestration Standard/Specification for Windows, Doors and Skylights.

* 1. American Architectural Manufacturers Association/Window and Door Manufacturers Association/Canadian Standards Association (AAMA/WDMA/CSA):
1. AAMA/WDMA/CSA 101/I.S.2/A440-08/NAFS – North American Fenestration Standard/Specification for Windows, Doors and Skylights.
	1. Window and Door Manufacturers Association (WDMA):

 1. WDMA I.S.2 – Hallmark Certification Program.

 2. WDMA 4-05 - Industry Standard for Water Repellent Preservative Non-Pressure Treatment for Millwork.

1. National Fenestration Rating Council (NFRC):

 1. NFRC 102 - Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.

* 1. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
	2. NFRC 500 - Procedure for Determining Fenestration Product Condensation Resistance Values.
	3. ENERGY STAR® Compliant Models available.
1. Insulating Glass Certification Council (IGCC).
2. Safety glass tested in accordance with ANSI Z97.1.
3. Screen Manufacturers Association (SMA):

 1. SMA-1201-2013 – Specifications for Insect Screens for Windows, Sliding Doors and

 Swinging Doors.

* 1. PERFORMANCE REQUIREMENTS

Specifier note: Higher test results may be achieved using high performance options and/or smaller sizes. Specific testing is dependent upon size and options. For further information contact your Weather Shield territory manager.

 A. Design and performance requirements:

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

[CW-PG35-C (C11-36”x72 1/8” jamb size tested)]

1. 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:

[CW-PG35-C – 5.25 psf (252 Pa)]

1. Casement windows must withstand the following positive/negative structural test pressure

without damage when tested according to ASTM E330:

[CW-PG35-C - +52.5/-52.5 psf (+2520/-2520 Pa)]

1. Casement windows must pass a forced entry resistance test of at least Grade 10 to meet requirements set forth in ASTM F588.
	1. SUBMITTAL PROCEDURES

 A. Shop drawings: submit shop drawings according to Section 01 33 23 – Shop Drawings, Product Data and Samples.

 B. Product data: submit manufacturer's product catalog data and installation guides.

C. 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

1. Single source responsibility: except for hardware mechanisms 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, assembly of most insulating glass, weather strip and manufacture of all sash 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
	2. Comply with the requirements for storage and handling of products as specified in Section 01 66 00 – Product Storage and Handling Requirements.
	3. 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: 10-year warranty.
3. Insulating glass: 20-year warranty.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

 A. Premium Wood 6204 Wood Casement Windows as manufactured by Weather Shield Mfg., Inc. of Medford, Wisconsin.

2.2 WOOD CASEMENT WINDOW MATERIALS

 A. 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. The frame includes solid one-piece jambs free from nails, screws or applied sash stops. Frame corners shall be butted, chemically and mechanically fastened.
2. Interior frame materials to be milled from [pine (standard)] [oak] [cherry] [maple] [mahogany] [mixed grain fir] [vertical grain fir] [character alder] [knotty pine], kiln dried to a moisture content of 6-12% at the time of fabrication and treated with a water-repellent preservative.
3. Frame thickness shall be 1-1/4” [32mm] at head and side jambs and 1” [25mm] at sill.
4. Wood sill operator cover shall be chemically fastened to sill.

 5. Frame shall have standard jamb depth of 4-9/16” [116mm].

 6. Frame shall have 2” [51mm] brick mould factory applied to head and side jambs; sill shall have 1-3/8” [35mm] subsill. Exterior sill shall be clad with .035” [0.9mm] white extruded aluminum.

 7. Option: frame provided with jamb extensions up to and including 12” [305mm] overall jamb depth [factory applied (standard)] [shipped loose]. Jamb extensions match interior frame finish (with the exception of knotty pine).

 B. Sash:

 1. Exterior colonial profile sash materials to be milled from pine, kiln dried to a moisture content of 6-12% at the time of fabrication and treated with a water-repellent preservative. Sash corners shall be mortised, tenoned and mechanically fastened.

1. Interior sash materials to be milled from [pine (standard)] [oak] [cherry] [maple] [mahogany] [mixed grain fir] [vertical grain fir] [character alder] [knotty pine], kiln dried to a moisture content of 6-12% at the time of fabrication and treated with a water-repellent preservative.
2. Colonial profile sash shall be 2” [51mm] thick.
3. Stiles and rails shall be 1-25/32” [45mm] wide.

 C. Finish:

1. Exterior finish: [primed (standard)] [no prime/no fingerjoint] [poly, shall be low gloss, two-component acrylic polyurethane: [white] [cameo] [desert tan] [adobe] [hartford green] [obsidian] [craftsman bronze] [brick red] [47 designer colors] [custom color as selected by the Architect]].
2. Interior finish: [clear treated wood: [pine (standard)] [oak] [cherry] [maple] [mahogany] [mixed grain fir] [vertical grain fir] [character alder] [knotty pine]] [primed] [prefinished white] [prefinished black] [poly prefinished: [white] [adobe] [desert tan] [Hartford green] [brick red] [cameo] [obsidian] [craftsman bronze] [47 designer colors]] [stained/sealed: [clear satin] [golden oak] [fruitwood] [chestnut]].
3. Glazing: select quality complying with ASTM C1036. Insulating glass IGCC certified to performance level CBA when tested in accordance with ASTM E2190.
	1. Glazing method:
		* + 1. Insulated glass consisting of two lites of clear [annealed (standard)] [tempered] glass
				2. Triple insulated glass consisting of three lites of clear [annealed] [tempered] glass
	2. Glass type:

 [Clear]

[Low E 272 sputter coat applied on number two surface]

[High-performance Low E: insulated glass consisting of one lite sputter coat Low E 366 applied on the number two surface and one lite clear glass with warm-edge spacer system and argon gas in airspace]. Optional: [EasyCare coating applied on number one surface] [pyrolytic Low E applied on number four surface].

[High-performance Low E laminated: insulated glass consisting of one lite sputter coat Low E 366 applied on the number two surface and one lite of clear laminated glass with .030” polyvinyl butyral interlayer with warm-edge spacer system and argon gas in airspace]. Optional: [EasyCare coating applied on number one surface] [Safeguard] [SafeGuard Certified].

[High-performance triple insl Low E: triple insulated glass consisting of one lite sputter coat Low E 366 applied on the number two surface, one lite of sputter coat Low E 272 applied on the number five surface and one center lite of clear glass with warm-edge spacer system and argon gas in two airspaces]. Optional: [EasyCare coating applied on number one surface].

 [Specialty glass: [obscure] [rain glass] [bronze] [gray]]

* 1. Insulated glass airspace:

[Air (standard)]

[Argon gas]

[Altitude adjusted (not available with argon gas)]

* 1. Insulated glass shall be sealed with a
	2. [black (standard)] [gray] [charcoal shadowline] warm-edge spacer system with integrated edge seal and foil laminate moisture vapor barrier.
	3. [black] [silver] stainless steel spacer system with polyisobutylene edge seal.
	4. Glass shall be silicone glazed at sash exterior to allow reglazing from the interior with [colonial (standard)] [putty] glazing bead. Back side of glazing bead to be finished black.

 E. Hardware:

1. Operator shall be hardened steel drive worm, hinged gear arms, factory applied, and located on the sill of the window:
	1. High pressure zinc die-cast case/handle options: [nested handle (standard)] [round handle] [T-handle] [ADA crank handle].
* Finishes: [goldtone (standard)] [white] [bright brass] [adobe] [rustic bronze] [brushed nickel] [brushed chrome] [corrosive-resistant [goldtone] [white] [adobe] [rustic bronze] finish for hardware and fasteners suitable for salt spray environments]].
1. Cam action sash lock must conform to profile of jamb. One sash lock shall be applied to all units up to and including 42” [1067mm] nominal glass height; two sash locks shall be applied to all units over 42” [1067mm] nominal glass height.
	1. High pressure zinc die-cast sash lock finishes: [goldtone (standard)] [white] [bright brass] [adobe] [rustic bronze] [brushed nickel] [brushed chrome].
2. Hinges: two concealed [steel with protective powder coat (standard)] [stainless steel] adjustable hinges shall consist of a stainless steel track, steel support arms and stainless steel reinforcing insert in low-friction sliding shoe. Options: [egress hinges] [limit stops].
3. Option: sash locks available with tandem tie bar on units over 42” [1067mm] nominal glass height.

 F. Weather stripping:

1. Flexible beige vinyl bulb weather strip at operator cover, exterior head jamb and side jambs.
2. Dual seal beige vinyl leaf weather strip applied to interior perimeter of frame at head, sill and side jambs.
3. Weather stripping shall provide three points of contact at sash rails and stiles.

 G. Screens:

1. Consisting of .019” [0.5mm] thick formed aluminum frames with baked-on acrylic coating or anodized finish, injection molded vinyl corner keys, [20x20 charcoal vinyl-coated fiberglass (standard)] [18x16 black aluminum non-glare] mesh.
2. Frame finish:
3. Zinc die-cast case/handle coordinating screen frame finishes: [goldtone (standard)] [white] [bright brass] [adobe] [dark bronze anodized] [champagne anodized] [clear anodized].
4. Wood-veneer wrapped screen frame finishes: [pine] [oak] [maple] [cherry] [mahogany] [alder]. Veneer shall be applied to craftsman bronze aluminum screen frame with concealed corner keys and shall have a minimum of two visible sides wrapped.

 H. High-performance option:

 1. Reinforced keeper.

 2. Two-piece concealed steel snubber with yellow dichromate finish located at hinge stile.

Optional accessories. Edit as required.

 I. Interior removable grilles:

* + - 1. Full perimeter wood grilles with no exposed fastening devices: [5/8” (16mm) traditional] [7/8” (22mm) colonial] [1-3/8” (35mm) colonial].
			2. Pattern: [rectangular] [marginal] [diamond (5/8” (16mm) traditional only)] [custom configuration as noted on drawings (lite cut subject to approval of Weather Shield)].
			3. Finish: to match interior.

 J. Airspace grilles:

* + - 1. Aluminum grilles in sealed airspace: [5/8" (16mm) flat] [11/16" (17mm) sculptured].
			2. Pattern: [rectangular] [marginal] [diamond (5/8” (16mm) flat only] [custom configuration as noted on drawings (lite cut subject to approval of Weather Shield)].
			3. Color: [white] [cameo] [desert tan] [western adobe] [hartford green] [obsidian] [craftsman bronze] [brick red].
			4. Optional finishes:

 a. [Two-tone 5/8” (16mm) flat airspace grilles: [white/desert tan interior] [cameo/white interior] [desert tan/white interior] [craftsman bronze/white interior] [western adobe/white interior] [hartford green/white interior] [brick red/white interior] [obsidian/white interior]]

 b. [Two-tone 11/16” (17mm) sculptured airspace grilles: [cameo/white interior] [desert tan/white interior] [craftsman bronze/white interior] [western adobe/white interior] [hartford green/white interior] [brick red/white interior] [obsidian/white interior]]

 K. Simulated divided lites:

1. Exterior and interior wood muntins adhered to glass with double-coated acrylic foam tape:
	* + - 1. [Colonial (standard)] [putty] profile exterior simulated divided lite bar options: [5/8” (16mm)] [7/8” (22mm)] [1-3/8” (35mm)] [2” (51mm)].
				2. [Colonial (standard)] [putty] profile interior simulated divided lite bar options: [5/8” (16mm)] [7/8” (22mm)] [1-3/8” (35mm)] [2” (51mm)].
2. [Adobe aluminum grilles-between-the-glass] [no grilles-between-the-glass].
3. Pattern: [rectangular] [marginal] [custom configuration as noted on drawings (lite cut subject to approval of Weather Shield)].
4. Finish: matches exterior/interior sash finish (with the exception of knotty pine).

2.3 ACCESSORIES AND TRIM

1. Interior installation clips [shipped loose (standard)] [factory applied]: [5-1/2” (140mm)] [11” (279mm)].
2. Exterior wood casings [factory applied (standard)] [shipped loose]: [2” (51mm) brick mould (standard)] [2” (51mm) stucco mould] [3-1/2” (89mm) franklin casing] [3-7/16” (87mm) Washington casing] [1-1/16” (27mm) sill nose (standard)] [2” (51mm) New England sill nose] [flat casing up to 8” (203mm)] [custom profile (subject to approval of Weather Shield)]. Color to match exterior frame.
3. Interior trim styles: [WM327 – 2-1/4”x11/16” (57mm x17mm)] [WM356 – 2-1/4”x11/16” (57mm x17mm)] [WM366 – 2-1/4”x11/16” (57mm x17mm)] [WM376 – 2-1/4”x5/8” (57mm x16mm)] [WM351 – 2-1/4”x11/16” (64mmx17mm)] [WM444 – 3-1/4”x11/16” (89mm x17mm)] [WM445 – 3-1/4”x11/16” (89mm x17mm)] [Windsor – 3-1/2”x1-1/16” (89x27mm)] [flat – 3-1/2”x1-1/16” (89x27mm)] [flat – 2-1/4”x1-11/16” (58x27mm)]. Finish: [clear pine] [primed] [prefinished white latex] [stained/sealed: [clear satin] [golden oak] [fruitwood] [chestnut]].
4. Wood rosettes: [2-1/2”x2-1/2” (64mmx64mm)] [3-5/8”x3-5/8” (92mmx92mm)]. Wood species: [clear pine] [primed] [prefinished white latex] [stained/sealed: [clear satin] [golden oak] [fruitwood] [chestnut]].

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 with batt insulation. Do not use expansive foam insulation.

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

E. Do not puncture prefinished exterior. Refer to installation instructions for complete installation recommendations.

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