

SECTION 085200

WOOD WINDOWS

(ANDERSEN® A-SERIES DOUBLE-HUNG, AWNING, CASEMENT, PICTURE, AND TRANSOM WINDOWS)

PART 1 - GENERAL

SPECIFIER NOTE: DATA CONTAINED IN THIS GUIDE SPEC IS ACCURATE AS OF NOVEMBER 2010. DUE TO ONGOING PRODUCT CHANGES, THIS DATA MAY CHANGE OVER TIME. CONSULT MANUFACTURER FOR COMPLETE PRODUCT DETAILS.

1.1 SUMMARY

A. Section Includes:

SPECIFIER NOTE: RETAIN PROJECT-REQUIRED WINDOW TYPE BELOW. DELETE TYPES NOT REQUIRED.

- Double-hung windows.
- 2. Cottage double-hung windows.
- 3. Reverse cottage double-hung windows.
- 4. Casement windows.
- Awning windows.
- Picture windows.
- 7. Transom fixed windows.
- 8. Transom venting windows.

SPECIFIER NOTE: ARTICLE BELOW INCLUDES SUBMITTAL OF RELEVANT DATA TO BE FURNISHED BY CONTRACTOR BEFORE, DURING OR AFTER CONSTRUCTION. COORDINATE THIS ARTICLE WITH THE ARCHITECT'S AND CONTRACTOR'S DUTIES AND RESPONSIBILITIES IN CONDITIONS OF THE CONTRACT AND DIVISION 01 SUBMITTAL PROCEDURES SECTION.

1.2 ACTION SUBMITTALS

- A. Product Data: Manufacturer's product data and installation guides.
- B. Sustainable Building Submittals:

SPECIFIERS NOTE: RETAIN SUBPARAGRAPH BELOW AND ENERGY PERFORMANCE CERTIFICATION PARAGRAPH IN QUALITY ASSURANCE ARTICLE IF WOOD WINDOWS ARE REQUIRED TO BE CERTIFIED.

- 1. Energy Performance:
 - a. Provide NFRC 100 Certified performance values meeting or exceeding values specified in Performance Criteria Article.

SPECIFIERS NOTE: RETAIN SUBPARAGRAPH BELOW AND RECYCLED CONTENT CERTIFICATION PARAGRAPH AND "FOREST CERTIFICATION" PARAGRAPH IN QUALITY ASSURANCE ARTICLE IF WOOD WINDOWS ARE REQUIRED TO BE CERTIFIED.

- Recycled Content.
 - a. Provide third party certified values in percent by weight of recycled content per ISO 14021 Standard for each product specified.
 - b. Provide statement indicating total cost for each product containing recycled content.

SPECIFIERS NOTE: RETAIN SUBPARAGRAPH BELOW IF WOOD WINDOWS ARE REQUIRED TO BE CERTIFIED FOR CERTIFIED WOOD COMPLIANCE.

1. Certified Wood:



- a. Provide wood window manufacturer's and third party chain of custody certificates indicating products comply with forest certification and chain of custody requirements.
- b. Provide statement indicating cost for each product and fraction by weight of certified wood in product.

SPECIFIERS NOTE: RETAIN SUBPARAGRAPH BELOW IF WOOD WINDOWS ARE REQUIRED TO BE QUALIFIED FOR REGIONAL MATERIALS.

- 2. Regional Materials.
 - a. Provide window manufacturer's Product Data for regional materials within [500] miles of project location, indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material.
 - b. Provide statement indicating cost for each product containing regional material and the fraction by weight that is considered regional material.

SPECIFIERS NOTE: RETAIN PARAGRAPH BELOW IF WINDOWS ARE REQUIRED TO BE CERTIFIED FOR INDOOR AIR QUALITY

- 3. Indoor Environmental Quality.
 - a. Provide third party certification that window materials used on project, including factory applied finishes, meet indoor air quality standards for low emitting materials under California CA Section 01350 Specifications.
- C. Shop Drawings: Drawings indicating direction of operable parts, typical jamb, head and sill conditions, and special mullion reinforcement details.
- D. Color Samples: Selection and verification samples, including the following:
 - 1. Hardware: Samples indicating typical finish on window hardware.
 - 2. Exterior Cladding: Submit color samples of exterior cladding.
 - 3. Interior Finishes: Submit color samples of interior finishes.

1.3 INFORMATIONAL SUBMITTALS

- A. Quality Assurance/Control Submittals:
 - 1. Performance Data: Manufacturer's published performance data for specified products.

1.4 CLOSEOUT SUBMITTALS

- A. Warranty documents specified herein.
- B. Owner's Manual: Bound manual clearly identified with project name, location, and completion date. Identify type and size of units installed. Provide recommendations for periodic inspections, care, and maintenance. Identify common causes of damage with instructions for temporary repair.

1.5 QUALITY ASSURANCE

SPECIFIERS NOTE: RETAIN OPTION IN MANUFACTURER QUALIFICATIONS PARAGRAPH BELOW IF REQUIRED FOR PROJECT OR MEETING FSC CERTIFICATION IS A REQUIREMENT. ANDERSEN CORPORATION HAS SUPPORTING DOCUMENTATION AVAILABLE UPON REQUEST.

A. Manufacturer Qualifications: A manufacturer capable of fabricating wood windows that meet or exceed Performance Criteria indicated and of documenting this performance by inclusion in lists and by labels, test reports, and calculations [and who is certified for chain-of-custody by an FSC accredited certification body].

SPECIFIERS NOTE: IF RETAINING OPTION IN MANUFACTURER QUALIFICATIONS PARAGRAPH ABOVE, ALSO RETAIN VENDOR QUALIFICATIONS PARAGRAPH BELOW.



- B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC accredited certification body.
- Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

SPECIFIER NOTE: PARAGRAPH BELOW SHOULD LIST OBLIGATIONS FOR COMPLIANCE WITH SPECIFIC CODE REQUIREMENTS PARTICULAR TO THIS SECTION. GENERAL STATEMENTS TO COMPLY WITH A PARTICULAR CODE ARE TYPICALLY ADDRESSED IN CONDITIONS OF THE CONTRACT AND DIVISION 01 REGULATORY REQUIREMENTS SECTIONS. REPETITIVE STATEMENTS SHOULD BE AVOIDED.

D. Code and Regulatory Requirements and Approvals: <Specify applicable requirements of regulatory agencies.>

E. Certifications:

- National Fenestration Rating Council (NFRC). Products shall be certified and labeled for U-Factor, Solar Heat Gain Coefficient (SHGC), and Visible Transmittance per NFRC 100 and 200 Procedures. Unique glass types that are special ordered may not apply, check with Manufacturer.
- Window and Door Manufacturers Association (WDMA). Products shall be certified and labeled per WDMA Hallmark Certification Program to the AAMA/WDMA/CSA 101/I.S.2/A440 industry standard.
- 3. Insulating Glass Units: Provide insulating glass units permanently marked with certification label of Insulating Glass Certification Council (IGCC) indicating compliance.

SPECIFIER NOTE: RETAIN CERTIFICATION LABEL REQUIREMENTS PARAGRAPH ABOVE OR BELOW.

 Insulating Glass Units: Provide insulating glass units permanently marked with certification label of Insulating Glass Manufacturers Association of Canada (IGMAC) indicating compliance with CAN/CGSB 12.8.

SPECIFIER NOTE: RETAIN PARAGRAPH BELOW IF PRE-INSTALLATION MEETING IS REQUIRED.

F. Pre-Installation Meetings: Conduct meeting at Project site to comply with requirements in Division 01 Section – Project Management and Coordination.

SPECIFIER NOTE: IN ARTICLE BELOW, STATE PHYSICAL OR ENVIRONMENTAL LIMITATIONS OR CRITERIA FOR INSTALLATION SUCH AS WEATHER, TEMPERATURE, HUMIDITY, VENTILATION OR ILLUMINATION REQUIRED FOR PROPER INSTALLATION OR APPLICATION.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D. Store materials and accessories off ground, under cover, and protected from weather and construction activities.

1.7 SITE CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication. Record measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.



B. Install units per manufacturer's safety and weather requirements.

SPECIFIER NOTE: COORDINATE ARTICLE BELOW WITH CONDITIONS OF THE CONTRACT AND WITH DIVISION 01 CLOSEOUT SUBMITTALS (WARRANTY) SECTION. USE THIS ARTICLE TO REQUIRE SPECIAL OR EXTENDED WARRANTY OF BOND COVERING THE WORK OF THIS SECTION.

1.8 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project Warranty provisions.

SPECIFIER NOTE: COORDINATE ARTICLE BELOW WITH MANUFACTURER'S WARRANTY REQUIREMENTS. VISIT THE ANDERSEN WEBSITE FOR A COMPLETE DESCRIPTION OF THE STANDARD LIMITED WARRANTY INCLUDING EXCLUSIONS AND LIMITATIONS.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard limited warranty document. Manufacturer's limited warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

PART 2 - PRODUCTS

SPECIFIER NOTE: RETAIN ARTICLE BELOW FOR PROPRIETARY METHOD SPECIFICATION. ADD PRODUCT ATTRIBUTES, PERFORMANCE CHARACTERISTICS, MATERIAL STANDARDS, AND DESCRIPTIONS AS APPLICABLE. USE OF SUCH PHRASES AS "OR EQUAL" OR "OR APPROVED EQUAL" OR SIMILAR PHRASES MAY CAUSE AMBIGUITY IN SPECIFICATIONS. SUCH PHRASES REQUIRE VERIFICATION (PROCEDURAL, LEGAL AND REGULATORY) AND ASSIGNMENT OF RESPONSIBILITY FOR DETERMINING "OR EQUAL" PRODUCTS.

2.1 MANUFACTURER

- A. Provide products from the following manufacturer:
 - 1. Andersen Corporation

100 4th Ave. N.

Bayport, MN 55003-1096. Phone: (800) 299-9029. Fax: (800) 752-9230.

E-mail: technicalsupport@andersenwindows.com.

www.andersenwindows.com.

Local Contact: <Specify contact information provided by local Andersen representative.>

SPECIFIER NOTE: ARTICLE BELOW SHOULD BE RESTRICTED TO STATEMENTS DESCRIBING DESIGN OF PERFORMANCE REQUIREMENTS AND FUNCTIONAL (NOT DIMENSIONAL) TOLERANCES OF A COMPLETE SYSTEM. LIMIT DESCRIPTIONS FOR COMPOSITE AND OPERATIONAL PROPERTIES REQUIRED TO LINK COMPONENTS OF A SYSTEM TOGETHER AND TO INTERFACE WITH OTHER SYSTEMS.

2.2 PERFORMANCE REQUIREMENTS

SPECIFIER NOTE: MANUFACTURER RECOMMENDS REFERRING TO WEBSITE FOR MOST CURRENT PRODUCT PERFORMANCE DATA. RETAIN, EDIT, OR DELETE LANGUAGE BELOW TO SUIT PROJECT REQUIREMENTS. REFER TO WWW.ANDERSENWINDOWS.COM FOR PERFORMANCE INFORMATION.

- A. Performance Requirements: Provide products/systems that have been manufactured, fabricated, and installed to the following performance criteria:
 - 1. Comply with AAMA/WDMA/CSA 101/I.S.2/A440.
 - Performance Class: <Specify performance class.>
 - 3. Performance Grade: <Specify performance grade.>
 - 4. U-Factor (NFRC 100): <Specify U-Factor.>
 - 5. Solar Heat Gain Coefficient (SHGC) (NFRC 200): <Specify SHGC.>



- Outdoor-Indoor Transmission Class (OITC) (ASTM E90): <Specify OITC.>
- 7. Sound Transmission Class (STC) (ASTM E90): <Specify STC.>

SPECIFIER NOTE: MANUFACTURER RECOMMENDS REFERRING TO WEBSITE DESIGN PRESSURE ESTIMATOR FOR ADDITIONAL WIND LOAD INFORMATION. RETAIN, EDIT, OR DELETE LANGUAGE BELOW TO SUIT PROJECT REQUIREMENTS

- B. Structural Requirements: Provide products/systems capable of withstanding wind loads based on testing units representative of those indicated for Project that pass AAMA/WDMA/CSA 101/I.S.2/A440, Uniform Structural Load Test:
 - 1. Design Wind Loads: Determine design wind loads applicable to Product from basic wind speed indicated in miles per hour (meters per second) at 33 feet (10 meters) above grade, according to ASCE, Section 6, based upon mean roof heights indicated on Drawings.
 - a. Basic Wind Speed: <Specify wind speed.>
 - b. Importance Factor: <Specify importance factor.>
 - c. Exposure Category: <Specify exposure category.>
 - d. Wind Load Requirement: <Specify design pressure requirement.>

2.3 MANUFACTURED UNITS

A. Proprietary Products/Systems: Composite clad, wood windows, including the following:

SPECIFIER NOTE: DELETE ANY OF THE FOLLOWING SUBPARAGRAPHS NOT REQUIRED FOR PROJECT.

- 1. Andersen® A-Series Full Frame Double-Hung Windows.
- 2. Andersen® A-Series Casement Windows.
- 3. Andersen® A-Series Awning Windows.
- 4. Andersen® A-Series Picture Windows.
- Andersen® A-Series Transom Fixed Windows.
- 6. Andersen® A-Series Transom Venting Windows.

SPECIFIER NOTE: EDIT ARTICLE BELOW TO SUIT PROJECT REQUIREMENTS. IF SUBSTITUTIONS ARE PERMITTED, EDIT TEXT BELOW. ADD TEST TO REFER TO DIVISION 01 PROJECT REQUIREMENTS (PRODUCT SUBSTITUTIONS PROCEDURES) SECTION.

7. Substitutions: No substitutions permitted.

SPECIFIER NOTE: SPECIFY MATERIALS TO BE FURNISHED. THIS ARTICLE MAY BE OMITTED AND THE MATERIALS CAN BE INCLUDED WITH THE DESCRIPTION OF A MANUFACTURED UNIT, EQUIPMENT, COMPONENT, OR ACCESSORY.

2.4 MATERIALS

SPECIFIERS NOTE: RETAIN CERTIFIED WOOD PARAGRAPH BELOW IF WOOD WINDOWS ARE REQUIRED TO BE CERTIFIED FOR LEED OR PROJECT IS BEING DESIGNED WITH SUSTAINABLE PRACTICES.

- A. Certified Wood: Windows shall be certified as "FSC Mixed Credit" per FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification."
- B. Frame: Fabricated from a wood species approved in WDMA I.S.4.
- C. Exterior Frame Members: Fibrex® material outer frame with wood core. Provide units in the following color:

SPECIFIER NOTE: RETAIN PROJECT REQUIRED COLOR BELOW. DELETE COLORS NOT REQUIRED.

Color: White.
 Color: Sandtone.



- 3. Color: Terratone®.
- 4. Color: Forest Green.
- 5. Color: Canvas.
- 6. Color: Dove Gray.
- 7. Color: Prairie Grass.
- 8. Color: Red Rock.
- 9. Color: Cocoa Bean.
- 10. Color: Dark Bronze.
- 11. Color: Black.

SPECIFIER NOTE: WINDOWS CAN BE ORDERED WITH A SASH COLOR DIFFERENT FROM THE FRAME COLOR. DELETE THE COLOR OPTIONS IF THE FRAME AND SASH COLORS ARE TO MATCH.

D. Sashes:

1. Exterior Components: Glass reinforced fiber with the following painted color:

SPECIFIER NOTE: RETAIN PROJECT REQUIRED COLOR BELOW. DELETE COLORS NOT REQUIRED.

- a. Color: White.
- b. Color: Sandtone.
- c. Color: Terratone®.
- d. Color: Forest Green.
- e. Color: Canvas.
- f. Color: Dove Gray.
- g. Color: Prairie Grass.
- h. Color: Red Rock.
- i. Color: Cocoa Bean.
- j. Color: Dark Bronze.
- k. Color: Black.
- 2. Interior Components: Water repellant wood preservative treated interior framing per WDMA I.S.4 in the following species and finish. Adhesively bond exterior and interior sash components.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED WOOD TYPE BELOW. DELETE WOOD TYPES NOT REQUIRED.

- a. Species: Pine.
- b. Species: Oak.
- c. Species: Maple.
- Unfinished.
- Clear coat finish.
- Stain Color:
 - a. Color: Cinnamon.
 - b. Color: Espresso.
 - c. Color: Honey.
 - d. Color: Mocha.
 - e. Color: Russet.
- 6. Painted Color (Pine):
 - a. Color: White.
 - b. Color: Birch Bark.
 - c. Color: Prime.
- E. Picture and Transom Sash Members:
 - 1. Exterior Components: Glass reinforced fiber in the following color:



SPECIFIER NOTE: RETAIN PROJECT REQUIRED COLOR BELOW. DELETE COLORS NOT REQUIRED.

- a. Color: White.
- b. Color: Sandtone.
- c. Color: Terratone®.
- d. Color: Forest Green.
- e. Color: Canvas.
- f. Color: Dove Gray.
- g. Color: Prairie Grass.
- h. Color: Red Rock.
- i. Color: Cocoa Bean.
- j. Color: Dark Bronze.
- k. Color: Black.
- 2. Interior Components: Water repellant wood preservative treated interior framing per WDMA I.S.4 in the following species and finish. Clip-fasten interior components to exterior components.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED WOOD TYPE BELOW. DELETE WOOD TYPES NOT REQUIRED.

- a. Species: Pine.
- b. Species: Oak.
- c. Species: Maple.
- 3. Unfinished.
- Clear coat finish.
- Stain Color:
 - a. Color: Cinnamon.
 - b. Color: Espresso.
 - c. Color: Honey.
 - d. Color: Mocha.
 - e. Color: Russet.
- 6. Painted Color (Pine):
 - a. Color: White.
 - b. Color: Birch Bark.
 - c. Prime.
- F. Sill: Fibrex® material outer frame with wood core approved in AAMA/WDMA/CSA 101/I.S.2/A440.
- G. Weatherstripping:
 - 1. Upper Sash Head and Lower Sash Sill: Continuous bulb style, foam-filled vinyl.
 - 2. Upper Sash Stiles: Single bulb style, vinyl-covered, foam-filled.
 - 3. Lower Sash Stiles: Dual bulb style, vinyl-covered, foam-filled.
 - 4. Meeting Rails: Continuous bulb style, foam-filled vinyl.

2.5 GLAZING

A. General: Insulating glass units certified through the Insulating Glass Certification Council as conforming to the requirements of IGCC. Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacers with bent or soldered corners.

SPECIFIER NOTE: RETAIN CERTIFICATION REQUIREMENTS PARAGRAPH ABOVE OR BELOW.

B. General: Insulating glass units certified through the Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8.



Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacers with bent or soldered corners.

C. Where safety glass is indicated or required by applicable code, provide Kind FT heat-treated float glass.

SPECIFIER NOTE: SELECT BETWEEN THE FOLLOWING STANDARD GLAZING OPTIONS. CONSULT AN ANDERSEN REPRESENTATIVE FOR ADDITIONAL GLAZING OPTIONS. IN ADDITION TO COMPLYING WITH SAFETY GLAZING REQUIREMENTS, TEMPERED GLASS MAY BE REQUIRED BECAUSE OF WINDOW SIZE AND WIND LOAD. CONSULT ANDERSEN CORPORATION FOR ASSISTANCE IN SPECIFYING THE APPROPRIATE GLAZING TYPE.

- D. High-Performance™ Low-E4® Glass, Argon Gas Blend Filled Insulating Glass Units:
 - Glass: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and an inboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3.

SPECIFIER NOTE: WHERE PATTERNED GLASS IS REQUIRED FOR PROJECT, DELETE PARAGRAPH ABOVE AND RETAIN PARAGRAPH BELOW WITH APPROPRIATE PATTERNED GLASS TYPE. DELETE TYPES NOT REQUIRED FOR PROJECT.

- Glass: Insulating glass units consisting of an outboard lite of clear tempered glass conforming to ASTM C1048, Type 1, Class 1, q3, Kind FT and the following patterned glass:
 - a. Inboard Pattern Glass Lite:
 - 1) Pattern: Cascade.
 - 2) Pattern: Fern.
 - 3) Pattern: Obscure.
 - 4) Pattern: Reed.
 - b. Air Space: 3/4 inch (76 mm).
- 3. Magnetron sputtering vapor deposition (MSVD) TiO2 coating applied to the No. 1 surface.
- High-Performance™ Low-E4® Coating: Magnetron sputtering vapor deposition (MSVD) Low-E
 coating applied to the No. 2 surface.
- 5. Filling: Fill space between glass lites with argon gas blend.
- 6. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.
- E. High-Performance™ Low-E4® Sun Glass, Low SHGC, Argon Gas Blend Filled Insulating Glass Units:
 - Glass: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and an inboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3.

SPECIFIER NOTE: WHERE PATTERNED GLASS IS REQUIRED FOR PROJECT, DELETE PARAGRAPH ABOVE AND RETAIN PARAGRAPH BELOW WITH APPROPRIATE PATTERNED GLASS TYPE. DELETE TYPES NOT REQUIRED FOR PROJECT.

- 2. Glass: Insulating glass units consisting of an outboard lite of clear tempered glass conforming to ASTM C1048, Type 1, Class 1, q3, Kind FT and the following patterned glass:
 - a. Inboard Pattern Glass Lite:
 - 1) Pattern: Cascade.
 - 2) Pattern: Fern.
 - 3) Pattern: Obscure.
 - 4) Pattern: Reed.
 - b. Air Space: 3/4 inch (76 mm).
- 3. Magnetron sputtering vapor deposition (MSVD) TiO2 coating applied to the No. 1 surface.
- 4. High-Performance™ Low-E4® Sun Glass Coating: Magnetron sputtering vapor deposition (MSVD) Low-E coating applied to the No. 2 surface.
- 5. Filling: Fill space between glass lites with argon gas blend.
- 6. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.



- F. High-Performance™ Low-E4® SmartSun™ Glass, Low SHGC, Argon Gas Blend Filled Insulating Glass Units:
 - 1. Glass: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and an inboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR NON-TEMPERED INSULATING GLASS UNITS. SELECT SUBPARAGRAPH BELOW FOR TEMPERED INSULATING GLASS UNITS.

- 2. Glass: Tempered insulating glass units consisting of an outboard and inboard lite of clear tempered glass conforming to ASTM C1048, Type 1, Class 1, q3, Kind FT.
 - a. Inboard Pattern Glass Lite:
 - 1) Pattern: Cascade.
 - 2) Pattern: Fern.
 - 3) Pattern: Obscure.
 - 4) Pattern: Reed.
 - b. Air Space: 3/4 inch (76 mm).
- Magnetron sputtering vapor deposition (MSVD) TiO2 coating applied to the No. 1 surface.
- 4. High-Performance™ Low-E4® SmartSun™ Glass Coating: Magnetron sputtering vapor deposition (MSVD) Low-E coating applied to the No. 2 surface.
- 5. Filling: Fill space between glass lites with argon gas blend.
- 6. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.

2.6 HARDWARE

A. Double-Hung Window Hardware:

SPECIFIER NOTE: SELECT BETWEEN THE FOLLOWING SASH LOCK OPTIONS.

- 1. Hardware Locks: Die-cast zinc sash locks in the following style and color:
 - a. Style: Traditional.

SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- b. Color: Stone.
- c. Color: White.
- d. Color: Black.
- e. Color: Gold Dust.
- f. Color: Bright Brass.
- g. Color: Antique Brass.
- h. Color: Polished Chrome.
- i. Color: Brushed Chrome.
- j. Color: Oil Rubbed Bronze.
- k. Color: Satin Nickel.
- 2. Sash Lifts: Provide the following number of lifts per sash:

SPECIFIER NOTE: RETAIN APPLICABLE SUBPARAGRAPH BELOW BASED ON LIFT SELECTION FOR PROJECT. DELETE SUBPARAGRAPHS NOT REQUIRED.

- a. Finger Lifts: Provide 2 per sash unit.
- b. Hand Lift: Provide 1 hand lift per sash unit.
- c. Bar Lift: Provide 1 hand lift per window unit.



SPECIFIER NOTE: IF OPTIONAL SASH LIFTS ARE SELECTED ABOVE, RETAIN REQUIRED SUBPARAGRAPHS BELOW FOR RELATED TYPE AND COLOR OR FINISH AND DELETE SUBPARAGRAPHS NOT REQUIRED.

- 3. Finger Lift Hardware: Zinc cast with baked, powder coated finish on chromate protective coating in the following style and color:
 - a. Style: Traditional.

SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- b. Color: Stone.
- c. Color: White.
- d. Color: Black.
- e. Color: Gold Dust.
- f. Color: Bright Brass.
- g. Color: Antique Brass.
- h. Color: Polished Chrome.
- i. Color: Brushed Chrome.
- j. Color: Oil Rubbed Bronze.
- k. Color: Satin Nickel.
- 4. Hand Lift Hardware: Zinc die cast with baked powder coated finish on chromate protective coating in the following style and color:
 - a. Style: Traditional.

SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- b. Color: Stone.
- c. Color: White.
- d. Color: Black.
- e. Color: Gold Dust.
- f. Color: Bright Brass.
- g. Color: Antique Brass.
- h. Color: Polished Chrome.
- i. Color: Brushed Chrome.
- j. Color: Oil Rubbed Bronze.
- k. Color: Satin Nickel.
- 5. Bar Lift Hardware: Zinc die cast with baked powder coated finish on chromate protective coating in the following style and color:
 - a. Style: Traditional.

SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- b. Color: Stone.
- c. Color: White.
- d. Color: Black.
- e. Color: Gold Dust.
- f. Color: Bright Brass.
- g. Color: Antique Brass.
- h. Color: Polished Chrome.
- i. Color: Brushed Chrome.
- j. Color: Oil Rubbed Bronze.
- k. Color: Satin Nickel.
- 6. Lock and Keeper: Die-cast zinc hardware with the following style and color:
 - a. Style: Traditional.



SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- b. Color: Stone.
- c. Color: White.
- d. Color: Black.
- e. Color: Gold Dust.
- f. Color: Bright Brass.
- g. Color: Antique Brass.
- h. Color: Polished Chrome.
- i. Color: Brushed Chrome.
- i. Color: Oil Rubbed Bronze.
- k. Color: Satin Nickel.

SPECIFIER NOTE: RETAIN THE PARAGRAPH BELOW IF DESIGN PRESSURE UPGRADE IS REQUIRED.

- 7. Balancers: Fit top and bottom sash with concealed frame mounted balancers. Design balancers to allow easy operation of double-hung units.
- 8. Tilt mechanism integrated into lock.
- B. Awning and Venting Transom Hardware:
 - Operator: Electrostatically-plated rotary-type operator attached to chrome-plated steel rod applied to bottom rail of sash. Single steel operator arm stamped with gear ring. Set arm gear assembly between nylon bushing and nylon spacer. Encase drive shaft and worm gear assembly in zinc die cast base.
 - 2. Operator Handle and Covers:
 - a. Folding Handle Hardware: Zinc die cast folding handle and cover with powder coated painted finish.
 - 1) Style: Traditional.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED FOLDING HANDLE STYLE ABOVE OR BELOW.

2) Style Contemporary

SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- 3) Color: Stone.
- 4) Color: White.
- 5) Color: Black.
- 6) Color: Gold Dust.
- 7) Color: Bright Brass.
- 8) Color: Antique Brass (Traditional style only).
- 9) Color: Polished Chrome (Traditional style only).
- 10) Color: Brushed Chrome (Traditional style only).
- 11) Color: Oil Rubbed Bronze.
- 12) Color: Satin Nickel.

SPECIFIER NOTE: OMIT SASH LOCKS WHERE REMOTE WINDOW OPERATORS ARE REQUIRED. OMITTING SASH LOCKS WILL DECREASE WINDOW PERFORMANCE. LEVEL 20 FORCED ENTRY RESISTANCE IS NOT AVAILABLE WHEN ELECTRIC OPERATOR IS SPECIFIED.

- 3. Sash Locks: Single actuation lock concealed by trim stops. Die cast zinc, galvanized steel link and engineered polymer components in finishes to match handle options.
- 4. Hinges: Powder coated painted hinge arms with 300 Series stainless steel slide track.



SPECIFIER NOTE: ADD THE FOLLOWING FOR USE WHEN EXPOSED TO SALT AIR OR OTHER SEVERE ENVIRONMENTAL OR INDUSTRIAL AREAS CALLING FOR HIGHER LEVELS OF CORROSION PROTECTION.

- 5. Corrosion Resistant Hardware:
 - a. Hinges: 300 Series stainless steel hinge arms with 300 Series stainless steel slide track.
 - b. Operators: 300 Series stainless steel gear arm rivet; zinc plated steel bottom plate. Other parts plated and powder coated steel or zinc.
- C. Venting Casement Hardware:
 - Hardened steel operator arm stamped with a gear ring. Set arm gear between nylon bushing and nylon spacer. Encase drive shaft and worm gear assemblies in zinc die cast base and removable, painted, die-cast cover.

SPECIFIER NOTE: WHILE DESIGNING WINDOW SIZES, CONSULT WITH ANDERSEN WINDOW'S A-SERIES WINDOW PRODUCT GUIDE DOCUMENT AVAILABLE AT WWW.ANDERSENWINDOWS.COM FOR FULL DESCRIPTION OF CLEAR OPENING DIMENSIONS AND POSITIONS.

- 2. Hinges: Powder coated painted hinge arms with 300 Series stainless steel slide track.
- Folding Handle: Zinc die cast handle and cover with powder coated painted finish.
 - a. Style: Traditional.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED FOLDING HANDLE STYLE ABOVE OR BELOW.

b. Style Contemporary

SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- c. Color: Stone.
- d. Color: White.
- e. Color: Black.
- f. Color: Gold Dust.
- g. Color: Bright Brass.
- h. Color: Antique Brass (Traditional style only).
- i. Color: Polished Chrome (Traditional style only).
- j. Color: Brushed Chrome (Traditional style only).
- k. Color: Oil Rubbed Bronze.
- Color: Satin Nickel.
- 4. Lock Handle and Bezel: Universal lock handle of die cast zinc with powder coated paint finish and polycarbonate bezel in the following color:

SPECIFIER NOTE: RETAIN HARDWARE LOCK COLOR BELOW AND DELETE COLORS NOT REQUIRED.

- a. Color: Stone.
- b. Color: White.
- c. Color: Black.
- Color: Gold Dust.
- e. Color: Bright Brass.
- f. Color: Antique Brass.
- g. Color: Polished Chrome.
- h. Color: Brushed Chrome.
- i. Color: Oil Rubbed Bronze.
- j. Color: Satin Nickel.
- 5. Sash Locks: Single actuation lock concealed by trim stops. Die cast zinc, galvanized steel link and engineered polymer components.



SPECIFIER NOTE: ADD THE FOLLOWING FOR USE WHEN EXPOSED TO SALT AIR OR OTHER SEVERE ENVIRONMENTAL OR INDUSTRIAL AREAS CALLING FOR HIGHER LEVELS OF CORROSION PROTECTION.

- 6. Corrosion Resistant Hardware:
 - a. Hinges: 300 Series stainless steel hinge arms with 300 Series stainless steel slide track.
 - b. Operators: 300 Series stainless steel gear arm link and clip; 300 Series stainless steel gear arm rivet; zinc plated steel bottom plate. Other parts plated and powder coated steel or zinc.

2.7 JOINING SYSTEMS

SPECIFIER NOTE: ANDERSEN STRONGLY RECOMMENDS CONSULTATION WITH AN EXPERIENCED STRUCTURAL ENGINEER, ARCHITECT OR CONTRACTOR AND A LOCAL ANDERSEN REPRESENTATIVE WHEN SPECIFYING ANDERSEN JOINING SYSTEMS.

- A. Non-Reinforced Joining:
 - 1. Joining Clips Mull Interior: Galvanized metal.
 - 2. Gusset Plates: Galvanized gusset plates.
 - a. Gusset Plate at Head, Sill and Jamb: 0.060 inch (1.52 mm).
 - b. Preformed Sill Gusset Plate: 0.031 inch (0.79 mm).
 - 3. Head Flashing: Full length drip cap.
 - a. Color: Match window unit exterior color.
 - 4. Sealant: As recommended by window manufacturer.
 - Exterior Trim Strips: Vinyl or PVC as recommended by window manufacturer for each joining method used.
 - a. Color: Match window unit exterior color.
- B. Reinforced Joining:
 - 1. Reinforcing: Provide 0.750 inch (19 mm) LVL Joining Strip.
 - 2. Gusset Plates: Galvanized Gusset Plates.
 - a. Gusset Plate at Head, Sill and Jamb: 0.060 inch (1.52 mm).

2.8 ACCESSORIES

- A. Sill Stool: Wood members machined from clear material or veneered finger joined material approved in AAMA/WDMA/CSA 101/I.S.2/A440.
- B. Extension Jambs: Wood members machined from clear material or veneered finger joined material. Predrill extension jambs for application. Factory-applied extension jambs are available in 1/16 inch (1.6 mm) depth increments ranging from 5-1/4 inch (133 mm) depth to 7-1/8 inch (181 mm).
- C. Exterior Trim and Casing: Where indicated on Drawings, provide trim attached to attachment strip.
 - Color: Match window framing.

SPECIFIER NOTE: IF EXTERIOR TRIM AND CASING IS REQUIRED FOR PROJECT, RETAIN SUBPARAGRAPH ABOVE FOR 1/2 INCH (13 MM) OR SUBPARAGRAPH BELOW FOR 3/4 INCH (19 MM).

- 2. Fibrex® material:
 - a. Flat Trim:

SPECIFIER NOTE: RETAIN ONE OF THE FOLLOWING WIDTHS BELOW.

- 1) Width: 3-1/2 inch (89 mm) by 1 1/2 inches (38 mm) deep.
- 2) Width: 4 1/2 inches (114 mm) by 1 1/2 inches (38 mm) deep.
- b. Brick Mould: 2 inch (51 mm) wide by 1 5/8 inches (41 mm) deep.
- c. Sill Nose: 1 15/16 inches (49 mm) wide by 1 7/8 inches (48 mm) deep.
- d. Mull Cover: 4-1/4 inch (108 mm) wide by 1 1/2 inches (38 mm) deep.



MULL COVER ABOVE IS FOR FACE. MULL COVER BELOW IS FOR POCKETS.

- e. Mull Cover: 3-3/4 inch (95 mm) wide by 1 1/2 inches (38 mm) deep.
- 3. Molded Urethane material:
 - a. Cornice: 3 5/8 inches (92 mm) high by 4 inches (102 mm) deep.
 - b. Cornice: 2 inches (51 mm) high by 3 1/4 inches (83 mm) deep.
 - c. Decorative Drip Cap: 15/16 inches (24 mm) high by 2 1/4 inches (57 mm) deep.

SPECIFIER NOTE: IF TRIM BOARD IS REQUIRED FOR PROJECT, RETAIN PARAGRAPH AND SUBPARAGRAPH ABOVE FOR VINYL TRIM BOARD OR PARAGRAPH AND SUBPARAGRAPH BELOW FOR VINYL LAMINATED BOARD.

SPECIFIER NOTE: ANDERSEN® BAY WINDOWS CAN BE WALL SUPPORTED OR SUSPENDED. THE CABLE SUPPORT SYSTEM IS REQUIRED WHEN UNITS ARE TO BE SUSPENDED. EACH CABLE IS CAPABLE OF SUPPORTING A MAXIMUM LOAD OF 500 LB (227 KG). ADDITIONAL SUPPORT IS NECESSARY IF THE SECTION OF THE WINDOW UNIT REQUIRING SUPPORT EXCEEDS 500 LB (227 KG). RADIUS TOP WINDOWS CANNOT BE USE AS BAY WINDOWS.

SPECIFIER NOTE: FIBREX® MATERIAL EXTERIOR GRILLES ARE STANDARD FOR DOUBLE-HUNG UNITS. INTERIOR GRILLES CAN BE FIXED FIBREX® MATERIAL OR WOOD AS SELECTED BELOW. FIXED INTERIOR GRILLES SHALL BE USED IN CONJUNCTION WITH FIXED EXTERIOR GRILLES. CONSULT SPECIFICATIONS FOR GRILLE MATERIAL OF ADJACENT UNIT FOR JOINED UNITS OF DIFFERENT TYPES. HARDWOOD MAPLE GRILLES ARE PROVIDED FOR PICTURE WINDOWS AND ARE AVAILABLE FOR OTHER WINDOW TYPES ON SPECIAL ORDER. CONSULT AN ANDERSEN REPRESENTATIVE FOR ADDITIONAL GRILLE OPTIONS.

2.9 GRILLES

SPECIFIER NOTE: REFER TO ANDERSEN® DIVIDED LIGHT PATTERN GUIDE FOR AVAILABLE DIVIDED LIGHT PATTERNS AND DETAILS. EXTERIOR AND INTERIOR COLORS CAN BE DIFFERENT. RETAIN PROJECT REQUIRED GRILLE PATTERN SUBPARAGRAPH BELOW AND DELETE SUBPARAGRAPHS NOT REQUIRED. FULL DIVIDED LIGHT AND FINELIGHT™ GRILLES ARE NOT AVAILABLE FOR IMPACT RESISTANT GLAZED PRODUCTS.

- A. Full Divided Light Grilles: Fixed exterior and interior grilles with an anodized aluminum muntin bar, 1/2 inch (13 mm) wide, to match spacer within insulated glass unit where indicated on Drawings.
 - Exterior Grille: Provide Fibrex® material exterior grilles where indicated on Drawings. Install grilles
 on exterior of glass with adhesive tape to simulate true divided light muntin bars in the following
 color:
 - a. Color: White.
 - b. Color: Terratone®.
 - c. Color: Sandtone.
 - d. Color: Forest Green.
 - e. Color: Canvas.
 - f. Color: Dove Gray.
 - g. Color: Prairie Grass.
 - h. Color: Red Rock.
 - i. Color: Cocoa Bean.
 - j. Color: Dark Bronze.
 - k. Color: Black.
 - 2. Interior grille: Provide profiled wood grilles applied with adhesive tape to interior glass surface.
 - a. Wood Species:
 - 1) Species: Pine.
 - 2) Species: Oak.
 - 3) Species: Maple.
 - b. Finish: Unfinished.
 - c. Finish: Clear coat finish.
 - d. Finish: Stain Color:
 - 1) Color: Cinnamon.



- 2) Color: Espresso.
- 3) Color: Honey.
- 4) Color: Mocha.
- 5) Color: Russet.
- e. Finish: Painted Color (Pine):
 - 1) Color: White.
 - 2) Color: Birch Bark.
 - 3) Prime.
- f. Match window interior unit wood species and finish.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED GRILLE WIDTH SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- 3. Width: 3/4 inch (19 mm).
- 4. Width: 7/8 inch (22 mm).
- 5. Width: 1-1/8 inch (29 mm).
- 6. Pattern: As indicated on Drawings.
- 7. Pattern: Colonial.
- 8. Pattern: Modified Colonial.
- 9. Pattern: Modified Colonial with checkrail.
- 10. Pattern: Diamond.
- 11. Pattern: Prairie A (9 light).
- 12. Pattern: Prairie (6 light).
- 13. Pattern: Specified equal light.
- 14. Pattern: Short fractional.
- 15. Pattern: Short fractional with checkrail.
- 16. Pattern: Tall fractional.
- 17. Pattern: Tall fractional with checkrail.
- 18. Pattern: Custom.
- B. Simulated Divided Light Grilles: Fixed exterior grilles with fixed or removable interior grilles where indicated on Drawings.
 - 1. Exterior Grille: Provide Fibrex® material exterior grilles where indicated on Drawings. Install grilles on exterior of glass with continuous adhesive tape to simulate true divided light muntin bars in the following color:
 - a. Color: White.
 - b. Color: Terratone®.
 - c. Color: Sandtone.
 - d. Color: Forest Green.
 - e. Color: Canvas.
 - f. Color: Dove Gray.
 - g. Color: Prairie Grass.
 - h. Color: Red Rock.
 - i. Color: Cocoa Bean.
 - j. Color: Dark Bronze.
 - k. Color: Black.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED INTERIOR GRILLE SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.



- 2. Fixed Interior Grille: Provide profiled wood grilles applied with adhesive tape to interior glass surface.
 - a. Grille Type: White Fibrex® material.
 - b. Wood Species:
 - 1) Species: Pine.
 - 2) Species: Oak.
 - 3) Species: Maple.
 - c. Finish: Unfinished.
 - d. Finish: Clear coat finish.
 - e. Finish: Stain Color:
 - 1) Color: Cinnamon.
 - 2) Color: Espresso.
 - 3) Color: Honey.
 - 4) Color: Mocha.
 - 5) Color: Russet.
 - f. Finish: Painted Color (Pine):
 - 1) Color: White.
 - 2) Color: Birch Bark.
 - 3) Prime.
 - Match window interior unit wood species and finish.
- 3. Removable Interior Grilles: Provide removable, hardwood maple divided light grilles where indicated on Drawings. Install removable grilles against interior glass, attached with metal fasteners or integral tabs to sash.
 - a. Wood Species:
 - 1) Species: Oak.
 - 2) Species: Maple.
 - b. Finish: Unfinished.
 - c. Finish: Clear coat finish.
 - d. Finish: Stain Color:
 - 1) Color: Cinnamon.
 - 2) Color: Espresso.
 - 3) Color: Honey.
 - 4) Color: Mocha.
 - 5) Color: Russet.
 - e. Finish: Painted Color (Pine):
 - 1) Color: White.
 - 2) Color: Birch Bark.
 - 3) Prime.
 - f. Match window interior unit wood veneer species and finish.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED GRILLE WIDTH SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- 4. Width: 3/4 inch (19 mm).
- 5. Width: 7/8 inch (22 mm).
- 6. Width: 1-1/8 inch (29 mm).
- 7. Pattern: As indicated on Drawings.
- 8. Pattern: Colonial.
- 9. Pattern: Prairie A (9 light).
- 10. Pattern: Prairie (6 light).



- 11. Pattern: Specified equal light.
- C. Removable Interior Grilles With Fixed Exterior Grilles: Provide removable, hardwood [Maple] [Oak] divided light grilles where indicated on Drawings. Install removable grilles against interior glass, attached with metal fasteners or integral tabs to sash. Provide dual face profile to give muntin bar appearance from both interior and exterior.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED EXTERIOR FACING SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- 1. Exterior Facing: Maple grille with White color painted finish.
- 2. Exterior Facing: Maple grille with Sandtone color painted finish.
- 3. Exterior Facing: Maple grille with Terratone® color painted finish.
- 4. Exterior Facing: Maple grille with Forest Green color painted finish.
- 5. Exterior Facing: Canvas color painted finish.
- 6. Exterior Facing: Dove Gray color painted finish.
- 7. Exterior Facing: Prairie Grass color painted finish.
- 8. Exterior Facing: Red Rock color painted finish.
- 9. Exterior Facing: Cocoa Bean color painted finish.
- 10. Exterior Facing: Dark Bronze color painted finish.
- 11. Exterior Facing: Black color painted finish.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED INTERIOR FACING SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- 12. Interior Facing: Unfinished Maple.
- 13. Interior Facing: White Painted maple interior.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED GRILLE WIDTH SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- 14. Width: 3/4 inch (19 mm).
- 15. Width: 7/8 inch (22 mm).
- 16. Width: 1-1/8 inch (29 mm).
- 17. Pattern: As indicated on Drawings.
- 18. Pattern: Colonial.
- 19. Pattern: Prairie A (9 light).
- 20. Pattern: Prairie (6 light).
- 21. Pattern: Specified equal light.
- D. Finelight™ Grilles: Provide contour profile aluminum muntin bars permanently mounted within insulating glass unit where indicated on Drawings.
 - 1. Grille Intersections: ABS concealed plastic connectors with nylon end keepers.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED FINISH SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED. SPECIFY IF EXTERIOR COLOR IS DIFFERENT THAN INTERIOR COLOR.

- 2. Exterior and Interior Surface: White color painted finish.
- 3. Exterior and Interior Surface: Sandtone color painted finish.
- 4. Exterior and Interior Surface: Terratone® color painted finish.
- 5. Exterior and Interior Surface: Forest Green color painted finish.
- 6. Exterior and Interior Surface: Canvas color painted finish.
- 7. Exterior and Interior Surface: Dove Gray color painted finish.
- 8. Exterior and Interior Surface: Prairie Grass color painted finish.



- 9. Exterior and Interior Surface: Red Rock color painted finish.
- 10. Exterior and Interior Surface: Cocoa Bean color painted finish.
- 11. Exterior and Interior Surface: Dark Bronze color painted finish.
- 12. Exterior and Interior Surface: Black color painted finish.
- 13. Width: 3/4 inch (19 mm).

SPECIFIER NOTE: RETAIN REQUIRED GRILLE WIDTH ABOVE OR BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- 14. Width: 1 inch (25 mm).
- 15. Pattern: As indicated on Drawings.
- 16. Pattern: Colonial.
- 17. Pattern: Modified Colonial.
- 18. Pattern: Prairie A (9 light).
- 19. Pattern: Prairie (6 light).
- 20. Pattern: Specified equal light.
- 21. Pattern: Short fractional.
- 22. Pattern: Tall fractional.
- 23. Pattern: Custom.

2.10 INSECT SCREENS

SPECIFIER NOTE: SELECT BETWEEN STANDARD ANDERSEN® AND TRUSCENE® INSECT SCREEN OPTIONS

- A. Insect Screens: Provide venting sash with an insect screen, including attachment hardware.
 - Frames: Full height 0.024 inch (0.61 mm) rolled aluminum frame with chromate conversion coating. Provide matching corner locks and latch retainers.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR FULL FRAME. RETAIN SUBPARAGRAPH BELOW FOR HALF FRAME.

- 2. Frames: Half height 0.024 inch (0.61 mm) rolled aluminum frame with chromate conversion coating. Provide matching corner locks and latch retainers.
 - Insect Screen Cloth: 18 by 16 (1.0 by 1.1 mm) count per sq. inch aluminum mesh, gunmetal finish.
 - b. Frame Finish: High-bake polyester finish in the following color:

SPECIFIER NOTE: RETAIN PROJECT REQUIRED FRAME FINISH SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- 1) Color: White.
- 2) Color: Stone.
- 3) Color: Gold Dust.
- 4) Color: Sandtone.
- 5) Color: Terratone®.
- 6) Color: Forest Green.
- 7) Color: Canvas.
- 8) Color: Dove Gray.
- 9) Color: Prairie Grass.
- 10) Color: Red Rock.
- 11) Color: Cocoa Bean.
- 12) Color: Dark Bronze.
- 13) Color: Black.
- B. TruScene® Insect Screen: Provide venting sash with an insect screen, including attachment hardware.



1. Frames: Full height 0.024 (0.61 mm) inch rolled aluminum frame with chromate conversion coating and polyester painted finish in the following color.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR FULL FRAME. RETAIN SUBPARAGRAPH BELOW FOR HALF FRAME.

2. Frames: Half height 0.024 (0.61 mm) inch rolled aluminum frame with chromate conversion coating and polyester painted finish in the following color.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED COLOR SUBPARAGRAPH BELOW. DELETE SUBPARAGRAPHS NOT REQUIRED.

- a. Color: White.
- b. Color: Stone.
- c. Color: Gold Dust.
- d. Color: Sandtone.
- e. Color: Terratone®.
- f. Color: Forest Green.
- g. Color: Canvas.
- h. Color: Dove Gray.
- Color: Prairie Grass.
- j. Color: Red Rock.
- k. Color: Cocoa Bean
- Color: Dark Bronze.
- m. Color: Black.
- 3. Wood Frames for Awning, Casement and Venting Transom Window Insect Screens: Full height 0.024 (0.61 mm) inch rolled aluminum frame with chromate conversion coating and polyester painted finish.
 - a. Wood Veneer Species:
 - 1) Species: Pine.
 - 2) Species: Oak.
 - 3) Species: Maple.
 - b. Finish:
 - 1) Unfinished.
 - 2) Clear coat finish.
 - 3) Stain Color:
 - a) Color: Cinnamon.
 - b) Color: Espresso.
 - c) Color: Honey.
 - d) Color: Mocha.
 - e) Color: Russet.
 - c. Match window interior unit wood species and finish.
- 4. Insect Screen Cloth: 25 by 25 count per square inch (9.84252 per sq cm) micro fine stainless steel wire with a polyester non-reflective coating.

2.11 FABRICATION

- A. Preservative Treatment: Treat wood sash and frame members after machining with a water repellent preservative per WDMA I.S.4.
- B. A-Series Double-Hung, Casement, Awning, Venting Transom Units:
 - Outer Frame: Fibrex® material.



SPECIFIER NOTE: RETAIN THE OUTER FRAME PARAGRAPH ABOVE FOR RECTANULAR DOUBLE-HUNG UNITS. SELECT THE OUTER FRAME PARAGRAPH BELOW FOR RADIUS TOP UNITS.

- 2. Outer Frame: Extruded Fibrex® material adhesively bonded corner keys.
- 3. Sill: Fibrex® material.
- 4. Bond outer frame members and sill to wood base frame with adhesive.
- 5. Jamb and Head Jamb Liners (Pine):
 - a. Side Jamb Liner: Solid pine filler attached to a rigid PVC vinyl extrusion.
 - b. Head Jamb Liner: Solid pine head parting stop and interior aesthetic filler with rigid PVC vinyl head liner.

SPECIFIER NOTE: RETAIN THE PARAGRAPH ABOVE OR SELECT BETWEEN THE FOLLOWING TWO PARAGRAPHS FOR ALTERNATIVE WOOD VENEERS

- Jamb and Head Jamb Liners (Oak and maple):
 - Side Jamb Liner: Oak or maple veneer over solid, finger-joined pine filler attached to rigid PVC vinyl extrusion.
 - b. Head Jamb Liner: Oak or maple veneer over solid, finger-joined pine parting stop and interior aesthetic filler with a rigid PVC vinyl head liner.
- 7. Sash Components:
 - a. Exterior Sash: Pultruded fiberglass material with adhesively bonded PVC corner keys.
 - b. Interior Sash: Clear or veneer wood adhesively applied to exterior sash components.
- 8. Factory applied weatherstripping.

SPECIFIER NOTE: ADD THE FOLLOWING PARAGRAPH FOR DOUBLE-HUNG PICTURE AND TRANSOMS.

- C. A-Series Picture and Transom Units:
 - 1. Outer Frame: Provide fiberglass bonded corner keys.
 - 2. Interior Sash: Provide clear wood interior sash components clip fastened to exterior sash profile.
 - 3. Provide clear or veneer wood stops.
 - 4. Mechanically fasten sill assembly and wood sub frame components. Bond outer frame members to sub-frame with adhesive and mechanical fasteners.
- D. Glazing: Factory glazed with glazing sealant.
- E. Weatherstripping: Factory-applied to unit frame. Field-applied interlocking weatherstripping at panel meeting stiles.

PART 3 - EXECUTION

SPECIFIER NOTE: SPECIFY ACTIONS TO PHYSICALLY DETERMINE THAT CONDITIONS ARE ACCEPTABLE TO RECEIVE PRIMARY PRODUCTS OF THE SECTION.

3.1 EXAMINATION

- A. Site Verification of Conditions: Verify that site conditions are acceptable for installation of units, including the following:
 - 1. Concrete surfaces are dry and free of excess mortar, rocks, sand, and other construction debris.
 - 2. Masonry openings are square and dimensions are correct.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH BELOW FOR WOOD FRAMING. RETAIN SUBPARAGRAPH ABOVE FOR MASONRY CONSTRUCTION.

3. Rough openings are square, plumb, and dimensions are correct.



4. Sill plates are level.

SPECIFIER NOTE: DELETE THE FOLLOWING SUBPARAGRAPH IF NO WOOD FRAMING ON PROJECT.

- 5. Wood frame walls are dry, clean, sound, and well nailed or glued, free of voids and without offsets at joints.
- 6. Nail heads are driven flush with surfaces in openings and within 3 inches (76 mm) of rough opening.
- B. Do not proceed with installation of units until unacceptable conditions are corrected.

SPECIFIER NOTE: COORDINATE ARTICLE BELOW WITH MANUFACTURER'S RECOMMENDED INSTALLATION REQUIREMENTS.

3.2 INSTALLATION

A. General:

- 1. Comply with the instructions and recommendations of window manufacturer.
- 2. Remove unit components, parts, accessories, and installation guides from carton.
- 3. Inspect unit components and verify that components are not damaged and that parts are included before disposing of carton.
- 4. Shop-assemble multiple units before installation per manufacturer's installation guides.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR SHOP-ASSEMBLED UNITS. RETAIN SUBPARAGRAPH BELOW FOR FIELD-ASSEMBLED UNITS.

5. Field-assemble multiple units before installation per manufacturer's installation guides.

B. Interface With Other Work:

- Perform installation per Manufacturer's installation guides.
- 2. Install units level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction. Install drip cap at head of single units and joined assemblies.
- 3. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- 4. Install insulation in shim space around unit perimeter to maintain continuity of building insulation. Do not overfill.
- 5. Hold back exterior siding or other finish materials from edge of unit to allow for expansion and contraction and installation of proper joint sealant with backing materials. Seal perimeter of unit after exterior finish is applied per requirements of Division 07 "Joint Sealants" Section.
- 6. Finish interior units per requirements specified in related sections. Refer to, and comply with, additional requirements in manufacturer's installation guides.
- 7. Install optional hardware and unit accessories after cleaning.

SPECIFIER NOTE: SPECIFY ALLOWABLE VARIATIONS BELOW.

C. Site Tolerances:

- 1. Adjust operation, insect screens, hardware, and accessories for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure.
- D. Extend vapor barrier to interior face of unit frame and attach.

SPECIFIER NOTE: SPECIFY THE FINAL ACTION REQUIRED TO CLEAN INSTALLED EQUIPMENT OR OTHER COMPLETED WORK TO PROPERLY FUNCTION OR PERFORM. COORDINATE ARTICLE BELOW WITH DIVISION 01 EXECUTION REQUIREMENTS (CLEANING) SECTION AND SPECIFIC PROJECT REQUIREMENTS.



3.3 FIELD TESTING

SPECIFIER NOTE: COORDINATE ARTICLE BELOW WITH CONDITIONS OF THE CONTRACT AND WITH DIVISION 01 QUALITY CONTROL. TESTING EQUIPMENT SHALL BE CALIBRATED PER SECTION 9 OF ASTM E1105: STANDARD TEST METHOD FOR FIELD DETERMINATION OF WATER PENETRATION OF INSTALLED EXTERIOR WINDOWS, SKYLIGHTS, DOORS AND CURTAIN WALLS, BY UNIFORM OR CYCLIC STATIC AIR PRESSURE DIFFERENCE, WHERE THE WATER TEST PRESSURE SHALL BE RUN AT 2/3 (0.667) OF THE WATER TEST PRESSURE USED TO ACHIEVE THE PRODUCTS RATED DESIGN PRESSURE. THE NUMBERS OF PRODUCTS TESTED SHALL BE AGREED AND WRITTEN IN THE PROJECT SPECIFICATION AND SHALL NOT EXCEED 1 PERCENT OF THE TOTAL NUMBER OF OPENINGS UNLESS AGREED UPON FIELD TESTING.

- A. General: If applicable, test units per with the following procedures:
 - 1. Inspect units and verify installation per Manufacturer's instructions.
 - 2. For products installed less than 6 months, comply with AAMA 502-08 Voluntary Specification for Field Testing of Windows and Sliding Glass Doors, Procedure B.
 - 3. For products installed longer than 6 months, comply with AAMA 511-08: Voluntary Guideline for Forensic Water Penetration Testing of Fenestration Products. If test indicates that field testing of units is necessary, test product as indicated in paragraph 1 above.
 - 4. Do not proceed with installation of additional units until unacceptable conditions are corrected.

3.4 CLEANING

- A. Clean units using cleaning material and methods specifically recommended by window manufacturer.
- B. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Avoid damaging protective coatings and finishes.
- D. Protect unit surfaces from masonry cleaning solution that could damage insulated glass panels or hardware.
- E. Remove debris from work site and properly dispose of debris.

SPECIFIER NOTE: SPECIFY PROVISIONS FOR PROTECTING WORK AFTER INSTALLATION BUT PRIOR TO ACCEPTANCE BY THE OWNER. COORDINATE ARTICLE BELOW WITH DIVISION 01 EXECUTION REQUIREMENTS SECTION.

3.5 PROTECTION

A. Protect installed work from damage due to subsequent construction activity on site.

END OF SECTION