SECTION 08 52 00

WOOD WINDOWS

(ANDERSEN® 400 SERIES ARCH, SPRINGLINE™, ENHANCEMENT AND FLEXIFRAME® SPECIALTY WINDOWS)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Wood windows in the following styles:

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

   a. Arch.
   b. Springline™.
   c. Enhancement.
   d. Flexiframe® Specialty Window.

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.

1.2 SYSTEM DESCRIPTION

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 ANSI/AAMA/NWWDA 101/I.S.2.
   2. Performance Grade: <Specify performance grade.>
   3. U-Factor (NFRC 100): <Specify U-Factor.>
   4. Solar Heat Gain Coefficient (SHGC) (NFRC 200) : <Specify SHGC.>
   5. Outdoor-Indoor Transmission Class (OITC) (ASTM E90) : <Specify OITC.>
   6. 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/NWWDA 101/I.S.2/NAFS, 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.>

C. Large Missile Impact: Provide glazing systems capable of withstanding large missile impact and air pressure cycling without failure as required by the Large Missile Test for ASTM E 1996 or comparable test acceptable to authorities have jurisdiction.

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.

1.3 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation guides.

C. Shop Drawings: Provide drawings indicating direction of operable parts, typical jamb, head and sill conditions, and special mullion reinforcement details.
1. Color Samples: Submit color Samples of cladding.

D. Contract Closeout Submittals: Submit the following:
1. Warranty documents specified herein.
2. 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.

SPECIFIER NOTE: ARTICLE BELOW SHOULD INCLUDE STATEMENTS OF PREREQUISITES, STANDARDS, LIMITATIONS AND CRITERIA THAT ESTABLISH AN OVERALL LEVEL OF QUALITY FOR PRODUCTS AND WORKMANSHIP FOR THIS SECTION. COORDINATE ARTICLE BELOW WITH DIVISION 01 QUALITY ASSURANCE SECTION.

1.4 QUALITY ASSURANCE

A. 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.

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

C. Certifications:
1. Insulating Glass Units: Provide insulating glass units permanently marked with certification label of Insulating Glass Certification Council (IGCC) indicating compliance with ASTM E 2190.

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

2. 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 or ASTM E2190.

SPECIFIER NOTE: RETAIN PARAGRAPH BELOW IF IMPACT RESISTANT PRODUCTS ARE REQUIRED.

D. Windborne-Debris Resistance: Provide glazed units capable of resisting impact from windborne debris, based on pass/fail criteria as determined from testing glazed units per ASTM E1886 and ASTM E1996.

SPECIFIER NOTE: RETAIN PARAGRAPH BELOW IF PREINSTALLATION MEETING IS REQUIRED.

E. Preinstallation Meetings: <Specify requirements for preinstallation meeting.>

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.

1.5 DELIVERY, STORAGE, AND HANDLING

A. General: Comply with Division 01 Product Requirements Section.

B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

E. Store materials and accessories off ground, under cover, and protected from weather and construction activities.

1.6 PROJECT/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 in accordance with 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.

1.7 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 Windows, Inc.
   2. 100 4th Ave. N.
   3. Bayport, MN 55003-1096.
   4. Phone: (800) 299-9029.
   5. Fax: (800) 752-9230.
   6. E-mail: technicalsupport@andersenwindows.com.
   7. www.andersenwindows.com.
   8. Local Contact: <Specify contact information provided by local Andersen representative.>

2.2 MANUFACTURED UNITS

A. Proprietary Products/Systems. Wood windows, including the following:
   1. Andersen® 400 Series Arch Specialty Windows.
   2. Andersen® 400 Series Springline™ Specialty Windows.
   3. Andersen® 400 Series Enhancement Specialty Windows.
   4. Andersen® 400 Series Flexiframe® Specialty 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.

   5. 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.

2.3 MATERIALS

A. Frame and Sash Members: Fabricated from wood species approved in ANSI/AAMA/NWWDA 101/I.S.2.

SPECIFIER NOTE: DELETE THE FOLLOWING PARAGRAPH IF SPRINGLINE™ WINDOWS ONLY ARE TO BE PROVIDED.

B. Glass Fiber Reinforced Polymer Composite Frame Cover: Comply with ASTM D3647.

SPECIFIER NOTE: RETAIN THE FOLLOWING PARAGRAPH FOR ARCH OR SPRINGLINE™ FULL CHORD, GOTHIC, MONUMENTAL QUARTER ROUND AND MONUMENTAL FULL ROUND WINDOWS ONLY.

C. Aluminum Frame Cover: Fabricate from 6063-T52 aluminum.

D. Polyester Urethane Coating: Conform to color uniformity, chemical resistance, detergent resistance, and weather resistance requirements of AAMA 2603. Provide coating in the following color:

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

   1. Color: White.

2. Color: Sandtone.
3. Color: Terratone®.
4. Color: Forest Green.

E. Glass and Trim Stops: Provide stops in the following material:

SPECIFIER NOTE: RETAIN PROJECT REQUIRED FINISH BELOW. DELETE FINISH NOT REQUIRED.

1. Unfinished.
2. Prefinished white.

F. Hardware: Engineered thermoplastic frame corner locks with fixed 90 degree and adjustable corner locks.

2.4 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 Association of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8 or ASTM E2190. Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacers with bent or soldered corners.

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.

C. High-Performance™ Low-E4™ Glass, Argon 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 C1048, Type 1, Class 1, q3.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR HEAT STRENGTHENED 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.
3. Magnetron sputtering vapor deposition (MSVD) TiO2 coating applied to the No. 1 surface.
4. 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.

D. High-Performance ™ Low-E4™ Sun Glass, Low SHGC, Argon 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, heat strengthened glass conforming to ASTM C1048, Type 1, Class 1, q3, Kind HS.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR HEAT STRENGTHENED 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.
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.

E. Impact Resistant Glazing: Provide impact resistant glazing that has been tested in accordance with ASTM E1996 large missile impact requirements.

SPECIFIER NOTE: RETAIN THE PARAGRAPH ABOVE AND SELECT BETWEEN THE TWO IMPACT RESISTANT GLASS TYPES IF IMPACT RESISTANT GLAZING REQUIRED.

F. Monolithic Impact Glass:
1. Glass: Impact resistant glass consisting of 2 lites of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3, Kind LA, laminated with 0.090 inch (2.3 mm) polyvinyl butyral interlayer in the following color:

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

2. Color: Clear.
3. Color: Gray tinted.
4. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 2.

SPECIFIER NOTE: EDIT PARAGRAPH BELOW TO SUIT PROJECT REQUIREMENTS. "SENTRYGLAS" IS A REGISTERED TRADEMARK OF E.I. DUPONT DE NEMOURS AND COMPANY. CONSULT MANUFACTURER FOR COMPLETE PRODUCT DETAILS.

G. Insulating Impact Resistant Glass:
1. Glass: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and a laminated inboard lite of cleared annealed glass conforming to ASTM C1036, Type 1, Class 1, q3, Kind LA, laminate with a 0.090 inch (2.29 mm) SentryGlas® Plus interlayer.
2. Magnetron sputtering vapor deposition (MSVD) TiO2 coating applied to the No. 1 surface.
3. High-Performance™ Low-E4™ Coating: Magnetron sputtering vapor deposition (MSVD) Low-E coating applied to the No. 2 surface.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR STANDARD LOW-E COATING. RETAIN SUBPARAGRAPH BELOW FOR LOW-E SUN COATING.

4. High-Performance Sun™ Low-E 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.

2.5 JOINING

SPECIFIER NOTE: ANDERSEN WINDOWS STRONGLY RECOMMENDS CONSULTATION WITH AN EXPERIENCED STRUCTURAL ENGINEER, ARCHITECT, OR CONTRACTOR AND A LOCAL ANDERSEN REPRESENTATIVE WHEN SPECIFYING ANDERSEN JOINING SYSTEMS. CONSULT AN ANDERSEN REPRESENTATIVE FOR JOINING OPTIONS WHEN JOINING IMPACT RESISTANT WINDOW PRODUCTS.

A. Wood Non-Reinforced Joining:
1. Non-reinforced join with wood spacer.

2. Gusset Plates: Galvanized metal gusset plates.

B. Aluminum Reinforced Joining
1. Reinforcing: Extruded aluminum profile of 6061-T6 aluminum with pre drilled holes.
2. End Plate: 0.080 inch (2.03 mm) 6061 T-5 stamped aluminum end plate with yellow chromate conversion coating and 1/2 inch (12.7 mm) stud that engages into aluminum profile.

C. Steel Reinforced Joining
1. Reinforcing: Provide 4 inch by 3/16 inch (100 mm by 4.8 mm) thick hot rolled steel plate conforming to ASTM A36 with zinc plating and yellow chromate conversion coat. Pre-drill holes for attachment to window frames and end brackets.
2. End Brackets: Pre-drilled steel end brackets that attach to each end of steel reinforcement member for attachment to rough opening.

D. LVL Reinforced Joining: 1-way.
1. Reinforcing: 4-9/16 inch (116 mm).

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR 4-9/16 INCH REINFORCING. RETAIN PARAGRAPH BELOW FOR 6-9/16 INCH REINFORCING.

2. Reinforcing: 6-9/16 inch (167 mm).
a. Engineered laminated veneer lumber, 3/4 inch (19 mm) thick, with extruded aluminum end cap.
b. End Brackets: 18 gage (1.3 mm) galvanized preformed metal gusset plates.
3. Jamb Clips: Stainless steel jamb clips.

E. LVL Reinforced Joining: 2-way:
1. Reinforcing: 6-9/16 inch (167 mm).
a. Engineered laminated veneer lumber 3/4 inch (19 mm) thick with extruded aluminum end cap.
b. End Brackets: 14 gage (2.3 mm) galvanized end brackets with zinc dichromate finish.
c. Intersection Brackets: 14 gage (2.3 mm) galvanized brackets with zinc dichromate finish.
2. Jamb clips: Stainless steel jamb clips.

F. Fasteners: Corrosion resistant screws and bolts as provided by window manufacturer for fastening reinforcement members to wood frame and fastening end brackets to reinforcement members. Other fasteners provided by window installer.

G. Provide silicone sealant recommended by window manufacturer.

H. Provide vinyl trim strips as recommended by window manufacturer for each joining method used.
1. Color: Match window unit exterior color.

I. Provide Head Flashing: 6 inch (152 mm) long sheet vinyl.
1. Color: Match window unit exterior color.

J. Jamb clips: Stainless steel.

K. Inside Mull Casing: Provide mull casings in the following species.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED FINISH BELOW. DELETE FINISH NOT REQUIRED.

1. Casing Species: Pine.
2. Casing Species: Oak.
3. Casing Species: Maple.

4. Casing Species: Prefinished White.

SPECIFIER NOTE: SPECIFY SUBORDINATE OR SECONDARY ITEMS THAT AID AND ASSIST PRIMARY PRODUCTS SPECIFIED ABOVE OR ARE NECESSARY FOR PREPARATION OR INSTALLATION OF THOSE ITEMS.

2.6 ACCESSORIES

SPECIFIER NOTE: COORDINATE SPECIFICATIONS FOR GRILLE MATERIAL OF ADJACENT UNIT FOR JOINED UNITS OF DIFFERENT TYPES. STANDARD GRILLE WIDTH IS 3/4 INCH (19 MM). 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.

A. 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.

1. Full Divided Light Grilles: Fixed exterior and interior grilles with an anodized aluminum muntin bar, 1/2 inch (12.7 mm) wide, to match spacer within insulated glass unit where indicated on Drawings.
   a. 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:
      1) Color: White.
      2) Color: Stone.
      3) Color: Sandtone.
      4) Color: Forest Green.
   b. Interior grille: Provide profiled wood grilles applied with adhesive tape to interior glass surface.
      1) Grille Type: Unfinished Maple.
      2) Grille Type: Unfinished Oak.
      3) Grille Type: Unfinished Pine
      4) Grille Type: White Fibrex® material.

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

   c. Width: 3/4 inch (19.1 mm).
   d. Width: 7/8 inch (22 mm).
   e. Width: 1-1/8 inch (29 mm).
   f. Width: 2-1/4 inch (57mm)
   g. Pattern as indicated on Drawings.

2. Simulated Divided Light Grilles: Fixed exterior grilles with fixed or removable interior grilles where indicated on Drawings.
   a. 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:
      1) Color: White.
      2) Color: Terratone®
      3) Color: Sandtone.
      4) Color: Forest Green.

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

b. Fixed Interior Grille: Provide profiled wood grilles applied with adhesive tape to interior glass surface.
   1) Grille Type: Unfinished Maple.
   2) Grille Type: Unfinished Oak.
   3) Grille Type: Unfinished Pine
   4) Grille Type: White Fibrex® material.

c. 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.
   1) Grille Type: Unfinished Maple.
   2) Grille Type: Unfinished Oak.
   3) Grille Type: Prefinished Maple.
      a) Color: White.
      b) Color: Terratone®
      c) Color: Sandtone.
      d) Color: Forest Green.

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

d. Width: 3/4 inch (19.1 mm).
e. Width: 7/8 inch (22 mm).
f. Width: 1-1/8 inch (29 mm).
g. Width: 2-1/4 inch (57mm
h. Pattern as indicated on Drawings.

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. 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.

a. Exterior Facing: Maple grille with White color painted finish.
b. Exterior Facing: Maple grille with Sandtone color painted finish.
c. Exterior Facing: Maple grille with Terratone® color painted finish.
d. Exterior Facing: Maple grille with Forest Green color painted finish.

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

e. Interior Facing: Unfinished Maple.
f. Interior Facing: White Painted maple interior.

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

g. Width: 3/4 inch (19.1 mm).
h. Width: 7/8 inch (22 mm).
i. Width: 1-1/8 inch (29 mm).
j. Pattern as indicated on Drawings.

4. Finelight™ Grilles: Provide contour profile aluminum muntin bars permanently mounted within insulating glass unit where indicated on Drawings.
   a. Grille Intersections: ABS concealed plastic connectors with nylon end keepers.

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

   b. Exterior and Interior Surface: White color painted finish.
   c. Exterior and Interior Surface: Sandtone color painted finish.
   d. Exterior and Interior Surface: Terratone® color painted finish.
   e. Exterior and Interior Surface: Forest Green painted finish.
   f. Width: 3/4 inch (19.1 mm).

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

   g. Width: 1 inch (25.4 mm).
   h. Pattern as indicated on Drawings.

B. Exterior Trim and Casing: Where indicated on Drawings, provide vinyl sheathed plywood in the following thickness, conforming to NIST Voluntary Product Standards P.S.1 and rigid vinyl channels.
   1. Thickness: 1/2 inch (12.7 mm).

SPECIFIER NOTE: RETAIN THICKNESS ABOVE OR BELOW.

   2. Thickness: 3/4 inch (19 mm).
   3. Color: Match window framing.
   4. Andersen® Vinyl Trim Board: 0.043 inch (1.09 mm) thick vinyl with lightly textured surface laminated with adhesive to 3/4 inch (19 mm) thick plywood.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH ABOVE FOR ANDERSEN® VINYL TRIM BOARD. RETAIN SUBPARAGRAPH BELOW FOR VINYL LAMINATED BOARD.

   5. Vinyl Laminated Board: .045 inch (1.14 mm) thick vinyl with smooth surface laminated with adhesive to 1/2 inch (12.7 mm) thick plywood.
   6. Trim Channels: Rigid vinyl extrusions furnished by window manufacturer for use on same product line.
   7. Support Mullion Trim: 2 inch (51 mm) wide wood filler and vinyl trim strip.
      a. Color: Match window unit exterior color.

SPECIFIER NOTE: CONTACT AN ANDERSEN REPRESENTATIVE FOR CUSTOM DESIGN CAPABILITIES. ANDERSEN® ART GLASS IS "FRANK LLOYD WRIGHT" IS A REGISTERED TRADEMARK OF THE FRANK LLOYD WRIGHT FOUNDATION.

C. Andersen® Art Glass Panels: Hand assembled, stained glass panels sized to match unit glass opening. Art Glass panels are designed exclusively for application to Andersen products. Art Glass Panels shall be constructed of steel reinforced zinc "Y" edge cames, rigid zinc "H" cames with welded seams, and flexible zinc alloy "H" cames. Join came joints with lead-free solder.
   1. Panel Glazing: Machine rolled glass and mouth-blown colored design glass. Glazing is fitted into cames using vinyl gaskets and silicone sealant. Secure panels with fixed and snap-lock polypropylene clips secured to the unit. Trim interior with wood stops.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED PATTERN BELOW AND DELETE PATTERNS NOT REQUIRED FOR PROJECT.

   2. Pattern: Frank Lloyd Wright® Series Colonnade.
   3. Pattern: Frank Lloyd Wright® Series Prairie Rhythm.

4. Pattern: Frank Lloyd Wright® Series Wichita.
5. Pattern: Frank Lloyd Wright® Series Eucalyptus.
6. Pattern: Artisan Series Harmonics.
7. Pattern: Artisan Series Affinity.
8. Pattern: Classic Series Victoria.
9. Pattern: Classic Series Regency.
10. Pattern: Classic Series Lotus.
11. Pattern: Classic Series Taos.
12. Pattern: Classic Series Diamond Lights.
13. Background Glass: Clear Antique color.

SPECIFIER NOTE: RETAIN CLEAR ANTIQUE BACKGROUND GLASS ABOVE OR SEMI-PRIVATE BACKGROUND GLASS BELOW.

14. Background Glass: Semi-Privacy color.
15. Design Glass: Standard color palettes.

SPECIFIER NOTE: RETAIN DESIGN GLASS ABOVE OR BELOW.

16. Design Glass: Custom color combinations.

SPECIFIER NOTE: RETAIN ONE OF THE FOLLOWING CAMING TYPES BELOW.

17. Caming: Antique Bronze finish.
18. Caming: Gold tone (gold-plated) finish.
19. Caming: Silver tone (nickel-plated) finish.

SPECIFIER NOTE: THE FOLLOWING CASING PROFILES LISTED BELOW ARE CONSISTENT WITH THE WOOD MOULDING AND MILLWORK PRODUCERS ASSOCIATION (WMMPA) WM SOFTWOOD MOULDINGS PATTERN CATALOG.

D. Interior Casing: Provide casing in the following material and style. Provide straight pieces made from solid or veneered finger joined material. Mill radial pieces from milled laminated wood.

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

1. Casing Material: Oak.
2. Casing Material: Maple.
3. Casing Material: Pine.

SPECIFIER NOTE: RETAIN PROJECT REQUIRED PROFILE BELOW. DELETE PROFILES NOT REQUIRED.

4. Profile: 2-1/4 inches (57 mm) Colonial Style WM 366.
5. Profile: 2-1/2 inches (64 mm) Colonial Style WM351.
6. Profile: 3-1/2 inches (89 mm) Colonial Style WM444.
7. Profile: 2-1/4 inches (57 mm) Ranch WM324.
8. Profile: 2-1/2 inches (64 mm) Ranch WM315.

SPECIFIER NOTE: SPECIFY PLINTH BLOCKS TO TRANSITION RADIAL TRIM TO STRAIGHT TRIM MEMBERS. USE 2-7/8 INCH BY 4 INCH (73 MM BY 102 MM) OR 3-7/8 INCH BY 4 INCH (98 MM BY 102 MM) FOR ARCH WINDOWS AND 2-7/8 INCH (73 MM) OR 3-7/8 INCH (98 MM) SQUARE FOR CIRCLE TOP™, ELLIPTICAL, CIRCLE, AND OVAL WINDOWS.

E. Plinth Blocks: Provide plinth blocks with milled sunburst pattern in the following material and size:

SPECIFIER NOTE: RETAIN PROJECT REQUIRED PLINTH BLOCK BELOW. DELETE PLINTH BLOCKS NOT REQUIRED.

1. Profile: 2-1/4 inches (57 mm) Oak.
2. Profile: 3-7/8 inch (98 mm) Oak.

3. Profile: 4 inch (102 mm) Oak.
4. Profile: 2-1/4 inches (57 mm) Maple.
5. Profile: 3-7/8 inch (98 mm) Maple.
6. Profile: 4 inch (102 mm) Maple.

F. Extension Jambs: wood members machined from clear material or veneered finger joined material approved in ANSI/AAMA/NWWDA 101/I.S.2. Pre-drill extension jambs for application. Notch extension jambs on backside for blind fastening. Provide extension jambs in the following material:

SPECIFIER NOTE: RETAIN PROJECT REQUIRED JAMB TYPE BELOW AND DELETE TYPES NOT REQUIRED FOR PROJECT.

1. Material: Pine.
2. Material: Select Hardwoods.
3. Material: Prefinished White.

G. Exterior Trim and Casing: Where indicated on Drawings, provide 1/2 inch (13 mm) vinyl sheathed plywood conforming to NIST Voluntary Product Standards PS1 and rigid vinyl channels.
1. 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).

H. Exterior Trim and Casing: Where indicated on Drawings, provide 3/4 inch (19 mm) vinyl sheathed plywood conforming to NIST Voluntary Product Standards PS1 and rigid vinyl channels.
1. Color: Match window framing.
2. Andersen® Vinyl Trim Board: 0.043 inch (1.09 mm) thick vinyl with lightly textured surface laminated with adhesive to 3/4 inch (19.1 mm) thick plywood.
   a. Trim Channels: Rigid vinyl extrusions supplied by window manufacturer for use on same product line.

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.

3. Vinyl Laminated Board to have 0.045 inch (1.14 mm) thick vinyl with smooth surface laminated with adhesive to 1/2 inch (13 mm) thick plywood.
   a. Trim Channels: Rigid vinyl extrusions supplied by window manufacturer for use on same product line.

SPECIFIER NOTE: DESCRIBE ITEMS THAT SHALL BE SHOP MANUFACTURED, FABRICATED, OR ASSEMBLED BEFORE BEING DELIVERED TO SITE.

2.7 FABRICATION

A. Preservative Treatment: Treat wood sash and frame members after machining with water repellent preservative per WDMA I.S.4.

B. Frame Components:
1. Attach lineal, glass fiber-reinforced, polymer composite frame cover to wood frame.

SPECIFIER NOTE: RETAIN SUBPARAGRAPH BELOW FOR ARCH AND SPRINGLINE™ WINDOWS.

2. Attach arch aluminum frame cover to wood frame.
3. Clean and prepare surfaces for painting.
4. Electrostatically-apply high durability coating (2 mil nominal dry film thickness) to exterior exposed surfaces of the following frame cover type:

SPECIFIER NOTE: RETAIN PROJECT REQUIRED FRAME COVER TYPE BELOW AND DELETE TYPE NOT REQUIRED FOR PROJECT.

a. Frame Cover: Plastic.
b. Frame Cover: Aluminum.

C. Corner Fastening:
1. Fasten frame cover corners together using integral engineered corner locks and stainless steel screws.
2. Fasten wood frame corners together using flat head screws.

SPECIFIER NOTE: DELETE THE FOLLOWING SUBPARAGRAPH IF FLEXIFRAME® WINDOW COMPONENTS ARE NOT TO BE FACTORY GLAZED BY ANDERSEN CORPORATION. RETAIN THE FOLLOWING SUBPARAGRAPH IF FACTORY GLAZED WINDOWS ARE TO BE PROVIDED.

D. Glazing: Factory glaze with high performance glazing sealant as primary seal and removable interior wood stops. Backfill between glass edge and frame with high performance sealant. Apply high performance glazing sealant as secondary seal at glass opening perimeter.
1. Color of Secondary Sealant: Match window unit.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the window manufacturer.

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

3.2 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 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 (75 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.

3.3 INSTALLATION

A. General:
   1. Remove unit components, parts, accessories, and installation guides from carton.
   2. Inspect unit components and verify that components are not damaged and that parts are included before disposing of carton.
   3. Shop-assemble multiple units before installation in accordance with manufacturer's installation guides.

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

   4. Field-assemble multiple units before installation in accordance with manufacturer's installation guides.

B. Interface With Other Work:
   1. Perform installation in accordance with Manufacturer's instructions.
   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.
   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.

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.

3.4 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 insulation 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 the site.

END OF SECTION