Purpose and Applications: This guide specification covers Andersen® A-Series windows. These architecturally inspired windows are suitable for new construction, remodeling or replacement applications.

Product Features: A-Series window products include wood interiors and a Fibrex sash and fiberglass frame and trim. There are 11 standard exterior colors, wood interiors in 6 species, 6 factory applied stain options and 7 interior finish options available. These finishes are offered in hundreds of combinations for sash, frame and trim colors and designed to make stunning window combinations easy to create. They are available in pine, oak or maple interiors and may be ordered unfinished, factory-stained, painted or primed. Exceptional energy efficiency and weather resistance are characteristics of A-Series windows and patio doors. VeriLock® security sensors can be integrated with professionally installed security systems and/or self-monitoring systems compatible with Honeywell 5800 transmitters.

This Document: This guide specification document is provided by Andersen Corporation as a technical support tool incident to the sale of its products. Andersen Corporation is solely responsible for its content. This document should be reviewed and edited to suit Project requirements by a qualified design professional. Performance values expressed in this document may vary based on size, configuration and specified options. Product data contained in this guide specification is accurate as of the date of issue indicated above. Due to ongoing product changes, this data may change over time. Consult manufacturer for complete product information.

Contact Information: Contact manufacturer for more information on this or other products made by Andersen Corporation: Andersen Windows, Inc., Andersen Service Center, 100 Fourth Ave North, Bayport, MN 55003-1096. Telephone: (800) 299-9029.

Website: <http://www.andersenwindows.com/for-professionals>

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Editor Note: Edit document to suit Project requirements and specifier practice. Specifier notes are shown in blue text like this. Optional text [**is shown in bold with brackets like this**]. Locations where language for Project-specific requirements is to be inserted are shown like this: <**insert language**>. Remove specifier notes and unused optional text in final version of the specification document.

Editor Note: The Construction Specifications Institute (CSI) recommends and supports use of its current MasterFormat section title and numbering system, shown below.

SECTION 08 52 00 – WOOD WINDOWS

SECTION 08 54 00 – COMPOSITE WINDOWS (WITH WOOD INTERIOR AND FIBERGLASS SASH)

SECTION 08 54 13 – FIBERGLASS WINDOWS (WITH WOOD AND COMPOSITE FRAMES)

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Wood and composite material-framed windows, with fiberglass sash components, of the following types: [**casement**] [**awning**] [**double-hung**] [**and**] [**sash-set fixed**].

Editor Note: Revise paragraph below to suit Project requirements. Add section numbers and titles according to CSI MasterFormat and specifier practice. This paragraph is intended for use only when a reader might reasonably expect to find work requirements in this Section, but those requirements are actually located in another, related section.

B. Related Sections: Section(s) related to this section include:

1. <**Insert Work Title**>: <**Insert Division number**> Section <**Insert Section title**>.

Editor Note: Standards numbers and titles in the article below are provided for specifier information and reference. The purpose of this Article is to fully identify standards that are referenced elsewhere using abbreviated nomenclature. Retain, edit or delete article to suit specifier practice and Project requirements.

1.2 REFERENCES

A. General: Standards listed by reference form a part of this specification section. Standards listed are identified by issuing authority, abbreviation, designation number, title or other designation. Standards subsequently referenced in this Section are referred to by issuing authority abbreviation and standard designation.

B. American Architectural Manufacturers Association (AAMA):

1. AAMA 450 - Voluntary Performance Rating Method for Mulled Fenestration Assemblies.

2. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products.

3. AAMA 614 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Plastic Profiles.

4. AAMA 615 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Plastic Profiles.

5. AAMA 624 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Fiber Reinforced Thermoset Profiles.

6. AAMA 625 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performance Organic Coatings on Fiber Reinforced Thermoset Profiles.

7. AAMA 902 - Voluntary Specification for Sash Balances.

8. NAFS - North American Fenestration Standard/Specification for windows, doors and skylights.

C. Andersen A-Series Product Installation Guides.

D. ASTM International (ASTM):

1. ASTM C1036 - Standard Specification for Flat Glass.

2. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.

3. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

4. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.

5. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

6. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.

7. ASTM F2090 - Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.

E. Building Code Compliance Office of Miami-Dade, Florida. Florida Building Code Test Protocol for High-Velocity Hurricane Zones:

1. TAS 201 - Impact Test.

2. TAS 202 - Uniform Static Air Pressure Test.

3. TAS 203 - Cyclic Wind Pressure Loading Test.

Editor Note: Retain paragraph below when pine, FSC Certified – Mixed Credit certification is required and coordinate with Part 2 - Products.

F. Forest Stewardship Council (FSC): FSC Chain-of-Custody Certification.

G. Insulating Glass Certification Council (IGCC): Insulating Glass Unit Certification.

H. Insulating Glass Manufacturers Alliance of Canada (IGMAC) and Canadian General Standards Board (CGSB): Insulating Glass Units Standard CAN/CGSB 12.8-97.

I. International Standards Organization (ISO): ISO 14021 - Environmental Labels and Declarations -- Self-Declared Environmental Claims (Type II Environmental Labeling).

J. National Fenestration Rating Council (NFRC):

1. NFRC 100 - Procedure for Determining Fenestration Product U-factors.

2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

K. Texas Department of Insurance: Product Evaluation WIN-1875 for compliance with wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

L. U.S. Environmental Protection Agency (EPA): ENERGY STAR.

M. Window and Door Manufacturers Association (WDMA):

1. WDMA Hallmark Certification Program for Manufacturers.

2. WDMA I.S.4 - Industry Specification for Preservative Treatment for Millwork.

1.3 ADMINISTRATIVE REQUIREMENTS

Editor Note: Retain paragraph below if pre-installation meetings are required and edit to suit Project requirements.

A. Pre-installation Meetings: Conduct pre-installation meeting to clarify Project requirements, substrate conditions, manufacturer’s installation instructions and manufacturer’s warranty requirements.

1.4 PERFORMANCE REQUIREMENTS

Editor Note: Project requirements in paragraph below might include but not be limited to design wind load, wind speed, maximum design deflection, importance factor, exposure category, performance class and grade.

A. Structural Performance Requirements:

1. Comply with requirements of NAFS.

2. <**Insert requirements**>.

Editor Note: Project requirements in paragraph below might include but not be limited to criteria from authority having jurisdiction. Edit to suit Project requirements. Select sub-paragraph 1 or 2 or 3, or alternatively sub-paragraphs 2 and 3.

B. Windborne Debris Performance Requirements:

1. Florida Building Code Test Protocol: TAS 201, TAS 202 and TAS 203.

2. ASTM E1886 and ASTM E1996.

3. Texas Department of Insurance: Comply with requirements of Texas Department of Insurance, Product Evaluation WIN-1875.

Editor Note: Retain paragraph below if compliance with a whole-building rating system (such as USGBC LEED, GBI GreenGlobes, or other) or specific sustainability-related design and construction aspects is required. Edit to suit Project requirements. Project requirements might include but not be limited to energy performance, recycled material content, regional materials or indoor air quality.

C. Environmental Performance Requirements: <**Insert requirements**>.

1.5 SUBMITTALS

A. Product Data: For each type of product required.

B. Shop Drawings: Showing methods of installation, plans, sections, elevations and details of walls, specified loads, flashings, vents, sealants, and interfaces with all materials not supplied by the window manufacturer, and identification of proposed component parts and finishes.

C. Samples: Selection and verification samples for finishes, colors and textures. Submit two complete sample sets of each type of material required.

D. Certificates: Signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.

E. Test and Evaluation Reports: Showing compliance with specified performance characteristics and physical properties.

F. Manufacturer Instructions: Manufacturer installation, storage, and other instructions.

Editor Note: Retain paragraph below if compliance with a whole-building rating system (such as USGBC LEED, GBI GreenGlobes, or other) or specific sustainability-related design and construction aspects is required. Edit to suit Project requirements.

G. Sustainable Design Submittals in Compliance with ISO 14021.

H. Qualification Statements: For manufacturer and installer.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Member in good standing of Insulating Glass Certification Council (IGCC).

2. Hallmark Certified Manufacturer and member in good standing of the Window and Door Manufacturers Association (WDMA).

3. Member in good standing of U.S. Green Building Council.

4. ENERGY STAR Partner.

5. Capable of demonstrating an extended history of window and door design, production and innovation.

Editor Note: Retain when a separate installer warranty is required.

B. Installer Qualifications:

1. Minimum five years’ experience in the commercial installation of products required for the Project.

2. Experience on at least five projects of similar size, type and complexity as the Project.

3. An entity utilizing workers competent in techniques required by manufacturer for product types and applications indicated.

1.7 DELIVERY, STORAGE AND HANDLING

A. Comply with manufacturer’s ordering instructions and lead time requirements to avoid construction delays.

B. Deliver materials to Project in manufacturer’s original unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials and accessories protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by manufacturer off ground, under cover and not exposed to weather and construction activities.

1.8 WARRANTY

Editor Note: Coordinate article below with Conditions of the Contract and with Division 01 Closeout Submittals (Warranty) Section.

A. Special Warranty: Manufacturer's transferrable, non-prorated limited warranty.

1. Warranty Period, Glass: [**20 years, non-impact**] [**10 years, impact**].

2. Warranty Period, Non-Glass Parts: 10 years.

3. Warranty Period, Exterior Coating, Fading and Hardware Corrosion:

a. Exterior Coating: Limited lifetime of the original structure

b. Fading: 20 years

c. Hardware Corrosion: 10 years

Editor Note: Retain paragraph below if a separate installation warranty, not provided by the manufacturer, is required and edit to suit Project requirements.

B. Special Warranty: Installer's standard form in which installer agrees to repair or replace windows that fail due to poor workmanship or faulty installation within the specified warranty period.

1. Warranty Period: <**Insert number of years**> years from date of Substantial Completion.

PART 2 PRODUCT

Editor Note: Add product features, performance characteristics, material standards, and descriptions as applicable. Use of terms such as "or equal" or "approved equal" or similar may cause ambiguity in specifications, requiring verification (procedural, legal and regulatory) and assignment of responsibility for the determination of "equal" products. Therefore, it is recommended that terms such as these be avoided.

2.1 COMPOSITE WINDOWS

A. General: Provide windows complying with the performance requirements indicated and tested according to NAFS.

B. Basis-of-Design Product: Subject to compliance with requirements provide Andersen Corporation: Andersen A-Series windows.

C. Substitution Limitations: [**No substitutions**] [**All other manufacturers: Submit substitution request in accordance with Section 01 25 00 - "Substitution Procedures"**] <**Insert substitution limitations**>.

2.2 MATERIALS

A. Construction:

1. Exterior Frame: Extruded composite profile consisting of 40 percent reclaimed pre-consumer wood fiber and 60 percent thermoplastic polymer, by weight.

2. Exterior Sash: Pultruded fiberglass.

3. Interior Exposed Frame: Preservative treated solid lumber (WDMA I.S.4), kiln dried and suitable for stain or painted finish.

4. Interior Exposed Sash: Preservative treated solid lumber (WDMA I.S.4), kiln dried and suitable for stain or painted finish.

B. Wood Species: [**Cherry**] [**Douglas Fir**] [**Mahogany**] [**Pine**] [**Pine, FSC Certified – Mixed Credit**] [**Maple**] [**Oak**] <**Insert requirements**>.

Editor Note: If factory-applied interior finish is required, retain and edit paragraph below to suit Project requirements. If unfinished interior is required retain only the “Unfinished” option.

C. Interior Finish:

1. Stained: Factory-applied before assembly, water-based, [**Clear Coat**] [**Honey**] [**Cinnamon**] [**Russet**] [**Mocha**] [**Espresso**] <**Insert requirements**>.

2. Painted: Factory-applied before assembly, [**White**] [**Birch Bark**] <**Insert requirements**>.

3. Primed: Factory-applied before assembly. <**Insert requirements**>.

4. Custom Finished: Factory-applied, [**custom finish as selected and approved by Architect**] <**Insert requirements**>.

Editor Note: If no factory-applied finish is required, retain sub-paragraph below and coordinate finish requirements in related section.

5. Unfinished.

Editor Note: Andersen A-Series products are available in factory electrostatically-applied acrylic enamel in 11 colors, in 2-, 3-, or 4-tone combinations of those colors. Visit web site for more information: <http://www.andersenwindows.com/for-professionals>

D. Exterior Finish:

Editor Note: Retain sub-paragraphs below for painted frame and sash. Edit to suit Project requirements. Substrate material and finish color category determine the applicable AAMA standard. AAMA 614 and AAMA 624 apply to the following colors: White, Sandtone, Canvas and Dove Gray.

1. Painted Frame: Factory electrostatically-applied acrylic enamel, in compliance with AAMA 614/AAMA 624, [**White**] [**Sandtone**] [**Canvas**] [**Dove Gray**] [**color as selected from manufacturer’s standard colors**] [**custom color as selected and approved by Architect**] <**Insert requirements**>.

2. Painted Sash: Factory electrostatically-applied acrylic enamel, in compliance with AAMA 614/ AAMA 624, [**White**] [**Sandtone**] [**Canvas**] [**Dove Gray**] [**color as selected from manufacturer’s standard colors**] [**custom color as selected and approved by Architect**] <**Insert requirements**>.

Editor Note: Retain sub-paragraphs below for painted frame and sash. Edit to suit Project requirements. Substrate material and finish color category determine the applicable AAMA standard. AAMA 615 and AAMA 625 apply to the following colors: Prairie Grass, Terratone, Forest Green, Dark Bronze, Cocoa Bean, Red Rock and Black.

3. Painted Frame: Factory electrostatically-applied acrylic enamel, in compliance with AAMA 615/AAMA 625, [**Prairie Grass**] [**Terratone**] [**Forest Green**] [**Dark Bronze**] [**Cocoa Bean**] [**Red Rock**] [**Black**] [**color as selected from manufacturer’s standard colors**] [**custom color as selected and approved by Architect**] <**Insert requirements**>.

4. Painted Sash: Factory electrostatically-applied acrylic enamel, in compliance with AAMA 615/AAMA 625, [**Prairie Grass**] [**Terratone**] [**Forest Green**] [**Dark Bronze**] [**Cocoa Bean**] [**Red Rock**] [**Black**] [**color as selected from manufacturer’s standard colors**] [**custom color as selected and approved by Architect**] <**Insert requirements**>.

Editor Note: Andersen Corporation employs manufacturing strategies to optimize recycled content. Efficient use of materials reduces overall resource consumption and demand for additional materials. Recycling materials and content in construction and building components help reduce the demand for natural resources. Pre-consumer recycled content varies by product. Contact Andersen Corporation for more information.

E. Pre-consumer Recycled Content: <**Insert requirements**>.

Editor Note: Copy article below for each window type required, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

Editor Note: The performance values and ratings indicated within this guide specification representative a variety of typical Andersen product configurations based on testing according to applicable industry standards. The performance of any specific product depends on unit size, glass type and other configuration and material variables. The values indicated may or may not be applicable to Project requirements. Many other product configuration and materials options are available. Consult with an Andersen Product Representative for more information.

2.3 WINDOW <**Insert window designation(s) used on Drawings**>.

A. Window Type and Performance Requirements: [**Casement**] [**Awning**][**Double-hung**] [**Sash-set fixed**] [**As indicated on Drawings**] [**As indicated in window schedule**] <**Insert window type**>.

Editor Note: Retain sub-paragraphs below for casement and awning windows. Casement windows have a maximum performance rating of PG70.

1. [**Casement**] [**and**] [**Awning**] Performance Class LC and Grade, Impact-Resistant: [**PG70**] <**Insert requirements**>.

2. [**Casement**] [**and**] [**Awning**] Performance Class LC and Grade, Non-Impact-Resistant: [**PG50**] <**Insert requirements**>.

Editor Note: Retain sub-paragraphs below for double-hung windows.

3. Double-hung Performance Class LC and Grade, Impact-Resistant: [**PG70**] <**Insert requirements**>.

4. Double-hung Performance Class LC and Grade, Non-Impact-Resistant: [**PG50**] <**Insert requirements**>.

Editor Note: Retain sub-paragraphs below for sash-set fixed windows.

5. Sash-set Fixed Performance Class LC and Grade, Impact-Resistant: [**PG70**] <**Insert requirements**>.

6. Sash-set Fixed Performance Class LC and Grade, Non-Impact-Resistant: [**PG50**] <**Insert requirements**>.

Editor Note: WDMA standard is < 0.3 cfm/ft². Retain sub-paragraph below for commercial buildings.

B. Air Infiltration Requirements:

1. Air Infiltration Rate: **< 0.2 cfm/sf²**.

Editor Note: Some of the Andersen products are ENERGY STAR certified with select glass options. Contact manufacturer for more information. Retain when ENERGY STAR certification is required.

C. Environmental Certifications:

1. ENERGY STAR performance requirements.

2. Indoor air quality performance.

D. Weatherstrip:

Editor Note: Retain sub-paragraph below when double-hung windows are required.

1. Type and Material for Double-Hung: Slip coated foam filled polypropylene at head and jambs, UV resistant polyethylene with urethane filling at sill.

Editor Note: Retain sub-paragraph below when casement or awning windows are required.

2. Type and Material for Casement or Awning: Flexible tubular vinyl.

E. Attachment Flange Type: [**Extruded vinyl**] [**None**].

F. Hardware:

Editor Note: Retain sub-paragraphs below for casement and awning windows and edit to suit Project requirements.

1. Operator Gear Type and Material: Rotary, die-cast coated carbon steel and stainless steel components.

2. Hinge Type and Material: Piano hinge, 200 and 300 series stainless steel.

Editor Note: Retain sub-paragraph below for traditional style folding casement window hardware and edit to suit Project requirements.

3. Casement and Awning Hardware Style, Material and Finish: Traditional folding, die-cast zinc, [**Antique Brass**] [**Black**] [**Bright Brass**] [**Brushed Chrome**] [**Distressed Bronze**] [**Distressed Nickel**] [**Gold Dust**] [**Oil-Rubbed Bronze**] [**Polished Chrome**] [**Satin Nickel**] [**Stone**] [**White**].

Editor Note: Retain sub-paragraph below for contemporary style folding casement window hardware and edit to suit Project requirements.

4. Casement and Awning Hardware Style, Material and Finish: Contemporary folding, die-cast zinc, [**Black**] [**Bright Brass**] [**Gold Dust**] [**Oil-Rubbed Bronze**] [**Satin Nickel**] [**Stone**] [**White**].

Editor Note: Retain sub-paragraph below for Classic Series Operator.

5. Classic Series Operator Cover Material and Finish: [**Polycarbonate, integral color**] [**Die-cast zinc, plated**].

6. Crank Handle Type and Material: Die-cast zinc, painted.

7. Sash Lock Type and Material: Single actuation, die-cast zinc and engineered polymer components.

8. Sash Lock Type and Material: Lever, die-cast zinc.

Editor Note: White and Black are painted finishes. Polished Brass, Antique Brass, Satin Chrome and Oil-rubbed Bronze are plated finishes.

9. Sash Lock Color: [**White**] [**Black**] [**Polished Brass**] [**Antique Brass**] [**Satin Chrome**] [**Oil-rubbed Bronze**].

10. Window Opening Control Device and Color: Provide device to restrict operable sash to less than 4 inches maximum clear opening, releasable in compliance with ASTM F2090, [**White**] [**Stone**].

Editor Note: Retain sub-paragraph below when vent limitation hardware is required. Vent limitation hardware cannot be used on windows required for emergency escape and rescue and is not available on push-out windows.

11. Vent Limitation Hardware: Provide fixed vent limiters to limit sash travel.

Editor Note: Retain sub-paragraphs below for double-hung windows and edit to suit Project requirements.

12. Double-hung Sash Hardware Style and Material: Traditional, forged metal.

13. Sash Lift Type: [**Bar lift**] [**Hand lift**] [**Finger lift**].

Editor Note: Gold Dust, Black, Stone and White are painted finishes. Antique Brass, Bright Brass, Oil-Rubbed Bronze, Satin Nickel and Bright Chrome are plated finishes.

14. Sash Lock and Sash Lift Finish: [**Antique Brass**] [**Black**] [**Bright Brass**] [**Brushed Chrome**] [**Distressed Bronze**] [**Distressed Nickel**] [**Gold Dust**] [**Oil-Rubbed Bronze**] [**Polished Chrome**] [**Satin Nickel**] [**Stone**] [**White**].

15. Balance Type and Material: [**Spring-loaded block and tackle**] [**AAMA** **902** **Class 5**], galvanized steel.

Editor Note: Verilock® Security Sensors and Wireless Open/Closed Sensors are optional. Retain paragraph below when Verilock® Security Sensors and Wireless Open/Closed Sensors are required.

16. Security Sensors, Designation: Configured and maintained with professionally installed building security system and/or self-monitoring system compatible with Honeywell 5800 transmitters and capable of detecting whether window or door is open or closed, and locked or unlocked, VeriLock® Security sensors: [**White**] [**Taupe Gray**][**Stone**][**Black**].

17. Wireless Open/Closed Sensors: Configured and maintained with professionally installed building security system and/or self-monitoring system compatible with Honeywell 5800 transmitters and capable of detecting whether window or door is open or closed [**White**] [**Sandtone**] [**Canvas**][**Dark Bronze**].

Editor Note: Retain paragraph below when divided lights are required. Grille type and location are a determining factor in overall window thermal performance. Coordinate with required U-Factor in GLAZING Article and with manufacturer’s information on product availability.

G. Divided Lights:

Editor Note: Retain sub-paragraph below when Full Divided Light Grilles are required and edit to suit Project requirements.

1. Full Divided Light: Permanent exterior and interior attachment, spacer between glass panes.

a. Style: Contoured profile.

b. Width: [**3/4 inch (19 mm)**] [**7/8 inch (22 mm)**] [**1-1/8 inches (29 mm)**] [**2-1/4 inches (57 mm)**].

c. Pattern: [**As shown in Drawings**] <**Insert pattern designation**>.

d. Exterior Color: [**Match window**] <**Insert requirements**>.

e. Interior Wood Finish: [**Match window**] <**Insert requirements**>.

Editor Note: Retain sub-paragraph below when Simulated Divided Light Grilles are required and edit to suit Project requirements.

2. Simulated Divided Light: [**Permanent exterior and interior attachment, no spacer between glass panes**] [**Permanent exterior attachment, removable interior, no spacer between glass panes**].

a. Style: Contoured profile.

b. Width: [**3/4 inch (19 mm)**] [**7/8 inch (22 mm)**] [**1-1/8 inches (29 mm)**] [**2-1/4 inches (57 mm)**].

c. Pattern: [**As shown in Drawings**] <**Insert pattern designation**>.

d. Exterior Color: [**Match window**] <**Insert requirements**>.

e. Interior Wood Finish: [**Match window**] <**Insert requirements**>.

Editor Note: Retain sub-paragraph below when Finelight Grilles-Between-the-Glass are required and edit to suit Project requirements. Available in 3/4 inch (19 mm) or 1 inch (25 mm) widths only.

3. Finelight Grille: Permanently installed between glass panes.

a. Style: Contoured profile.

b. Width: [**3/4 inch (19 mm)**] [**1 inch (25 mm)**].

c. Pattern: [**As shown in Drawings**] <**Insert pattern designation**>.

d. Exterior Color: [**Match window**] <**Insert requirements**>.

e. Interior Wood Finish: [**Match window**] <**Insert requirements**>.

H. Insect Screens:

Editor Note: Retain sub-paragraphs below when wood-veneered insect screens for casement, awning and venting transom windows are required and edit to suit Project requirements.

1. Type, [**Casement**] [**Awning**] [**Venting** **Transom**]: Conventional.

a. Frame Material: Aluminum.

b. Painted Finish and Color: [**Factory-applied baked-on silicone polyester enamel**] **<Insert color>** [**White**] [**Stone**] [**Gold Dust**].

c. Veneered Finish and Species: Wood veneer to match window.

d. Insect Screen Material: [**Aluminum wire cloth**] [**Stainless steel wire cloth, TruScene**].

Editor Note: Retain sub-paragraph below when conventional non-veneered full- or half-screens for double-hung windows are required and edit to suit Project requirements.

2. Type, Double-Hung: Conventional [**full**] [**half**].

a. Frame Material: Aluminum.

b. Painted Finish and Color: [**Factory-applied baked-on silicone polyester enamel**] **<Insert color>** [**Color as selected by Architect from manufacturer’s available exterior colors**].

c. Insect Screen Material: [**Aluminum wire cloth**] [**Stainless steel wire cloth, TruScene**].

Editor Note: Retain paragraph below when exterior trim or accessories are required and edit to suit Project requirements.

I. Exterior Trim and Accessories:

1. Type: 2 inch Brick Mould.

2. Type: [**3-1/2 inch Flat Casing**] [**4-1/2 inch Flat Casing**].

3. Type: 1-15/16 inch Sill Nose.

4. Type: [**Decorative Drip Cap**] [**2 inch Cornice**] [**3-5/8 inch Cornice**].

5. Type: [**As indicated**] <**Insert requirements**>.

Editor Note: Linear trim components are made of Fibrex material. Curved trim components are made of polyurethane.

6. Material: [**Fibrex material wood-polymer composite**] [**High density polyurethane**].

7. Finish and Color: Painted, [**White**] [**Sandtone**] [**Canvas**] [**Prairie Grass**] [**Terratone**] [**Forest Green**] [**Dove Gray**] [**Dark Bronze**] [**Cocoa Bean**] [**Red Rock**] [**Black**] [**Match doors**] <**Insert requirements**>.

Editor Note: Windows installed in combination must be designed and installed so as to attain a level of structural performance meeting requirements of the authority having jurisdiction. Refer to product literature or consult with an Andersen product representative.

J. Mullions:

1. Type: Steel Clip system configured to be structurally sound and designed in accordance with AAMA 450.

2. Type: Easy Connect fiberglass plates configured to be structurally sound and designed in accordance with AAMA 450.

Editor Note: Retain article below when non-impact-resistant glazing using Andersen Low-E4 glass is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.4 NON-IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.28 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.28 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.26 without grilles**] [**0.24 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.26 without grilles**] [**0.23 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.30 without grilles**] [**0.27 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.32 without grilles**] [**0.29 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.27 without grilles**] [**0.25 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.45 without grilles**] [**0.41 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.44 without grilles**] [**0.39 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.52 without grilles**] [**0.46 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.54 without grilles**] [**0.48 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.55 without grilles**] [**0.49 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.46 without grilles**] [**0.41 with grilles**] <**Insert VLT value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. Double-hung: [**27/22**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**27/22**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen High-Performance Low-E4 Glass.

2. Glazing Configuration: [**Dual-pane**] [**Triple-pane**].

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

6. Opacity: [**Cascade**] [**Fern**] [**Obscure**] [**Reed**] [**None**].

Editor Note: Retain sub-paragraph below when laminated glass is required and edit to suit Project.

7. Laminate Interlayer Thickness: [**0.060**] [**0.090**] inch.

Editor Note: Retain sub-paragraph below when between-the-glass art glass is required and edit to suit Project requirements.

8. Between-the-Glass Art Glass:

a. Pattern Designation, Historic and Classic Series: [**Lotus**] [**Regency**] [**Victoria**] [**Diamond Lights**] [**Arts & Crafts**] [**Amber**] [**Queen Anne**] [**Rectangular Grid**] [**Diamond Grid**].

b. Color Designation: [**Amber**] [**Caramel**] [**Cobalt**] [**Copper**] [**Dark Blue**] [**Deep Green**] [**Deep Rose**] [**Deep Teal**] [**Iridized Green**] [**Light Blue**] [**Light Green**] [**Lilac**] [**Marbled Green**] [**Marbled White**] [**Marbled Yellow-Green**] [**Moss Green**] [**Navy Blue**] [**Olive Green**] [**Opal**] [**Pale Blue**] [**Rose**] [**Sand**] [**Teal**] [**Topaz**] [**Violet**].

c. Accent Jewel Designation: [**Amber**] [**Lilac**] [**Pink**] [**Green**] [**Opal Amber**] [**Smoke**].

d. Iridescent Accent Tile Designation: [**Avocado Glimmer**] [**Kiwi Glimmer**] [**Tamarind Glimmer**] [**Tangerine Glimmer**].

Editor Note: Retain article below when non-impact-resistant glazing using Andersen Low-E4 Sun glass is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.5 NON-IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.29 without grilles**] [**0.31 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.27 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.27 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.16 without grilles**] [**0.15 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.16 without grilles**] [**0.15 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.19 without grilles**] [**0.17 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.19 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.17 without grilles**] [**0.15 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.25 without grilles**] [**0.23 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.24 without grilles**] [**0.22 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.29 without grilles**] [**0.26 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.30 without grilles**] [**0.27 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.31 without grilles**] [**0.27 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.26 without grilles**] [**0.23 with grilles**] <**Insert VLT value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows. In all cases, the second set of optional performance data is for upgraded glass.

3. Double-hung: [**27/22**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**27/22**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen Low-E4 Sun Glass.

2. Glazing Configuration: Dual-pane.

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

6. Opacity: [**Cascade**] [**Fern**] [**Obscure**] [**Reed**] [**None**].

Editor Note: Retain sub-paragraph below when between-the-glass art glass is required and edit to suit Project requirements.

7. Between-the-Glass Art Glass:

a. Pattern Designation, Historic and Classic Series: [**Lotus**] [**Regency**] [**Victoria**] [**Diamond Lights**] [**Arts & Crafts**] [**Amber**] [**Queen Anne**] [**Rectangular Grid**] [**Diamond Grid**].

b. Color Designation: [**Amber**] [**Caramel**] [**Cobalt**] [**Copper**] [**Dark Blue**] [**Deep Green**] [**Deep Rose**] [**Deep Teal**] [**Iridized Green**] [**Light Blue**] [**Light Green**] [**Lilac**] [**Marbled Green**] [**Marbled White**] [**Marbled Yellow-Green**] [**Moss Green**] [**Navy Blue**] [**Olive Green**] [**Opal**] [**Pale Blue**] [**Rose**] [**Sand**] [**Teal**] [**Topaz**] [**Violet**].

c. Accent Jewel Designation: [**Amber**] [**Lilac**] [**Pink**] [**Green**] [**Opal Amber**] [**Smoke**].

d. Iridescent Accent Tile Designation: [**Avocado Glimmer**] [**Kiwi Glimmer**] [**Tamarind Glimmer**] [**Tangerine Glimmer**].

Editor Note: Retain article below when non-impact-resistant glazing using Andersen Low-E4 SmartSun glass is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.6 NON-IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.27 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.26 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.26 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.17 without grilles**] [**0.16 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.17 without grilles**] [**0.16 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.18 without grilles**] [**0.16 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.41 without grilles**] [**0.37 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.39 without grilles**] [**0.35 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.47 without grilles**] [**0.41 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.49 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.49 without grilles**] [**0.44 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.41 without grilles**] [**0.37 with grilles**] <**Insert VLT value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. Double-hung: [**27/22**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**27/22**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen Low-E4 SmartSun Glass.

2. Glazing Configuration: Dual-pane.

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

6. Opacity: [**Cascade**] [**Fern**] [**Obscure**] [**Reed**] [**None**].

Editor Note: Retain sub-paragraph below when between-the-glass art glass is required and edit to suit Project requirements.

7. Between-the-Glass Art Glass:

a. Pattern Designation, Historic and Classic Series: [**Lotus**] [**Regency**] [**Victoria**] [**Diamond Lights**] [**Arts & Crafts**] [**Amber**] [**Queen Anne**] [**Rectangular Grid**] [**Diamond Grid**].

b. Color Designation: [**Amber**] [**Caramel**] [**Cobalt**] [**Copper**] [**Dark Blue**] [**Deep Green**] [**Deep Rose**] [**Deep Teal**] [**Iridized Green**] [**Light Blue**] [**Light Green**] [**Lilac**] [**Marbled Green**] [**Marbled White**] [**Marbled Yellow-Green**] [**Moss Green**] [**Navy Blue**] [**Olive Green**] [**Opal**] [**Pale Blue**] [**Rose**] [**Sand**] [**Teal**] [**Topaz**] [**Violet**].

c. Accent Jewel Designation: [**Amber**] [**Lilac**] [**Pink**] [**Green**] [**Opal Amber**] [**Smoke**].

d. Iridescent Accent Tile Designation: [**Avocado Glimmer**] [**Kiwi Glimmer**] [**Tamarind Glimmer**] [**Tangerine Glimmer**].

Editor Note: Retain article below when non-impact-resistant glazing using Andersen Low-E4 PassiveSun glass is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.7 NON-IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.30 without grilles**] [**0.31 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.43 without grilles**] [**0.39 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.42 without grilles**] [**0.38 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.50 without grilles**] [**0.44 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.52 without grilles**] [**0.47 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.53 without grilles**] [**0.47 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.44 without grilles**] [**0.40 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.50 without grilles**] [**0.45 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.48 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.57 without grilles**] [**0.51 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.60 without grilles**] [**0.53 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.60 without grilles**] [**0.54 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.51 without grilles**] [**0.46 with grilles**] <**Insert VLT value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. Double-hung: [**27/22**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**27/22**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen Low-E4 PassiveSun Glass.

2. Glazing Configuration: Dual-pane.

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

Editor Note: Retain sub-paragraph below when between-the-glass art glass is required and edit to suit Project requirements.

6. Between-the-Glass Art Glass:

a. Pattern Designation, Historic and Classic Series: [**Lotus**] [**Regency**] [**Victoria**] [**Diamond Lights**] [**Arts & Crafts**] [**Amber**] [**Queen Anne**] [**Rectangular Grid**] [**Diamond Grid**].

b. Color Designation: [**Amber**] [**Caramel**] [**Cobalt**] [**Copper**] [**Dark Blue**] [**Deep Green**] [**Deep Rose**] [**Deep Teal**] [**Iridized Green**] [**Light Blue**] [**Light Green**] [**Lilac**] [**Marbled Green**] [**Marbled White**] [**Marbled Yellow-Green**] [**Moss Green**] [**Navy Blue**] [**Olive Green**] [**Opal**] [**Pale Blue**] [**Rose**] [**Sand**] [**Teal**] [**Topaz**] [**Violet**].

c. Accent Jewel Designation: [**Amber**] [**Lilac**] [**Pink**] [**Green**] [**Opal Amber**] [**Smoke**].

d. Iridescent Accent Tile Designation: [**Avocado Glimmer**] [**Kiwi Glimmer**] [**Tamarind Glimmer**] [**Tangerine Glimmer**].

Editor Note: Retain article below when non-impact-resistant glazing using Andersen Low-E4 glass with HeatLock technology is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.8 NON-IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.24 without grilles**] [**0.26 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.25 without grilles**] [**0.26 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.25 without grilles**] [**0.27 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.23 without grilles**] [**0.25 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.23 without grilles**] [**0.25 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.25 without grilles**] [**0.26 with grilles**] <**Insert U-Factor value**>.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.26 without grilles**] [**0.23 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.25 without grilles**] [**0.23 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.30 without grilles**] [**0.27 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.26 without grilles**] [**0.24 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.44 without grilles**] [**0.40 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.43 without grilles**] [**0.38 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.51 without grilles**] [**0.45 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.53 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.54 without grilles**] [**0.48 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.45 without grilles**] [**0.40 with grilles**] <**Insert VLT value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**27/23**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. Double-hung: [**27/22**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**27/22**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen Low-E4 Glass with HeatLock Technology.

2. Glazing Configuration: Dual-pane.

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

Editor Note: Retain sub-paragraph below when between-the-glass art glass is required and edit to suit Project requirements.

6. Between-the-Glass Art Glass:

a. Pattern Designation, Historic and Classic Series: [**Lotus**] [**Regency**] [**Victoria**] [**Diamond Lights**] [**Arts & Crafts**] [**Amber**] [**Queen Anne**] [**Rectangular Grid**] [**Diamond Grid**].

b. Color Designation: [**Amber**] [**Caramel**] [**Cobalt**] [**Copper**] [**Dark Blue**] [**Deep Green**] [**Deep Rose**] [**Deep Teal**] [**Iridized Green**] [**Light Blue**] [**Light Green**] [**Lilac**] [**Marbled Green**] [**Marbled White**] [**Marbled Yellow-Green**] [**Moss Green**] [**Navy Blue**] [**Olive Green**] [**Opal**] [**Pale Blue**] [**Rose**] [**Sand**] [**Teal**] [**Topaz**] [**Violet**].

c. Accent Jewel Designation: [**Amber**] [**Lilac**] [**Pink**] [**Green**] [**Opal Amber**] [**Smoke**].

d. Iridescent Accent Tile Designation: [**Avocado Glimmer**] [**Kiwi Glimmer**] [**Tamarind Glimmer**] [**Tangerine Glimmer**].

Editor Note: Retain article below when impact-resistant glazing using Andersen Low-E4 impact-resistant glass is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.9 IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.30 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.31 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.30 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.26 without grilles**] [**0.24 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.25 without grilles**] [**0.23 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.30 without grilles**] [**0.27 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.27 without grilles**] [**0.24 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.45 without grilles**] [**0.40 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.43 without grilles**] [**0.39 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.50 without grilles**] [**0.45 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.53 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.53 without grilles**] [**0.47 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.45 without grilles**] [**0.41 with grilles**] <**Insert U-Factor value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**33/29**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**33/29**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. Double-hung: [**30/26**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**33/29**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen Low-E4 Impact-Resistant Glass.

2. Glazing Configuration: Dual-pane.

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

Editor Note: Retain article below when impact-resistant glazing using Andersen Low-E4 Sun impact-resistant glass is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.10 IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.30 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.30 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.31 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.30 without grilles**] [**0.31 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.30 without grilles**] [**0.31 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.30 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.16 without grilles**] [**0.15 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.16 without grilles**] [**0.15 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.19 without grilles**] [**0.17 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.19 without grilles**] [**0.17 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.17 without grilles**] [**0.15 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.24 without grilles**] [**0.22 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.24 without grilles**] [**0.21 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.27 without grilles**] [**0.24 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.29 without grilles**] [**0.25 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.29 without grilles**] [**0.26 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.25 without grilles**] [**0.22 with grilles**] <**Insert VLT value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**33/29**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**33/29**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. Double-hung: [**30/26**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**33/29**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen Low-E4 Sun Impact-Resistant Glass.

2. Glazing Configuration: Dual-pane.

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

Editor Note: Retain article below when impact-resistant glazing using AndersenLow-E4 SmartSun impact-resistant glass is required. Glass type is a significant factor in determining overall window U-Factor. Copy article below for each window type, edit to suit Project and product requirements and re-insert text as many times as needed to describe additional window types.

2.11 IMPACT-RESISTANT GLAZING <**Insert window designation(s) used on Drawings**>.

Editor Note: Select required U-Factor in paragraph below and coordinate with required glazing type. U-Factors provided are based on whole-window performance, not on center-of-glass. Coordinate selection below with manufacturer’s product information. Actual unit performance values will vary depending upon Performance Grade (PG) rating, glass options, accessories such as grilles, unit size and type. Consult Andersen Product Representative for more information.

A: Thermal Transmission (U-Factor), NFRC 100:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.30 without grilles**] [**0.31 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.29 without grilles**] [**0.30 with grilles**] <**Insert U-Factor value**>.

Editor Note: Retain sub-paragraph below for casement fixed windows.

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.18 without grilles**] [**0.16 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.17 without grilles**] [**0.16 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.18 without grilles**] [**0.17 with grilles**] <**Insert SHGC value**>.

C. Visible Light Transmittance (VLT), NFRC 200:

Editor Note: Retain sub-paragraph below for casement windows.

1. [**0.40 without grilles**] [**0.36 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. [**0.39 without grilles**] [**0.35 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. [**0.45 without grilles**] [**0.40 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for picture windows.

4. [**0.47 without grilles**] [**0.42 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for fixed transom windows.

5. [**0.48 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for venting transom windows.

6. [**0.41 without grilles**] [**0.37 with grilles**] <**Insert VLT value**>.

Editor Note: Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC) performance varies depending on window type and features. Consult Andersen Product Representative for more information.

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

Editor Note: Retain sub-paragraph below for casement windows.

1. Casement: [**33/29**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for awning windows.

2. Awning: [**33/29**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows.

3. Double-hung: [**30/26**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for sash-set fixed windows.

4. Direct-set fixed: [**33/29**] <**Insert STC/OITC value**>.

E. Glass Units: Provide insulating glass units certified through [**Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190**] [**Insulating Glass Manufacturers Alliance of Canada (IGMAC) conforming to the requirements of Canadian General Standards Board CAN/CGSB 12.8**].

1. Manufacturer Designation: Andersen High-Performance Low-E4 SmartSun Impact-Resistant Glass.

2. Glazing Configuration: Dual-pane.

3. Tint: [**Gray**] [**None**].

4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

5. Glass Type: [**Annealed glass, ASTM C1036**] [**Fully tempered glass, ASTM C1048**].

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that all substrate conditions are suitable for installation in compliance with manufacturer’s recommendations.

B. Do not begin installation until substrates have been properly prepared and any conditions not in compliance with manufacturer’s recommendations have been corrected.

3.2 INSTALLATION

A. General: Comply with manufacturer’s product recommendations, including but not limited to the Andersen installation instructions. Comply with Drawings [**and Shop Drawings**] for installing windows, hardware, accessories, and other components.

B. Install windows plumb, level and square. Anchor windows securely to structure in correct orientation to flashing and adjacent construction as indicated. Comply with product installation instructions for proper flashing integration into wall system. Install windows so as to drain water penetration to the exterior.

C. Adjust sashes, insect screens, ventilators, hardware and accessories as applicable for correct fit. Adjust weatherstrip for smooth operation and weather-tight closure.

3.3 FIELD QUALITY CONTROL

A. Manufacturer’s Field Services: If requested by Owner, provide manufacturer’s field service consisting of product use recommendations and periodic site visits for observation of product installation in accordance with manufacturer’s recommendations.

1. Site Visits: <**Insert site visit requirements**>.

Editor Note: Retain article below if field tests for air and water leakage are required. Edit to suit Project requirements including testing services and methodology.

B. Field Testing: Provide field testing of installed units.

1. Test units in compliance with AAMA 502.

2. Use test equipment calibrated according to ASTM E1105.

3.4 CLEANING

A. Remove protective films and non-permanent labels prior to 90 days after installation.

B. Remove excess sealant, soiling, dirt and other substances. Clean window frame and glass surfaces. Avoid damaging coatings and finishes.

C. Touch-up, repair or replace glass or other window components broken, scratched or damaged during construction prior to Substantial Completion.

D. Remove and lawfully dispose of construction debris from Project site.

3.5 PROTECTION

A. Protect installed windows and finish surfaces from damage during construction until completion of Project and acceptance by Owner.

END OF SECTION 08 52 00 – WOOD WINDOWS

END OF SECTION 08 54 00 – COMPOSITE WINDOWS (WITH WOOD INTERIOR AND FIBERGLASS SASH)

END OF SECTION 08 54 13 – FIBERGLASS WINDOWS (WITH WOOD AND COMPOSITE FRAMES)