Purpose and Applications: This guide specification covers Andersen® 400 Series windows. These windows are suitable for new construction, remodeling or replacement applications.

Product Features: 400 Series rigid vinyl clad wood window and patio door products are made to exact specifications. They are available in seven standard exterior colors, in various shapes and sizes to create dramatic window and patio door combinations.

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. 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: [www.andersenwindows.com](http://www.andersenwindows.com)

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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 52 16 – PLASTIC-CLAD WOOD WINDOWS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Vinyl-clad wood-framed windows of the following types: [**casement**] [**awning**] [**Double-Hung**] [**gliding**] [**picture**] [**and**] [**direct-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 613 - Voluntary Performance Requirements and Test Procedures for Organic Coatings on Plastic Profiles.

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

5. AAMA 623 - Voluntary Specification, Performance Requirements and Test Procedures for Organic Coatings on Fiber Reinforced Thermoset Profiles.

6. AAMA 624 - Voluntary Specification, Performance Requirements and Test Procedures for High 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 Corporation: Andersen 400 Series Installation Guide.

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 E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.

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

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

Editor Note: Reference below does not apply to gliding windows.

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

L. 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. Preinstallation Meetings: Conduct preinstallation 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. References below do not apply to gliding windows.

B. Windborne Debris Performance Requirements:

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

2. ASTM E1886 and ASTM E1996.

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 the 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. U.S. 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.

2. Warranty Period, Non-Glass Parts: 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 wood 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 WOOD 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 400 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. Frame: Finger-jointed or laminated veneer lumber capped with rigid vinyl, preservative treated WDMA I.S. 4.

2. Interior Sash: Solid lumber, kiln dried and suitable for stain or painted finish, preservative treated WDMA I.S. 4.

3. Exterior Sash: Co-extruded rigid vinyl or liquid-applied vinyl over finger-jointed lumber.

Editor Note: Retain sub-paragraph below and edit to suit Project requirements when using awning, casement, and casement picture windows. If grilles are required for project, grille profile will match the interior stop profile selected.

4. Interior Stop: [**Beveled**] [**Contemporary**]

B. Wood Species: [**Clear pine**] [**Clear pine, FSC Certified – Mixed Credit**] <**Insert requirements**>.

C. Interior Finish:

Editor Note: Retain one of three sub-paragraphs below and edit to suit Project requirements.

1. Painted: Factory-applied before assembly, **[black] [dark bronze]** [**white**] <**Insert requirements**>.

2. Custom: Site-finished. <**Insert requirements**>.

3. Unfinished.

D. Exterior Finish:

Editor Note: AAMA 613 applies to White, Canvas, Sandtone and Terratone. AAMA 614 applies to Forest Green, Dark Bronze and Black.

1. Frame and Sash: [**AAMA 613**] [**AAMA 614**] for color retention, [**Color as selected from manufacturer’s standard colors**] [**White**] [**Canvas**] [**Sandtone**] [**Terratone**] [**Forest Green**] [**Dark Bronze**] [**Black**] <**Insert requirements**>.

Editor Note: AAMA 624 applies to color retention for all colors on 400 Series Flexiframe® and gliding windows. AAMA 623 applies to White, Canvas, Sandtone and Terratone. AAMA 624 applies to Forest Green, Dark Bronze and Black.

2. Trim: [**AAMA 623**] [**AAMA 624**] for color retention, [**Color as selected from manufacturer’s standard colors**] [**White**] [**Canvas**] [**Sandtone**] [**Terratone**] [**Forest Green**] [**Dark Bronze**] [**Black**] <**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: [**Casement**] [**Awning**] [**Double-Hung**] [**Gliding**] [**Picture**] [**Direct-set fixed**] [**As indicated on Drawings**] [**As indicated in window schedule**] <**Insert window type**>.

B. Performance Grade Requirements:

Editor Note: Casement windows have a maximum performance rating of PG70.

1. Casement Performance Class LC and Grade, Non-Impact-Resistant: [**PG40**] [**PG45**] [**PG50**] [**PG70**] <**Insert requirements**>.

Editor Note: Retain sub-paragraphs below for casement windows. Impact-resistant casement windows have a maximum performance rating of PG70. Some ratings are for stationary casement windows. See Andersen product guide or website for corresponding values.

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

Editor Note: Awning windows have a maximum performance rating of PG70. Some ratings are for stationary awning windows. See Andersen product guide or website for corresponding values.

3. Awning Performance Class LC and Grade, Non-Impact-Resistant: [**PG35**] [**PG50**] [**PG60**] <**Insert requirements**>.

Editor Note: Retain sub-paragraphs below for awning windows. Impact-resistant awning windows have a maximum performance rating of PG60. Some ratings are for stationary awning windows. See Andersen product guide or website for corresponding values.

4. Awning Performance Class LC and Grade, Impact-Resistant: [**PG60**] <**Insert requirements**>.

Editor Note: Retain sub-paragraphs below for double-hung and double-hung insert windows. Double-Hung insert windows are not available with impact class ratings. Double-Hung insert windows have a maximum performance rating of PG20.

5. Double-Hung Performance Class LC and Grade, Non-Impact-Resistant: [**PG40**] [**PG50**] <**Insert requirements**>.

6. Double-Hung cottage style Performance class R and Grade, Non-Impact-Resistant PG20.

7. Double-Hung specialty shape Performance class LC and Grade, Non-Impact-Resistant [**PG30**] [**PG35**].

8. Double-Hung Insert Performance Class R and Grade, Non-Impact-Resistant: PG20 <**Insert requirements**>.

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

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

10. Gliding Performance Class LC and Grade, Non-Impact-Resistant: [**PG30**] <**Insert requirements**>.

Editor Note: Retain sub-paragraphs below for casement picture and double-hung picture windows. Casement picture windows have a maximum performance rating of PG70 with tempered glass. Double-Hung picture windows have a maximum performance rating of PG50.

11. Casement Picture Performance Class LC and Grade, Non-Impact-Resistant: PG70 <**Insert requirements**>.

12. Casement Picture Performance Class LC and Grade, Impact-Resistant: PG70 <**Insert requirements**>.

13. Double-Hung Picture Performance Class LC and Grade, Non-Impact-Resistant: PG65 <**Insert requirements**>.

14. Double-Hung Picture Performance Class LC and Grade, Impact-Resistant: PG50 <**Insert requirements**>.

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

15. Direct-set Fixed Performance Class LC and Grade, Non-Impact-Resistant: PG50 <**Insert requirements**>.

16. Direct-set Fixed Performance Class LC and Grade, Impact-Resistant: PG70 <**Insert requirements**>.

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

C. Air Infiltration Requirements:

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

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

D. Environmental Certifications:

1. ENERGY STAR performance requirements.

2. Indoor air quality performance.

E. Weatherstrip:

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

1. Type and Material for Casement and Awning: Flexible vinyl bulb or vinyl covered foam gasket.

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

2. Type and Material for Hung: Vinyl covered foam gasket at head and sill, compressible vinyl bulb at checkrail and vinyl fins at jambs.

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

3. Type and Material for Gliding: Compressible vinyl bulb at all sides and meeting rail.

F. Attachment Flange:

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

1. Type and Material for Double-Hung or Gliding: [**Attached rigid vinyl**] [**None**].

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

2. Type and Material for Casement or Awning: [**Integral rigid vinyl**] [**None**].

G. 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 zinc and stainless steel components.

2. Hinge Type and Material: Concealed hinge and track, [**corrosion-resistant, 300 series stainless steel**] [**standard, 400 series galvanized steel**].

Editor Note: Die cast zinc applies to Classic Series, Traditional Folding and Contemporary Folding crank handles. Forged brass applies to Estate crank handles. Edit to suit Project requirements.

3. Crank Handle Material and Style: [**Die-cast zinc**][**Forged brass**] [**Classic Series**] [**Traditional Folding**] [**Contemporary Folding**] [**Estate**].

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

Editor Note: Gold Dust, White, Black and Stone are painted finishes. Antique Brass, Bright Brass, Brushed Chrome, Distressed Bronze, Distressed Nickel, Oil-Rubbed Bronze, Polished Chrome, and Satin Nickel are plated finishes. Retain one of four sub-paragraphs below and edit to suit Project requirements.

5. Crank and Sash Lock Color, Classic Series: [**Stone**] [**White**].

6. Crank and Sash Lock Color, Traditional Folding: [**Gold Dust**] [**White**] [**Black**] [**Stone**] [**Antique Brass**] [**Bright Brass**] [**Brushed Chrome**] [**Distressed** **Bronze**] [**Distressed Nickel**] [**Oil-Rubbed Bronze**] [**Polished Chrome**] [**Satin Nickel**].

7. Crank and Sash Lock Color, Contemporary Folding: [**Black**] [**Bright Brass**] [**Gold Dust**] [**Oil-Rubbed Bronze**] [**Satin Nickel**] [**Stone**] [**White**].

8. Crank and Sash Lock Color, Estate: [**Antique Brass**] [**Bright Brass**] [**Brushed Chrome**] [**Distressed** **Bronze**] [**Distressed Nickel**] [**Oil-Rubbed Bronze**] [**Polished Chrome**] [**Satin Nickel**].

Editor Note: Sub-paragraph below applies to casement windows only. Retain when window opening control device is required.

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

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.

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

Editor Note: Retain sub-paragraphs below for double-hung and double-hung insert windows and edit to suit Project requirements. Die-cast zinc applies to all sash locks except Estate Series plated finishes which are forged brass.

11. Sash Lock Material: [**Die-cast zinc**] [**Forged brass**].

12. Sash Lift Type and Material: Surface mounted, die-cast zinc.

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

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

Editor Note: Sash lifts are optional. Retain paragraph below when sash lifts are required.

14. Sash Lock and Sash Lift Material and Style: Die-cast zinc[**Classic Series**] [**Estate**] [**Traditiona**l].

15. Tilt-Wash Mechanism Material and Color: Injection molded polymer, [**White**] [**Gray**].

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

17. Jamb Liner Material and Color: Rigid vinyl, [**White**] [**Gray**].

18. Window Opening Control Device: Provide device to restrict operable sash to less than four inches maximum clear opening and releasable, in compliance with ASTM F2090.

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.

19. Vent Limitation Hardware: Provide fixed vent limiters to limit sash travel [**Gray**] [**White**].

Editor Note: Retain sub-paragraphs below for gliding windows and edit to suit Project requirements. White, Stone and Black are injection molded plastic. Metro hardware is injection molded plastic. Estate hardware is plated forged brass. White, Black and Stone are painted finishes. Antique Brass, Bright Brass, Brushed Chrome, Distressed Bronze, Distressed Nickel, Oil-Rubbed Bronze, Polished Chrome, and Satin Nickel are plated finishes.

20. Sash Lock Mechanism Type and Material: Flush mounted rotating sash handle, Metro Style, injection molded plastic, [**White] [Stone] [Black]**.

21. Sash Lock Mechanism Type and Materials: Flush mounted rotating sash handle, Estate Style, forged brass, [**Antique Brass**] [**Bright Brass**] [**Brushed Chrome**] [**Distressed** **Bronze**] [**Distressed Nickel**] [**Oil-Rubbed Bronze**] [**Polished Chrome**] [**Satin Nickel**].

22. Roller Type and Material: Dual adjustable shoe, Teflon-impregnated glass fiber reinforced polymer.

23. Head and Sill Track Material and Color: Rigid vinyl, [**Sandtone**] [**White**].

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.

H. Divided Lights:

Editor Note: Retain sub-paragraph below when Full Divided Light Grilles are required and edit to suit Project requirements. For awning, casement, and casement picture windows, interior grille profile will match interior stop profile chosen previously. Grille spacers will match the insulated glass spacer available in Black, Stainless Steel or White – see glazing articles.

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

1. Interior Style: [**Contoured profile**] [**Match Interior Stop**]
2. Exterior Style: Contoured profile.

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

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

e. Spacer Color: [**Match insulated glass spacer**]

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

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

Editor Note: Retain sub-paragraph below when Simulated Divided Light Grilles are required and edit to suit Project requirements. For awning, casement, and casement picture windows, interior grille profile will match interior stop profile chosen previously.

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

1. Interior Style: [**Contoured profile**] [**Match Interior Stop**]
2. Exterior Style: Contoured profile.

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

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

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

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

I. Insect Screens:

Editor Note: Retain sub-paragraphs below when casement and awning window insect screens are required and edit to suit Project requirements.

1. Type: Conventional.

a. Frame Material: Aluminum.

Editor Note: Match window frame option below applies only to double-hung and gliding windows. Casement and awning windows are available only in White, Stone, Dark Bronze and Black.

b. Painted Finish and Color: Factory-applied baked-on silicone polyester enamel [**Match window frame**] **<Insert color>** **[White] [Stone] [Dark Bronze] [Black]**.

Editor Note: Veneered option is available only on casement and awning windows.

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

Editor Note: Fiberglass option in sub-paragraph below applies only to retractable insect screens.

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

Editor Note: Retain sub-paragraphs below when double-hung, double-hung insert and gliding window insect screens are required and edit to suit Project requirements. Gliding window insect screens are available in half configuration only.

2. Type: Conventional [**full**] [**half**].

a. Frame Material: Aluminum.

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

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

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

J. 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 components are made of polyurethane.

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

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

K. Mullions: [**Laminated veneer lumber**] [**Structural steel**] [**Structural aluminum**] 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. Casement: [**0.29 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

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

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

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

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

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

4. Double-Hung retrofit: [**0.31 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

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

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

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

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

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

7. Casement fixed: [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

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

8. Double-Hung fixed: [**0.29 without grilles**] [**0.31 with grilles**] <**Insert U-Factor value**>.

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

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

1. Casement: [**0.31 without grilles**] [**0.29 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

4. Double-Hung retrofit: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

5. Gliding: [**0.29 without grilles**] [**0.26 with grilles**] <**Insert SHGC value**>.

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

6. Direct-set fixed: [**0.33 without grilles**] [**0.30 with grilles**] <**Insert SHGC value**>.

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

7. Casement fixed: [**0.34 without grilles**] [**0.31 with grilles**] <**Insert SHGC value**>.

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

8. Double-Hung fixed: [**0.33 without grilles**] [**0.30 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.54 without grilles**] [**0.49 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.53 without grilles**] [**0.48 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.53 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

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

4. Double-Hung retrofit: [**0.54 without grilles**] [**0.48 with grilles**] <**Insert VLT value**>.

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

5. Gliding: [**0.49 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

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

6. Direct-set fixed: [**0.58 without grilles**] [**0.52 with grilles**] <**Insert VLT value**>.

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

7. Casement fixed: [**0.60 without grilles**] [**0.53 with grilles**] <**Insert VLT value**>.

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

8. Double-Hung fixed: [**0.57 without grilles**] [**0.51 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: [**26/22**] <**Insert STC/OITC value**>.

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

2. Awning: [**26/21**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**26/23**] <**Insert STC/OITC value**>.

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

4. Gliding: [**26/22**] <**Insert STC/OITC value**>.

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

5. Direct-set fixed: [**30/25**] <**Insert STC/OITC value**>.

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

6. Casement fixed: [**29/25**] <**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.

2. Glazing Configuration: Dual-pane.

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

4. Glass Spacer Color: [**Black**] [**Stainless Steel**] [**White**]

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

6. Opacity: [**Obscure**] [**Rain**] [**Reed**] [**Glue chip**] [**Satin Etch**] [**None**].

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

7. Laminate Interlayer Thickness: 0.060 inch.

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

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

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

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

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

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

4. Double-Hung retrofit: [**0.31 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

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

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

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

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

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

7. Casement fixed: [**0.27 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

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

8. Double-Hung fixed: [**0.30 without grilles**] [**0.31 with grilles**] <**Insert U-Factor value**>.

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

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

1. Casement: [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.19 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.19 without grilles**] [**0.17 with grilles**] <**Insert SHGC value**>.

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

4. Double-Hung retrofit: [**0.19 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

5. Gliding: [**0.18 without grilles**] [**0.16 with grilles**] <**Insert SHGC value**>.

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

6. Direct-set fixed: [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

7. Casement fixed: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

8. Double-Hung fixed: [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.30 without grilles**] [**0.27 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.29 without grilles**] [**0.27 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.29 without grilles**] [**0.26 with grilles**] <**Insert VLT value**>.

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

4. Double-Hung retrofit: [**0.30 without grilles**] [**0.27 with grilles**] <**Insert VLT value**>.

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

5. Gliding: [**0.27 without grilles**] [**0.24 with grilles**] <**Insert VLT value**>.

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

6. Direct-set fixed: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert VLT value**>.

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

7. Casement fixed: [**0.33 without grilles**] [**0.30 with grilles**] <**Insert VLT value**>.

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

8. Double-Hung fixed: [**0.32 without grilles**] [**0.28 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: [**26/22**] <**Insert STC/OITC value**>.

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

2. Awning: [**26/21**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**26/23**] <**Insert STC/OITC value**>.

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

4. Gliding: [**26/22**] <**Insert STC/OITC value**>.

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

5. Direct-set fixed: [**30/25**] <**Insert STC/OITC value**>.

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

6. Casement fixed: [**29/25**] <**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.

2. Glazing Configuration: Dual-pane.

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

4. Glass Spacer Color: [**Black**] [**Stainless Steel**] [**White**]

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

6. Opacity: [**Obscure**] [**Rain**] [**Reed**] [**Glue chip**] [**Satin Etch**] [**None**].

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

7. Laminate Interlayer Thickness: 0.060 inch.

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

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

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

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

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

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

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

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

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

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

6. Direct-set fixed: [**0.26 without grilles**] [**0.27 with grilles**] <**Insert U-Factor value**>.

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

7. Casement fixed: [**0. 26 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

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

8. Double-Hung fixed: [**0.29 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. Casement: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

4. Double-Hung retrofit: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

5. Gliding: [**0.19 without grilles**] [**0.17 with grilles**] <**Insert SHGC value**>.

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

6. Direct-set fixed: [**0.23 without grilles**] [**0.21 with grilles**] <**Insert SHGC value**>.

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

7. Casement fixed: [**0.23 without grilles**] [**0.21 with grilles**] <**Insert SHGC value**>.

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

8. Double-Hung fixed: [**0.22 without grilles**] [**0.20 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.48 without grilles**] [**0.44 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.47 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.48 without grilles**] [**0.42 with grilles**] <**Insert VLT value**>.

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

4. Double-Hung retrofit: [**0.48 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

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

5. Gliding: [**0.44 without grilles**] [**0.39 with grilles**] <**Insert VLT value**>.

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

6. Direct-set fixed: [**0.52 without grilles**] [**0.46 with grilles**] <**Insert VLT value**>.

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

7. Casement fixed: [**0.54 without grilles**] [**0.48 with grilles**] <**Insert VLT value**>.

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

8. Double-Hung fixed: [**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: [**26/22**] <**Insert STC/OITC value**>.

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

2. Awning: [**26/21**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**26/23**] <**Insert STC/OITC value**>.

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

4. Gliding: [**26/22**] <**Insert STC/OITC value**>.

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

5. Direct-set fixed: [**30/25**] <**Insert STC/OITC value**>.

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

6. Casement fixed: [**29/25**] <**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. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

4. Glass Spacer Color: [**Black**] [**Stainless Steel**] [**White**]

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

6. Opacity: [**Obscure**] [**Rain**] [**Reed**] [**Glue chip**] [**Satin Etch**] [**None**].

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

7. Laminate Interlayer Thickness: 0.060 inch.

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

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

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

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

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

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

4. Double-Hung retrofit: [**0.32 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

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

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

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

6. Direct-set fixed: [**0.27 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

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

7. Casement fixed: [**0.28 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

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

8. Double-Hung fixed: [**0.30 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

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

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

1. Casement: [**0.51 without grilles**] [**0.47 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.51 without grilles**] [**0.46 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.51 without grilles**] [**0.45 with grilles**] <**Insert SHGC value**>.

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

4. Double-Hung retrofit: [**0.51 without grilles**] [**0.46 with grilles**] <**Insert SHGC value**>.

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

5. Gliding: [**0.47 without grilles**] [**0.42 with grilles**] <**Insert SHGC value**>.

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

6. Direct-set fixed: [**0.53 without grilles**] [**0.48 with grilles**] <**Insert SHGC value**>.

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

7. Casement fixed: [**0.57 without grilles**] [**0.51 with grilles**] <**Insert SHGC value**>.

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

8. Double-Hung fixed: [**0.55 without grilles**] [**0.49 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.59 without grilles**] [**0.53 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.58 without grilles**] [**0.53 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.58 without grilles**] [**0.52 with grilles**] <**Insert VLT value**>.

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

4. Double-Hung retrofit: [**0.59 without grilles**] [**0.53 with grilles**] <**Insert VLT value**>.

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

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

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

6. Direct-set fixed: [**0.63 without grilles**] [**0.57 with grilles**] <**Insert VLT value**>.

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

7. Casement fixed: [**0.66 without grilles**] [**0.59 with grilles**] <**Insert VLT value**>.

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

8. Double-Hung fixed: [**0.63 without grilles**] [**0.56 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: [**26/22**] <**Insert STC/OITC value**>.

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

2. Awning: [**26/21**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**26/23**] <**Insert STC/OITC value**>.

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

4. Gliding: [**26/22**] <**Insert STC/OITC value**>.

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

5. Direct-set fixed: [**30/25**] <**Insert STC/OITC value**>.

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

6. Casement fixed: [**29/25**] <**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. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

4. Glass Spacer Color: [**Black**] [**Stainless Steel**] [**White**]

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

6. Opacity: [**Obscure**] [**Rain**] [**Reed**] [**Glue chip**] [**Satin Etch**] [**None**].

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

7. Laminate Interlayer Thickness: 0.060 inch.

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

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

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

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

3. Double-Hung: [**0.27 without grilles**] [**0.28 with grilles**] <**Insert U-Factor value**>.

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

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

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

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

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

6. Direct-set fixed: [**0.22 without grilles**] [**0.25 with grilles**] <**Insert U-Factor value**>.

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

7. Casement fixed: [**0.22 without grilles**] [**0.25 with grilles**] <**Insert U-Factor value**>.

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

8. Double-Hung fixed: [**0.25 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. Casement: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.30 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.30 without grilles**] [**0.27 with grilles**] <**Insert SHGC value**>.

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

4. Double-Hung retrofit: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

5. Gliding: [**0.28 without grilles**] [**0.25 with grilles**] <**Insert SHGC value**>.

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

6. Direct-set fixed: [**0.32 without grilles**] [**0.29 with grilles**] <**Insert SHGC value**>.

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

7. Casement fixed: [**0.34 without grilles**] [**0.31 with grilles**] <**Insert SHGC value**>.

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

8. Double-Hung fixed: [**0.32 without grilles**] [**0.29 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.52 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.51 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.52 without grilles**] [**0.46 with grilles**] <**Insert VLT value**>.

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

4. Double-Hung retrofit: [**0.52 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

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

5. Gliding: [**0.48 without grilles**] [**0.42 with grilles**] <**Insert VLT value**>.

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

6. Direct-set fixed: [**0.56 without grilles**] [**0.50 with grilles**] <**Insert VLT value**>.

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

7. Casement fixed: [**0.58 without grilles**] [**0.52 with grilles**] <**Insert VLT value**>.

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

8. Double-Hung fixed: [**0.56 without grilles**] [**0.50 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: [**26/22**] <**Insert STC/OITC value**>.

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

2. Awning: [**26/21**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**26/23**] <**Insert STC/OITC value**>.

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

4. Gliding: [**26/22**] <**Insert STC/OITC value**>.

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

5. Direct-set fixed: [**30/25**] <**Insert STC/OITC value**>.

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

6. Casement fixed: [**29/25**] <**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. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.

4. Glass Spacer Color: [**Black**] [**Stainless Steel**] [**White**]

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

6. Opacity: [**Obscure**] [**Rain**] [**Reed**] [**Glue chip**] [**Satin Etch**] [**None**].

Editor Note: Retain article below when non-impact-resistant glazing using Andersen Low-E4 PassiveSun 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.

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

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

2. Awning: [**0.26 without grilles**] [**0.27 with grilles**] <**Insert U-Factor value**>.

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

3. Double-Hung: [**0.27 without grilles**] [**0.29 with grilles**] <**Insert U-Factor value**>.

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

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

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

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

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

6. Direct-set fixed: [**0.23 without grilles**] [**0.25 with grilles**] <**Insert U-Factor value**>.

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

7. Casement fixed: [**0.23 without grilles**] [**0.25 with grilles**] <**Insert U-Factor value**>.

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

8. Double-Hung fixed: [**0.26 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. Casement: [**0.47 without grilles**] [**0.43 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.46 without grilles**] [**0.42 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.46 without grilles**] [**0.41 with grilles**] <**Insert SHGC value**>.

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

4. Double-Hung retrofit: [**0.47 without grilles**] [**0.42 with grilles**] <**Insert SHGC value**>.

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

5. Gliding: [**0.43 without grilles**] [**0.38 with grilles**] <**Insert SHGC value**>.

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

6. Direct-set fixed: [**0.48 without grilles**] [**0.43 with grilles**] <**Insert SHGC value**>.

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

7. Casement fixed: [**0.52 without grilles**] [**0.47 with grilles**] <**Insert SHGC value**>.

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

8. Double-Hung fixed: [**0.50 without grilles**] [**0.45 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.58 without grilles**] [**0.52 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.57 without grilles**] [**0.51 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.57 without grilles**] [**0.51 with grilles**] <**Insert VLT value**>.

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

4. Double-Hung retrofit: [**0.58 without grilles**] [**0.51 with grilles**] <**Insert VLT value**>.

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

5. Gliding: [**0.53 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

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

6. Direct-set fixed: [**0.62 without grilles**] [**0.55 with grilles**] <**Insert VLT value**>.

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

7. Casement fixed: [**0.64 without grilles**] [**0.57 with grilles**] <**Insert VLT value**>.

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

8. Double-Hung fixed: [**0.61 without grilles**] [**0.55 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: [**26/22**] <**Insert STC/OITC value**>.

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

2. Awning: [**26/21**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**26/23**] <**Insert STC/OITC value**>.

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

4. Gliding: [**26/22**] <**Insert STC/OITC value**>.

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

5. Direct-set fixed: [**30/25**] <**Insert STC/OITC value**>.

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

6. Casement fixed: [**29/25**] <**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 with HeatLock Technology.

2. Glazing Configuration: Dual-pane.

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

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

5. Glass Spacer Color: [**Black**] [**Stainless Steel**] [**White**]

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

7. Opacity: [**Obscure**] [**Rain**] [**Reed**] [**Glue chip**] [**Satin Etch**] [**None**].

Editor Note: Retain article below when insulated 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.

2.10 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. Casement: [**0.33 without grilles**] [**0.34 with grilles**] <**Insert U-Factor value**>.

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

2. Awning: [**0.33 without grilles**] [**0.34 with grilles**] <**Insert U-Factor value**>.

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

3. Double-Hung: [**0.35 without grilles**] [**0.36 with grilles**] <**Insert U-Factor value**>.

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

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

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

5. Casement fixed: [**0.26 without grilles**] [**0.27 with grilles**] <**Insert U-Factor value**>.

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

6. Double-Hung fixed: [**0.31 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

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

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

1. Casement: [**0.31 without grilles**] [**0.29 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.31 without grilles**] [**0.28 with grilles**] <**Insert SHGC value**>.

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

4. Direct-set fixed: [**0.33 without grilles**] [**0.30 with grilles**] <**Insert SHGC value**>.

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

5. Casement fixed: [**0.34 without grilles**] [**0.31 with grilles**] <**Insert SHGC value**>.

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

6. Double-Hung fixed: [**0.33 without grilles**] [**0.30 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.53 without grilles**] [**0.48 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.52 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.53 without grilles**] [**0.47 with grilles**] <**Insert VLT value**>.

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

4. Direct-set fixed: [**0.56 without grilles**] [**0.50 with grilles**] <**Insert VLT value**>.

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

5. Casement fixed: [**0.57 without grilles**] [**0.51 with grilles**] <**Insert VLT value**>.

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

6. Double-Hung fixed: [**0.55 without grilles**] [**0.49 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: [**30/26**] <**Insert STC/OITC value**>.

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

2. Awning: [**31/27**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**32/28**] <**Insert STC/OITC value**>.

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

4. Direct-set fixed: [**35/29**] <**Insert STC/OITC value**>.

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

5. Casement fixed: [**35/30**] <**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 Insulated 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 Spacer Color: [**Black**] [**Stainless Steel**] [**White**].

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

7. Opacity: [**White obscure**] [**None**].

Editor Note: Retain sub-paragraphs below when laminated glass is required.

8. Laminate Interlayer Thickness: 0.090 inch.

Editor Note: Retain article below when 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.

2.11 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. Casement: [**0.33 without grilles**] [**0.34 with grilles**] <**Insert U-Factor value**>.

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

2. Awning: [**0.33 without grilles**] [**0.34 with grilles**] <**Insert U-Factor value**>.

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

3. Double-Hung: [**0.35 without grilles**] [**0.26 with grilles**] <**Insert U-Factor value**>.

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

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

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

5. Casement fixed: [**0.26 without grilles**] [**0.27 with grilles**] <**Insert U-Factor value**>.

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

6. Double-Hung fixed: [**0.32 without grilles**] [**0.33 with grilles**] <**Insert U-Factor value**>.

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

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

1. Casement: [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

4. Direct-set fixed: [**0.20 without grilles**] [**0.18 with grilles**] <**Insert SHGC value**>.

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

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

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

6. Double-Hung fixed: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.30 without grilles**] [**0.27 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.29 without grilles**] [**0.26 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.29 without grilles**] [**0.26 with grilles**] <**Insert VLT value**>.

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

4. Direct-set fixed: [**0.30 without grilles**] [**0.27 with grilles**] <**Insert VLT value**>.

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

5. Casement fixed: [**0.32 without grilles**] [**0.28 with grilles**] <**Insert VLT value**>.

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

6. Double-Hung fixed: [**0.31 without grilles**] [**0.27 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: [**30/26**] <**Insert STC/OITC value**>.

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

2. Awning: [**31/27**] <**Insert STC/OITC value**>.

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

3. Double-Hung: [**32/28**] <**Insert STC/OITC value**>.

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

4. Direct-set fixed: [**35/29**] <**Insert STC/OITC value**>.

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

5. Casement fixed: [**35/30**] <**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: [**Bronze**] [**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 Spacer Color: [**Black**] [**Stainless Steel**] [**White**].

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

7. Opacity: [**White obscure**] [**None**].

Editor Note: Retain article below when 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.

2.12 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. Casement: [**0.32 without grilles**] [**0.34 with grilles**] <**Insert U-Factor value**>.

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

2. Awning: [**0.33 without grilles**] [**0.34 with grilles**] <**Insert U-Factor value**>.

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

3. Double-Hung: [**0.34 without grilles**] [**0.35 with grilles**] <**Insert U-Factor value**>.

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

4. Direct-set fixed: [**0.23 without grilles**] [**0.21 with grilles**] <**Insert U-Factor value**>.

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

5. Casement fixed: [**0.25 without grilles**] [**0.26 with grilles**] <**Insert U-Factor value**>.

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

6. Double-Hung fixed: [**0.31 without grilles**] [**0.32 with grilles**] <**Insert U-Factor value**>.

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

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

1. Casement: [**0.21 without grilles**] [**0.20 with grilles**] <**Insert SHGC value**>.

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

2. Awning: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

3. Double-Hung: [**0.21 without grilles**] [**0.19 with grilles**] <**Insert SHGC value**>.

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

4. Direct-set fixed: [**0.23 without grilles**] [**0.21 with grilles**] <**Insert SHGC value**>.

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

5. Casement fixed: [**0.23 without grilles**] [**0.21 with grilles**] <**Insert SHGC value**>.

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

6. Double-Hung fixed: [**0.22 without grilles**] [**0.20 with grilles**] <**Insert SHGC value**>.

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

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

1. Casement: [**0.48 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

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

2. Awning: [**0.47 without grilles**] [**0.43 with grilles**] <**Insert VLT value**>.

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

3. Double-Hung: [**0.47 without grilles**] [**0.42 with grilles**] <**Insert VLT value**>.

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

4. Direct-set fixed: [**0.50 without grilles**] [**0.45 with grilles**] <**Insert VLT value**>.

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

5. Casement fixed: [**0.51 without grilles**] [**0.46 with grilles**] <**Insert VLT value**>.

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

6. Double-Hung fixed: [**0.49 without grilles**] [**0.44 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: [**30/26**] <**Insert STC/OITC value**>.

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

2. Awning: [**31/27**] <**Insert STC/OITC value**>.

Editor Note: Retain sub-paragraph below for Double-Hung windows.

3. Double-Hung: [**32/28**] <**Insert STC/OITC value**>.

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

4. Direct-set fixed: [**35/29**] <**Insert STC/OITC value**>.

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

5. Casement fixed: [**35/30**] <**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 Impact-Resistant Glass.

2. Glazing Configuration: Monolithic.

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

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

5. Glass Spacer Color: [**Black**] [**Stainless Steel**] [**White**].

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

7. Opacity: [**White obscure**] [**None**].

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

8. Laminate Interlayer Thickness: [**0.030**] [**0.060**] [**0.090**] inch.

Editor Note: Retain article below when clear monolithic impact-resistant glazing 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.

2.13 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 with clear monolithic glass.

1. Casement: [**0.78 without grilles**] [**0.78 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows with clear monolithic glass.

2. Awning: [**0.78 without grilles**] [**0.78 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows with clear monolithic glass.

3. Double-Hung: [**0.77 without grilles**] [**0.77 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for direct-set fixed windows with clear monolithic glass.

4. Direct-set fixed: [**0.82 without grilles**] [**0.82 with grilles**] <**Insert SHGC value**>.

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

Editor Note: Retain sub-paragraph below for casement windows with clear monolithic glass.

1. Casement: [**0.56 without grilles**] [**0.51 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows with clear monolithic glass.

2. Awning: [**0.55 without grilles**] [**0.51 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows with clear monolithic glass.

3. Double-Hung: [**0.56 without grilles**] [**0.50 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for direct-set fixed windows with clear monolithic glass.

4. Direct-set fixed: [**0.60 without grilles**] [**0.54 with grilles**] <**Insert SHGC value**>.

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

Editor Note: Retain sub-paragraph below for casement windows with clear monolithic glass.

1. Casement: [**0.66 without grilles**] [**0.59 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for awning windows with clear monolithic glass.

2. Awning: [**0.64 without grilles**] [**0.58 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows with clear monolithic glass.

3. Double-Hung: [**0.65 without grilles**] [**0.58 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for direct-set fixed windows with clear monolithic glass.

4. Direct-set fixed: [**0.71 without grilles**] [**0.63 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: [**34/29**] <**Insert STC/OITC value**>.

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

2. Awning: [**34/31**] <**Insert STC/OITC value**>.

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

3. Direct-set fixed: [**36/32**] <**Insert STC/OITC value**>.

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

4. Casement fixed: [**37/34**] <**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 Clear Monolithic Impact-Resistant Glass.

2. Glazing Configuration: Monolithic.

3. Tint: None.

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

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

6. Opacity: [**White obscure**] [**None**].

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

7. Laminate Interlayer Thickness: 0.090 inch.

Editor Note: Retain article below when gray monolithic impact-resistant glazing 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.

2.14 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 with gray monolithic glass.

1. Casement: [**0.78 without grilles**] [**0.78 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows with gray monolithic glass.

2. Awning: [**0.78 without grilles**] [**0.78 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows with gray monolithic glass.

3. Double-Hung: [**0.77 without grilles**] [**0.77 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for direct-set fixed windows with gray monolithic glass.

4. Direct-Set fixed: [**0.82 without grilles**] [**0.82 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for casement fixed windows with gray monolithic glass.

5. Casement fixed: 0.78 without grilles <**Insert SHGC value**>.

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

Editor Note: Retain sub-paragraph below for casement windows with gray monolithic glass.

1. Casement: [**0.45 without grilles**] [**0.41 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for awning windows with gray monolithic glass.

2. Awning: [**0.44 without grilles**] [**0.40 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for double-hung windows with gray monolithic glass.

3. Double-Hung: [**0.44 without grilles**] [**0.40 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for direct-set fixed windows with gray monolithic glass.

4. Direct-set fixed: [**0.44 without grilles**] [**0.40 with grilles**] <**Insert SHGC value**>.

Editor Note: Retain sub-paragraph below for casement fixed windows with gray monolithic glass.

5. Casement fixed: 0.44 without grilles <**Insert SHGC value**>.

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

Editor Note: Retain sub-paragraph below for casement windows with gray monolithic glass.

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

Editor Note: Retain sub-paragraph below for awning windows with gray monolithic glass.

2. Awning: [**0.39 without grilles**] [**0.36 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for double-hung windows with gray monolithic glass.

3. Double-Hung: [**0.40 without grilles**] [**0.35 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for direct-set fixed windows with gray monolithic glass.

4. Direct-set fixed: [**0.36 without grilles**] [**0.32 with grilles**] <**Insert VLT value**>.

Editor Note: Retain sub-paragraph below for casement fixed windows with gray monolithic glass.

5. Casement fixed: 0.36 without 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: [**34/29**] <**Insert STC/OITC value**>.

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

2. Awning: [**34/31**] <**Insert STC/OITC value**>.

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

3. Direct-set fixed: [**36/32**] <**Insert STC/OITC value**>.

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

4. Casement fixed: [**37/34**] <**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 Gray Monolithic Impact-Resistant Glass.

2. Glazing Configuration: Monolithic.

3. Tint: Gray.

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

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

6. Opacity: [**White obscure**] [**None**].

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

7. Laminate Interlayer Thickness: 0.090 inch.

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 Unit Installation Guide, installation information in product literature and on product packaging. 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. Refer to manufacturer for guidance on timing for when best to remove protective films and non-permanent labels 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 52 16 – PLASTIC-CLAD WOOD WINDOWS)