**NOTE TO SPECIFIER**  Vitro Architectural Glass; high performance architectural glass.

This section is based on the products of Vitro Architectural Glass, which is located at:

Glass Technology Center
400 Guys Run Rd.
Pittsburgh, PA 15024
Toll Free Tel: (800) 887-6457
Fax: (800) 367-2986
Email:
Web: http://www.vitroglazings.com
[Click Here] for additional information.

Vitro Architectural Glass, North America’s largest and most trusted glass manufacturer, is responsible for many of the commercial glass industry’s most commonly specified products, including high-performance Solarban® low-emissivity (low-e) glasses, Starphire Ultra-Clear® glass and a range of performance-tinted glasses. As a global organization focused on producing glass for the architectural, automotive and containers markets, Vitro is committed to innovation and sustainable manufacturing and end-use, including the development of energy-efficient products and processes. By working closely with customers and partners, Vitro provides expert service and support to ensure that its projects meet or exceed ever-evolving requirements and satisfy demanding sustainability certifications.

PART 1 GENERAL

1.1 SECTION INCLUDES

**NOTE TO SPECIFIER**  Delete types not required.

A. High performance glass of the following types:
   1. Insulating glass.
   2. Low-e insulating glass.
   3. Reflective insulating glass.
   4. Reflective low-e insulating glass.
   5. Monolithic float glass.

1.2 RELATED SECTIONS

**NOTE TO SPECIFIER**  Delete any sections below not relevant to this project; add others as required.

A. Section 08400 - Entrances and Storefronts: Exterior Entrances and Storefront.
B. Section 08500 - Windows: Exterior Windows.
C. Section 08900 - Glazed Curtainwall: Exterior Curtainwall.

1.3 REFERENCES
**NOTE TO SPECIFIER**  Delete references from the list below that are not actually required by the text of the edited section.


B. ASCE 7 - "Minimum Design Loads for Buildings and Other Structures".

C. ASTM International (ASTM):

1.4 DEFINITIONS

A. Manufacturers of Glass Products: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.

C. Interspace: Space between lites of an insulating-glass unit that contains dehydrated air or other specified gas.

D. Sealed Insulating Glass Unit Surface Designations:
   1. Surface 1 - Exterior surface of the outer glass lite.
   2. Surface 2 - Interspace surface of the outer glass lite.
   3. Surface 3 - Interspace surface of the inner glass lite.
   4. Surface 4 - Interior surface of the inner glass lite.

1.5 PERFORMANCE REQUIREMENTS

A. General: Provide glass capable of withstanding thermal movement and wind and impact loads (where applicable) as specified in paragraph B following.

B. Glass Design: Glass thickness designations indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites in the thickness designations indicated for various size openings, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:
   1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
      a. Design Wind Loads: Determine design wind loads applicable to the Project according to ASCE 7, "Minimum Design Loads for Buildings and Other
Structures”: Section 6.5, “Method 2-Analytical Procedure,” based on mean roof heights above grade indicated on Drawings.

** NOTE TO SPECIFIER ** Insert values required for project.

1) Basic Wind Speed: ______ mph.
2) Importance Factor: ______.
3) Exposure Category: ______.

** NOTE TO SPECIFIER ** Delete if not required for project.

b. Specified Design Snow Loads: As indicated on Drawings, but not less than snow loads applicable to Project as required by ASCE 7, "Minimum Design Loads for Buildings and Other Structures”: Section 7.0, “Snow Loads.”

c. Probability of Breakage for Vertical Glazing: ______ lites per 1000 for lites set vertically or not more than 15 degrees off vertical.
   1) Wind Load Duration: Short duration, as defined in ASTM E 1300 or ______ seconds or less.

d. Probability of Breakage for Sloped Glazing: ______ per 1000 for lites set greater than 15 degrees off vertical.
   1) Wind Load Duration: Short duration, as defined in ASTM E 1300 or ______ seconds or less.
   2) Snow Load Duration: Long duration, as defined in ASTM E 1300 or ______ days.

e. Maximum Lateral Deflection: For the following types of glass supported on all 4 edges, provide thickness required that limits center deflection at design wind pressure to ______ times the short side length or 1 inch, whichever is less.
   1) For monolithic-glass lites heat treated to resist wind loads.
   2) For insulating glass.

C. Thermal Movements: Provide glazing that allows for thermal movements resulting from ambient and surface temperatures changes acting on glass framing members and glazing components.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
   1. For monolithic-glass lites, properties are based on units with lites 1/4 inch (6.0 mm) thick.
   2. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
   3. Center-of-Glass Values: Based on using LBL-44789 WINDOW 5.0 computer program for the following methodologies:
      a. U-Factors: NFRC 100 expressed as Btu/ sq. ft. per h per degree F.

1.6 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: For each glass product and glazing material indicated.

C. Verification Samples: For the following products, in the form of 12 inch (305 mm) square samples for insulating glass units.
D. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

E. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.
1. For solar-control low-e-coated glass, provide documentation demonstrating that manufacturer of coated glass is certified by coating manufacturer.

F. Qualification Data: For installers.

G. Product Test Reports: For each of the following types of glazing products.
1. Tinted float glass.
2. Coated float glass.
3. Insulating glass.

H. Warranties: Special warranties specified in this Section.

1.7 QUALITY ASSURANCE

A. Sustainable Design Certification: Glass shall be Cradle to Cradle Certified, minimum Level, Cradle to Cradle Innovation Institute.

B. Fabricator Qualifications: Vitro Certified Fabricator Network, as acceptable to the manufacturer.

C. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association Glazier Certification Program as Level-2 (Senior Glaziers) or Level-3 (Master Glaziers).

D. Source Limitations for Glass: Obtain the following through one source from a single manufacturer for each glass type: Clear float glass, coated float glass and insulating glass.

E. Glass Product Testing: Obtain glass test results for product test reports in "Submittals" Article from a qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program.

F. Glazing Publications: Comply with published recommendations of glass product manufacturers and industry organizations, including but not limited to those below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
3. AAMA: “Sloped Glazing Guidelines.”
4. IGMA: “Guidelines for Sloped Glazing.”

G. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the following testing and inspecting agency:
1. Insulating Glass Certification Council.
2. Associated Laboratories, Inc.
3. Insulating Glass Manufacturers Alliance.
1. Subject to compliance with requirements, obtain safety glazing products permanently marked with certification label of the Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.
2. Lites more than 9 sq ft (0.84 sq m) in area are required to be Category II materials.
3. Where glazing units, including Kind FT glass and laminated glass, are specified in Part 2 articles for glazing lites more than 9 sf (0.84 sq m) in area, provide glazing products that comply with Category II materials, and for lites 9 sf (0.84 sq m) or less in area, provide glazing products that comply with Category I or II materials.

1.8 DELIVERY, STORAGE, AND HANDLING
A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
B. For insulating-glass units that will be exposed to substantial altitude changes, comply with insulating-glass manufacturer's written recommendations for venting and sealing to avoid hermetic seal ruptures.

1.9 WARRANTY
A. Manufacturer's Warranty for Coated-Glass Products: Manufacturer's standard form, made out to the glass fabricator in which the coated glass manufacturer agrees to replace coated glass units that deteriorate during normal use within the specified warranty period. Deterioration of the coated glass is defined as peeling and/or cracking, or discoloration that is not attributed to glass breakage, seal failure, improper installation, or cleaning and maintenance that is contrary to the manufacturer's written instructions.
1. Warranty Period: ______ years from date of Substantial Completion.
B. Manufacturer's Warranty on Insulating Glass: Manufacturer's standard form in which the insulating glass unit manufacturer agrees to replace insulating-glass units that deteriorate during normal use within the specified warranty period. Deterioration of insulating glass units is defined as an obstruction of vision by dust, moisture, or a film on the interior surfaces of the glass caused by a failure of the hermetic seal that is not attributed to glass breakage, improper installation, or cleaning and maintenance that is contrary to the manufacturer's written instructions.
1. Warranty Period: ______ years from date of Substantial Completion.
C. Manufacturer's Warranty on Laminated Glass: Manufacturer's standard form in which the laminated glass manufacturer agrees to replace laminated glass units that deteriorate during normal use within the specified warranty period. Deterioration of laminated glass is defined as defects, such as discoloration, edge separation, or blemishes exceeding those allowed by ASTM C 1172 that are not attributed to glass breakage, improper installation, or cleaning and maintenance that is contrary to the manufacturer's written instructions.
1. Warranty Period: ______ years from date of Substantial Completion.

PART 2  PRODUCTS

2.1 MANUFACTURERS

**NOTE TO SPECIFIER**  Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 GLASS PRODUCTS

A. Annealed Float Glass: ASTM C 1036, Type I (transparent flat glass), Quality-Q3; of class indicated.

B. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent flat glass); Quality-Q3; of class, kind, and condition indicated.
   1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.
   2. Provide Kind HS (heat-strengthened) float glass in place of annealed float glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in Part 1 "Performance Requirements" Article.
   3. For uncoated glass, comply with requirements for Condition A.
   4. For coated vision glass, comply with requirements for Condition C (other uncoated glass).
   5. Provide Kind FT (fully tempered) float glass in place of annealed or Kind HS (heat-strengthened) float glass where safety glass is indicated or required.

C. Sputter-Coated Float Glass: ASTM C 1376, float glass with metallic-oxide or -nitride coating deposited by vacuum deposition process after manufacture and complying with other requirements specified.

D. Tempered Patterned Glass: ASTM C 1048, Kind FT (fully tempered), Type II (patterned flat glass), Class 1 (clear), Form 3 (patterned); and of quality, finish, and pattern specified.

E. Insulating-Glass Units, General: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units and with requirements specified in this Article and in Part 2 "Insulating-Glass Units" Article.
   1. Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in Part 1 "Performance Requirements" Article.
   2. Provide Kind FT (fully tempered) glass lites where safety glass is indicated or required.
   3. Overall Unit Thickness and Thickness of Each Lite: Dimensions indicated for insulating-glass units are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit’s edge.
   5. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
2.3 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.

**NOTE TO SPECIFIER**  Products specified in this Section are intended to be part of the Glazing section. Manufacturer provides glass products to others for installation. Delete products not required.

2.4 GLASS SCHEDULE, INSULATING GLASS

A. Type: Clear Insulating Glass - Clear, low-reflective exterior appearance.
   2. Performance Values: VLT 79 percent; SHGC 0.70; shading coefficient 0.81; exterior reflectance 15 percent; U-value winter 0.47; U-value summer 0.50.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Clear glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

   2. Performance Values: VLT 84 percent; SHGC 0.82; shading coefficient 0.94; exterior reflectance 15 percent; U-value winter 0.47; U-value summer 0.50.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Starphire glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass.

C. Type: Uncoated Tinted Insulating Glass - Light-green, low-reflective exterior appearance.
   2. Performance Values: VLT 69 percent; SHGC 0.50; shading coefficient 0.57; exterior reflectance 13 percent; U-value winter 0.47; U-value summer 0.50.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

D. Type: Uncoated Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
   1. Atlantica + Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 60 percent; SHGC 0.41; shading coefficient 0.47; exterior reflectance 11 percent; U-value winter 0.47; U-value summer 0.50.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

E. Type: Uncoated Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
   1. Azuria + Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 61 percent; SHGC 0.39; shading coefficient 0.45; exterior reflectance 11 percent; U-value winter 0.47; U-value summer 0.50.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

F. Type: Uncoated Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
   1. Solarbronze + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 47 percent; SHGC 0.51; shading coefficient 0.59; exterior reflectance 8 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

G. Type: Uncoated Tinted Insulating Glass - Cool light-gray, low reflective exterior appearance.
1. Solargray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 40 percent; SHGC 0.46; shading coefficient 0.53; exterior reflectance 7 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

H. Type: Uncoated Tinted Insulating Glass - Dark-gray, low-reflective exterior appearance.
1. Graylite II + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 8 percent; SHGC 0.22; shading coefficient 0.25; exterior reflectance 4 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Graylite II glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

I. Type: Uncoated Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
1. Solarblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 50 percent; SHGC 0.49; shading coefficient 0.56; exterior reflectance 9 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

J. Type: Uncoated Tinted Insulating Glass - Dark-blue, low-reflective exterior appearance.
1. Pacifica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 38 percent; SHGC 0.36; shading coefficient 0.41; exterior reflectance 7 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

K. Type: Uncoated Tinted Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
1. Optigray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 56 percent; SHGC 0.52; shading coefficient 0.60; exterior reflectance 10 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optigray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

L. Type: Low-E Clear Insulating Glass Clear, low-reflective exterior appearance.
1. Sungate 400 (2) Clear + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 76 percent; SHGC 0.60; shading coefficient 0.69; exterior reflectance 14 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Clear glass, Sungate 400 (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

M. Type: Low-E Clear Insulating Glass Clear, low-reflective exterior appearance.
1. Sungate 400 (2) Starphire + Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 80 percent; SHGC 0.68; shading coefficient 0.78; exterior reflectance 14 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Starphire glass, Sungate 400 (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass.

N. Type: Low-E Tinted Insulating Glass Clear, low-reflective exterior appearance.
2. Performance Values: VLT 76 percent; SHGC 0.63; shading coefficient 0.73; exterior reflectance 14 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Clear glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

O. Type: Low-E Tinted Insulating Glass - Light-green, low-reflective exterior appearance.
1. Solexia + Sungate 400 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 66 percent; SHGC 0.44; shading coefficient 0.50; exterior reflectance 11 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

P. Type: Low-E Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
1. Atlantica + Sungate 400 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 58 percent; SHGC 0.35; shading coefficient 0.40; exterior reflectance 10 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

Q. Type: Low-E Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
1. Azuria + Sungate 400 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 59 percent; SHGC 0.34; shading coefficient 0.39; exterior reflectance 10 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

R. Type: Low-E Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
1. Solarbronze + Sungate 400 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 46 percent; SHGC 0.44; shading coefficient 0.50; exterior reflectance 8 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

S. Type: Low-E Tinted Insulating Glass - Cool light-gray, low-reflective exterior appearance.
1. Solargray + Sungate 400 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 38 percent; SHGC 0.39; shading coefficient 0.44; exterior reflectance 7 percent; U-value winter 0.32; U-value summer 0.31.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

T. Type: Low-E Tinted Insulating Glass - Dark-gray, low-reflective exterior appearance.
1. Graylite II + Sungate 400 (3) Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 8 percent; SHGC 0.15; shading coefficient 0.17; exterior reflectance 4 percent; U-value winter 0.32; U-value summer 0.31.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Graylite II glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

U. Type: Low-E Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
   1. Solarblue + Sungate 400 (3) Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 48 percent; SHGC 0.42; shading coefficient 0.49; exterior reflectance 8 percent; U-value winter 0.32; U-value summer 0.31.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

V. Type: Low-E Tinted Insulating Glass - Deep-blue, low-reflective exterior appearance.
   1. Pacifica + Sungate 400 (3) Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 37 percent; SHGC 0.30; shading coefficient 0.34; exterior reflectance 7 percent; U-value winter 0.32; U-value summer 0.31.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Sungate 400 (sputtered) coated on third surface (3).

W. Type: Low-E Clear Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
   1. Optigray Clear + Sungate 400 Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 54 percent; SHGC 0.46; shading coefficient 0.52; exterior reflectance 9 percent; U-value winter 0.32; U-value summer 0.231.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Clear glass, Optigray solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

X. Type: Low-E Clear Insulating Glass - Clear, low-reflective exterior appearance.
   1. Solarban 60 (2) Clear + Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 70 percent; SHGC 0.39; shading coefficient 0.45; exterior reflectance 11 percent; U-value winter 0.29; U-value summer 0.27.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Clear glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear (transparent) float glass.

Y. Type: Ultra-Clear Low-E Insulating Glass - Ultra-clear, low-reflective exterior appearance.
   1. Solarban 60 (2) Starphire + Starphire by Vitro Architectural Glass.
   2. Performance Values: VLT 74 percent; SHGC 0.41; shading coefficient 0.48; exterior reflectance 11 percent; U-value winter 0.29; U-value summer 0.27.
   3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Starphire glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass.

Z. Type: Low-E Tinted Insulating Glass - Light-green, low-reflective exterior appearance.
   1. Solarban 60 (2) Solexia + Clear by Vitro Architectural Glass.
   2. Performance Values: VLT 61 percent; SHGC 0.32; shading coefficient 0.37; exterior reflectance 9 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

AA. Type: Low-E Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
1. Solarban 60 (2) Atlantica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 53 percent; SHGC 0.27; shading coefficient 0.32; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

BB. Type: Low-E Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
1. Solarban 60 (2) Azuria + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 54 percent; SHGC 0.28; shading coefficient 0.32; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

CC. Type: Low-E Tinted Insulating Glass - Cool light-gray, low-reflective exterior appearance.
1. Solarban 60 (2) Solargray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 35 percent; SHGC 0.25; shading coefficient 0.29; exterior reflectance 6 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

DD. Type: Low-E Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
1. Solarban 60 (2) Solarbronze + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 42 percent; SHGC 0.28; shading coefficient 0.32; exterior reflectance 7 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

EE. Type: Low-E Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
1. Solarban 60 (2) Solarblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 45 percent; SHGC 0.28; shading coefficient 0.33; exterior reflectance 7 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

FF. Type: Low-E Tinted Insulating Glass - Deep-blue, low-reflective exterior appearance.
1. Solarban 60 (2) Pacifica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 34 percent; SHGC 0.22; shading coefficient 0.26; exterior reflectance 6 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.
GG. Type: Low-E Tinted Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
1. Solarban 60 (2) Optigray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 50 percent; SHGC 0.30; shading coefficient 0.35; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optigray glass, Solarban 60 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

HH. Type: Low-E Tinted Insulating Glass - Light-green, low-reflective exterior appearance.
1. Solexia + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 61 percent; SHGC 0.37; shading coefficient 0.42; exterior reflectance 10 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

II. Type: Low-E Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
1. Atlantica + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 53 percent; SHGC 0.31; shading coefficient 0.36; exterior reflectance 9 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

JJ. Type: Low-E Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
1. Azuria + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 54 percent; SHGC 0.31; shading coefficient 0.36; exterior reflectance 9 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

KK. Type: Low-E Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
1. Solarbronze + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 42 percent; SHGC 0.32; shading coefficient 0.37; exterior reflectance 7 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

LL. Type: Low-E Tinted Insulating Glass - Cool, light-gray, low-reflective exterior appearance.
1. Solargray + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 35 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 7 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

MM. Type: Low-E Tinted Insulating Glass - Dark-gray, low-reflective exterior appearance.
1. Graylite II + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 7 percent; SHGC 0.13; shading coefficient 0.14; exterior reflectance 4 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Graylite II glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

NN. Type: Low-E Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
1. Solarblue + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 45 percent; SHGC 0.33; shading coefficient 0.38; exterior reflectance 7 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

OO. Type: Low-E Tinted Insulating Glass - Deep-blue, low-reflective exterior appearance.
1. Pacifica + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 34 percent; SHGC 0.25; shading coefficient 0.29; exterior reflectance 6 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

PP. Type: Low-E Tinted Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
1. Optigray + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 50 percent; SHGC 0.35; shading coefficient 0.40; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optigray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 60 solar control (sputtered) on third surface (3).

QQ. Type: Low-E Clear Insulating Glass - Clear, low-reflective exterior appearance.
2. Performance Values: VLT 54 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 19 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

RR. Type: Ultra-Clear Low-E Insulating Glass - Ultra-clear, low-reflective exterior appearance.
1. Solarban 67 (2) Starphire + Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 57 percent; SHGC 0.30; shading coefficient 0.34; exterior reflectance 20 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Starphire glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass.

SS. Type: Low-E Tinted Insulating Glass - Light-green, low-reflective exterior appearance.
1. Solarban 67 (2) Solexia + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 47 percent; SHGC 0.25; shading coefficient 0.29; exterior reflectance 16 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.
TT. Type: Low-E Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
1. Solarban 67 (2) Atlantica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 41 percent; SHGC 0.22; shading coefficient 0.26; exterior reflectance 13 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

UU. Type: Low-E Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
1. Solarban 67 (2) Azuria + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 42 percent; SHGC 0.23; shading coefficient 0.26; exterior reflectance 13 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

VV. Type: Low-E Tinted Insulating Glass - Cool light-gray, low-reflective exterior appearance.
1. Solarban 67 (2) Solargray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 27 percent; SHGC 0.20; shading coefficient 0.23; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

WW. Type: Low-E Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
1. Solarban 67 (2) Solarbronze + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 32 percent; SHGC 0.22; shading coefficient 0.25; exterior reflectance 10 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

XX. Type: Low-E Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
1. Solarban 67 (2) Solarblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 34 percent; SHGC 0.22; shading coefficient 0.26; exterior reflectance 10 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

YY. Type: Low-E Tinted Insulating Glass - Deep-blue, low-reflective exterior appearance.
1. Solarban 67 (2) Pacifica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 26 percent; SHGC 0.19; shading coefficient 0.21; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Solarban 67 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

ZZ. Type: Low-E Tinted Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
1. Solarban 67 (2) Optigray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 38 percent; SHGC 0.24; shading coefficient 0.27; exterior reflectance 12 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarban 67 glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Optigray solar control (sputtered) on third surface (3).

AAA. Type: Low-E Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
2. Performance Values: VLT 32 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 9 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

BBB. Type: Low-E Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
2. Performance Values: VLT 41 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 11 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

CCC. Type: Low-E Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
2. Performance Values: VLT 42 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 11 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

DDD. Type: Low-E Tinted Insulating Glass - Cool light-gray, low-reflective exterior appearance.
2. Performance Values: VLT 27 percent; SHGC 0.26; shading coefficient 0.30; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

EEE. Type: Low-E Tinted Insulating Glass - Dark-gray color, low-reflective exterior appearance.
2. Performance Values: VLT 5 percent; SHGC 0.12; shading coefficient 0.14; exterior reflectance 4 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Graylite II glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

FFF. Type: Low-E Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
2. Performance Values: VLT 34 percent; SHGC 0.30; shading coefficient 0.34; exterior reflectance 9 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

GGG. Type: Low-E Tinted Insulating Glass - Deep-blue, low-reflective exterior appearance.
1. Pacifica + Solarban 67 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 26 percent; SHGC 0.23; shading coefficient 0.27; exterior reflectance 7 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

HHH. Type: Low-E Tinted Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
2. Performance Values: VLT 38 percent; SHGC 0.32; shading coefficient 0.36; exterior reflectance 10 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optigray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass Solarban 67 solar control (sputtered) on third surface (3).

III. Type: Low-E Clear Insulating Glass - Clear, low-reflective exterior appearance.
1. Solarban 70XL (2) Starphire + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 64 percent; SHGC 0.27; shading coefficient 0.32; exterior reflectance 12 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

JJJ. Type: Low-E Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
1. Solarban 70XL (2) Atlantica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 51 percent; SHGC 0.24; shading coefficient 0.28; exterior reflectance 9 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

KKK. Type: Low-E Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
1. Solarban 70XL (2) Azuria + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 52 percent; SHGC 0.25; shading coefficient 0.29; exterior reflectance 9 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

LLL. Type: Low-E Tinted Insulating Glass - Cool light-gray, low-reflective exterior appearance.
1. Solarban 70XL (2) Solargray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 34 percent; SHGC 0.20; shading coefficient 0.23; exterior reflectance 6 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

MMM. Type: Low-E Tinted Insulating Glass - Light-green, low-reflective exterior appearance.
1. Solarban 70XL (2) Solexia + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 58 percent; SHGC 0.27; shading coefficient 0.31; exterior reflectance 10 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

NNN. Type: Low-E Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
1. Solarban 70XL (2) Solarbronze + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 40 percent; SHGC 0.21; shading coefficient 0.25; exterior reflectance 7 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

OOO. Type: Low-E Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
1. Solarban 70XL (2) Solarblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 42 percent; SHGC 0.23; shading coefficient 0.26; exterior reflectance 8 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

PPP. Type: Low-E Tinted Insulating Glass - Deep-blue, low-reflective exterior appearance.
1. Solarban 70XL (2) Pacifica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 32 percent; SHGC 0.19; shading coefficient 0.22; exterior reflectance 6 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

QQQ. Type: Low-E Tinted Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
1. Solarban 70XL (2) Optigray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 47 percent; SHGC 0.24; shading coefficient 0.28; exterior reflectance 8 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optigray glass, Solarban 70XL solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

RRR. Type: Low-E Tinted Insulating Glass - Light-green, low-reflective exterior appearance.
1. Solexia + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 56 percent; SHGC 0.32; shading coefficient 0.37; exterior reflectance 11 percent; U-value winter 0.28; U-value summer 0.26
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

SSS. Type: Low-E Tinted Insulating Glass - Emerald-green, low-reflective exterior appearance.
1. Atlantica + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 49 percent; SHGC 0.28; shading coefficient 0.32; exterior reflectance 10 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).
TTT. Type: Low-E Tinted Insulating Glass - Aqua-blue, low-reflective exterior appearance.
1. Azuria + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 49 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 9 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

UUU. Type: Low-E Tinted Insulating Glass - Warm-bronze, low-reflective exterior appearance.
1. Solarbronze + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 38 percent; SHGC 0.26; shading coefficient 0.30; exterior reflectance 8 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

VVV. Type: Low-E Tinted Insulating Glass - Cool light-gray, low-reflective exterior appearance.
1. Solargray + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 32 percent; SHGC 0.24; shading coefficient 0.27; exterior reflectance 7 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

WWW. Type: Low-E Tinted Insulating Glass - Dark gray, low-reflective exterior appearance.
1. Graylite II + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 6 percent; SHGC 0.11; shading coefficient 0.13; exterior reflectance 4 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Graylite II glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

XXX. Type: Low-E Tinted Insulating Glass - Light sky-blue, low-reflective exterior appearance.
1. Solarblue + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 40 percent; SHGC 0.27; shading coefficient 0.32; exterior reflectance 8 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

YYY. Type: Low-E Tinted Insulating Glass.
2. Pacifica + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
3. Performance Values: VLT 31 percent; SHGC 0.22; shading coefficient 0.26; exterior reflectance 6 percent; U-value winter 0.28; U-value summer 0.26.
4. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

ZZZ. Type: Low-E Tinted Insulating Glass - Light-gray, ultra-neutral low-reflective exterior appearance.
1. Optigray + Solarban 70XL (3) by Vitro Architectural Glass.
2. Performance Values: VLT 45 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 9 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optigray glass + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, Solarban 70XL solar control (sputtered) on third surface (3).

AAAA. Type: Low-E Insulating Glass - Steel blue-gray, low-reflective exterior appearance.
1. Solarban z50 (2) Optiblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 51 percent; SHGC 0.32; shading coefficient 0.36; exterior reflectance 8 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optiblue glass, Solarban z50 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

BBBB. Type: Low-E Insulating Glass - Deep steel blue-gray, low-reflective exterior appearance.
1. Solarban z50 (2) Optiblue + Optiblue by Vitro Architectural Glass.
2. Performance Values: VLT 37 percent; SHGC 0.31; shading coefficient 0.35; exterior reflectance 7 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optiblue glass, Solarban z50 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Optiblue glass.

CCCC. Type: Low-E Clear Insulating Glass - Steel blue-gray, low-reflective exterior appearance.
1. Solarban z75 (2) Optiblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 48 percent; SHGC 0.24; shading coefficient 0.28; exterior reflectance 9 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optiblue glass, Solarban z75 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

DDDD. Type: Low-E Clear Insulating Glass - Clear, low reflective exterior appearance.
1. Solarban 72 (2) Starphire + Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 71 percent; SHGC 0.30; shading coefficient 0.34; exterior reflectance 13 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Starphire glass, Solarban 72 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire Clear glass.

EEEE. Type: Reflective Tinted Insulating Glass - Subtly reflective aqua-blue exterior appearance.
1. Vistacool (2) Azuria + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 47 percent; SHGC 0.34; shading coefficient 0.39; exterior reflectance 21 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Vistacool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

FFFF. Type: Reflective Tinted Insulating Glass - Subtly reflective deep-blue exterior appearance.
1. Vistacool (2) Pacifica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 29 percent; SHGC 0.32; shading coefficient 0.37; exterior reflectance 11 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Vistacool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.
GGGG. Type: Reflective Tinted Insulating Glass - Reflective light-green exterior appearance.
1. Solarcool (2) Solexia + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 27 percent; SHGC 0.31; shading coefficient 0.36; exterior reflectance 24 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

HHHH. Type: Reflective Tinted Insulating Glass - Reflective aqua-blue exterior appearance.
1. Solarcool (2) Azuria + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 24 percent; SHGC 0.25; shading coefficient 0.29; exterior reflectance 20 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

IIII. Type: Reflective Tinted Insulating Glass - Reflective deep-blue exterior appearance.
1. Solarcool (2) Pacifica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 15 percent; SHGC 0.25; shading coefficient 0.29; exterior reflectance 10 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

JJJJ. Type: Reflective Tinted Insulating Glass - Reflective light sky-blue exterior appearance.
1. Solarcool (2) Solarblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 20 percent; SHGC 0.32; shading coefficient 0.37; exterior reflectance 15 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

KKKK. Type: Reflective Tinted Insulating Glass - Reflective warm-bronze exterior appearance.
1. Solarcool (2) Solarbronze + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 19 percent; SHGC 0.34; shading coefficient 0.40; exterior reflectance 14 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

LLLL. Type: Reflective Tinted Insulating Glass - Reflective cool light gray exterior appearance.
1. Solarcool (2) Solargray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 16 percent; SHGC 0.32; shading coefficient 0.36; exterior reflectance 11 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

MMMM. Type: Reflective Tinted Solar Control Low-E Insulating Glass - Subtly reflective aqua-blue exterior appearance.
1. Vistacool (2) Azuria + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 42 percent; SHGC 0.26; shading coefficient 0.30; exterior reflectance 20 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Vistacool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).

NNNN. Type: Reflective Tinted Solar Control Low-E Insulating Glass - Subtly reflective deep-blue exterior appearance.
1. **Vistacool (2) Pacifica + Solarban 60 (3) Clear by Vitro Architectural Glass.**
2. **Performance Values:** VLT 42 percent; SHGC 0.26; shading coefficient 0.30; exterior reflectance 20 percent; U-value winter 0.29; U-value summer 0.27.
3. **Insulating Glass Unit Construction:** 1/4 inch (6 mm) Azuria glass, Vistacool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).

**OOOO.** Type: Reflective Tinted Solar Control Low-E Insulating Glass - Reflective light-green exterior appearance.

1. **Solarcool (2) Solexia + Solarban 60 (3) Clear by Vitro Architectural Glass.**
2. **Performance Values:** VLT 24 percent; SHGC 0.19; shading coefficient 0.22; exterior reflectance 24 percent; U-value winter 0.29; U-value summer 0.27.
3. **Insulating Glass Unit Construction:** 1/4 inch (6 mm) Solexia glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).

**PPPP.** Type: Reflective Tinted Solar Control Low-E Insulating Glass - Reflective deep-blue exterior appearance.

1. **Solarcool (2) Pacifica + Solarban 60 (3) Clear by Vitro Architectural Glass.**
2. **Performance Values:** VLT 13 percent; SHGC 0.15; shading coefficient 0.17; exterior reflectance 10 percent; U-value winter 0.29; U-value summer 0.27.
3. **Insulating Glass Unit Construction:** 1/4 inch (6 mm) Pacifica glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).

**QQQQ.** Type: Reflective Tinted Solar Control Low-E Insulating Glass - Reflective aqua-blue exterior appearance.

1. **Solarcool (2) Azuria + Solarban 60 (3) Clear by Vitro Architectural Glass.**
2. **Performance Values:** VLT 21 percent; SHGC 0.17; shading coefficient 0.19; exterior reflectance 19 percent; U-value winter 0.29; U-value summer 0.27.
3. **Insulating Glass Unit Construction:** 1/4 inch (6 mm) Azuria glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).

**RRRR.** Type: Reflective Tinted Solar Control Low-E Insulating Glass - Reflective warm-bronze exterior appearance.

1. **Solarcool (2) Solarbronze + Solarban 60 (3) Clear by Vitro Architectural Glass.**
2. **Performance Values:** VLT 17 percent; SHGC 0.18; shading coefficient 0.21; exterior reflectance 14 percent; U-value winter 0.29; U-value summer 0.27.
3. **Insulating Glass Unit Construction:** 1/4 inch (6 mm) Solarbronze glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).

**SSSS.** Type: Reflective Tinted Solar Control Low-E Insulating Glass - Reflective cool light-gray exterior appearance.

1. **Solarcool (2) Solargray + Solarban 60 (3) Clear by Vitro Architectural Glass.**
2. **Performance Values:** VLT 14 percent; SHGC 0.17; shading coefficient 0.20; exterior reflectance 11 percent; U-value winter 0.29; U-value summer 0.27.
3. **Insulating Glass Unit Construction:** 1/4 inch (6 mm) Solargraye glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).
TTTT. Type: Reflective Tinted Solar Control Low-E Insulating Glass - Reflective light sky-blue exterior appearance.
1. Solarcool (2) Solarblue + Solarban 60 (3) Clear by Vitro Architectural Glass.
2. Performance Values: VLT 17 percent; SHGC 0.18; shading coefficient 0.21; exterior reflectance 14 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass, low-e coating Solarban 60 solar control (sputtered) on third surface (3).

UUUU. Type: Subtly Reflective Solar Control Low-E Insulating Glass - Subtly reflective aqua-blue exterior appearance.
1. Vistacool (2) Azuria + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 38 percent; SHGC 0.24; shading coefficient 0.27; exterior reflectance 21 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Vistacool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).

VVVV. Type: Subtly Reflective Solar Control Low-E Insulating Glass - Subtly reflective deep-blue exterior appearance.
1. Vistacool (2) Pacifica + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 24 percent; SHGC 0.19; shading coefficient 0.22; exterior reflectance 11 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Vistacool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).

WWWW. Type: Reflective Solar Control Low-E Insulating Glass - Reflective light-green exterior appearance.
1. Solarcool (2) Solexia + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 22 percent; shading coefficient 0.17; shading coefficient 0.20; exterior reflectance 24 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).

XXXX. Type: Reflective Solar Control Low-E Insulating Glass - Reflective deep-blue exterior appearance.
1. Solarcool (2) Pacifica + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 12 percent; SHGC 0.13; shading coefficient 0.15; exterior reflectance 10 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).

YYYY. Type: Reflective Solar Control Low-E Insulating Glass - Reflective aqua-blue exterior appearance.
1. Solarcool (2) Azuria + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 19 percent; SHGC 0.15; shading coefficient 0.18; exterior reflectance 19 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).
ZZZZ. Type: Reflective Solar Control Low-E Insulating Glass - Reflective warm-bronze exterior appearance.
1. Solarcool (2) Solarbronze + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 15 percent; SHGC 0.15; shading coefficient 0.17; exterior reflectance 14 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).

AAAA. Type: Reflective Solar Control Low-E Insulating Glass - Reflective cool light-gray exterior appearance.
1. Solarcool (2) Solargray + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 13 percent; SHGC 0.14; shading coefficient 0.16; exterior reflectance 11 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).

BBBB. Type: Reflective Solar Control Low-E Insulating Glass - Reflective light-sky-blue exterior appearance.
1. Solarcool (2) Solarblue + Solarban 70XL (3) Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 16 percent; SHGC 0.15; shading coefficient 0.18; exterior reflectance 14 percent; U-value winter 0.28; U-value summer 0.26.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarcool on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass, low-e coating Solarban 70XL solar control (sputtered) on third surface (3).

CCCC. Type: Low-E Clear Insulating Glass - Clear, reflective exterior appearance.
1. Solarban R100 (2) Clear + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 42 percent; SHGC 0.23; shading coefficient 0.27; exterior reflectance 32 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Clear glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

DDDD. Type: Ultra-Clear Low-E Insulating Glass - Ultra-clear, reflective exterior appearance.
1. Solarban R100 (2) Starphire + Starphire by Vitro Architectural Glass.
2. Performance Values: VLT 44 percent; SHGC 0.23; shading coefficient 0.27; exterior reflectance 33 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Starphire glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Starphire glass.

EEEE. Type: Low-E Tinted Insulating Glass - Emerald-green, reflective exterior appearance.
1. Solarban R100 (2) Atlantica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 32 percent; SHGC 0.19; shading coefficient 0.22; exterior reflectance 20 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Atlantica glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

FFFF. Type: Low-E Tinted Insulating Glass - Aqua-blue, reflective exterior appearance.
1. Solarban R100 (2) Azuria + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 32 percent; SHGC 0.19; shading coefficient 0.22; exterior reflectance 21 percent; U-value winter 0.29; U-value summer 0.27.

3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

GGGGG. Type: Low-E Insulating Glass - Steel blue-gray, reflective exterior appearance.
1. Solarban R100 (2) Optiblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 30 percent; SHGC 0.20; shading coefficient 0.23; exterior reflectance 19 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optiblue glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

HHHHH. Type: Low-E Tinted Insulating Glass - Cool light-gray, reflective exterior appearance.
1. Solarban R100 (2) Solargray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 21 percent; SHGC 0.17; shading coefficient 0.19; exterior reflectance 12 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solargray glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

IIIII. Type: Low-E Tinted Insulating Glass - Light-green, reflective exterior appearance.
1. Solarban R100 (2) Solexia + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 36 percent; SHGC 0.21; shading coefficient 0.24; exterior reflectance 25 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

JJJJJ. Type: Low-E Tinted Insulating Glass - Warm-bronze, reflective exterior appearance.
1. Solarban R100 (2) Solarbronze + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 25 percent; SHGC 0.18; shading coefficient 0.21; exterior reflectance 15 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

KKKKK. Type: Low-E Tinted Insulating Glass - Light sky-blue, reflective exterior appearance.
1. Solarban R100 (2) Solarblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 26 percent; SHGC 0.19; shading coefficient 0.22; exterior reflectance 11 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

LLLLL. Type: Low-E Tinted Insulating Glass - Deep-blue, reflective exterior appearance.
1. Solarban R100 (2) Pacifica + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 20 percent; SHGC 0.16; shading coefficient 0.19; exterior reflectance 11 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.
Type: Low-E Tinted Insulating Glass - Light-gray, ultra-neutral reflective exterior appearance.
1. Solarban R100 (2) Optigray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 29 percent; SHGC 0.20; shading coefficient 0.22; exterior reflectance 18 percent; U-value winter 0.29; U-value summer 0.27.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Optigray glass, Solarban R100 solar control (sputtered) on second surface (2) + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

Type: Reflective Solar Control Low-E Insulating Glass - Reflective light-green exterior appearance.
1. Solarcool (1) Solexia + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 27 percent; SHGC 0.28; shading coefficient 0.32; exterior reflectance 37 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solexia glass, Solarcool on the first surface + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

Type: Reflective Solar Control Low-E Insulating Glass - Reflective deep-blue exterior appearance.
2. Performance Values: VLT 14 percent; SHGC 0.21; shading coefficient 0.24; exterior reflectance 36 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Pacifica glass, Solarcool on the first surface + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

Type: Reflective Solar Control Low-E Insulating Glass - Reflective aqua-blue exterior appearance.
2. Performance Values: VLT 23 percent; SHGC 0.21; shading coefficient 0.25; exterior reflectance 37 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Azuria glass, Solarcool on the first surface + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

Type: Reflective Solar Control Low-E Insulating Glass - Reflective warm-bronze exterior appearance.
1. Solarcool (1) Solarbronze + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 18 percent; SHGC 0.31; shading coefficient 0.35; exterior reflectance 37 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarbronze glass, Solarcool on the first surface + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

Type: Reflective Solar Control Low-E Insulating Glass - Reflective light sky-blue exterior appearance.
1. Solarcool (1) Solarblue + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 19 percent; SHGC 0.29; shading coefficient 0.33; exterior reflectance 37 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solarblue glass, Solarcool on the first surface + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

Type: Reflective Solar Control Low-E Insulating Glass - Reflective cool light-gray exterior appearance.
1. Solarcool (1) Solargray + Clear by Vitro Architectural Glass.
2. Performance Values: VLT 15 percent; SHGC 0.28; shading coefficient 0.32; exterior reflectance 36 percent; U-value winter 0.47; U-value summer 0.50.
3. Insulating Glass Unit Construction: 1/4 inch (6 mm) Solgray glass, Solarcool on the first surface + 1/2 inch (13 mm) air space + 1/4 inch (6 mm) Clear glass.

2.5 GLASS SCHEDULE, MONOLITHIC GLASS

   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 91 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.90
         Shading Coefficient: 1.03 Outdoor Visible Light reflectance: 8 percent.

   1. Tint Color: Solexia by Vitro Architectural Glass.
   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 77 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.62
         Shading Coefficient: 0.71 Outdoor Visible Light reflectance: 8 percent.

   1. Tint Color: Atlantica by Vitro Architectural Glass.
   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 67 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.53.
         Shading Coefficient: 0.61. Outdoor Visible Light Reflectance: 7 percent.

   1. Tint Color: Azuria by Vitro Architectural Glass.
   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 68 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.52.
         Shading Coefficient: 0.59. Outdoor Visible Light Reflectance: 7 percent.

   1. Tint Color: Solarbronze by Vitro Architectural Glass.
   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 53 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.63.
         Shading Coefficient: 0.73. Outdoor Visible Light Reflectance: 6 percent.

   1. Tint Color: Solargray by Vitro Architectural Glass
   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 44 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.58.
         Shading Coefficient: 0.67. Outdoor Visible Light Reflectance: 6 percent.

G. Type: Uncoated Monolithic Tinted Float Glass. Outdoor Appearance: Dark-gray.
   1. Tint Color: Graylite II by Vitro Architectural Glass
   2. Performance Values for 1/4 inch (6 mm) Glass:
   1. Tint Color: Solarblue by Vitro Architectural Glass
   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 9 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.36.
         Shading Coefficient: 0.41. Outdoor Visible Light Reflectance: 4 percent.

   1. Tint Color: Azuria by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass.
      a. Location: Second Surface (2).
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 56 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.61.
         Shading Coefficient: 0.71. Outdoor Visible Light Reflectance: 6 percent.

   1. Tint Color: Solarbronze by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass.
      a. Location: Second Surface (2)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 26 percent. U-Value Winter: 1.03. U-Value Summer: 0.93. SHGC: 0.38.
         Shading Coefficient: 0.44. Outdoor Visible Light Reflectance: 19 percent.

   1. Tint Color: Solargray by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass.
      a. Location: Second Surface (2)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 17 percent. U-Value Winter: 1.03. U-Value Summer: 0.93. SHGC: 0.44.
         Shading Coefficient: 0.51. Outdoor Visible Light Reflectance: 11 percent.

   1. Tint Color: Solarblue by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass
      a. Location: Second Surface (2)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 21 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.45.
         Shading Coefficient: 0.51. Outdoor Visible Light Reflectance: 14 percent.

   1. Tint Color: Pacifica by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass
      a. Location: Second Surface (2)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 16 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.38.
         Shading Coefficient: 0.44. Outdoor Visible Light Reflectance: 10 percent.
   1. Tint Color: Pacifica by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass
      a. Location: First Surface (1)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 16 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.31.
         Shading Coefficient: 0.35. Outdoor Visible Light Reflectance: 36 percent.

   1. Tint Color: Azuria by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass
      a. Location: First Surface (1)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 26 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.31.
         Shading Coefficient: 0.36. Outdoor Visible Light Reflectance: 36 percent.

   1. Tint Color: Solarbronze by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass
      a. Location: First Surface (1)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 21 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.40.
         Shading Coefficient: 0.46. Outdoor Visible Light Reflectance: 38 percent.

   a. Tint Color: Solarblue by Vitro Architectural Glass
   b. Reflective Coating: Solarcool by Vitro Architectural Glass
      1) Location: First Surface (1)
   2. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 21 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.38.
         Shading Coefficient: 0.44. Outdoor Visible Light Reflectance: 36 percent.

   1. Tint Color: Solargray by Vitro Architectural Glass
   2. Reflective Coating: Solarcool by Vitro Architectural Glass
      a. Location: First Surface (1)
   3. Performance Values for 1/4 inch (6 mm) Glass:
      a. VLT: 17 percent. U-Value Winter: 1.02. U-Value Summer: 0.93. SHGC: 0.37.
         Shading Coefficient: 0.43. Outdoor Visible Light Reflectance: 36 percent.

PART 3 EXECUTION

** NOTE TO SPECIFIER ** Products specified in this Section are intended to be part of the Glazing section. Manufacturer provides glass products to others for installation. Delete products not required.

3.1 INSTALLATION

A. Refer to Section 08800 - Glazing for installation requirements.
END OF SECTION