SECTION 08 13 00

ALUMINUM FRAMED DOORS - SLIDING, HINGED ENTRY, PIVOT ENTRY AND FOLDING

Display hidden notes to specifier. (Don't know how? [Click Here](https://www.arcat.com/sd/display_hidden_notes.shtml))

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\*\* NOTE TO SPECIFIER \*\* THERMA-TRU DOORS; Fiberglass and steel exterior door systems, sliding, hinged entry, pivot entry and folding.   
This section is based on the products of THERMA-TRU DOORS, which is located at:1750 Indianwood CircleMaumee, OH 43537Toll Free Tel: 800-346-9142Tel: 260-868-5811Fax: 800-393-3533Email: [request info (stacy.bentley@fbin.com)](https://arcat.com/rfi?action=email&company=THERMA-TRU%252BDOORS&message=RE%253A%2520Spec%2520Question%2520(08130ttd)%253A%2520&coid=41444&spec=08130ttd&rep=&fax=800-393-3533)  
Web: <http://www.thermatru.com>   
 [ [Click Here](https://arcat.com/company/therma-tru-doors-41444) ] for additional information.  
Our roots go back to 1962 when David Welles, a retired Owens Corning executive, purchased a bankrupt building supply company in Toledo, Ohio. In 1983, the company launched its Fiber-Classic style, the first fiberglass door on the market, creating a product never seen before: An entryway door that looked as beautiful as wood but with exceptional performance.  
Today, we are the nation's leading manufacturer of fiberglass and steel exterior door systems, and we are the most preferred brand of entry doors among building professionals. Our attention to detail in styling, including our glass innovations, have brought improved curb appeal and value to our customers' homes, and the security and durability features built into every Therma-Tru door brings home comfort and security.  
We are committed to advancing the industry with quality products that hinge on performance and open the door to style and comfort.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Aluminum-framed sliding glass door systems.
    2. Aluminum-framed hinged glass entry doors.
    3. Aluminum-framed pivot glass entry doors.
    4. Aluminum-framed folding glass wall systems.
  1. RELATED SECTIONS

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

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 03 45 00 - Architectural Precast Concrete.
    3. Section 04 20 00 - Unit Masonry.
    4. Section 05 40 00 - Cold-Formed Metal Framing.
    5. Section 06 10 00 - Rough Carpentry.
    6. Section 06 20 00 - Finish Carpentry.
    7. Section 07 21 19 - Foamed-In-Place Insulation.
    8. Section 07 46 16 - Aluminum Siding.
    9. Section 07 60 00 - Flashing and Sheet Metal.
    10. Section 07 62 00 - Sheet Metal Flashing and Trim.
    11. Section 07 90 00 - Joint Protection.
  1. REFERENCES

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

* + 1. American Architectural Manufacturers Association (AAMA):
       1. AAMA 611 - Voluntary Specifications for Anodized Architectural Aluminum.
       2. AAMA 1503 - Voluntary Test Method for Thermal Transmittance And Condensation Resistance Of Windows, Doors, And Glazed Wall Sections.
    2. ASTM International (ASTM):
       1. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.
       2. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wires, Profiles, and Tubes.
       3. ASTM B241 - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tubes.
       4. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
       5. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
       6. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
       7. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
       8. ASTM E547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
       9. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missiles and Exposed to Cyclic Pressure Differentials
       10. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
    3. American Welding Society (AWS): Structural Welding Code.
    4. Fenestration and Glazing Industry Alliance (FGIA):
    5. Glass Association of North America (GANA): Glazing manual.
    6. Window and Door Manufacturer's Association (WDMA): AAMA/WDMA/CSA 101/I.S.2/A440 - Windows, Skylights and Glass Doors.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data:
        1. Manufacturer's data sheets on each product to be used.
        2. Preparation instruction and recommendations
        3. Storage and handling requirements and recommendations.
        4. Typical installation methods

\*\* NOTE TO SPECIFIER \*\* Delete color selection samples if colors have been pre-selected.

* + 1. Selection Samples: Two complete color chip sets representing manufacturer's full range of stocked colors with a standard size of 2 x 3 inches (50 x 75 mm).

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Verification Samples: Two representative units of each type, size, color, and finish.
       1. Aluminum Finish: Two samples, minimum size of 2 x 3 inches (50 x 75 mm), representing actual material and color.
       2. Assembly Sample: By request only. One sample demonstrating connection details with a maximum size of 12 x 12 x 12 inches (305 x 305 x 305 mm). Glazing included as offered by glass supplier. Sample developed to best represent the specified product.
    2. Shop Drawings: Detailed drawings prepared specifically for the project by manufacturer. Include information not fully detailed in manufacturer's standard product data, including, but not limited to wall elevations and detail sections of every typical composite member.
       1. Show opening dimensions, framed opening tolerances, profiles, product components, anchorages, and accessories.
       2. Include details of materials, construction, and fastener locations.
       3. Include schedule identifying each unit, with marks or numbers referencing Drawings.
       4. Show surrounding substrates and relevant conditions.
    3. Manuals: Manufacturer's maintenance manuals, operating instructions, and warranty registration cards to the general contractor during the completion of the project.
    4. Warranty: Manufacturer's standard warranty.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum twenty (25) years documented experience in fabrication and erection of glass door systems for projects of similar scope.
        1. Manufacturer must use an extruded aluminum system comprised of domestically produced aluminum and is fabricated and assembled in the USA.
        2. Manufacturer must be recognized by NAMI.
        3. Manufacturer must be a member in good standing of the National Glass Association (NGA).
     2. Installer Qualifications: Experienced in performing work in this section. Has specialized in installation of work similar in scope and complexity required for this project for a minimum of five (5) years.
     3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project. Fill in blank below with approximate size of mockup or delete line. Edit as required for project.

* + 1. Mockup:
       1. The intent of the mock-up is to demonstrate surface preparation techniques, quality of workmanship and visual appearance.
       2. Provide sample unit of representative product size, Use manufacturer approved installation methods to determine acceptability of door installation methods. Comply with Division 01 43 39 Quality Assurance
       3. Refinish mock-up area as required to produce acceptable work.
       4. Do not continue with remaining work until workmanship, color, and sheen are approved by the Architect.
       5. Approved mockup shall represent minimum quality required for the Work.
       6. Do not alter or remove mock-up until work is completed or removal is authorized.
       7. Approved mockup shall remain in place within the Work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Store and handle in strict compliance with manufacturer's written instructions and recommendations. Store products in manufacturer's original unopened packaging, covered to protect factory finishes from damage, precipitation, and construction dirt until ready for installation. Store materials off construction grounds in a secure location that is a dry, covered area and protected from weather conditions.
     2. Inspect and report any freight damages to the manufacturer immediately.
     3. Protect from damage due to weather, excessive temperature, and construction operations.
  2. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
  3. WARRANTY

\*\* NOTE TO SPECIFIER \*\* Many components are also warranted by the original manufacturers for greater lengths of time. Reference original component manufacturers' warranties for complete information. The manufacturer offers extended warranties and service contracts on a per project basis.

* + 1. Manufacturer's Warranty: Provide manufacturer's standard limited warranty against defects in materials and workmanship.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: THERMA-TRU DOORS, which is located at:1750 Indianwood CircleMaumee, OH 43537Toll Free Tel: 800-346-9142Tel: 260-868-5811Fax: 800-393-3533Email: [request info (stacy.bentley@fbin.com)](https://arcat.com/rfi?action=email&company=THERMA-TRU%252BDOORS&message=RE%253A%2520Spec%2520Question%2520(08130ttd)%253A%2520&coid=41444&spec=08130ttd&rep=&fax=800-393-3533);Web: <http://www.thermatru.com>
      2. Basis of Design: THERMA-TRU DOORS - Veris Collection.

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

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00 - Product Requirements.
  1. ALUMINUM FRAMED SLIDING GLASS DOOR SYSTEMS
     1. Performance and Design Requirements:

\*\* NOTE TO SPECIFIER \*\* Edit the following section to suit project requirements. Coordinate with manufacturer for the project location, wall size, and local building code to provide a system tailored to your needs.

* + - 1. Air Leakage Performance:
         1. Design, fabricate, assemble, and erect the aluminum glazed system to be permanently free of significant air leakage.
      2. Structural Performance: Structural performance as tested in accordance with ASTM E330; with no glass breakage or permanent damage to fasteners, anchors, hardware, or actuating mechanisms.
         1. Normal wall deflection not exceeding 1/175 of clear span for span lengths of 162 inches (4115 mm) or less and 1/240 plus 1/4 inch (6 mm) for others. Restrict deflection to 3/4-inch (19 mm) maximum for individual glazing lites.
         2. Parallel to wall deflection not exceeding 175 percent of glass edge clearance. Restrict deflection to L/360- or 1/8-inch (3 mm) maximum. Restrict deflection to 1/16-inch (1.6 mm) maximum above doors and/or windows. Increasing the deflection to 1/8 inch (3 mm) to be permitted if the door operation is not affected.
         3. Deflection of the entire assembly, including, but not limited to, glass, not to exceed 1-1/2 inches (38 mm).
      3. Thermal Performance: Tested values, certifications, and simulation protocols.
         1. Thermal Characteristics:

\*\* NOTE TO SPECIFIER \*\* Fill in blanks below. Note this is subject to glass availability and project specific requirements. Consult manufacturer for details.

U-Value: \_\_\_.

SHGC: \_\_\_.

VLT: \_\_\_.

CRF: \_\_\_.

* + - * 1. U-Value: Unit complies with U-value, NFRC rating, or simulation in accordance with NFRC 100 protocol, shown in manufacturer's published data for glazing and sill specified.
        2. Solar Heat Gain Coefficient: Unit to comply with the Solar Heat Gain Coefficient NFRC rated, or simulation in accordance with NFRC 200 protocol, shown in manufacturers published data for the glazing and sill specified.
        3. Visible Light Transmittance: Unit complies with Visible Light Transmittance, NFRC rating, or simulation in accordance with NFRC 200 protocol, shown in manufacturer's published data for glazing and sill specified.
        4. Condensation Resistance Factor: Unit to comply with the Condensation Resistance Factor, NFRC rated, or simulation in accordance with NFRC 500 protocol, shown in manufacturers published data for the glazing and sill specified.
      1. Manufacturer's Certificate/Compliance:

\*\* NOTE TO SPECIFIER \*\* Delete door systems and associated test results not required. Coordinate selection of testing results below with selection of options for 'Basis of Design' in the following Article.

* + - * 1. V2 Thermal Multi Track Door System, with or without pocket, when tested on a typical four panel door.

Unit Size (WxH): 235 inches x 98 inches (5956 mm x 2481 mm).

Panel Size of (WxH) 60 inches x 97 inches (1524mm x 2464 mm).

1-17/32 inch (38.8 mm) Upleg Sill, NCTL-110-25329-1.

Manufacturer's certificates showing door system meets or exceeds R30 Product Designation conforming to AAMA/WDMA/CSA 101.I.S.2/A440 and/or testing indicated.

Air Infiltration Test per ASTM E283:

Force of 0.27 cfm per sq ft (84 L per min per cu m) when tested at 1.57 psf (75 Pa) pressure differential.

Water Penetration Test per ASTM E331:

Water pressure of 4.5 psf (220 Pa) and 5.0 gal per hour per sq ft (204 L per hour per sq m).

Uniform Structural Load Test (ASTM E330):

Design Pressure: +/- 30 psf (1440 Pa).

Structural Overload Test pressure: +/- 45 psf (2160 Pa).

* + - * 1. V2 Non-Thermal Multi Track Door System, with or without pocket, when tested on a typical four panel door.

Unit Size (WxH) 244 x 100 inches (6198mm x 2540 mm).

Panel Size of (WxH) 60-1/2 x 99 inches (1537mm x 2515 mm).

1-1/4 inch (31.7 mm) Integrated Upleg Sill, NCTL-110-25535-1; Results per TAS 202.

Air Infiltration Test per ASTM E283:

Force of 0.14 cfm per sq ft (43 L per min per cu m) when tested at 1.57 psf (75 Pa) pressure differential.

Water Penetration Test per ASTM E331:

Water pressure of 12.0 psf (575 Pa) and 5.0 gal per hour per sq ft (204 L per hour per sq m).

Uniform Structural Load Test (ASTM E330):

Design Pressure: +/- 65 psf (3112 Pa).

Structural Overload Test Pressure: +/- 97.5 psf (4668 Pa).

Forced Entry Resistance per ASTM F842: Passed Grade 10.

Impact and Cycling Tests per TAS 201/TAS 203.

Large Missile Impact.

Cyclic Wind Pressure Loading: +/-80 psf.

Florida Product Approval: Impact FL No. 41857.1.

Florida Product Approval: Non-Impact FL No. 41857.2.

* + 1. Aluminum-Framed Sliding Glass Door Systems:

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required. Consult manufacturer to determine which framing meets project specific requirements.

* + - 1. Basis of Design: V2 Sliding Glass Door System - V2 Hook Rail as manufactured by Therma-Tru Corporation.
      2. Basis of Design: V2 Sliding Glass Door System - V2 Hurricane Hook Rail as manufactured by Therma-Tru Corporation.
      3. Framing Members Thickness: Minimum .080-inch (2 mm) wall thickness for structural members.
      4. Load Bearing: Bottom load bearing system.

\*\* NOTE TO SPECIFIER \*\* Delete configuration options not required. Additional configurations are available.

* + - 1. Configuration: As indicated on Drawings.
      2. Configuration: Dual track.
      3. Configuration: Multi-track.
      4. Configuration: Multi-track, pocketing.
      5. Operation: Manual.

\*\* NOTE TO SPECIFIER \*\* Delete panel size option not required. The minimum panel size for G2 sliding glass doors is 20 inches (508 mm); smaller panels may be available upon engineering approval. Maximum panel size for G2 sliding doors is 5 x 10 ft (1524 x 3048 mm); larger panels may be available depending on application.

* + - 1. Panel Size: As indicated on Drawings.
      2. Panel Size:
         1. Width \_\_ x \_\_ ft (\_\_ x \_\_ mm).
         2. Height \_\_ x \_\_ ft (\_\_ x \_\_ mm).

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Drainage: Factory installed weeping.

\*\* NOTE TO SPECIFIER \*\* Delete glazing accessories if not required or delete glazing accessory type options not required.

* + - 1. Glazing Accessories:
         1. Type: Grilles between the glass, 3/16 x 5/8 inch (5 x 16 mm).
         2. Type: Simulated divided lites, 3/4 x 3/32 inch (9.5 x 2.5 mm).

\*\* NOTE TO SPECIFIER \*\* Delete screens if not required or delete screen type option not required.

* + - 1. Screens:
         1. Type: Genius ZigZag2.
         2. Type: Genius Shear Screen Classic.

\*\* NOTE TO SPECIFIER \*\* Delete sills options not required.

* + - 1. Sills: Low profile thermal slider track sill.
      2. Sills: Standard 1-17/32 inch (38.8 mm) Up leg sill.
      3. Sills: Standard 1-1/4 inch (31.7 mm) Up leg sill (Impact Required)

\*\* NOTE TO SPECIFIER \*\* Hardware is subject to vendor availability. Manufacturer reserves the right to discontinue any hardware option at any time.

* + 1. Hardware:

\*\* NOTE TO SPECIFIER \*\* Delete if sliding door systems not specified in paragraph above.

* + - 1. For Sliding Door Systems:

\*\* NOTE TO SPECIFIER \*\* Delete handles and associated finish options not required.

* + - * 1. Handles: Standard ergonomic handle.

\*\* NOTE TO SPECIFIER \*\* Custom finishes available upon request at additional lead time and/or cost.

Finish: Black.

Finish: White.

Finish: Silver Matte.

Finish: Satin Nickel.

* + - * 1. Handles: Standard Recessed Handle

\*\* NOTE TO SPECIFIER \*\* Custom finishes available upon request at additional lead time and/or cost.

Finish: Clear Anodized.

Finish: Dark Bronze Anodized.

* + - * 1. Handles:

\*\* NOTE TO SPECIFIER \*\* Delete types not required. Custom finishes available upon request at additional lead time and/or cost.

Style and Finish: Inspira, black nickel.

Style and Finish: Inspira, brushed nickel.

Style and Finish: Verge, black nickel.

Style and Finish: Verge, brushed nickel.

Finish: Bushed Nickel.

\*\* NOTE TO SPECIFIER \*\* Delete roller option not required.

* + - 1. Rollers: 3 inches (76 mm) polymer wheels and stainless-steel precision bearings.
      2. Rollers: 3 inches (76 mm) stainless steel wheels and stainless-steel precision bearings (Required for Impact and Structural Approvals)
    1. Materials:

\*\* NOTE TO SPECIFIER \*\* Other alloys and tempers may be used for non-structural members provided they do not void the required warranties. Indicate alloys and tempers clearly on Shop Drawings and in structural calculations.

* + - 1. Aluminum Flashing and Closures:
         1. Alloy and Temper: 6063-T52, 6063-T6, or 6061-T6.
         2. Snap-on Covers and Miscellaneous Non-Structural Trim: Minimum thickness as recommended by manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete the following when not required.

* + - 1. Thermal Breaks: Thermal Insulbar Separation, manufacturer's standard system to provide thermal separation between exterior and interior components.

\*\* NOTE TO SPECIFIER \*\* Delete if not required. Verify with manufacturer if internal reinforcing is required based on framing material, structure, size, and configuration.

* + - 1. Internal Reinforcing:
         1. Structural Aluminum Compliance: ASTM B221 and ASTM B241.
         2. Carbon Steel Compliance: ASTM A36.
         3. Carbon Steel Finish: Factory primed steel, manufacturer recommended primer.

\*\* NOTE TO SPECIFIER \*\* Delete perimeter sealant options not required.

* + - 1. Perimeter Sealant: Manufacturer's standard, color to match framing finish.
      2. Glazing: Double pane glazing, 1 inch (25 mm) insulated glass unit.

\*\* NOTE TO SPECIFIER \*\* Delete outboard glazing lite options not required.

* + - * 1. Standard Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.26.

Visible Light Transmittance: 71 percent.

Solar Heat Gain Coefficient: 0.40.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed laminate(.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

* + - * 1. Enhanced Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 64 percent.

Solar Heat Gain Coefficient: 0.27.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 62 percent.

Solar Heat Gain Coefficient: 0.27.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed laminate(.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 63 percent.

Solar Heat Gain Coefficient: 0.27.

* + - * 1. Turtle Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Annealed laminate(.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

\*\* NOTE TO SPECIFIER \*\* Delete vertical inboard glazing lit options not required.

* + - * 1. Air Spacers: Stainless steel spacer with dual seals of polyisobutylene/silicone and filled with argon gas.
        2. Compliance: ASTM C864.

\*\* NOTE TO SPECIFIER \*\* Discuss specialty glazing options with the manufacturer to determine viability, benefits, and recommended installation locations. Job specification sections can be provided by the manufacturer for the following specialty glazing options. Delete if not required.

* + - 1. Glazing Accessories:
         1. Decorative mullions.
         2. Simulated Divided Lites (SDL) Flat Profile: 3/4 x 3/32 inches (19 x 4 mm).
         3. Interior muntin grid on insulated glazing.
      2. Fasteners: Aluminum and stainless steel, not causing electrolytic action or corrosion.

\*\* NOTE TO SPECIFIER \*\* Delete the following option if not applicable to project requirements.

* + - 1. Fasteners: Zinc Cadmium-plated, acceptable in locations as approved by manufacturer.
      2. Finish for Exposed Fasteners: To match the finish of aluminum frame.
    1. Finishes:

\*\* NOTE TO SPECIFIER \*\* Delete aluminum door frame finish options not required. Stock/standard anodized finishes available at additional cost. Custom dual color and dual finish options available. If more than one finish is required, indicate locations where each is to be used on the architectural Drawings.

* + - 1. Aluminum Door Frames: Manufacturer's standard Clear Anodized finish, Class I AAMA 611.
      2. Aluminum Door Frames: Manufacturer's standard Dark Bronze Anodized, Class 1 AAMA 611.
      3. Aluminum Door Frames: Powder coating solids finish, Bone White, AAMA 2605.
      4. Aluminum Door Frames: Powder coating solids finish, Fashion Gray, AAMA 2605.
      5. Aluminum Door Frames: Powder coating solids finish, Charcoal, AAMA 2605.
      6. Aluminum Door Frames: Powder coating solids finish, Sandstone, AAMA 2605.
      7. Aluminum Door Frames: Powder coating solids finish, White, AAMA 2605.
      8. Aluminum Door Frames: Powder coating solids finish, Black, AAMA 2605.
      9. Aluminum Screen Frames: White
      10. Aluminum Screen Frames: Black
      11. Aluminum Sill Finish: Manufacturer's standard Clear Anodized finish, Class I AAMA 611.
      12. Aluminum Sill Finish: Manufacturer's standard Dark Bronze Anodized finish, Class I AAMA 611.
    1. Fabrication:
       1. Fabrication must be done at the manufacturing location.
       2. Disassemble only to the extent necessary for shipping and handling limitations.
       3. The manufacturer is to be notified of any field modification prior to the activity commencing.
       4. Fabricate components to allow for accurate and rigid fit of joints and corners. Match components carefully ensuring continuity of line and design. Ensure joints and connections will be flush and weather tight. Ensure slip joints make full, tight contact and are weathertight.
       5. Fabricate components true to detail and free from defects impairing appearance, strength, or durability.
       6. Fabricate with removable sill and head stop.
       7. Reinforce components at anchorage and support points, joints, and attachment points for interfacing work.
  1. ALUMINUM FRAMED HINGED GLASS ENTRY DOORS
     1. Performance and Design Requirements:

\*\* NOTE TO SPECIFIER \*\* Edit the following section to suit project requirements. Coordinate with manufacturer for the project location, wall size, and local building code to provide a system tailored to your needs.

* + - 1. Air Leakage Performance:
         1. Design, fabricate, assemble, and erect the aluminum glazed system to be permanently free of significant air leakage.
      2. Structural Performance: Structural performance as tested in accordance with ASTM E330; with no glass breakage or permanent damage to fasteners, anchors, hardware, or actuating mechanisms.
         1. Normal Wall Deflection:

Span Lengths of 13.5 ft (4.11 m) or Less: 1/175 of clear span or less.

All Other Spans: 1/240 + 1/4 inch (6 mm) for all others.

Restrict deflection to 3/4 inch (19 mm) maximum for individual glazing lites.

* + - * 1. Parallel to Wall Deflection:

Not to exceed 175 percent of glass edge clearance.

Restrict deflection to L/360 or 1/8 inch (3 mm) maximum.

Restrict deflection to 1/16 inch (1.5 mm) maximum above doors and windows.

Deflection of 1/8 inches (3 mm) is acceptable if door operation is not affected

* + - * 1. Deflection of Entire Assembly Including, but not Limited to Glass: Not to exceed 1-1/2 inches (38 mm).
      1. Thermal Performance: Tested values, certifications, and simulation protocols.
         1. Thermal Characteristics:

\*\* NOTE TO SPECIFIER \*\* Fill in blanks below. Note this is subject to glass availability and project specific requirements. Consult manufacturer for details.

U-Value: \_\_\_.

SHGC: \_\_\_.

VLT: \_\_\_.

CRF: \_\_\_.

* + - * 1. U-Value: Unit complies with U-value, NFRC rating, or simulation in accordance with NFRC 100 protocol, shown in manufacturer's published data for glazing and sill specified.
        2. Solar Heat Gain Coefficient: Unit to comply with the Solar Heat Gain Coefficient NFRC rated, or simulation in accordance with NFRC 200 protocol, shown in manufacturers published data for the glazing and sill specified.
        3. Visible Light Transmittance: Unit complies with Visible Light Transmittance, NFRC rating, or simulation in accordance with NFRC 200 protocol, shown in manufacturer's published data for glazing and sill specified.
        4. Condensation Resistance Factor: Unit to comply with the Condensation Resistance Factor, NFRC rated, or simulation in accordance with NFRC 500 protocol, shown in manufacturers published data for the glazing and sill specified.
      1. Manufacturer's Certificate/Compliance:

\*\* NOTE TO SPECIFIER \*\* Delete door systems and associated test results not required. Coordinate selection of testing results below with selection of options for 'Basis of Design' in the following Article.

* + - * 1. V3 Glazed Aluminum Door Single w/ or w/out Sidelite(s) Outswing:

Max. Frame Dimension (WxH):

X - 47.97 x 99.88 inches (1218 x 2537 mm),

OX or XO - 68.72 x 99.88 inches (1745 x 2537 mm).

OXO - 89.47 x 99.88 inches (2272 x 2537 mm).

Door Max. D.L.O. (WxH):

X - 35.25 x 89.25 inches (895 x 2267 mm).

OX or XO - 35.25 x 89.25 inches (895 x 2267 mm).

OXO - 35.25 x 89.25 inches (895 x 2267 mm).

Sidelite Max. D.L.O. (WxH):

X - N/A

OX or XO - 16.75 x 94.06 inches (425 x 2389 mm).

OXO - 16.75 x 94.06 inches (425 x 2389 mm).

Units must meet or exceed the following performance tests.

Hinged Entry Door FL Approval No. 46172.1 (Non-Impact), 46172.5 (Impact); Test Report No. TEL 01463793.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Hinged Entry Door FL Approval No. 46172.9 (HVHZ); Test Report No. TEL 01463792.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + - * 1. V3 Glazed Aluminum Door Double with or without Sidelites Outswing:

Max. Frame Dimension (WxH):

OXXO - 131.72 x 99.88 inches (3346 x 2537 mm).

XX - 90.22 x 99.88 inches (2291 x 2537 mm).

Door Max. D.L.O. (WxH):

OXXO - 35.25 x 89.25 inches (895 x 2267 mm).

XX - 35.25 x 89.25 inches (895 x 2267 mm).

Sidelite Max. D.L.O. (WxH):

OXXO - 16.75 inches x 94.06 inches (425 x 2389 mm).

XX - N/A

Units must meet or exceed the following performance tests.

Hinged Entry Door FL Approval No. 46172.2 (Non-Impact), 46172.6 (Impact); Test Report No. TEL 01463793.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Hinged Entry Door FL Approval No. 46172.10 (HVHZ); Test Report No. TEL 01463792.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + - * 1. V3 Glazed Aluminum Door Single w/ or w/out Sidelites w/ Transom Outswing:

Max. Frame Dimension (WxH):

O/X - 47.97 x 119.69 inches (1218 x 3040 mm).

O/OX or O/XO - 68.72 x 119.69 inches (1745 x 3040 mm).

O/OXO - 89.47 x 119.69 inches (2280 x 3040 mm).

Door Max. D.L.O. (WxH):

O/X - 35.25 x 89.25 inches (895 x 2267 mm).

O/OX or O/XO - 35.25 x 89.25 inches (895 x 2267 mm).

O/OXO - 35.25 x 89.25 inches (895 x 2267 mm).

Sidelite Max. D.L.O. (WxH):

O/X - N/A

O/OX or O/XO - 16.75 x 94.06 inches (425 x 2389 mm).

O/OXO - 16.7 inches x 94.06 inches (425 x 2389 mm).

Transom Max. D.L.O (WxH):

O/X - 43.09 x 6.75 inches (1094 x 171 mm).

O/OX or O/XO - 63.84 x 16.75 inches (1621 x 425 mm).

O/OXO - 84.59 x 16.75 inches (2148 x 425 mm).

Units must meet or exceed the following performance tests.

Hinged Entry Door FL Approval No. 46172.3 (Non-Impact), 46172.7 (Impact); Test Report No. TEL 01463793.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Hinged Entry Door FL Approval No. 46172.11 (HVHZ); Test Report No. TEL 01463792.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + - * 1. V3 Glazed Aluminum Door Double w/ Transom Outswing:

Max. Frame Dimension (WxH):

O/XX - 90.22 x 119.69 inches (2291 x 3040 mm)

Door Max. D.L.O. (WxH):

O/XX - 35.25 x 89.25 inches (895 x 22 67 mm).

Transom Max. D.L.O (WxH):

O/XX - 85.34 x 16.75 inches (2168 x 425 mm).

Units must meet or exceed the following performance tests.

Hinged Entry Door FL Approval No. 46172.4 (Non-Impact), 46172.8 (Impact); Test Report No. TEL 01463793.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Hinged Entry Door FL Approval No. 46172.12 (HVHZ); Test Report No. TEL 01463792.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + 1. Hinged Entry Door:

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required. .

* + - 1. Basis of Design: V2 Hinged Entry Door - V2 Standard Rail as manufactured by Therma-Tru Corporation.
      2. Basis of Design: V3 Hinged Entry Door - V3 Lite Rail as manufactured by Therma-Tru Corporation.

\*\* NOTE TO SPECIFIER \*\* Delete panel size and operation and configuration options not required.

* + - 1. Panel Size (WxH): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm).
      2. Panel Size: As indicated on the Drawings.
      3. Operation and Configuration: Out-swing system.
      4. Operation and Configuration: In-swing system.
      5. Glazing: Double pane glazing, 1 inch (25 mm) insulated glass unit.

\*\* NOTE TO SPECIFIER \*\* Delete outboard glazing lite options not required.

* + - * 1. Standard Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.26.

Visible Light Transmittance: 71 percent.

Solar Heat Gain Coefficient: 0.40.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed Laminate (0.090 inch SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

* + - * 1. Enhanced Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 64 percent.

Solar Heat Gain Coefficient: 0.27.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 62 percent.

Solar Heat Gain Coefficient: 0.27.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed laminate(.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 63 percent.

Solar Heat Gain Coefficient: 0.27.

* + - * 1. Turtle Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Annealed laminate(.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

* + - * 1. Privacy Glass:

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

* + - * 1. Air Spacers:

Stainless steel spacer with dual seals of polyisobutylene/silicone and filled with argon gas.

Aluminum spacer filled with argon gas

* + - * 1. Compliance: ASTM C864.

\*\* NOTE TO SPECIFIER \*\* Delete glazing accessory options not required.

* + - 1. Glazing Accessories:
         1. Decorative mullions.
         2. Simulated Divided Lites (SDL) Traditional Profile: 3/4 x 15/32 inches (19 x 12 mm).
         3. Simulated Divided Lites (SDL) Flat Profile: 3/4 x 3/32 inches (19 x 4 mm).
         4. Interior muntin grid on insulated glazing.
      2. Framing Members: Minimum 0.125 inch (3 mm) wall thickness for structural members.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the others. Consult manufacturer to determine which framing meets project specific requirements.

* + - * 1. V2: Standard Thermal extruded aluminum frame with a thermal isolation separation.

Width: 2.75-inch (69.85 mm).

* + - * 1. V3: Lite Thermal extruded aluminum frame with a thermal isolation separation.

Width: 2.75-inch (69.85 mm).

* + - 1. Perimeter Weather Gaskets: EPDM.

\*\* NOTE TO SPECIFIER \*\* Delete sill options not required.

* + - 1. Sill: Out-swing.
      2. Sill: In-swing. Limited air and water performance.
      3. Sill: ADA approve, both in-swing and out-swing. Limited air and water performance.
      4. Hardware:

\*\* NOTE TO SPECIFIER \*\* Delete handle sets options not required.

* + - * 1. Handle Sets: Heirloom.
        2. Handle Sets: Venture.
        3. Handle Sets: Millennium.
        4. Handle Sets: Realm.
        5. Handle Sets: Inspira.
        6. Handle Sets: Verge.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required. Brass, Satin Nickel, and Oil Rubbed Bronze finishes are not available on Inspira and Verge. Brushed Nickel is not available on Realm.

* + - * 1. Finish: Brass.
        2. Finish: Brushed Nickel.
        3. Finish: Black Nickel.
        4. Finish: Satin Nickel
        5. Finish: Oil Rubbed Bronze.
        6. Lock Set on Swing Doors: 3-point
        7. Concealed Locking Rods: Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Delete hinge option not required.

* + - * 1. Semi-Concealed 3-Knuckle Hinge: Corrosion proof aluminum hinge with stainless steel bushings and security bolt end.
        2. Semi-Concealed 7-Knuckle Hinge: Corrosion proof aluminum hinge with stainless steel bushings and security bolt end.
    1. Materials:
       1. Aluminum: 6063-T5, 6063-T6 alloy and temper.
          1. Framing Members: Thickness based on design loading, cross sectional configuration, and fabrication requirements.
          2. Aluminum Flashing and Closures: 0.040 inches thick, minimum.
          3. Snap-on Covers and Miscellaneous Non-structural Trim: Minimum thickness as recommended by the manufacturer.
       2. Glazing: Refer to product section.

\*\* NOTE TO SPECIFIER \*\* Verify with manufacturer if internal reinforcing is required based on framing material, structure, size, and configuration.

* + - 1. Internal Reinforcing:
         1. Structural Aluminum: ASTM B221/B221M and ASTMB241/B241M.
         2. Shapes and Sizes: To suit installation.
      2. Glazing Gaskets Complying with ASTM C864: EPDM compression type Replaceable.
         1. Compatible with glazing sealant used.
         2. Profile and Hardness: As necessary. Maintain uniform pressure for watertight seal.
         3. Color: Black.
         4. Factory molded corners required at interior.
      3. Setting Blocks, Edge Blocks, and Spacers: As required by manufacturer and compatible with insulated glass where required.
      4. Perimeter Sealant: Manufacturer's standard.
         1. Color: Match framing finish if available, otherwise as selected by Architect from manufacturer's standard range.
      5. Anchors and Fasteners:
         1. Aluminum and stainless steel of type which will not cause electrolytic action or corrosion.
         2. Exposed Fasteners: Finish to match aluminum frame.
    1. Frame Finish:

\*\* NOTE TO SPECIFIER \*\* Delete all but one of the following frame finishes. If more than one finish is required, indicate the locations where each is to be used on the architectural drawings.

* + - 1. Aluminum Finish: Anodized complying with AAMA 611.
         1. Color: Clear.
         2. Color: Dark Bronze.
      2. Aluminum Finish: AAMA 2605.
         1. Color: Manufacturer's standard White.
         2. Color: Manufacturer's standard Black.
         3. Color: Manufacturer's standard Bone White.
         4. Color: Manufacturer's standard Sandstone.
         5. Color: Manufacturer's standard Fashion Gray.
         6. Color: Manufacturer's standard Charcoal.
         7. Color: Manufacturer's standard Split Finish.
    1. Fabrication:
       1. Fabricate components in accordance with shop drawings approved by the Architect.
       2. All major fabrication to be done at the manufacturing location and not onsite.
       3. Manufacturer must remove burrs and rough edges prior to finishing application.
       4. Disassemble only to the extent necessary for shipping and handling limitations.
       5. Notify Manufacturer of any field modification prior to activity commencing.
       6. Fabricate components to allow accurate and rigid fit of joints and corners. Match components carefully ensuring continuity of line and design. Ensure joints and connections are flush and weather tight.

\*\* NOTE TO SPECIFIER \*\* Delete the following if internal reinforcing is not required for this project.

* + - 1. Fabricate components true to detail and free from defects impairing appearance, strength, or durability.
      2. Isolation membrane materials must be used to separate dissimilar metals to prevent galvanic corrosion action between materials.
  1. ALUMINUM FRAMED PIVOT GLASS ENTRY DOORS
     1. Performance and Design Requirements:

\*\* NOTE TO SPECIFIER \*\* Edit the following section to suit project requirements. Coordinate with manufacturer for the project location, wall size, and local building code to provide a system tailored to your needs.

* + - 1. Air Leakage Performance:
         1. Design, fabricate, assemble, and erect the aluminum glazed system to be permanently free of significant air leakage.
      2. Structural Performance: Structural performance as tested in accordance with ASTM E330; with no glass breakage or permanent damage to fasteners, anchors, hardware, or actuating mechanisms.
         1. Normal Wall Deflection:

Span Lengths of 13.5 ft (4115 m) or Less: 1/175 of clear span or less.

All Other Spans: 1/240 + 1/4 inch (6 mm) for all others.

Restrict deflection to 3/4 inch (19 mm) maximum for individual glazing lites.

* + - * 1. Parallel to Wall Deflection:

Not to exceed 175 percent of glass edge clearance.

Restrict deflection to L/360 or 1/8 inch (3 mm) maximum.

Restrict deflection to 1/16 inch (1.5 mm) maximum above doors and windows.

Deflection of 1/8 inches (3 mm) is acceptable if door operation is not affected

* + - * 1. Deflection of Entire Assembly Including, but not Limited to Glass: Not to exceed 1-1/2 inches (38 mm).
      1. Thermal Performance: Tested values, certifications, and simulation protocols.
         1. Thermal Characteristics:

\*\* NOTE TO SPECIFIER \*\* Fill in blanks below. Note this is subject to glass availability and project specific requirements. Consult manufacturer for details.

U-Value: \_\_\_.

SHGC: \_\_\_.

VLT: \_\_\_.

CRF: \_\_\_.

* + - * 1. U-Value: Unit complies with U-value, NFRC rating, or simulation in accordance with NFRC 100 protocol, shown in manufacturer's published data for glazing and sill specified.
        2. Solar Heat Gain Coefficient: Unit to comply with the Solar Heat Gain Coefficient NFRC rated, or simulation in accordance with NFRC 200 protocol, shown in manufacturers published data for the glazing and sill specified.
        3. Visible Light Transmittance: Unit complies with Visible Light Transmittance, NFRC rating, or simulation in accordance with NFRC 200 protocol, shown in manufacturer's published data for glazing and sill specified.
        4. Condensation Resistance Factor: Unit to comply with the Condensation Resistance Factor, NFRC rated, or simulation in accordance with NFRC 500 protocol, shown in manufacturers published data for the glazing and sill specified.
      1. Manufacturer's Certificate/Compliance:

\*\* NOTE TO SPECIFIER \*\* Delete door systems and associated test results not required. Coordinate selection of testing results below with selection of options for 'Basis of Design' in the following Article.

* + - * 1. V3 Glazed Aluminum Pivot Door Single w/ or w/out Sidelite(s) Outswing:

Max. Frame Dimension (WxH):

X - 47.97 x 99.88 inches (1218 x 2537 mm).

OX or XO - 68.72 x 99.88 inches (1745 x 2537 mm).

OXO - 89.47 x 99.88 inches (2272 x 2537 mm).

Door Max. D.L.O. (WxH):

X - 35.25 x 89.25 inches (895 x 2267 mm).

OX or XO - 35.25 x 89.25 inches (895 x 2267 mm).

OXO - 35.25 x 89.25 inches (895 x 2267 mm).

Sidelite Max. D.L.O. (WxH):

X - N/A

OX or XO - 16.75 x 94.06 inches (425 x 4929 mm).

OXO - 16.75 x 94.06 inches (425 x 4929 mm).

Units must meet or exceed the following performance tests.

Pivot Entry Door FL Approval No. 46173.1 (Non-Impact), 46173.5 (Impact); Test Report No. TEL 01463795.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Pivot Entry Door FL Approval No. 46173.9 (HVHZ); Test Report No. TEL 01463794.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + - * 1. V3 Glazed Aluminum Pivot Door Double with or without Sidelites Outswing:

Max. Frame Dimension (WxH):

OXXO - 131.72 inches x 99.88 inches (3346 x 2537 mm).

XX - 90.22 inches x 99.88 inches 2292 x 2537 mm).

Door Max. D.L.O. (WxH):

OXXO - 35.25 inches x 89.25 inches (895 x 2267 mm).

XX - 35.25 inches x 89.25 inches (895 x 2267 mm).

Sidelite Max. D.L.O. (WxH):

OXXO - 16.75 inches x 94.06 inches (425 x 4929 mm).

XX - N/A.

Units must meet or exceed the following performance tests.

Pivot Entry Door FL Approval No. 46173.2 (Non-Impact), 46173.6 (Impact); Test Report No. TEL 01463795.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Pivot Entry Door FL Approval No. 46173.10 (HVHZ); Test Report No. TEL 01463794.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + - * 1. V3 Glazed Aluminum Pivot Door Single w/ or w/out Sidelites w/ Transom Outswing:

Max. Frame Dimension (WxH):

O/X - 47.97 inches x 119.69 inches (1218 x 3040 mm).

O/OX or O/XO - 68.72 inches x 119.69 inches (1745 x 3040 mm).

O/OXO - 89.47 inches x 119.69 inches (2273 x 3040 mm).

Door Max. D.L.O. (WxH):

O/X - 35.25 inches x 89.25 inches (895 x 2267 mm).

O/OX or O/XO - 35.25 inches x 89.25 inches (895 x 2267 mm).

O/OXO - 35.25 inches x 89.25 inches (895 x 2267 mm).

Sidelite Max. D.L.O. (WxH):

O/X - N/A

O/OX or O/XO - 16.75 inches x 94.06 inches (425 x 4929 mm).

O/OXO - 16.7 inches x 94.06 inches (425 x 4929 mm).

Transom Max. D.L.O (WxH):

O/X - 43.09 x 16.75 inches (1094 x 425 mm).

O/OX or O/XO - 63.84 x 16.75 inches (1621 x 425 mm).

O/OXO - 84.59 x 16.75 inches 2149 x 425 mm).

Units must meet or exceed the following performance tests.

Pivot Entry Door FL Approval No. 46173.3 (Non-Impact), 46173.7 (Impact); Test Report No. TEL 01463795.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Pivot Entry Door FL Approval No. 46173.11 (HVHZ); Test Report No. TEL 01463794.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + - * 1. V3 Glazed Aluminum Pivot Door Double w/ Transom Outswing:

Max. Frame Dimension (WxH):

O/XX - 90.22 x 119.69 inches (2291 x 3040 mm).

Door Max. D.L.O. (WxH):

O/XX - 35.25 x 89.25 inches (895 x 2267 mm).

Transom Max. D.L.O (WxH):

O/XX - 85.34 x 16.75 inches (2168 x 425 mm).

Units must meet or exceed the following performance tests.

Pivot Entry Door FL Approval No. 46173.4 (Non-Impact), 46173.8 (Impact); Test Report No. TEL 01463795.

Structural Tests per ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per ASTM E1886/E1996.

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

Pivot Entry Door FL Approval No. 46173.12 (HVHZ); Test Report No. TEL 01463794.

Structural Tests per TAS 202/ASTM E330:

Design Pressure: +/-50 psf.

Structural Load Pressure: +/-75 psf.

Forced Entry: Pass.

Impact and Cycling Tests per TAS 201/TAS 203:

Large Missile Impact: Missile Level D.

Fatigue Load Cycling: +/-50 psf.

* + 1. Pivot Entry Door:

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required. .

* + - 1. Basis of Design: V2 Pivot Entry Door - V2 Standard Rail as manufactured by Therma-Tru Corporation.
      2. Basis of Design: V3 Pivot Entry Door - V3 Lite Rail as manufactured by Therma-Tru Corporation.

\*\* NOTE TO SPECIFIER \*\* Delete panel size and operation and configuration options not required.

* + - 1. Panel Size (WxH): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm).
      2. Panel Size: As indicated on the Drawings.
      3. Operation and Configuration: Out-swing system.
      4. Operation and Configuration: In-swing system.
      5. Glazing: Double pane glazing, 1 inch (25 mm) insulated glass unit.

\*\* NOTE TO SPECIFIER \*\* Delete outboard glazing lite options not required.

* + - * 1. Standard Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.26.

Visible Light Transmittance: 71 percent.

Solar Heat Gain Coefficient: 0.40.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed Laminate (0.090 inch SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

* + - * 1. Enhanced Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 64 percent.

Solar Heat Gain Coefficient: 0.27.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 62 percent.

Solar Heat Gain Coefficient: 0.27.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed laminate(.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 63 percent.

Solar Heat Gain Coefficient: 0.27.

* + - * 1. Turtle Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Annealed laminate(.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

* + - * 1. Privacy Glass:

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

* + - * 1. Air Spacers:

Stainless steel spacer with dual seals of polyisobutylene/silicone and filled with argon gas.

Aluminum spacer filled with argon gas

* + - * 1. Compliance: ASTM C864.

\*\* NOTE TO SPECIFIER \*\* Delete glazing accessory options not required.

* + - 1. Glazing Accessories:
         1. Decorative mullions.
         2. Simulated Divided Lites (SDL) Traditional Profile: 3/4 x 15/32 inches (19 x 12 mm).
         3. Simulated Divided Lites (SDL) Low Profile: 3/4 x 5/32 inches (19 x 4 mm).
         4. Interior muntin grid on insulated glazing.
      2. Framing Members: Minimum 0.125 inch (3 mm) wall thickness for structural members.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the others. Consult manufacturer to determine which framing meets project specific requirements.

* + - * 1. V2: Standard Thermal extruded aluminum frame with a thermal isolation separation.

Width: 2.75-inch (69.85 mm).

* + - * 1. V3: Lite Thermal extruded aluminum frame with a thermal isolation separation.

Width: 2.75-inch (69.85 mm).

* + - 1. Perimeter Weather Gaskets: EPDM.
      2. Sill: ADA approve, both in-swing and out-swing. Limited air and water performance.
      3. Hardware:

\*\* NOTE TO SPECIFIER \*\* Delete handle sets options not required.

* + - * 1. Handle Sets: Heirloom.
        2. Handle Sets: Venture.
        3. Handle Sets: Millennium.
        4. Handle Sets: Realm.
        5. Handle Sets: Inspira.
        6. Handle Sets: Verge.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required. Brass, Satin Nickel, and Oil Rubbed Bronze finishes are not available on Inspira and Verge. Brushed Nickel is not available on Realm.

* + - * 1. Finish: Brass.
        2. Finish: Brushed Nickel.
        3. Finish: Black Nickel.
        4. Finish: Satin Nickel
        5. Finish: Oil Rubbed Bronze.
        6. Lock Set on Swing Doors: 3-point
        7. Concealed Locking Rods: Stainless steel.
        8. Hardware: Bottom and top pivoting hardware.
    1. Materials:
       1. Aluminum: 6063-T5, 6063-T6 alloy and temper.
          1. Framing Members: Thickness based on design loading, cross sectional configuration, and fabrication requirements.
          2. Aluminum Flashing and Closures: 0.040 inches thick, minimum.
          3. Snap-on Covers and Miscellaneous Non-structural Trim: Minimum thickness as recommended by the manufacturer.
       2. Glazing: Refer to product section.

\*\* NOTE TO SPECIFIER \*\* Verify with manufacturer if internal reinforcing is required based on framing material, structure, size, and configuration.

* + - 1. Internal Reinforcing:
         1. Structural Aluminum: ASTM B221/B221M and ASTMB241/B241M.
         2. Shapes and Sizes: To suit installation.
      2. Glazing Gaskets Complying with ASTM C864: EPDM compression type Replaceable.
         1. Compatible with glazing sealant used.
         2. Profile and Hardness: As necessary. Maintain uniform pressure for watertight seal.
         3. Color: Black.
         4. Factory molded corners required at interior.
      3. Setting Blocks, Edge Blocks, and Spacers: As required by manufacturer and compatible with insulated glass where required.
      4. Perimeter Sealant: Manufacturer's standard.
         1. Color: Match framing finish if available, otherwise as selected by Architect from manufacturer's standard range.
      5. Anchors and Fasteners:
         1. Aluminum and stainless steel of type which will not cause electrolytic action or corrosion.
         2. Exposed Fasteners: Finish to match aluminum frame.
    1. Frame Finish:

\*\* NOTE TO SPECIFIER \*\* Delete all but one of the following frame finishes. If more than one finish is required, indicate the locations where each is to be used on the architectural drawings.

* + - 1. Aluminum Finish: Anodized complying with AAMA 611.
         1. Color: Clear.
         2. Color: Dark Bronze.
      2. Aluminum Finish: AAMA 2605.
         1. Color: Manufacturer's standard White.
         2. Color: Manufacturer's standard Black.
         3. Color: Manufacturer's standard Bone White.
         4. Color: Manufacturer's standard Sandstone.
         5. Color: Manufacturer's standard Fashion Gray.
         6. Color: Manufacturer's standard Charcoal.
         7. Color: Manufacturer's standard Split Finish.
    1. Fabrication:
       1. Fabricate components in accordance with shop drawings approved by the Architect.
       2. All major fabrication to be done at the manufacturing location and not onsite.
       3. Manufacturer must remove burrs and rough edges prior to finishing application.
       4. Disassemble only to the extent necessary for shipping and handling limitations.
       5. Notify Manufacturer of any field modification prior to activity commencing.
       6. Fabricate components to allow accurate and rigid fit of joints and corners. Match components carefully ensuring continuity of line and design. Ensure joints and connections are flush and weather tight.

\*\* NOTE TO SPECIFIER \*\* Delete the following if internal reinforcing is not required for this project.

* + - 1. Fabricate components true to detail and free from defects impairing appearance, strength, or durability.
      2. Isolation membrane materials must be used to separate dissimilar metals to prevent galvanic corrosion action between materials.
  1. ALUMINUM FRAMED FOLDING GLASS DOOR SYSTEMS
     1. Performance and Design Requirements:

\*\* NOTE TO SPECIFIER \*\* Edit the following section to suit project requirements. Coordinate with manufacturer for the project location, wall size, and local building code to provide a system tailored to your needs.

* + - 1. Air Leakage Performance:
         1. Design, fabricate, assemble, and erect the aluminum glazed system to be permanently free of significant air leakage.
         2. Significant Air Leakage: A differential test pressure amounting to 20 percent of specified strength performance pressure required with operable doors, or joints, if any, sealed to prevent crack leakage.
      2. Structural Performance: Structural performance as tested in accordance with ASTM E330; with no glass breakage or permanent damage to fasteners, anchors, hardware, or actuating mechanisms.
         1. Normal Wall Deflection:

For Clear Span Lengths of 162 inches (4115 mm) or Less:

No more than 1/175.

For Clear Span Lengths Greater than 162 inches (4115 mm):

1/240 plus 1/4 inch (6 mm) for others.

For Individual Glazing Lites:

Restrict deflection to 3/4 inch (19 mm) maximum.

* + - * 1. Parallel to Wall Deflection:

Glass Edge Clearance: Not exceeding 175 percent.

Deflection: L/360 or 1/8 inch (3 mm) maximum.

Deflection Above Doors and/or Windows: 1/16-inch (1.6 mm) maximum.

Deflection to 1/8 inch (3 mm) is permittable if the unit operation is not affected.

* + - * 1. Deflection of Entire Assembly, Including, but not Limited to, Glass: Not to exceed 1-1/2 inches (38 mm).
      1. Thermal Performance: Tested values, certifications, and simulation protocols.
         1. Thermal Characteristics:

\*\* NOTE TO SPECIFIER \*\* Fill in blanks below. Note this is subject to glass availability and project specific requirements. Consult manufacturer for details.

U-Value: \_\_\_.

SHGC: \_\_\_.

VLT: \_\_\_.

CRF: \_\_\_.

* + - * 1. U-Value: Unit complies with U-value, NFRC rating, or simulation in accordance with NFRC 100 protocol, shown in manufacturer's published data for glazing and sill specified.
        2. Solar Heat Gain Coefficient: Unit to comply with the Solar Heat Gain Coefficient NFRC rated, or simulation in accordance with NFRC 200 protocol, shown in manufacturers published data for the glazing and sill specified.
        3. Visible Light Transmittance: Unit complies with Visible Light Transmittance, NFRC rating, or simulation in accordance with NFRC 200 protocol, shown in manufacturer's published data for glazing and sill specified.
        4. Condensation Resistance Factor: Unit to comply with the Condensation Resistance Factor, NFRC rated, or simulation in accordance with NFRC 500 protocol, shown in manufacturers published data for the glazing and sill specified.
      1. Manufacturer's Certificate/Compliance:

\*\* NOTE TO SPECIFIER \*\* Delete door systems and associated test results not required. Coordinate selection of testing results below with selection of options for 'Basis of Design' in the following Article.

* + - * 1. V2 Folding Glass Wall Systems: 3x8 Panel Infold and Outfold Aluminum:

Standard Sill Test No. NCTL-110-25533-1 (TAS 202):

Frame Size (WxH): 223 x 100.5 inches (5664 x 2553 mm).

Panel Size (WxH): 36 x 96 inches (914 x 2438 mm).

Air Infiltration Test per ASTM E283 when tested to 1.57 psf: Specimen 1 (Outfold): Less than 0.01 cfm/sqft. Specimen 2 (Infold): 0.02 cfm/sqft. Specimen 3 (Infold): 0.07 cfm/sqft. Specimen 4 (Outfold): 0.02 cfm/sqft.

Water Penetration Resistance per ASTM E331: Specimen 1 (Outfold): 12 psf. Specimen 2 (Infold): 9 psf.

Uniform Load Test per ASTM E330: All Specimens Design Pressure: +/-80 psf. All Specimens Structural Overload Pressure: +/-120 psf.

Impact & Cycling Report (TAS 201/TAS 203): All Specimens: Large Missile Impact. All Specimens: Cyclic Wind Pressure Loading: +/-80 psf. All Specimens: Forced Entry Resistance: Passed per ASTM F588-07 (Grade 10) and AAMA 1304.

Flush Sill Test No. NCTL-110-25536-1 (TAS 202):

Frame Size (WxH): 216.125 x 100.5 inches (5490 x 2552 mm).

Panel Size (WxH): 36 x 96 inches (914 x 2438 mm).

Air Infiltration Test per ASTM E283 when tested to 1.57 psf: Specimen 3: 0.09 cfm/sqft.

Water Penetration Resistance per ASTM E331: All Specimens: 9 psf.

Uniform Load Test per ASTM E330: a)Specimen 2 Design Pressure: +/-70 psf. Specimens 3 & 4 Design Pressure: +/-80 psf. Specimen 2 Structural Overload Pressure: +/-105 psf. Specimens 3 & 4 Structural Overload Pressure: +/-120 psf.

Impact and Cycling Report (TAS 201/TAS 203): All Specimens: Large Missile Impact. All Specimens: Cyclic Wind Pressure Loading: +/-80 psf. All Specimens: Forced Entry Resistance: Passed per AAMA 1304.

V2 FGW 3x8 Panel Outfold Aluminum Reinforced:

Impact (41856.1).

Non-Impact (41856.2).

Panel Size (WxH): 36 x 96 inches (914 x 2438 mm).

Panel D.L.O. (WxH): 29 x 89 inches (737 x 2260 mm).

* + 1. Folding Glass Wall Systems:

\*\* NOTE TO SPECIFIER \*\* Delete folding wall systems and associated test results not required. Coordinate selection of testing results below with selection of options for 'Basis of Design' in the following Article.

* + - 1. Basis of Design V2 Folding Glass Wall System - V2 Standard Rail as manufactured by Therma-Tru Corporation.
      2. Basis of Design: V3 Folding Glass Wall System - V3 Lite Rail as manufactured by Therma-Tru Corporation.
    1. Framing Members: Minimum 0.125 inch (3 mm) wall thickness for structural members.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the others. Consult manufacturer to determine which framing meets project specific requirements.

* + - 1. V2: Standard Thermal extruded aluminum frame with a thermal isolation separation.
         1. Width: 2.75-inch (69.85 mm).
      2. V3: Lite Thermal extruded aluminum frame with a thermal isolation separation.
         1. Width: 2.75-inch (69.85 mm).
    1. Hardware: For folding.

\*\* NOTE TO SPECIFIER \*\* Delete handle options not required.

* + - 1. Handles: Heirloom.
      2. Handles: Venture.
      3. Handles: Millennium.
      4. Handles: Realm.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

* + - 1. Finish: Brass.
      2. Finish: Brushed Nickel.
      3. Finish: Black Nickel.
      4. Finish: Satin Nickel.
      5. Finish: Oil-Rubbed Bronze.
      6. Glazing: Double pane glazing, 1 inch (25 mm) insulated glass unit.

\*\* NOTE TO SPECIFIER \*\* Delete outboard glazing lite options not required.

* + - * 1. Standard Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.26.

Visible Light Transmittance: 71 percent.

Solar Heat Gain Coefficient: 0.40.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed Laminate (0.090 inch SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 70 percent.

Solar Heat Gain Coefficient: 0.40.

* + - * 1. Enhanced Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 64 percent.

Solar Heat Gain Coefficient: 0.27.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 62 percent.

Solar Heat Gain Coefficient: 0.27.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Enhanced Low-E coating on surface two (With or without Neat coating).

Inboard Glazing Lite: Annealed laminate (0.090 inch SGP interlayer) clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 63 percent.

Solar Heat Gain Coefficient: 0.27.

* + - * 1. Turtle Low-E Coating:

3/16 inch (5 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

1/4 inch (6 mm) Glass:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Tempered clear glass.

U-Value (Argon Fill): 0.24.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

3/16 inch (5 mm) Glass w/ SGP Interlayer:

Outboard Glazing Lite: Tempered clear glass with Turtle Low-E coating on surface two.

Inboard Glazing Lite: Annealed laminate (0.090 SGP interlayer) clear glass.

U-Value (Argon Fill): 0.25.

Visible Light Transmittance: 38 percent.

Solar Heat Gain Coefficient: 0.18.

* + - * 1. Air Spacers:

Stainless steel spacer with dual seals of polyisobutylene/silicone and filled with argon gas.

Aluminum spacer filled with argon gas.

* + - * 1. Compliance: ASTM C864.
    1. Glazing Accessories:
       1. Decorative mullions.
       2. Simulated Divided Lites (SDL) Traditional Profile: 3/4 x 15/32 inches (19 x 12 mm).
       3. Simulated Divided Lites (SDL) Low Profile: 3/4 x 5/32 inches (19 x 4 mm).
       4. Interior muntin grid on insulated glazing.
    2. Finishes:

\*\* NOTE TO SPECIFIER \*\* Delete aluminum wall frames options not required.

* + - 1. Aluminum Wall Frames: Standard Dark Bronze Anodized.
      2. Aluminum Wall Frames: Standard Clear Anodized.
      3. Aluminum Wall Frames: Powder Coating White, AAMA 2605.
      4. Aluminum Wall Frames: Powder Coating Black, AAMA 2605.
      5. Aluminum Wall Frames: Powder Coating Bone White, AAMA 2605.
      6. Aluminum Wall Frames: Powder Coating Fashion Gray AAMA 2605.
      7. Aluminum Wall Frames: Powder Coating Sandstone AAMA 2605
      8. Aluminum Wall Frames: Powder Coating Charcoal AAMA2605
      9. Aluminum Wall Frames: Split Finish color, as indicated on Drawings.
      10. Aluminum Screen Frames: Finish to match frames.
    1. Fabrication:
       1. Major fabrication must be done at the manufacturing location.
       2. Install gaskets and tapes at factory.
       3. Disassemble only to the extent necessary for shipping and handling limitations.
       4. The manufacturer is to be notified of any field modification prior to the activity commencing.

1. EXECUTION
   1. EXAMINATION AND PREPARATION
      1. Prepare substrates in strict accordance with the methods recommended by the manufacturer for achieving the best result for the substrates under project conditions. Thoroughly clean surfaces and substrates prior to installation.
      2. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
      3. Verify the structural integrity or the header such that the maximum deflection with both the live and dead loads is limited to less than 1/8 inch (3 mm). Provide structural support for lateral wind loading. A maximum vertical deflection of greater than 1/8 inch (3 mm) per request may be allowable if accepted by manufacturer. Any deflections larger than 1/8 (3 mm) that is requested must be reevaluated and analyzed for engineering approval.
      4. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
   2. PREPARATION
      1. General contractor shall direct, supervise, and inspect all site work related to the door system.
      2. Clean surfaces thoroughly prior to installation.
      3. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install in accordance with manufacturer's instructions, approved submittals and in proper relationship with adjacent construction.
         1. Separate dissimilar materials using nonconductive tape, paint, or other material not visible in finished work.
         2. Provide attachments and shims to permanently fasten the system to building structure.
         3. Maintain dimensional tolerances and alignment with adjacent work.
         4. Anchor securely in place, allowing for required movement, including but limited to expansion and contraction.
         5. Set sill members in bed of sealant. Set other members with internal sealants to provide weather tight construction.
         6. Install flashings, bent metal closures, corners, gutters, and other accessories as required for complete installation.
         7. Clean surfaces and install sealant in accordance with sealant manufacturer's instructions and guidelines.
   4. ADJUSTING AND CLEANING
      1. Adjust hinge set, locksets, roller assemblies, and other hardware for proper operation. Lubricate using a suitable lubricant compatible with door and frame coatings.
      2. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions before owner's acceptance.
      3. Remove from project site, and legally dispose of construction debris associated with this work.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* 1. FIELD QUALITY CONTROL
     1. Field Inspection: Coordinate field inspection with appropriate sections in Division 01.
  2. TESTING AND ADJUSTING
     1. Adjust hinge set, locksets, and other hardware for proper operation.
     2. Lubricate using a manufacturer approved lubricant compatible with door and frame coatings.
  3. CLEANING AND PROTECTION
     1. Clean and protect products in accordance with the manufacturer's recommendations.
        1. Protect installed products until completion of project.
        2. Remove temporary coverings and protection of adjacent work areas.
        3. Clean and dress sealant prior to installation completion.
        4. Clean glass prior to installation completion.
        5. At Completion of the Installation Installer: Clean entire enclosure systems one time. Includes surface cleaning of aluminum framing and glass and cleanup of construction debris. All subsequent cleaning shall be the responsibility of the general contractor.
     2. Touch-up, repair or replace damaged products before Substantial Completion.
        1. Areas with Abraded Surface Finish: Clean and touch-up with air dry paint, as approved and furnished by window manufacturer, color to match factory applied finish.

END OF SECTION