# PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 and 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

A. Section Includes:
1. Interior swinging all-glass entrance doors.
2. All-glass sidelights and transoms.
3. Interior all-glass storefronts.

B. Related Requirements:
1. Section 018113 “Sustainable Design Requirements.”
2. Section 055000 "Metal Fabrications" for overhead-steel support for all-glass systems.
3. Section 088004 "Interior Glazing" for general glass requirements.

## 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

## 1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for all-glass system.

B. LEED Submittals: Credits MRc4, MRc5, and EQc4.2. Refer to Section 018113 "Sustainable Design Requirements" for additional submittal requirements.

C. Shop Drawings: For all-glass entrances and storefronts.
1. Include plans, elevations, and sections.
2. Include details of fittings and glazing, including isometric drawings of patch fittings and rail fittings.
3. Door hardware locations, mounting heights, and installation requirements.

D. Samples for Initial Selection: For each type of exposed finish indicated.

E. Samples for Verification: For each type of exposed finish indicated, prepared on Samples of size indicated below.
1. Metal Finishes: 6-inch-long sections of patch fittings and rail fittings, accessory fittings, and other items.
2. Glass: 6 inches square, showing exposed-edge finish.

3. Door Hardware: For exposed door hardware of each type, in specified finish, full size.

F. Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, sidelights, transoms, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

G. Delegated-Design Submittal: For all-glass systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For all-glass systems to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

1.8 MOCKUPS

A. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
1. Build mockup of typical all-glass system as shown on Drawings or as selected by Architect.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of all-glass systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including excessive deflection.
      b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
      c. Failure of operating components.
   2. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design all-glass entrances and storefronts.

B. General Performance: Comply with performance requirements specified, as determined by testing of all-glass entrances and storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

C. Structural Loads:
   1. Other Design Loads: As indicated on Drawings.
   2. Deflection Limits: Deflection normal to glazing plane is limited to 1/175 of clear span or 3/4 inch, whichever is smaller.

D. Seismic Performance: All-glass entrances and storefronts shall withstand the effects of earthquake motions determined according to California Building Code requirements.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Blumcraft of Pittsburgh; C.R. Laurence Co, Inc.
   2. Dorma America.
   3. Or Equal.

2.3 METAL COMPONENTS

A. Fitting Configuration:
   1. Manual-Swinging, All-Glass Entrance Doors: Patch fitting at top and continuous rail fitting at bottom.
   2. All-Glass Storefronts: Recessed glazing channel at top and continous rail fitting at bottom, unless noted otherwise.

B. Patch Fittings: Stainless steel-clad aluminum.

C. Rail Fittings:
   1. Material: Match patch-fitting metal and finish.
   2. Height of Bottom Rail: As indicated.
   3. Profile: Tapered.
   4. End Caps: Manufacturer's standard precision-fit end caps for rail fittings.

D. Accessory Fittings: Match patch-fitting metal and finish.

E. Anchors and Fastenings: Concealed.

F. Materials:
   1. Aluminum: ASTM B 221, with strength and durability characteristics of not less than Alloy 6063-T5.
   2. Stainless-Steel Cladding: ASTM A 666, Type 304.
      a. Finish: As selected by Architect from manufacturer’s full range.

## 2.4 GLASS

A. Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated surfaces), Type I (transparent), tested for surface and edge compression per ASTM C 1048 and for impact strength per 16 CFR 1201 for Category II materials.
   1. Refer to Section 088000 “Glazing” for additional requirements.
   2. Class 1: Clear monolithic or frosted as indicated.
      a. Thickness: 1/2 inch, unless noted otherwise or as required to meet performance requirements.
   3. Exposed Edges: Machine ground and flat polished.
   4. Butt Edges: Flat ground.
   5. Corner Edges: Miter corners.

## 2.5 ENTRANCE DOOR HARDWARE

A. General: Heavy-duty entrance door hardware units in sizes, quantities, and types recommended by manufacturer for all-glass entrance systems indicated. For exposed parts, match metal and finish of patch fittings.

B. Refer to Section 087100 “Door Hardware” and Drawings for additional entrance door hardware requirements.

## 2.6 BUTT-GLAZING SEALANTS

A. Sealants: Refer to Section 088000 “Glazing” for sealant requirements.

2.7 FABRICATION

A. Provide holes and cutouts in glass to receive hardware, fittings, and accessory fittings before tempering glass. Do not cut, drill, or make other alterations to glass after tempering.
   1. Fully temper glass using horizontal (roller-hearth) process, and fabricate so that when glass is installed, roll-wave distortion is parallel with bottom edge of door or lite.

B. Factory assemble components and factory install hardware and fittings to greatest extent possible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install all-glass systems and associated components according to manufacturer's written instructions.

B. Set units level, plumb, and true to line, with uniform joints.

C. Maintain uniform clearances between adjacent components.

D. Lubricate hardware and other moving parts according to manufacturer's written instructions.

E. Set, seal, and grout floor closer cases as required to suit hardware and substrate indicated.

F. Install butt-joint sealants according to manufacturer's instructions and as specified in Section 079200 "Joint Sealants."

3.3 ADJUSTING AND CLEANING

A. Adjust all-glass entrance doors and hardware to produce smooth operation and tight fit at contact points and weather stripping.
   1. For all-glass entrance doors accessible to people with disabilities, adjust closers to provide a three-second closer sweep period for doors to move from a 70-degree open position to 3 inches from the latch measured to the leading door edge.

B. Remove excess sealant and glazing compounds and dirt from surfaces.

END OF SECTION