

**SECTION 08 42 27****ALL-GLASS DOORS**

**\*\*\*\*\* Unique custom designed glass doors assemblies, facades, curtain walls, skylights, and other structures can add distinction, exceptional beauty, and expansive visibility to a construction project. However, these glass structures require meticulous engineering, extensive knowledge of materials and codes, broad experience, quality materials, and expert craftsmanship. Each design will have unique parameters and requirements which must be accurately addressed in order to provide a safe, functional, durable, weather-resistant glass assembly which can withstand wind and seismic loads and thermal expansion and contraction. It is critical that unique glass structures be both designed and fabricated by a single, knowledgeable entity assuming complete responsibility. Piece-meal assembly of products from numerous manufacturers and fabricators without a comprehensive design and engineered solution is not a method for achieving a functional, safe, glass structure.**

**Innovative Structural Glass, Inc. can provide this essential sole source design and fabrication responsibility. They are a domestic company focused on the United States market. They provide glass luxury at affordable prices in a timely manner. Innovative Structural Glass, Inc. designs and fabricates a wide variety of glass structures including door assemblies, facades, entrances, storefronts, skylights, canopies, glass fin systems, and tension truss structures.**

**This specification guide can be used to specify a custom designed and engineered all-glass door assembly. In contrast to more typical descriptive specifications, this section is a performance type emphasizing the critical factor of design and engineering. It provides a convenient format that can be edited to reflect the unique glass structure envisioned by an architect and ensure that it is correctly engineered, carefully detailed, accurately fabricated, and properly installed.**

**This specification section is organized by placing information in three standard parts:**

**PART 1 - GENERAL**

**Describes the design and performance criteria for the all-glass door assembly and other administrative and procedural requirements.**

**PART 2 - PRODUCTS**

**Describes materials, products, accessories, and fabrication methods to be used for the glass door assembly.**

**PART 3 - EXECUTION**

**Describes how the components will be assembled and installed at the construction site.**

**Throughout this product guide specification, references are made to other specification sections that might be contained in the project manual. These references are presented as examples and coordination reminders. For each project, these references will need to be**

revised to reflect actual sections being used.

The six-digit specification section numbers in this guide are based on classifications and numbers contained the 2004 Edition of MasterFormat published by the Construction Specifications Institute (CSI) and Construction Specifications Canada (CSC). This is the industry standard for organizing construction specifications.

Within the specification text, Imperial dimensions are presented first in brackets followed by System International Metric (SI) equivalents also in brackets. Depending on project requirements, either the Imperial or the SI metric equivalents will need to be deleted.

The specifier will need to edit this product specification for a specific project to reflect the options and applications being used. The guide section has been written so that much editing can be accomplished by deleting unnecessary requirements and options. Additional information describing the desired characteristics of the all-glass door assembly will need to be added by the specifier. Options are indicated by [ ]. Notes to assist the specifier in selecting options and editing the specification guide are printed in bold and indicated with \*\*\*\*\*. For final editing, all brackets and notes will need to be deleted from the guide.

\*\*\*\*\*

## **PART 1 - GENERAL**

### **1.1 SUMMARY**

\*\*\*\*\* An all-glass door assembly is defined as a complete installation of glass door leaves with no or minimal metal framing, door hardware, and components for attachment to door opening. All-glass doors may be installed in metal framed glass, frameless glass, cast concrete, masonry, wood, or other type of wall opening. All-glass doors may be swinging, sliding, or floor cantilevered pivoting type operation. Edit the following paragraph to reflect project requirements. \*\*\*\*\*

- A. Section includes: Functional design, structural engineering, custom fabrication, and site erection required for complete all-glass, [swinging,] [sliding,] [free-standing cantilevered,] [exterior,] [interior,] door assembly consisting of
1. Glass door leaves.
  2. Door hardware.
  3. Attachment and support devices.

\*\*\*\*\* List other specification sections dealing with work directly related to this section such as the following. \*\*\*\*\*

- B. Related sections:

1. Section 03 30 00 - Cast-in-Place Concrete: Concrete [foundations] [slab] [wall opening] to receive all-glass door.
2. Section 05 12 00 - Structural Steel: Steel framing to receive all-glass door.
3. Section 06 20 00 - Finish Carpentry: Wood framing to receive all-glass door.
4. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts: Aluminum framing to receive all-glass door.
5. Section 08 41 26 - Glass Facades: Glass wall system to receive all-glass door.
6. Section 09 26 00 - Gypsum Board Assemblies - Metal stud and gypsum board partitions to receive all-glass door.

**\*\*\*\*\* Glass door hardware may be specified in this section or in a separate section covering hardware for all project doors. However, supply and installation of door hardware must be part of this section to ensure sole source responsibility. Include the following paragraph if door hardware is specified in a separate section. \*\*\*\*\***

7. Section 08 71 00 - Door Hardware: Hardware for all-glass doors to be supplied and installed as part of this Section.

**\*\*\*\*\* Glass for all-glass door may be specified in this section or in a separate section covering glass for all project glazing. If color tinted or reflective glass is required for various entrance, storefront, window, door, and curtain wall systems; it is important that glass be provided from a single glass manufacturer to ensure uniformity of appearance. However, supply and installation of glass must be part of this section to ensure sole source responsibility. Include the following paragraph if glass is specified in a separate section. \*\*\*\*\***

8. Section 08 80 00 - Glazing: Glass to be supplied and installed as part of this Section.

## **1.2 REFERENCES**

**\*\*\*\* List by number and full title reference standards referred to in remainder of specification section. Delete non-applicable references. \*\*\*\*\***

- A. American National Standards Institute (ANSI): ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
- B. American Society of Civil Engineers (ASCE): ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- C. American Society for Testing and Materials (ASTM):

1. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  2. ASTM A269 - Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
  3. ASTM A276 - Stainless and Heat-Resisting Steel Bars and Shapes.
  4. ASTM B248 - Wrought Copper and Copper Alloy Plate, Sheet, Strip, and Rolled Bar.
  5. ASTM B221 - Aluminum-Alloy Extruded Bar, rod, Wire, Shape, and Tube.
  6. ASTM C1036 - Flat Glass.
  7. ASTM C1048 - Heat Treated Flat Glass, Kind HS, Kind FT, Coated and Uncoated.
  8. ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
  9. ASTM E1300 - Determining Load Resistance of Glass in Buildings.
- D. Consumer Product Safety Commission (CPSC): CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
- E. International Code Council (ICC): ICC IBC - International Building Code.

### **1.3 DESIGN AND PERFORMANCE CRITERIA**

**\*\*\*\*\* Innovative Structural Glass, Inc. will provide structural engineering and design for all-glass door assembly. Edit this article to reflect project conditions and applicable codes. \*\*\*\*\***

- A. Design, size components, and install all-glass door assembly in accordance with ASTM E1300 to withstand these loads without breakage, loss, failure of seals, product deterioration, and other defects.

**\*\*\*\*\* Edit this article to reflect whether exterior and interior all-glass doors are being specified. If only interior door units are required, delete non-applicable criteria. \*\*\*\*\***

1. Dead and live loads: Determined by ASCE 7 and calculated in accordance with applicable codes.
2. Seismic loads: System shall be designed and installed to comply with applicable seismic requirements for Project location as defined by of ICC IBC.

3. Movement and deflection of structural support framing.
  4. Effects of applicable wind load acting inward and outward normal to plane of wall in accordance with ASTM E330.
  5. Thermal loads and movement:
    - a. Ambient temperature range: [[120] [\_\_\_\_\_] degrees F.] [[67] [\_\_\_\_\_] degrees C.]
    - b. Material surfaces range: [[180] [\_\_\_\_\_] degrees F.] [[100] [\_\_\_\_\_] degrees C.]
- B. Provide and install weatherstripping, exterior gaskets, sealants, and other accessories to resist water and air penetration.

#### **1.4 SUBMITTALS**

- A. Submit in accordance with Section 01 33 00 - Submittal Procedures:
1. Product data for materials, door hardware, and other components.
    - a. For each type glass, provide maximum allowable stress in both horizontal and vertical directions.
    - b. Photographs or drawings for hardware.
  2. Shop drawings: Elevations, dimensions, tolerances, components, anchorage, method of installation, and other details.
  3. Samples:
    - a. Hardware finishes.
    - b. [6 by 6 inches] [152 by 152 mm] minimum size of [color tinted] [reflective coated] glass.
  4. Manufacturer's installation and maintenance instructions.
  5. Certification that assembly meets specified performance requirements.
  6. Data showing compliance with manufacturer's and installer's qualifications specified in Paragraphs [1.5.A and 1.5.B] [\_\_\_\_\_] . Provide descriptions, locations, photographs, references, and completion dates for previous projects.
  7. Copies of warranties required by Paragraph [1.8] [\_\_\_\_\_] for review by Architect.

## 1.5 QUALITY ASSURANCE

**\*\*\*\*\* To ensure that completed all-glass door assembly is structurally sound, weathertight, functional, durable, and safe; specify that design, engineering, fabrication, and supply of all components, materials, and products be the sole responsibility of an experienced single entity such as Innovative Structural Glass, Inc. It is critical that unique glass structures be both designed and fabricated by a single, knowledgeable entity assuming complete responsibility. Piece-meal assemblies of products from numerous manufacturers and fabricators without a comprehensive design and engineered solution is not a method for achieving a functional, safe, glass structure.**

- A. Single source responsibility: Design, structural engineering, and custom fabrication for all-glass door assembly and supply of all components, materials, and products shall be sole responsibility of single manufacturer. Provision of products from numerous sources for site assembly without complete single source design and supply responsibility is not acceptable. Components to be fabricated or supplied by single source are:

**\*\*\*\*\* Edit the following list to reflect components required for all-glass door assembly. \*\*\*\*\***

1. Glass [as specified in Section 08 80 00 - Glazing].
  2. Door hardware [as specified in Section 08 71 00 - Door Hardware].
  3. Attachment and support devices, anchors, weatherstripping, gaskets, sealants, and other installation components required for complete, functional installation.
- B. Single installation responsibility: All components listed in Paragraph [1.5.A] [\_\_\_\_\_] shall be installed by a single installer.
- C. Manufacturer qualifications: Company specializing in designing, engineering, and fabricating unique, custom designed, glass door assemblies, facades, entrances, storefronts, and other glazed structures.
1. Experience: 5 years minimum successful experience providing glass structures.
  2. Previous projects: Successfully completed 3 minimum all-glass door assemblies of scope, type, and size as proposed Project.
- D. Installer qualifications: Company experienced in erecting custom designed, all-glass door assemblies, and other glazed structures and acceptable to manufacturer for installing proposed structure.
1. Experience: 3 years minimum successful experience installing all-glass door assemblies.

2. Previous projects: Successfully completed 3 minimum all-glass door assemblies of scope, type, and size as proposed Project.
- E. Design structural components and develop shop drawings under direct supervision of professional structural engineer experienced in design of glass structures. Calculations and shop drawings shall bear engineer's seal.
- F. Safety glazing: Comply with Consumer Product Safety Commission 16 CFR 1201, ANSI Z97.1, and other applicable safety requirements. Each piece of safety glazing shall be permanently labeled with appropriate marking.

**\*\*\*\*\* For large, more complicated structures it is appropriate that Innovative Structural Glass, Inc. send a field representative to oversee installation. Use the following paragraph to require manufacturer's field representative. \*\*\*\*\***

- G. Manufacturer's field representative:
  1. During installation, provide services of manufacturer's field representative knowledgeable of all-glass door installation.
  2. Manufacturer's representative shall observe installation, quality control, and certify work meets specified requirements.
  3. Manufacturer's representative shall submit report covering observations, procedures, noted deficiencies, corrective measures, and certification of proper installation.

## **1.6 PRE-INSTALLATION CONFERENCE**

**\*\*\*\*\* Depending on project size, complexity, and number of coordination items, a pre-installation conference maybe important. Include this article to specify pre-installation conference. \*\*\*\*\***

- A. In accordance with Section 01 31 00 - Project Management and Coordination, convene a pre-installation conference at site prior to commencing work of this Section.
- B. Require attendance of entities directly concerned with all-glass door installation [including manufacturer's field representative].
- C. Review at meeting:

**\*\*\*\*\* Add to and edit the following list to reflect project conditions. \*\*\*\*\***

1. Construction and preparation of rough door opening.

2. Schedule, sequence, and method for installing all-glass door and coordination with other work.
3. Availability of materials.
4. Protection of adjacent items and finishes.
5. Other items related to successful execution of work.

## **1.7 PRODUCT HANDLING**

- A. Protect glass and other components during delivery, storage, and handling in accordance with manufacturer's instructions. Prevent edging chipping and other damage.
- B. Do not store glass panels on site for extended time.

## **1.8 WARRANTIES**

- A. Provide under provisions of Section 01 77 00 - Closeout Procedures:
  1. Manufacturer's 2 years warranty to cover design, fabrication, and materials against defects and failure to perform and remain weathertight. Warranty to provide for replacement of defective components.
  2. Installer's 5 years warranty to cover installation against defects and failure to perform and remain weathertight. Warranty to provide for required repairs.

## **PART 2 - PRODUCTS**

### **2.1 ACCEPTABLE DESIGNER-MANUFACTURER**

- A. All-glass door assembly shall be designed and fabricated by Innovative Structural Glass, Inc.
  1. Address: P.O. Box 775, 40220 Pierce Drive, Three Rivers, California 93271.
  2. Phone: 559-561-7000.
  3. Website: www.structuralglass.com
- B. Requests to use design services and products of another manufacturer must be submitted in accordance with Section 01 63 00 - Product Substitution Procedures.

### **2.2 GLASS PRODUCTS**

**\*\*\*\*\* Fully tempered safety glass is used for all-glass doors. As previously noted, glass**



**products can be specified in this section or in Section 08 80 00 - Glazing with a reference in this section. Edit the following to indicate where glass is specified. \*\*\*\*\***

- A. Glass type and thickness shall be determined by glass door manufacturer to accommodate Project design and performance requirements specified in Paragraph [1.3] [\_\_\_\_\_]. Types of glass shall [be as specified in Section 08 80 00 - Glazing.] [include the following.]

**\*\*\*\*\* If glass is being specified in this section, select types from the following paragraphs:**

- B. Primary glass products:

**\*\*\*\*\* Clear, color tinted, reflective, and low-E glass products can be used to fabricate the tempered glass panels used for glass doors. Select required primary glass products from the following, \*\*\*\*\***

1. Clear glass: Clear, transparent, flat, annealed, float glass, conforming to ASTM C1036, Type I, Class 1, Quality q3.
2. Color tinted glass: [Blue] [Light green] [Dark green] [Light gray] [Medium gray] [Dark gray] [Bronze] [\_\_\_\_\_] color tinted, annealed, float glass conforming to ASTM C1036, Type I, Class 2, Quality q3.

**\*\*\*\*\* Metallic oxide coatings can be deposited onto color tinted glass during production provide a reflective appearance and increase solar control. \*\*\*\*\***

3. Reflective coated tinted glass: [\_\_\_\_\_] color tinted float glass with metallic oxide coating deposited during production and conforming to ASTM C1036, Type I, Class 2, Quality q3.

**\*\*\*\*\* Low emissivity (low-E) glass products are produced by applying a neutral coating which blocks a significant percentage of solar energy and greatly improves energy efficiency. \*\*\*\*\***

4. Low emissivity (low-E) glass: Clear glass with neutral coating pyrolytically applied to improve thermal performance and reduce solar heat gain.

**\*\*\*\*\* Fully tempered glass is approximately four times as strong as annealed glass of equal thickness. Tempered glass qualifies as safety glass and tends to break into small cubical pieces. \*\*\*\*\***

- C. Fabricated glass door leaves:

1. Primary glass product shall be heat treated to produce fully tempered safety glass door leaf complying with ASTM C1048, Kind FT and ANSI Z97.1 and CPSC 16 CFR.

**\*\*\*\*\* Holes and cutouts for door hardware must be made prior to tempering glass panels. \*\*\*\*\***

2. Drill required holes and make cutouts for hardware prior to tempering glass.

### **2.3 DOOR ASSEMBLIES**

A. Provide complete all-glass door assemblies including door panels and hardware for locations indicated on Drawings.

B. Use: [Exterior] [and] [Interior].

**\*\*\*\*\* Typically all-glass doors are manually operated, swinging doors with pivots. Sliding and automatic motorized doors are also available. All-glass, floor-cantilevered, pivoting gates can also be designed. \*\*\*\*\***

C. Operation: [Manual] \*\*\* [Electrically operated], \*\*\* [pivoting] \*\*\* [sliding] \*\*\* [floor-cantilevered, pivoting] \*\*\* [\_\_\_\_\_] type.

D. Use: [Exterior] [and] [interior].

**\*\*\*\*\* All-glass door assemblies can consist of single door leaf, pair of leaves, or a combination of fixed and operable leaves. \*\*\*\*\***

E. Configuration: [Single door leaf] \*\*\* [Pair of door leaves] \*\*\* [[\_\_number\_\_] sliding door leaves and [\_\_number\_\_] fixed glass panels] \*\*\* [\_\_\_\_\_] as illustrating and dimensioned on Drawings.

F. Door leaf: Fully tempered glass with exposed edges highly polished with arised corners.

1. Thickness: [1/2 inch] [13 mm] [\_\_\_\_\_] minimum.

**\*\*\*\*\* Varying sizes of all-glass doors are possible including full wall height doors up to 120 inches. \*\*\*\*\***

2. Size: [[\_\_\_\_\_] [inches] [mm] wide by [\_\_\_\_\_] [inches] [mm] high.] [As indicated on Drawings.]

**\*\*\*\*\* Door leaves can be all glass panels or provided with top and bottom metal rails bonded to glass door leaf. \*\*\*\*\***

**\*\*\*\*\* Include the following paragraph if metal rails are required. \*\*\*\*\***

3. Provide [top] [and] [bottom] rails with channel profile for bonding to glass.

a. Material: [Stainless steel complying with ASTM A167 or ASTM 276 with [brushed satin finish] [reflective polished finish] [electrostatically applied

powder paint coating] [\_\_\_\_\_] .] \*\*\* [Cold-formed from bronze alloy sheet complying with ASTM B248 with [brushed satin finish] [reflective polished finish] [\_\_\_\_\_] .] \*\*\* [Extruded aluminum complying with ASTM B221 with [[clear] [bronze] [black] anodized finish.] [fluoropolymer colored paint coating [\_\_\_\_\_] .]

b. Nominal width:

1) Bottom: [\_\_\_\_\_] [inches] [mm].

2) Top: [\_\_\_\_\_] [inches] [mm].

## **2.4 DOOR HARDWARE**

**\*\*\*\*\* Hardware is a critical component for an all-glass door assembly. Several manufacturers offer hardware specifically designed for all-glass doors. Innovative Structural Glass will select and provide hardware for specific project applications. Door size, weight, and attachment are determining factors. Contact Innovative Structural Glass for assistance in determining appropriate door hardware. Specific manufacturer's hardware items can be specified or generic types can be indicated and Innovative Structural Glass will make hardware selections. In either case, door hardware should be part of the single source responsibility specified in Paragraph 1.5[\_\_\_\_\_].**

- A. Equip all-glass door assembly with all hardware required for complete, functional, durable installation. Items shall be selected as appropriate for application, door size, weight, and attachment method.
- B. Door hardware finishes: [[Satin] [Bright] chromium plate] \*\*\* [[Satin] [Bright] stainless steel] \*\*\* [[Satin] [Bright] bronze] \*\*\* [\_\_\_\_\_] or as otherwise indicated.]  
\*\*\* [As selected by manufacturer to match or be compatible with finish of door components.]

**\*\*\*\*\* Door hardware can be specified in this section or in Section 08 71 00 - Door Hardware with a reference in this section. If hardware is specified in this section, list items and indicate type required. \*\*\*\*\***

- C. Hardware items: [As specified in Section 08 71 00 - Door Hardware.]

**\*\*\*\*\* Swinging glass door leaves are typically equipped with pivots. \*\*\*\*\***

- 1. Pivots: Top and bottom pivots with adjustment mechanism for aligning door. Bottom pivot recessed and concealed in floor and top pivot concealed in mounting channel installed in [door opening frame] [above ceiling].
- 2. Closer: [Overhead mounted type.] [Recessed floor type.]

**\*\*\*\*\* Various types of keyed cylinder locks are available for all glass doors. \*\*\*\*\***

3. Keyed cylinder dead lock: [Through glass, center of door height type] \*\*\* [Through glass corner of door type.] \*\*\* [Bottom rail installed type.] \*\*\* [Top rail installed type.] \*\*\* [Combination [straight vertical] [L-shaped] round pull handle and keyed dead lock operating [top] [bottom] bolt through rod inside pull handle.] \*\*\* [\_\_\_\_\_] Provide with compatible strike.

**\*\*\*\*\* Various lever operated locksets and dead locks can be installed in all-glass doors using rectangular lockset housings. Standard lockset functions are available. \*\*\*\*\***

4. Keyed cylinder lockset: [Lever operated] mortise type lockset in rectangular housing installed in glass door leaf. Provide with matching strike housing suitable for installation in adjacent glass panel or glass door leaf. Locking function shall be [\_\_\_\_\_].

**\*\*\*\* Standard rim exit devices can be mounted on all-glass doors with intermediate rails or lock housings. However, more stylish exit devices are available as combination pull handle and pivoting panic bar which operates a top or bottom latchbolt. The round panic bar and pull handle appear as a continuous bent tube passing through glass door. \*\*\*\*\***

5. Exit device: [Rim exit devices with [panic bar] [push pad] mounted on all-glass door [intermediate rail] [lock housing.] \*\*\* [Combination L-shaped round pull handle and pivoting panic bar which operates [top] [bottom] latchbolt. Round panic bar and pull handle appear as continuous bent tube passing through glass door.] Provide exit devices with strikes, keyed cylinder lock, and dogging device.

**\*\*\*\*\* Numerous push and pull handles can to mounted on all-glass doors including custom fabricated designs. Commonly used handles are formed from two sections of aluminum, stainless steel, or bronze tubing which appear as a continuous bent tube passing through all-glass door. \*\*\*\*\***

6. Push-pull handle: [Fixed, two-piece [aluminum] [stainless steel] [bronze] [straight loop] [L-shaped] handle that appears as continuous bent tube passing through glass door panel] \*\*\* [Custom design as indicated on Drawings] \*\*\* [\_\_\_\_\_].
- D. Door stops: [Wall mounted type with resilient bumper.] [Floor mounted type with expansion anchor pedestal with resilient bumper.]
  - E. Weatherstripping: Provide manufacturer's standard perimeter gasketing, door bottoms and sweeps, and other seals to prevent air infiltration and water penetration.] \_\_\_\_\_].
  - F. Thresholds: [Aluminum] [Stainless steel] [Bronze] [fluted flat saddle] [smooth flat saddle], [\_\_\_\_\_] [inches] [mm] wide.

**\*\*\*\*\* Electromagnetic locks, electric deadbolt locks, and electromagnetic monitor switches can be provided as part of an all-glass door assembly. \*\*\*\*\***

- G. Electromagnetic lock: Magnetic lock surface mounted at head of door opening with [armature attached to top rail of door.] [saddle bracket to secure armature to glass door.]
- H. Electromagnetic dead bolt lock: Magnetic bolt retraction lock recessed mounted at head of door opening to engage strike in top rail of all-glass door.
- I. Electromagnetic switch: Magnetic switch to monitor door position recessed mounted at head of door opening with magnetic contact mounted in top rail of all-glass door.

**\*\*\*\*\* Pivoting all-glass doors can be automatically operated using overhead automatic electric operators. \*\*\*\*\***

- J. Automatic door operator: Self contained, head mounted electric operator for [single] [pair of] all-glass door[s] with enclosure, attachment hardware, controls, wiring, and other components and accessories required for complete functional installation.
  - 1. Top rail of all-glass door shall be designed to interface with automatic operator.
  - 2. Include pair of push plate switches, [wall] [pedestal] mounted both sides of opening and used to activate operators when depressed.

**\*\*\*\*\* Edit and include the following paragraph if all-glass sliding door assembly is being specified. \*\*\*\*\***

- K. Sliding door hardware: Provide hardware for operation of sliding door assembly of size and configuration indicated on Drawings.
  - 1. [Single] [Double] channel suspension track with clamps, brackets and other fittings for attachment at head of door opening.
  - 2. Wheeled adjustable carriers designed to attach to glass door panel with pins, sleeves, securing bolts, and covers.
  - 3. Floor guides with door stops.

**\*\*\*\*\* All-glass gates for railings, counters, and partial height walls can be fabricated with a floor mounted, cantilevered tubular support and recessed pivot and closer assembly. This method is also applicable for all-glass doors installed in partitions which do not extend to ceiling and top pivots are not feasible. Include the following paragraph to specify floor mounted, cantilevered, pivoting door assembly. \*\*\*\*\***

- L. Floor cantilevered, pivoting door assembly: For all-glass gates installed in [railings]

[counters] [partial height walls] [\_\_\_\_\_] provide [aluminum] [stainless steel] [bronze] floor mounted, cantilevered tubular support and recessed pivot and closer assembly. Tubular support shall be equipped with channel for securing glass panel. Assembly shall be designed to support glass door leaf of size indicated on Drawings.

## **2.5 ACCESSORIES**

- A. Provide glazing accessories, anchorage devices, and fasteners of type and size recommended by all-glass door assembly manufacturer and as required for complete, functional, weathertight installation.

**\*\*\*\*\* Include the following paragraph if automatic door operator or other type of electrified hardware is required. \*\*\*\*\***

- B. Provide conduit, wiring, power supplies, and other electrical components required for electrified hardware items.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Field verify dimensions prior to fabricating all-glass door assembly components.
- B. Coordinate requirements for and locations of blockouts for [door pivots] [recessed floor closers] [strike boxes] and other embedded door assembly components with Section 03 30 00 - Cast-in-Place Concrete.
- C. Coordinate provision of all-glass door assembly with construction of door opening to ensure adequate provision is made for support and anchorage of assembly components.

**\*\*\*\*\* Include the following paragraph if electrically operated door assemblies or electrified hardware items are being installed. \*\*\*\*\***

- D. Coordinate electrical requirements for [automatic door assemblies] [electrified door hardware] to ensure proper power source, conduit, wiring, and boxes. All conduit shall be concealed.

### **3.2 INSPECTION**

- A. Inspect framed openings and verify that supports, blockouts, and other work are complete and that all glass door assembly may be properly installed.
- B. Report unacceptable conditions and deficiencies. Do not proceed with installation until corrective action has been performed.
- C. Inspect glass panels for chipped edges, scratches, abrasions, and other damage.

Remove damaged panels from site and replace.

### **3.3 INSTALLATION**

- A. Site assemble and erect all-glass door assembly in accordance with manufacturer's instruction and reviewed shop drawings.
- B. Placing assemblies: Center in opening and secure with manufacturer recommended anchorage devices. Provide adjustable attachments and shims to align assembly plumb, level, and free of warp or twist. Seal joints around frames.
- C. Do not field cut or alter structural framing or assembly components without written approval from manufacturer and Architect.
- D. Hardware: Install door hardware. Properly align pivots with internal adjustments. Ensure gaskets and weatherstripping are provided for all exterior openings. Adjust hardware for smooth operation.
- E. After installation, test each assembly. Lock and unlock locks. [Cycle automatic door assemblies through all required functions. Verify speed, operation, and controls.]
- F. Correct deficiencies and make necessary adjustments and modifications. Retest.
- G. Demonstration operation and maintenance of door assemblies to Owner's representatives.

### **3.4 CLEANING**

- A. Clean excess sealant from glass and other surfaces immediately after application. Use solvents or other cleaners recommended by manufacturer.
- B. Remove protective material from prefinished surfaces.
- C. Wash exposed surfaces using a solution of mild detergent in warm water, applied with soft, clean cloths. Do not use abrasives. Take care to remove dirt from corners. Wipe surfaces clean.

**END OF SECTION**