

SECTION 08 41 26

ALL-GLASS ENTRANCES

This section is based on the products of Doralco Architectural Metal Solutions, a Div. of Doralco, which is located at:
5919 W. 118th Street
Alsip, IL 60803
Phone: 888-443-6725
Fax: 708-388-9392
Web Site: www.doralco.com

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Division 01 - General Requirements, and other applicable specification sections in the Project Manual apply to the work specified in this Section.

1.2 SUMMARY

- A. Scope: Provide design and engineering, labor, material, equipment, related services, and supervision required, including, but not limited to, manufacturing, fabrication, erection, and installation for all-glass entrances as required for the complete performance of the work, and as shown on the Drawings and as herein specified.
- B. Section Includes: The work specified in this Section includes, but shall not be limited to, the following:
 - 1. Vestibule doors matching entrance doors.
 - 2. Sidelites.

1.3 REFERENCES

- A. General: The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only. The edition/revision of the referenced publications shall be the latest date as of the date of the Contract Documents, unless otherwise specified.

Delete standards below which are not referenced in Parts 1, 2, or 3 of this specification section.

- B. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 611, "Voluntary Specifications for Anodized Architectural Aluminum (Revised)."
- C. American National Standards Institute (ANSI):
 - 1. ANSI Z97.1, "Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings."
- D. ASTM (ASTM):
 - 1. ASTM A 666, "Standard Specification for Austenitic Stainless Steel, Sheet, Strip, Plate, and Flat Bar."
 - 2. ASTM B 36/B 36M, "Standard Specification for Brass Plate, Sheet, Strip, and Rolled Bar."
 - 3. ASTM B 221/B 221M, "Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes."
 - 4. ASTM C 1048, "Standard Specification for Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass."

- 5. ASTM E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction."
 - E. Builders Hardware Manufacturers Association, Inc. (BHMA):
 - 1. ANSI/BHMA A156.4, "Door Controls - Closers" (copyrighted by BHMA, ANSI approved).
 - F. Code of Federal Regulation (CFR):
 - 1. 16 CFR Part 1201, "Safety Standard for Architectural Glazing Material" (Consumer Products Safety Commission).
 - G. Glass Association of North America (GANA):
 - 1. GANA GM, "Glazing Manual."
 - H. National Association of Architectural Metal Manufacturers (NAAMM):
 - 1. NAAMM MFM, "Metal Finishes Manual."
- 1.4 SYSTEM DESCRIPTION
- A. Safety Glass Standard: Provide tempered glass components that comply with ANSI Z97.1 and testing requirements of 16 CFR Part 1201, Category II.
 - B. Testing Criteria for Door Rail: The door rail shall be tested to perform 1,000,000 cycles without any failures. The door rail shall also be subject to a temperature pulloff test at temperatures from -10 °F (-23 °C) to 150 °F (66 °C). The rail shall remain stationary throughout this test while a 500 pound (227 kg) pressure is applied.
- 1.5 SUBMITTALS
- A. General: See Section 01 33 00 - Submittal Procedures.
 - B. Product Data: Submit product data showing material proposed. Submit sufficient information to determine compliance with the Drawings and Specifications. Product data shall include, but shall not be limited to, the following:
 - 1. Manufacturer's standard details and fabrication method.
 - 2. Data on finishing, hardware, and accessories.
 - 3. Recommendations for maintenance and cleaning of exterior finish surfaces.
 - C. Shop Drawings: Submit shop drawings for each product and accessory required. Include information not fully detailed in manufacturer's standard product data, including, but not limited to, the following:
 - 1. Layout and installation details.
 - 2. Elevations at 1/4 inch equals 1 foot (1:48) scale.
 - 3. Detail sections of fittings.
 - 4. Hardware mounting heights.
 - 5. Anchorage and reinforcement.
 - 6. Glazing details.
 - D. Samples:
 - 1. Submit samples for initial color selection. Submit samples of each specified finish. Submit samples in form of manufacturer's color charts showing full range of colors and finishes available. Where finishes involve normal color variations, include samples showing the full, range of variations expected.

Delete above if colors preselected and specified or scheduled. Retain below with or without above.

2. Submit samples for verification. Submit samples of size indicated below and of same thickness and material indicated for work. Show the full range of color and texture variations expected.
 - a. Submit pairs of samples of each specified metal color and finish on 12 inch (305 mm) long sections of extrusions or formed shapes.
 - b. Submit samples of glass approximately 6 inches (152 mm) square showing the edge conditions.
 - c. Submit samples for exposed hardware of each type, in specified finish, full size.

E. Quality Control Submittals:

1. Qualification Data: Submit qualification data for firms and persons specified in Quality Assurance Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names of architects and owners, and other information specified.
2. Product Test Reports: Submit certified product test reports based on tests performed by an accredited inspecting and testing laboratory clearly describing in written form, and in shop drawing form, compliance of the all-glass entrances with requirements indicated based on comprehensive testing.

Retain below for project requiring LEED certification.

F. LEED Submittals: Submittals that are required to comply with requirements for LEED certification include, but shall not be limited to, the following:

1. Recycled Content Materials: Provide product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.

Above applies to Credit MR 4. Below applies to Credit MR 5.1 and MR 5.2.

2. Regional Materials: Provide product data for regional materials indicating location and distance from the Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Distance shall be within 500 miles (805 Km) of the Project Site. Include statement indicating cost for each regional material and, if applicable, the fraction by weight that is considered regional.

1.6 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: Manufacturer shall be a firm engaged in the manufacture of all-glass entrances of types and sizes required, and whose products have been in satisfactory use in similar service for a minimum of 15 years.
2. Installer Qualifications: Installer shall be a firm that shall have a minimum of five years of successful installation experience with projects utilizing all-glass entrances similar in type and scope to that required for this Project.
3. Inspecting and Testing Agency Qualifications: To qualify for acceptance, an independent inspecting and testing agency hired by the Contractor or manufacturer to test products shall demonstrate to the Architect's satisfaction that they are qualified according to ASTM E 329 to conduct testing indicated.

B. Regulatory Requirements: Comply with applicable requirements of the laws, codes, ordinances, and regulations of Federal, State, and local authorities having jurisdiction. Obtain necessary approvals from such authorities.

C. Pre-Installation Conference: Conduct pre-installation conference in accordance with Section 01 31 19 - Project Meetings. Prior to commencing the installation, meet at the Project site to review the material selections, installation procedures, and coordination with other trades.

Pre-installation conference shall include, but shall not be limited to, the Contractor, the Installer, and any trade that requires coordination with the work. Date and time of the pre-installation conference shall be acceptable to the Owner and the Architect.

- D. Single Source Responsibility: Obtain each type of all-glass entrance and required accessories from a single source with resources to produce products of consistent quality in appearance and physical properties without delaying the work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project site in supplier's or manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and lot number, if any. Do not deliver units until the work is ready for their installation.
 - 1. Inspect components for damage upon delivery. Unless minor defects in metal components can be made to meet the Architect's satisfaction, damaged parts shall be removed and replaced.
- B. Store materials in their original, undamaged packages and containers, inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.8 PROJECT CONDITIONS

- A. Environmental Requirements: Proceed with installation only when existing and forecasted weather conditions permit assembly to be performed according to manufacturer's written instructions and warranty requirements.
- B. Field Measurements: Take field measurements prior to fabrication of the work and preparation of shop drawings, to ensure proper fitting of the work. Show recorded measurements on final shop drawings. Notify the Owner and the Architect, in writing, of any dimensions found which are not within specified dimensions and tolerances in the Contract Documents, prior to proceeding with the fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the work.
 - 1. Where necessary, proceed with fabrication without measurement and coordinate fabrication tolerances to ensure proper fit.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Product specified is tempered glass swing safety entrances "Style P" with door rail system, all as manufactured Doralco Architectural Metal Solutions, a Div. of Doralco; 5919 W. 118th Street, Alsip, IL 60803; Phone: 888-443-6725; Fax: 708-388-9392; Web Site: www.doralco.com. Items specified are to establish a standard of quality for design, function, materials, and appearance. Equivalent products by other manufacturers are acceptable. The Architect will be the sole judge of the basis of what is equivalent.
- B. Substitutions: If the Contractor desires to make substitutions of materials, comply with requirements specified in Section 01 60 00 - Product Requirements.

2.2 MATERIALS

Retain below for project requiring LEED certification.

- A. LEED Requirements:
 - 1. Recycled Content Materials: Provide building materials with recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a

minimum of [10 percent] [20 percent] of the cost of materials used for the Project. See LEED Green Building Rating System.

Above applies to Credit MR 4. Select applicable percentages (10 percent applies to Credit MR 4.1, 20 percent applies to Credit MR 4.1 and MR 4.2). Below applies to Credit MR 5.1 and MR 5.2. Retain first indicated option below for Credit MR 5.1, retain both options for Credit MR5.2.

2. Regional Materials: Provide a minimum of [10 percent (based on cost)] [and an additional 10 percent beyond Credit MR 5.1 (total of 20 percent, based on cost)], of building materials that are regionally extracted, processed, and manufactured.
- B. Glass: Provide flat, fully tempered glass in thickness indicated for doors and sidelites. Comply with requirements of ASTM C 1048 for Kind FT (fully tempered), Condition A (uncoated surfaces), Type 1 (transparent), Class 1 (clear) glass. Provide products of thickness indicated that have been tested for surface and edge compression according to ASTM C 1048 and for impact strength according to 16 CFR Part 1201 for Category II materials.

Select thickness below (3/8 inch [10 mm] is for interior and is subject to dimension restrictions).

1. Thickness: 3/8 inch (10 mm).
 2. Thickness: 1/2 inch (13 mm).
 3. Thickness: 5/8 inch (16 mm).
 4. Thickness: 3/4 inch (19 mm).
 5. Edge Treatment: Provide machine ground and polished edges for exposed glass edges of doors and sidelites and flat ground edges for butting glass edges.
- C. Fittings, General: Provide fittings fabricated from aluminum extrusions of alloy and temper recommended by manufacturer for use intended and required for application of finish indicated. Provide manufacturer's standard fittings for configurations required, unless otherwise indicated, and as follows:
1. Aluminum: Provide alloy and temper recommended by manufacturer for use and finish indicated, but not less than the strength and durability properties of ASTM B 221/B 221M), Alloy 6063-T5.

If applicable, select metal below for cladding over aluminum. Delete all three if aluminum is not clad. First option (indicated as "bronze") is also called muntz metal by some manufacturers. The CDA recommends brass alloy primarily for interior applications.

- a. Bronze Cladding: ASTM B 36/B 36M, Alloy UNS No. C28000 (muntz metal, 60 percent copper).
 - b. Brass Cladding: ASTM B 36/B 36M), Alloy UNS No. C26000 (cartridge brass, 70 percent copper).
 - c. Stainless Steel Cladding: ASTM A 666, Type 304.
- D. Door Rail Systems: Provide door rail systems matching metal and finish of door fittings. The system shall offer pre-vinylated glazing for specified glass. Systems shall include, but shall not be limited to, door rails, patches, vertical stiles, center locks, and strike housings. Comply with GANA guidelines, GANA GM, and hardware manufacturer requirements for size restrictions. Door rails shall allow for 1/2 inch (13 mm) adjustability each way (1 inch [25 mm] overall) for standard hardware. System shall include, but shall not be limited to, end caps, blocking, and preparation.
1. Profile: Square.
 2. Profile: Beveled.

Select profile above and height below. The 3-3/8 inch (86 mm) rail height is available in square and beveled profile. The 4 inch (102 mm), 6 inch (152 mm), and 10 inch (254 mm) rail heights are available in square profile only.

3. Height: 3-3/8 inches (86 mm).
4. Height: 4 inches (102 mm).
5. Height: 6 inches (152 mm).
6. Height: 10 inches (254 mm).
7. Height: Custom, as indicated on the Drawings.
8. Glass Sizing: Glass sizing shall be in accordance with manufacturer's written recommendations.
9. Assembly: Assembly shall be in accordance with manufacturer's written recommendations. Rails shall be assembled together with a tongue-and-groove method to ensure proper alignment and shall be mechanically joined with stainless steel bolts at strategically located positions as determined by procedures.
10. Type: Provide two-part dry-glazed system complete with hardware and miscellaneous items/equipment as herein specified or as required for a complete installation. Door rails shall have a minimum gasket thickness of 0.625 inch (15.88 mm) with a minimum thickness of 0.187 inch (4.75 mm) for the aluminum at the clamping portion on both sides of the glass.
 - a. Basis of Design: "Sure-Grip Slimline," Doralco Architectural Metal Solutions, a Div. of Doralco.
 - b. Basis of Design: "Sure-Grip Dry-Glazed," Doralco Architectural Metal Solutions, a Div. of Doralco.

Select above or below, as applicable to the Project. If retaining above, select either the "Slimline" or "Dry-Glazed" system.

11. Type: Provide one-part wet-glazed system complete with hardware and miscellaneous items/equipment as herein specified or as required for a complete installation.
 - a. Basis of Design: "Econo Wet-Glaze Door Rail System," Doralco Architectural Metal Solutions, a Div. of Doralco.

- E. Sidelite Systems: Provide sidelite systems matching metal and finish of door fittings. The system shall offer pre-vinylated glazing for specified glass.

Fittings below come in radius, square, and taper profiles, and in 1 inch (25 mm), 1-3/8 inches (35 mm), 2 inches (51 mm), 2-1/2 inches (64 mm), 3-3/8 inches (86 mm), 4 inches (102 mm), 6 inches (152 mm), 10 inches (254 mm), or custom sizes.

- F. Door Fittings: Provide fittings of the profile and arrangement indicated. Comply with requirements indicated for kind and form of metal finish.
- G. Accessory Fittings: Provide manufacturer's standard accessory fittings of the type indicated. Comply with requirements indicated for kind and form of metal and finish of door fittings.
- H. Anchors and Fastenings: Provide manufacturer's standard concealed anchors and fastenings. Do not use exposed fasteners.
- I. Weatherstripping: Provide manufacturer's standard sweep type weatherstripping on exterior doors.
- J. Lock Cylinders: Lock cylinders for tempered glass entrance doors are specified in Section 08 71 00 - Door Hardware.

Retain either or both of the following if applicable to the Project.

- K. Entrances and Storefronts: See Section 08 41 00 - Entrances and Storefronts.
- L. Curtain Walls: See Section 08 44 13 - Glazed Aluminum Curtain Walls.

2.3 HARDWARE

- A. General: Prep for heavy-duty hardware units as indicated, scheduled, or required for operation of type of door, including, but not limited to, the following items of sizes, number, and type recommended by the manufacturer for the type of service required. Provide metal and finish for exposed parts to match finish of overhead fittings. For any related auxiliary hardware which is not work of this Section, see Section 08 71 00 - Door Hardware.
- B. Concealed Floor Closer: Provide center-hung, concealed floor closer complying with ANSI/BHMA A156.4 requirements, including, but not limited to, cases, bottom arms, top pivots, plates, and accessories required for a complete installation.

Select above or below.

- C. Concealed Overhead Closer: Provide manufacturer's standard heavy duty, concealed overhead closer complying with ANSI/BHMA A156.4 requirements. An auxiliary stop must be used when the door has an overhead concealed closer.
- D. Overhead Door Stop: Provide overhead door stop systems.
- E. Locks: Equip exterior doors with manufacturer's locksets that accept a standard cylinder with related components. Comply with the following.
 - 1. Location and Function: Provide round throw deadbolt in continuous bottom fitting. Key outside and thumbturn inside shall operate lock with endload capability.
- F. Cylinders: Cylinders are supplied under another section, for keying into building system.
- G. Threshold: Provide manufacturer's standard extruded aluminum threshold in mill finish. Coordinate cutouts with operating hardware. Include anchors and jamb clips.

2.4 FABRICATION

- A. General: Fabricate all-glass entrance components to designs and sizes indicated. Sizes of door and profile requirements of fittings and hardware shall be as indicated on the Drawings.
 - 1. Locate and provide holes and cutouts in glass to receive hardware before tempering glass. Do not permit cutting, drilling, or other alterations to glass after tempering.
 - 2. Fabricate work to accommodate required fittings, hardware, anchors, reinforcement, and accessory items.

Use tables below to determine recommended maximum swinging door size when using standard 1 3/4" wide door rails. Tables are furnished by the manufacturer.

Recommended Maximum Interior or Exterior Swinging Door Sizes							
Fully Tempered Glass							
		Full Rails			Patch Fittings		
Glass Thickness Glass Weight		3/8 inch (10 mm) 5.0 lb/ft ² (24.41 kg/m ²)	1/2 inch (13 mm) 6.5 lb/ft ² (31.74 kg/m ²)	3/4 inch (19 mm) 10.0 lb/ft ² (48.82 kg/m ²)	3/8 inch (10 mm) 5.0 lb/ft ² (24.41 kg/m ²)	1/2 inch (13 mm) 6.5 lb/ft ² (31.74 kg/m ²)	3/4 inch (19 mm) 10.0 lb/ft ² (48.82 kg/m ²)
Concealed Overhead Closer	Width	36 inches (914 mm)	42 inches (1067 mm)	36 inches (914 mm)	36 inches (914 mm)	42 inches (1067 mm)	36 inches (914 mm)
	Height	84 inches (2134 mm)	108 inches (2743 mm)	84 inches (2134 mm)	84 inches (2134 mm)	102 inches (2581 mm)	84 inches (2134 mm)
	Glass Weight	105 pounds (47.63 kg)	205 pounds (92.99 kg)	210 pounds (95.25 kg)	105 pounds (47.63 kg)	194 pounds (88.00 kg)	210 pounds (95.25 kg)
Floor Closer	Width	36 inches (914 mm)	48 inches (1219 mm)	48 inches (1219 mm)	36 inches (914 mm)	42 inches (1067 mm)	36 inches (914 mm)
	Height	84 inches (2134 mm)	108 inches (2743 mm)	120 inches (3048 mm)	84 inches (2134 mm)	102 inches (2581 mm)	96 inches (2438 mm)
	Glass Weight	105 pounds (47.63 kg)	234 pounds (106.14 kg)	400 pounds (181.44 kg)	105 pounds (47.63 kg)	194 pounds (88.00 kg)	240 pounds (108.86 kg)

Use the table below to determine the recommended maximum swinging door size when using the Doralco Slimline Series rails and patches.

FULLY TEMPERED GLASS, INTERIOR USE ONLY

		FULL SLIMLINE RAILS			SLIMLINE PATCHES		
GLASS THICKNESS		10MM (3/8")	12 MM (1/2")	19MM (3/4")	10MM (3/8")	12 MM (1/2")	19MM (3/4")
GLASS WEIGHT		5LBS /SQ FT	6.5 LBS/SQ FT	10 LBS/SQ FT	5LBS /SQ FT	6.5 LBS/SQ FT	10 LBS/SQ FT
CONCEALED DORMA	WIDTH	36" (914 MM)	42" (1065 MM)	MUST USE FLOOR CLOSER WITH 3/4" GLASS	NOT AVAILABLE	42" (1065 MM)	NOT AVAILABLE
RTS88 OHCC WITH STANDARD LENGTH SPINDLE	HEIGHT	84" (2130 MM)	108" (2740 MM)			102" (2590 MM)	
	GLASS WEIGHT	105 LBS	205 LBS			194 LBS	
DORMA BTS80 FLOOR CLOSER	WIDTH	36" (914 MM)	42" (1065 MM)	42" (1065 MM)	NOT AVAILABLE	42" (1065 MM)	NOT AVAILABLE
	HEIGHT	84" (2130 MM)	108" (2740 MM)	108" (2740 MM)		102" (2590 MM)	
	GLASS WEIGHT	105 LBS	205 LBS	320 LBS		194 LBS	

An auxiliary stop must be used with Slimline series door hardware. Contact the manufacturer for additional information.

- B. Prefabrication: Complete fabrication, assembly, finishing, hardware application, and other work to the greatest extent possible before shipment to the site. Disassemble components only as necessary for shipment and installation.
- C. Continuity: Maintain accurate relation of planes and angles with hairline fit of contacting members.

2.5 FINISHES

- A. Comply with NAAMM MFM for architectural metal products for recommendations for applying and designating finishes.

Select applicable material and finish below.

1. Aluminum Finishes: Finish designations prefixed by AA comply with system established by the Aluminum Association for designating aluminum finishes.
 - a. Class I Clear Anodized Finish: AA-M12-C22-A41 (Mechanical Finish: non-specular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear film thicker than 0.7 mil [0.018 mm]) complying with AAMA 611.
 - b. Class II, Clear Anodized Finish: AA-M12-C22-A31 (Mechanical Finish: non-specular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.4 mil [0.010 mm] or thicker) complying with AAMA 611.

If clear anodized finish is applicable select one of two subparagraphs above. If color anodized finish is applicable select one of two subparagraphs below.

- c. Class I Color Anodized Finish: AA-M21-C22-A42/A44 (Mechanical Finish: non-specular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited coating 0.7 mil [0.018 mm] complying with AAMA 611. Provide color to match the Architect's sample, or, if no sample, as selected by the Architect from within full range of industry colors and color density range.
- d. Class II, Color Anodized Finish: AA-M12-C22-A32/A34 (Mechanical Finish: non-specular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural

Class II, integrally colored or electrolytically deposited coating 0.4 mil [0.010 mm] or thicker) complying with AAMA 611. Provide color to match the Architect's sample, or, if no sample, as selected by the Architect from within full range of industry colors and color density range.

2. Stainless Steel Finishes: Remove or blend tool marks, die marks, and stretch lines into finish. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
 - a. Bright, Directional Polish: No. 4 finish.
 - b. Mirror-Like Reflective, Non-Directional Polish: No. 8 finish.
3. Copper Alloy Finishes: Finish designations prefixed by CDA conform to the system established by the Copper Development Association for designating copper alloy finishes.
 - a. Bronze Polished Finish: CDA-M21 (smooth specular, buffed, mechanical finish).
 - b. Bronze Natural Satin Finish: CDA-M31 (fine satin, directional-textured, mechanical finish).
 - c. Brass Polished Finish: CDA-M21 (smooth specular, buffed, mechanical finish).
 - d. Brass Natural Satin Finish: CDA-M32 (medium satin, directional-textured, mechanical finish).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which the work is to be installed, and notify the Contractor in writing, with a copy to the Owner and the Architect, of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
 1. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installer.

3.2 INSTALLATION

- A. Install all-glass entrance doors and associated components in accordance reviewed product data, final shop drawings, as indicated on the Drawings, and in accordance with manufacturer's printed instructions and recommendations.
 1. Set units level, plumb, and true-to-line.
 2. Lubricate hardware and other moving parts.

3.3 ADJUSTING AND CLEANING

- A. Adjusting: Adjust doors and hardware to provide a tight fit at contact points and at weatherstripping for smooth operation and weathertight closure.
 1. Hardware: Adjust operating hardware to ensure proper operation. Set, seal, and grout floor closer cases. Coordinate cylinder installation.
- B. Cleaning: Clean door and frame surfaces after installation, exercising care to avoid damage to finish.
 1. Clean glass surfaces after installation, complying with requirements contained in Section 08 80 00 - Glazing for cleaning and maintenance. Remove excess glazing and sealant compounds, dirt, and other substances.

3.4 PROTECTION

- A. Provide final protection and maintain conditions in a manner acceptable to the Installer, that shall ensure that the all-glass entrances shall be without damage at time of Substantial Completion.

END OF SECTION