**SECTION 08 41 26 (.01)**

**ALL-GLASS ENTRANCES AND STOREFRONTS
(Frameless Glass Entrance System)**

1. **GENERAL**
	1. **Summary**
		1. Section Includes
			1. All-Glass Entrance Systems
			2. Handles
			3. Closers
			4. Accessories
		2. Products Installed But Not Supplied Under This Section
			1. Tempered Glass: [Section 08 80 00] [Section 08 88 00]
			2. Door Hardware: Section 08 71 00
		3. Related Requirements
			1. Section 01 25 00 – Substitution Procedures
			2. Section 01 33 00 – Submittal Procedures
			3. Section 01 70 00 – Execution and Closeout Requirements
			4. Section 08 71 00 – Door Hardware
			5. Section 08 80 10 – Glazing
			6. Section 08 88 00 – Special Function Glazing
	2. References
		1. Abbreviations and Acronyms

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| * + - 1. ANSI/BHMA
 | Standards and publication developed by Builders Hardware Manufacturers Association in conjunction with American National Standards Institute. |

* + 1. Definitions

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| * + - 1. Patch Kit
 | Industry term referring to a short rail (example: FHC 9-inch) installed at the top and bottom of all-glass doors; and for attaching pivot hinges and closers to the door. This option is used when a full rail is not desired at the top or bottom of all-glass doors. |
| * + - 1. ANSI/BHMA Grade 1
 | Standard defining product grade for a particular hardware item with Grade 1 being the highest. |

* + 1. Reference Standards
			1. American National Standards Institute (ANSI) Publications:

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| --- | --- |
| * + - * 1. A156.3 - 20
 | Exit Devices |
| * + - * 1. A156.13 - 17
 | Mortise Locks and Latches |

* + - 1. American National Standards Institute (ANSI) Publications:

|  |  |
| --- | --- |
| * + - * 1. A156.1 - 21
 | CPSC 16 CFR 1201 Category II |

* 1. **Submittals**
		1. Section 01 33 00
	2. **Action Submittals**
		1. Product Data
			1. Manufacturer’s technical product data for all-glass entrance systems, including:
				1. [Door hardware,] [automatic in-ground operators,] components, and accessories.
				2. Standard details and fabrication method.

Include fabrication details, material description, dimensions of individual components and profiles, and finishes.

* + - * 1. Test data: Fabricated door.
		1. Shop Drawings
			1. Dimensioned drawings of all-glass entrance systems indicating:
				1. Plans, elevations, and sections.

Elevation-Scale: ¼ inch per foot

* + - * 1. Details and Isometric Drawings: Fittings, rails, framing, and glazing.
				2. Door Hardware: Locations, mounting heights, quantities, and installation requirements.
				3. Anchorage and reinforcement.
				4. Door Signage: Layout, font size and location on door.
		1. Samples
			1. Manufacturer’s finishes on exposed areas for each color and type finish:
				1. Metal Fittings and Components: 6-inch long sections.
				2. Tempered Glass Edge Finishes: 6-inch square sections.
				3. Provide 3 samples of each.
		2. Entrance Door Hardware Schedule
			1. Prepared by Supplier:
				1. Detail fabrication and assembly of hardware.
				2. Detail procedures and diagrams.
			2. Coordinate and verify:
				1. Components, assemblies and related work.
				2. Proper size, thickness, hand, function and finish.
		3. Manufacturers’ Written Instructions
			1. Site Storage
			2. Installation
			3. Cleaning
	1. **Closeout Submittals**
		1. Warranty Documentation
			1. Manufacturer’s Product Warranty
		2. Record Documentation
		3. Section 01 70 00
	2. **Quality Assurance**
		1. Certifications
			1. Supervisor and Installers:
				1. Evidence of completed installations of all-glass entrances similar in design and extent to those required for this project.
				2. Installation work has a record of successful in-service performance.
		2. Mock-ups
			1. Prepare mock-up for approval by Architect.
			2. Mock-up will serve as a standard for installation.
		3. Components and Fittings
			1. Provide from a single-source manufacturer.
			2. Door rail systems: Comply with ANSI/BHMA Grade 1.
	3. **Delivery, Storage and Handling**
		1. Delivery and Acceptance Requirements
			1. Protect materials and components against damage during transit.
			2. Deliver in Manufacturer’s original, unopened, undamaged containers with identification labels intact.
			3. Upon delivery, inspect for damage.
				1. Repair of minor defects and damage subject to Architect’s approval.
				2. Remove damaged and unacceptable parts and replace with new.
		2. Storage and Protection
			1. Store materials to protect from exposure to harmful weather conditions and damage from elements, construction activities, and hazards before, during and after installation.
			2. Do not use adhesive papers or sprayed coatings that become firmly bonded when exposed to sunlight or high temperatures. Do not leave coating residue on surfaces.
		3. Handling
			1. Avoid damaging materials and components during handling.
	4. **Site Conditions**
		1. Field Measurements
			1. Take field measurements before fabrication.
				1. Verify actual measurements or openings, and record measurements on shop drawings.
				2. Coordinate fabrication tolerances to insure proper fit.
			2. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
	5. **Warranty**
		1. Manufacturer Warranty: 2 years
			1. Repair or replace components of all-glass entrances that fail in materials or workmanship within the specified warranty period.
		2. Section 01 70 00
1. **PRODUCTS**
	1. **Manufacturers**
		1. Acceptable Manufacturer
			1. FHC- Frameless Hardware Company

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Website: [www.fhc-usa.com](http://www.fhc-usa.com)

* + - 1. Substitutions: Not permitted.
	1. **Performance/Design Criteria**
		1. Manual-Swinging, Herc-Door™ All-Glass Entrance Systems
			1. Rails [with lock] [without lock]
			2. Handles
			3. Closer at [Top] [Bottom]
		2. Basis of Design
			1. Frameless Hardware Company LLC (FHC) Advance Series Herc-Door™ Frameless Door Rail System used for establishing quality, performance, appearance, including layout, material, attachment method and ease of installation.
				1. Sizes, profiles and dimensions are based on specific types and models, support and express the design concept. For minor deviations in dimensions and profiles, submit a Substitution Request. (Section 01 25 00)
	2. **System Components**
		1. Tempered Glass
			1. [Monolithic Tempered:]
				1. Thickness: [1/2-inch] [5/8-inch] [3/4-inch]
			2. [Laminated Tempered:]
				1. Thickness: [9/16-inch] [11/16-inch] [13/16-inch]
			3. Refer to [Section 08 80 00] [Section 08 88 00].
		2. Door Rails
			1. Top Rails:
				1. Height: [2½-inch] [4-inch]
				2. Length: [9”] [35 ¾ inches] [Custom]
				3. Profile: [Square] [Tapered]
				4. Matching end caps
				5. Locks: [With] [Without]
			2. Bottom Rails:
				1. Height: [2½-inch] [4-inch] [6-inch (Square only)] [10- inch (Square only)]
				2. Profile: [Square] [Tapered]
				3. Matching end caps
				4. Locks: [With] [Without]
			3. Material: Aluminum
			4. Finish:
				1. [Brushed Stainless Steel (304 Alloy)]
				2. [Polished Stainless Steel (304 Alloy)]
				3. [Satin Anodized]
				4. [Matte Black]
				5. [Dark Bronze Anodized]
				6. [Polished Brass]
				7. [Satin Brass (Custom)]
				8. [Oil Rubbed Bronze (Custom)]
				9. [Custom Powder Coated: (Specify color)]
		3. Vertical Door Stile
			1. Length: [Standard] [Custom]
			2. Finish: Match door rails.
		4. Headers
			1. Use with [Overhead Concealed Closers] [Pivots] [Locks].
			2. Width: [4-inch] [4 ½-inch] [6-inch]
			3. Length: [36 inches] [72 inches] [Custom]
			4. Finish: Match door rails.
		5. Access Control Handles
			1. General:
				1. [Glass Mounted] [Rail Mounted] [Glass and Rail Mounted]
				2. UL Certified
				3. Complies with ADA and NFPA Configurations
			2. Panic Handles
				1. Application: Exterior Push/Pull Handle Combination [using Panic and Dummy Handles]
				2. Tubing: 1¼ - inch diameter
				3. Handle Configuration: Style [A] [B] [D] [F] [F-S] [G] [H] [J] [J-S] [M] [M-S] [X] [Z]
			3. Deadbolt Handles
				1. Deadbolt Location: [Top Lock] [Top and Bottom Lock] [Bottom Lock]

Top of Deadbolt: [Bolt Latch Option] [Rolling Bolt Latch Option]

Keyed Access: [Cylinder] [Thumbturn]

* + - * 1. Tubing: 1¼ - inch diameter
				2. Handle Configuration: Style [A] [B] [D] [F] [F-S] [G] [H] [J] [J-S] [M] [M-S] [X] [Z]
			1. Electromagnetic Egress Handles
				1. \_\_\_\_\_\_\_\_
			2. Finish:
				1. [Brushed Stainless Steel (304 Alloy)]
				2. [Polished Stainless Steel (304 Alloy)]
				3. [Matte Black]
				4. [Dark Bronze Anodized]
				5. [Polished Brass]
				6. [Satin Brass (Custom)]
				7. [Oil Rubbed Bronze (Custom)]
				8. [Custom Powder Coated: (Specify color)]
		1. [Top] [Bottom] Locking Ladder Pulls
			1. Glass Mounted
			2. Application: Interior Back-to-Back pulls.
			3. Tubing: 1¼ - inch diameter, Stainless Steel 304
			4. Deadbolt Location: Latches into [Header] [Floor]
			5. Small Format Interchangeable Core Rim Cylinder.
			6. Thumbturn: ADA Compliant
			7. Finish: [Brushed Stainless] [Polished Stainless] [Matte Black]
		2. Back-to-Back Ladder Pulls ***Round tubing***
			1. Glass Mounted
			2. Application: Interior Back-to-Back pulls.
			3. Tubing: 1¼ - inch diameter, Stainless Steel 304
			4. Length (overall): [24 inches] [36 inches] [48 inches] [60 inches] [72 inches] [84 inches]
			5. Finish: [Brushed Stainless] [Polished Stainless] [Matte Black] [Dark Bronze Anodized
		3. Back-to-Back Ladder Pulls ***Square tubing***
			1. Glass Mounted
			2. Application: Interior Back-to-Back pulls.
			3. Tubing: 1¼ - inch Square, Stainless Steel 304
			4. Length (overall): [24 inches] [48 inches] [Custom]
			5. Finish: [Brushed Stainless] [Polished Stainless] [Matte Black] [Dark Bronze Anodized]
		4. Back-to-Back Door Pulls ***Round tubing***
			1. Glass Mounted
			2. Application: Interior Back-to-Back pulls.
			3. Tubing: 1-inch Diameter, Stainless Steel 304
			4. Length (overall): [10 inches] [12 inches] [18 inches] [24 inches]
			5. Finish: [Brushed Stainless] [Polished Stainless] [Matte Black] [Dark Bronze Anodized]
		5. Back-to-Back Door Pulls ***Square tubing***
			1. Glass Mounted
			2. Application: Interior Back-to-Back pulls.
			3. Tubing: 1-inch Square, Stainless Steel 304
			4. Length (overall): [12 inches] [24 inches]
			5. Finish: [Brushed Stainless] [Polished Stainless] [Matte Black] [Satin Anodized] [Dark Bronze Anodized]
		6. Locksets, Latchsets and Keepers
			1. Center Locks and Glass Keepers
				1. Glass Mounted
				2. Size: 6 inches by 10 inches
				3. Tempered Glass Thickness: [½-inch][5/8-inch] [3/4-inch] [Custom]
				4. Lock Function: [Office] [Entrance] [Storefronts]
				5. Finish: [Brushed Stainless] [Polished Stainless] [Satin Anodized] [Matte Black]
		7. Lever Handles
			1. ANSI/BHMA A156.3.
			2. Provide breakaway feature to prevent irreparable damage to lock when force more than that specified in ANSI/BHMA A156.13 is applied.
		8. Cylinders and Cores
			1. [Section 08 71 00.]
		9. Door Closing Control Hardware Devices
			1. Overhead Concealed Door Closers (Normal-Duty) and Floor Mounted Pivots
				1. Door Width: 30 inches to 48 inches
				2. Door Weight: 250 pounds, maximum
				3. Spindle: [1/2-inch] [3/4-inch]
				4. Hold Open: [90 degrees] [105 degrees] [None]
				5. Spring: [Fixed] [Adjustable]
			2. Overhead Concealed Door Closers and Floor Mounted Pivot (Heavy Duty)
				1. Door: Offset and Double Acting Center Hung
				2. Door Weight: 1000 pounds, maximum
				3. Spindle: [1/2-inch] [7/8-inch]
				4. Hold Open: [90 degrees] [105 degrees] [None]
				5. Door Swing: 180 degrees.
				6. Spring: [Fixed] [Adjustable]
			3. Floor Mounted Door Closers (Heavy Duty) and Overhead Pivots
				1. Door Width: 54 inches, maximum
				2. Door Weight: 1300 pounds, maximum
				3. Spindle: [Interchangeable]
				4. Hold Open: [90 degrees] [105 degrees] [None; 180 degrees, Door Swing]
				5. Spring: [Fixed] [Adjustable]
				6. Cover Plate

Finish:

[Brushed Stainless Steel (304 Alloy)]

[Polished Stainless Steel (304 Alloy)]

[Polished Brass]

* + - 1. Types and optional features of closers for specific openings under Hardware Schedule.
			2. [Section 08 71 00.]
		1. Accessories
			1. Thresholds
				1. Width: [4-inch] [4 ½-inch] [5-inch] [7-inch]
				2. Rise: 1/2 -inch
				3. Lengths: [36-inch] [72-inch] [252-inch] [Custom]
				4. Finish: [Satin Anodized] [Dark Bronze Anodized]
			2. Weatherstripping
				1. Door Rail – Sweeps

Finish: [Satin Anodized] [Dark Bronze Anodized]

Seal: Wool Pile

* + - * 1. Vertical

Finish: Clear

Seal: Wool Pile

* + - * 1. Bulb

Finish: Clear

Seal: Clear Vinyl Bulb

* + - * 1. Adhesive Tape:

Material: Acrylic

Finish: Transparent

Adhesion: Very High-Bond

* + - 1. Keying System and Keys

Section 08 71 00

* 1. **Fabrication**
		1. Fabricate doors, components, hardware and accessories to accommodate required fittings, anchors, and reinforcement.
		2. Shop assemble doors, components, hardware and accessories to greatest extent possible.
			1. Continuity: Maintain accurate relation of planes and angles with fit of contacting members.
		3. Ship completely assembled units ready for installation.
			1. Disassemble minimum number of items necessary to accommodate shipping and installation.
1. **EXECUTION**
	1. **Examination**
		1. Verification of Conditions
			1. Examine substrates and supports for compliance with installation tolerances and conditions required for proper installation of tempered glass, and identify conditions detrimental to work.
			2. Proceed with installation after unsatisfactory conditions have been corrected.
	2. **Preparation**
		1. Protection of In-Place Conditions
			1. Exercise care in using equipment and installing railings.
			2. Provide means to protect other work from damage.
	3. **Installation**
		1. General:
			1. Install doors, components, hardware and accessories in accordance with manufacturer’s written instructions.
				1. Cutting, drilling and other alternation to tempered glass after tempering is not permitted.
			2. Install units level, plumb and true to line with uniform joints.
			3. Maintain uniform clearances between adjacent components.
			4. Lubricate hardware and moving parts.
		2. Adjusting
			1. Doors:
				1. Adjust to produce smooth operation, tight fit at contact points and weather tight closure.
				2. Provide a tight fit at meeting points and weather-stripping.
			2. Hardware:
				1. Adjust operating hardware to provide proper operation.

Comply with requirements in Section 08 71 00.

* + - * 1. Install floor closer cases.

Set, seal and grout.

* 1. **Field Quality Control**
		1. Inspections
			1. Verify components are installed following manufacturer’s installation instructions and meet tolerances.
			2. Verify doors are weather-tight and hardware operates smoothly.
			3. Verify finishes are not marred or damaged.
		2. Non-Conforming Work
			1. Adjust doors and hardware.
			2. Remove and replace items that cannot be repaired to satisfaction of Architect.
			3. Inspect.
	2. **Cleaning**
		1. Tempered Glass:
			1. Clean and polish in accordance with manufacturer written instructions.
			2. Remove excess glazing and sealant compounds, dirt, debris and other substances.
		2. Metal Surfaces:
			1. General:
				1. Wash with clean water and mild detergent.
				2. Avoid abrasive chemicals, detergents and implement that may mar or gouge material.
			2. Protective Film:
				1. Remove from metal surfaces as soon as practical to avoid damage to metal surfaces from adhesives exposed to direct sunlight, and high ambient and surface temperatures.
	3. Protection
		1. Protect doors, hardware and finishes from damage or deterioration.
			1. Provide temporary protective covering approved by manufacturer.
			2. Remove protective coverings at [Substantial Completion] [Project Completion].
		2. Repair damaged components.
			1. Follow manufacturer’s written recommendations.
			2. If component cannot be restored to like-new condition, provide new component.
		3. Restore damaged finishes.
			1. Refinish unit in field or shop.
			2. Reinstall and adjust.

**END OF SECTION**