

SECTION 085123 - STEEL WINDOWS AND DOORS

PART 1 - GENERAL

0.1 SUMMARY

- A. Section Includes: Thermally-broken steel windows and doors with narrow-profile members.

0.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For steel windows and doors.
- C. Samples: For each exposed product and for each color specified, 12 inches (300 mm) long.

0.3 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

0.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For steel windows and doors to include in maintenance manuals.

0.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer capable of fabricating steel windows and doors that meet performance requirements indicated and of documenting performance by labels, test reports, and calculations.

0.6 WARRANTY

- A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace components of steel windows and doors that fail in materials or workmanship within specified warranty period.

- 1. Warranty Period:

- a. Window and Door Units: 20 years from date of Substantial Completion.
- b. Insulating Glass Units: 20 years from date of Substantial Completion.
- c. Finish: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

0.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Portella Steel Doors & Windows; Artisan Series.

- 1. Authorized Distributor: Revival Sash (revivalsash.com).

0.2 PERFORMANCE REQUIREMENTS

- A. Structural Wind Loads: As indicated on Drawings.

- B. Deflection Limits: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch (19 mm), whichever is less, at design pressures.
- C. Structural: Test according to ASTM E 330 as follows:
 - 1. When tested at positive and negative wind-load design pressures, steel windows and doors do not evidence deflection exceeding specified limits.
 - 2. When tested at 150 percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
 - 3. Test Durations: As required by design wind velocity, but not less than 10 seconds.
- D. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.33 Btu/sq. ft. x h x deg F for fixed window unit; 0.44 for doors.
- E. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.21 for windows; 0.16 for doors.

0.3 STEEL WINDOWS AND DOORS

- A. Window and Door Member Profiles: Manufacturer's standard true divided lite design unless otherwise indicated, as follows:
 - 1. Frame Depth: 2 inches.
 - 2. Muntin Width: 1-1/4 inches.
- B. Operating Types: Provide the following operating types in locations indicated on Drawings:
 - 1. Fixed windows, sidelights and transoms.
 - 2. Out-swing doors.
- C. Steel Finish: Zinc bonded galvanized and factory finished.
 - 1. Factory Finish: Manufacturer's standard process including the following:
 - a. Epoxy Base Primer: 2 coats.
 - b. Acrylic Lacquer Paint: 2 coats.
 - c. Clear Polyurethane: 3 coats.
 - 2. Color and Gloss: As selected by Architect from manufacturer's full range.
- D. Mullions: Formed of carbon steel matching window units; with anchors for support to structure and for installation of window units and having sufficient strength to withstand design pressure indicated. Provide mullions of profile indicated and with cover plates. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections.
- E. Weather Stripping: Manufacturer's standard compressible weather stripping, complying with AAMA 701/702, ASTM C 509, or ASTM C 864 and designed for permanently resilient sealing under compression and for complete concealment when sash or door is closed.

0.4 GLAZING

- A. Insulating-Glass Units: Manufacturer's standard units Section 088000 "Glazing" and as follows:

1. Basis-of-Design Product: Cardinal Glass Industries; 366.
2. Glass: ASTM C 1036, Type 1, Class 1, q3, clear.
 - a. Kind: Fully tempered.
3. Lites: Two.
4. Filling: Fill space between glass lites with argon.
5. Spacer: Manufacturer's standard spacer material and construction, in dark bronze color.
6. Low-E Coating: Manufacturer's standard.

0.5 HARDWARE

- A. General: Provide door hardware, with operating components of stainless steel, carbon steel complying with AAMA 907, brass, bronze, or other corrosion-resistant material designed to smoothly operate, tightly close, and securely lock steel doors; and sized to accommodate door weight and dimensions.
- B. Door Hardware:
 1. Door Hinges: Manufacturer's standard adjustable steel post in barrel with ball bearings.
 2. Door Lock: Manufacturer's optional Rocky Mountain mortise hardware.
 3. Push/Pull Units: As selected by Architect.
 4. Weather Strip: Black silicon gasket; 4-point contact; and weather sweep.
 5. Threshold: Manufacturer's standard custom-fabricated brass with patina finish and door weep system

0.6 ACCESSORIES

- A. Fasteners: Provide fasteners of bronze, brass, stainless steel, or other metal that are warranted by manufacturer to be noncorrosive and compatible with trim, hardware, anchors, and other components of steel windows and doors.
- B. Anchors, Clips, and Accessories: Provide units of stainless steel, hot-dip zinc-coated steel, bronze, brass, or iron complying with ASTM A 123/A 123M. Provide units with sufficient strength to withstand design pressure indicated.

0.7 FABRICATION

- A. General: Fabricate steel windows and doors of type and in sizes indicated to tolerance within 1/16 inch of indicated dimensions. Include a complete system for assembly of components and anchorage of window and door units.
- B. Factory glazed windows and doors.
 1. Glazing System: Manufacturer's standard wet-glazed system using glazing clips and glazing compound.
- C. Subframes, Operable Sash and Doors: Formed of carbon steel of profile indicated. Miter or cope corners, and weld and dress joints smooth.
- D. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.
- E. Provide weep holes and internal water passages to conduct infiltrating water to the exterior.

PART 3 - EXECUTION

0.1 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, doors, hardware, accessories, and other components.
- B. Install windows and doors level, plumb, square, true to line, without distortion or impediment to thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Set sill members in bed of sealant or with gaskets, as indicated, to provide weathertight construction.
- D. Install windows and doors to drain condensation, water-penetrating joints, and moisture migrating within windows or doors to the exterior.
- E. Separate corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials according to ASTM E 2112.

0.2 ADJUSTING

- A. Adjust operating sashes, screens, hardware, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

END OF SECTION