

SECTION 08510

STEEL WINDOWS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section includes the following:
 - 1. New custom fabricated, double hung and awning steel weatherstripped windows to match existing in accordance with window schedule as indicated.
 - 2. New fixed steel windows to match existing.
 - 3. Re-glazing existing windows as specified in Section 08800 and replacement of damaged or missing operating hardware.
 - 4. For restoration of existing steel windows, refer to Section 04500.
- B. Related work specified in other Sections:
 - 1. Perimeter caulking specified in Section 07920.
 - 2. Glass, glazing and glazing materials specified in Section 08800.
 - 3. Field-applied paint finish is specified in Section 09900.

1.02 SUBMITTALS

- A. Samples:
 - 1. Typical sash corner.
 - 2. Color sample of finish for verification purposes.
 - 3. Hardware.
- B. Shop Drawings and Manufacturer's Literature:
 - 1. Submit for approval shop drawings showing window and installation details, including anchorage, fastening and sealing methods.
 - 2. Dimensioned elevations showing window opening and window sizes.
 - 3. Provide mock-up of windows, 10 minimum.

1.03 QUALITY ASSURANCE

- A. Manufacturer: Minimum five years experience in the manufacture of steel windows of the type required.
- B. Installer: Experienced in the installation of steel windows.
- C. Allowable Tolerances: Size dimensions +/- 1/16-inch.

- D. Source Quality Control:
1. Air Infiltration Test, ASTM E283: Maximum air infiltration 0.37-CFM/Ft. of crack length.
 2. Water Penetration Test, ASTM E331: No water penetration for 15-minutes when window is subjected to a rate of flow of 5-gal./hr./sq. ft. with differential pressure across window unit of 6.24-PSF (50-mph).
 3. Upon request, the window manufacturer shall provide a test report from a qualified independent testing laboratory regularly engaged in testing windows to verify that his products conform to these test requirements.

1.04 PRODUCT, STORAGE AND HANDLING

- A. Store in designated areas in an upright position on wood slats or on a dry floor in a manner that will prevent damage. Ventilate canvas or plastic coverings to prevent humidity buildup.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURER

- A. Hope's Architectural Products, Inc., Torrance Steel Window Co., or Carmel Steel Products, as required to match profile of existing steel windows.

2.02 MATERIALS

- A. Steel windows shall be manufactured from solid hot rolled steel shapes.
1. Sections made from new billet steel with flanges rolled integrally at the mill.
 2. Perimeter frames and ventilator sections shall have glazing rebates providing an unobstructed glazing surface.
 3. Glazing rebate surfaces shall be perpendicular to the web or stem of the section. Rebate surfaces that are tapered will not be acceptable.
 4. Combined weight of frame and ventilator sections shall be a minimum of 3.7-pounds per lineal foot. Frame section alone shall not weigh less than 1.65-pounds per lineal foot. Muntin shall weigh not less than 1.23-pounds per lineal foot.
 5. The ventilator sections shall have an integral dovetail groove located on the inside bedding contact for the reception of weatherstripping.
- B. Glazing beads, if used on existing steel windows, shall be match the material and appearance of existing beads.
- C. Weatherstripping shall be extruded vinyl.
- D. Hardware: As required to match existing.
- E. Paint:
1. Pre-treatment: Zinc phosphate.
 2. Primer: Epoxy primer.
 3. Finish Coat: Field-applied oil-based exterior trim paint as specified in Section 09900.

2.02 FABRICATION

- A. Fabricate steel windows in accordance with approved shop drawings.
- B. Prior to fabrication, clean hot rolled steel sections by shot blasting.
- C. Miter or cope corners of frame and ventilators and solidly weld. Exposed and contact surfaces shall be finished smooth flush with the adjacent surfaces.
- D. Muntin shall be tenoned and welded to the perimeter frame. Muntin intersections shall be either slotted and cross notched or tenoned and welded to each other.
- E. Glazing:
 - 1. Sash shall be designed for inside or outside glazing as required to match existing.
 - 2. Provide continuous snap-in glazing beads to suit the glass as specified.
- F. Weatherstrip: Apply continuous vinyl weatherstripping to the integral weatherstrip groove in the interior contact surface of the ventilator sections, and on the same plane around the interior perimeter of the ventilated area. Weatherstripping that is surface applied or requires an additional retainer or requires screws for application is not acceptable.
- G. Factory Finishing:
 - 1. After fabrication, windows, mullions, covers and trim shall be zinc phosphate treated in a continuous five stage process.
 - 2. Following pretreatment, apply one coat of a primer and oven cure.
 - 3. Windows will be field painted as specified in Section 09900.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Window openings shall conform with details, dimensions and tolerances shown on the window manufacturer's approved shop drawings.
- B. Conditions which may adversely affect the window installation must be corrected before installation commences.
- C. Complete wash down of the adjacent masonry before erection to prevent damage to the finish by the cleaning materials.

3.02 INSTALLATION

- A. Install windows in openings in strict accordance with manufacturer's instructions and approved shop drawings.
 - 1. Set units plumb, level and true to line, without warp or rack of frames.
 - 2. Anchor units securely to surrounding construction with approved fasteners.
 - 3. The exterior joints between the sash, trim and mullions shall be properly sealed watertight with an approved sealant and neatly pointed.

- B. Attach ventilator hardware, as required, and adjust ventilators to operate smoothly, free from twist, and to be weathertight when closed.
- C. Repair abraded areas of the factory finish.

3.03 CLEANING

- A. Leave window surfaces clean after installation and ready to receive glass and glazing.

END OF SECTION