SECTION 085664 - STEEL SLIDING DETENTION WINDOWS

1. GENERAL
   * + 1. RELATED WORK SPECIFIED ELSEWHERE
          1. Joint Sealants: Section 079200.
          2. Security Glass and Glazing: Section 088853.
       2. WINDOW TYPES AND DESCRIPTIONS
          1. Acceptable Manufacturer:

Hope’s Windows, Inc, 84 Hopkins Avenue, P.O. Box 580, Jamestown, New York 14702, phone (716) 665-5124, [www.hopeswindows.com](http://www.hopeswindows.com).

Or equal.

* + - 1. REFERENCES
         1. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:

Steel Window Specifications by the Steel Window Institute (SWI).

Structural Welding Code - Steel, AWS D1.1 and Structural Welding Code - Sheet Steel, AWS D1.3, as applicable, by the American Welding Society (AWS Codes).

* + - 1. PERFORMANCE REQUIREMENTS
         1. Air infiltration test, meets or exceeds ASTM E283, maximum air infiltration: 50 CFM/Sq. Ft.
         2. Water penetration test, meets or exceeds ASTM E331, no water penetration for 15 minutes when the window is subjected to a rate of flow of 5 gal. /hr./sq. ft. with differential pressure across the window unit of 2.86 PSF.
         3. Quality of e-coat/ top-coat combination shall meet or exceed the following ASTM designations: ASTM D714- Paint Blistering Test, ASTM D4585 – Humidity Test, ASTM B117 – Salt Spray (Fog) Test, ASTM D1654 – Painted Products in Corrosive Environments, ASTM G85 – Cyclic Fog/Dry Test (Prohesion), ASTM D5894 – Salt Fog/UV Painted Metal, ASTM D4541 – Pull Off Strength of Coating Test.
      2. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Waiver of Submittals: The Waiver of Certain Submittal Requirements in Section 013300 does not apply to this Section.
         5. Submittal Packages: Submit the Quality Assurance Package prior to other submittal packages. After Quality Assurance Package is approved, submit the Detention Window Package, and the Quality Control Package specified below at the same time.
         6. Quality Assurance Package:

Detention Window Manufacturer’s Qualifications:

Name, business address and telephone numbers of the Detention Window Manufacturer.

Names, addresses and telephone numbers of facility contacts of 5 similar projects where manufacturer’s detention windows have been in operation for a minimum of 3 years.

Detention Window Installation Company Qualifications:

Name, business address and telephone numbers of the installation company.

Provide a comprehensive history of the Installation Company.

Names, addresses and telephone numbers of facility contacts of 5 similar projects company has completed in past 3 years.

Equipment Installer’s Qualifications:

Name of person providing on-site supervision of the installation and completion of Work of this section.

Names, addresses and telephone numbers of facility contacts of 5 similar projects this person has supervised in the past 3 years.

* + - * 1. Detention Window Package:

Shop Drawings: Full size fabrication and installation details including anchoring connections to adjacent construction and recommended sealing methods. Include dimensioned elevations showing window opening and window sizes.

Product Data: Catalog sheets, specifications, and installation instructions.

Samples:

Color Samples for Factory Prefinished Windows:

Manufacturer’s standard colors for specified finish.

* + - * 1. Quality Control Submittals:

Test Reports:

Current certified air infiltration and water penetration test reports for each type of window unit required.

* + - * 1. Contract Closeout Submittals:

Operation and Maintenance Data: Two copies of owner’s manual, including instructions for cleaning windows and touching-up finish.

* + - 1. QUALITY ASSURANCE
         1. Detention Windows Manufacturer’s Qualifications: The manufacturer of detention windows shall be regularly engaged in the production of detention windows and shall have furnished detention windows for 5 similar projects that have been in operation for not less than 3 years, and shall be subject to the approval of the Director.
         2. Installation Company Qualifications: The Company installing the Work of this Section shall be experienced in detention window work and shall have been engaged in the installation of detention windows for a minimum of 3 years.
         3. Installer’s Qualifications: The person supervising the Work of this Section shall be experienced in detention window work and shall have been engaged in the supervision of installation of detention windows for a minimum of 3 years.
         4. Testing Agency:

Air infiltration and water penetration tests shall be performed by a qualified independent testing laboratory.

* + - * 1. E-coat/ top-coat combination shall meet or exceed the following ASTM designations: ASTM D714- Paint Blistering Test, ASTM D4585 – Humidity Test, ASTM B117 – Salt Spray (Fog) Test, ASTM D1654 – Painted Products in Corrosive Environments, ASTM G85 – Cyclic Fog/Dry Test (Prohesion), ASTM D5894 – Salt Fog/UV Painted Metal, ASTM D4541 – Pull Off Strength of Coating Test.
        2. Tolerance for Window Size (height and width) Dimensions: + 1/16 inch.
      1. WARRANTY
         1. Detention Window Manufacturer’s standard one year warranty.
      2. DELIVERY, STORAGE, AND HANDLING
         1. Deliver windows in sturdy, protective crates, or containers.
         2. Store and handle windows in a manner that will not cause damage to the finish.
      3. MAINTENANCE
         1. Extra Materials: Furnish detention window manufacturer’s factory finish touch-up kit for the factory finish on windows. Store touch-up kit at the site where directed.

Label kits to identify locations used.

1. PRODUCTS
   * + 1. MATERIALS
          1. Perimeter framing, ventilators and removable covers shall be custom formed.
          2. from 12-gauge steel.
          3. Head channel shall be custom formed from 10-gauge steel.
          4. Glazing rebate shall provide unobstructed glazing surface at least 1-1/2” in height.
          5. Bearing surfaces for the rollers shall be 12-gauge stainless steel.
          6. Glazing beads shall be formed from 12-gauge steel.
          7. Hardware shall be as follows:

Stainless steel ball-bearings rollers.

Bronze pull.

Manually operated bronze bolt.

* + - * 1. Weather-stripping shall be fin seal pile.
        2. Anchors shall be fabricated from steel angles with a minimum leg thickness of 3/16”.
        3. Fasteners: Zinc plated steel, Torx center pin, unless otherwise indicated.

Exposed Fasteners: Finished to match windows.

* + - * 1. Paint:

Pre-treatment.

Primer – E-Coat (Electrodeposited epoxy primer).

Finish coat – Factory applied polyurethane.

* + - * 1. Accessories:

Anchors, Window Weld Plates, Clips, Fittings, and Related Fasteners: Galvanized or stainless steel, unless otherwise approved.

* + - * 1. Insect Screen: 20 GA stainless steel screen frame with W/ 14 x 18 x .011 stainless steel mesh and SF5 aluminum spline.
        2. Cold Galvanizing Compound: Single component, non-aerosol, compound giving 93 percent pure zinc in the dried film and meeting the requirements of DOD-P-21035A (NAVY).
      1. FABRICATION
         1. Fabricate windows in accordance with approved shop drawings.
         2. Frames and ventilators shall be coped and welded at corners the full depth of the

frame for maximum strength and weather tightness, with all exposed welds dressed smooth.

All removable covers or trim, either exterior or interior, shall be attached with tamper-resistant screws spaced not more than 9” on center at the interior and spaced not more than 12” on center at the exterior.

* + - * 1. Hardware shall be as follows:

Rollers located at the head and sill of the ventilator.

Pull located at the ventilator jamb.

Bolt located at the ventilator sill.

* + - * 1. Weather-stripping shall be screw applied to both the exterior and interior contacts.
        2. Anchors shall be located a maximum of 18” on center and shall be a minimum of2” long.
        3. Glazing:

All frames shall be designed for inside glazing.

Provide continuous glazing beads compatible with glass as specified.

Glazing beads shall be cut and shop fitted to each glass lite prior to shipment.

Glazing beads shall be attached with tamper-resistant screws spaced a maximum of 9” on center.

* + - * 1. Factory finishing:

Shot Blasting: Before any machining or welding is performed, all hot-rolled steel sections shall be cleaned by shot blasting to remove any loose scale.

Bonderizing: After fabrication, windows, mullions, covers, and trim shall be subjected to a 10 stage bonderizing pre-treatment process that produces a non-metallic phosphate coating on the surface of the steel in preparation for e-coat priming system.

E-Coat Prime Painting: Following the pretreatment, windows and accessories are e-coated with a cathodic epoxy primer of PPG Powercron® 8000 or equal to ensure all surfaces are evenly covered. Spray or dip primers shall not be acceptable. Immerse in a rinse of ultra-filtered RO water for 3 min to remove all the excess paint and removing any runs. A spray of ultra-filtered RO water repeats the above process to further improve surface conditions. The primer is oven baked to 335 degrees F for 15 minutes to a dry film thickness of 0.7 - 1.0 mil. The material is then cooled in preparation for the finish coat.

Ultrathane Finish Painting: Following the prime coat, all windows and accessories are given a spray coat of acrylic polyurethane and oven baked at 225 degrees F for 15 minutes to dry film thickness of 1.5 to 2.0 mils. The combined overall dry film thickness of the prime coat and finish coat shall be 2.2 - 3.0 mils. E-Coat/top coat combination shall provide full documented compliance with all ASTM designations as outlined in Quality Assurance portion of the specifications.

Color as selected by the Director’s Representative from the window manufacturer’s available color selections.

1. EXECUTION
   * + 1. EXAMINATION
          1. Verification of Conditions: Examine surfaces to receive detention windows for defects that will adversely affect the execution and quality of the Work. Do not proceed until unsatisfactory conditions are corrected.

Check locations and conditions of required built-in anchors.

* + - 1. INSTALLATION
         1. Install the Work of this Section in accordance with the manufacturer’s printed instructions, except as shown or specified otherwise.
         2. Anchor window units securely in place, aligned, without warp.

Weld window weld plates to windows and built-in anchors per manufacturer’s written instructions and approved shop drawings.

Cover plates and miscellaneous trim pieces shall be fastened per manufacturer’s written instructions and approved shop drawings.

Welded and abraded galvanized surfaces shall be wire brushed and repaired with a coating of cold galvanizing compound applied in accordance with compound manufacturer’s instructions.

* + - * 1. Seal metal to metal joints, screw heads, and unneeded fastener holes with sealing mastic.
      1. ADJUSTING
         1. Adjust operating sash and hardware for smooth operation and weathertight closure. Lubricate hardware and other moving parts.
         2. Touch-up welded and abraded surfaces per manufacturer’s written instructions and finish to match adjacent areas.
      2. CLEANING
         1. Clean window units promptly after completion of installation.

END OF SECTION 085664