

**SECTION 0 8 51 00
HOLLOW METAL WINDOWS & FRAMES**

PART 1 – GENERAL

1.01 REFERENCE STANDARDS

- A. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Hot-Rolled Steel Sheets and Strips: Commercial quality carbon steel, pickled and oiled, complying with ASTM A569 and ASTM A568.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A568.
- C. Hot Dipped Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A526 and with ASTM A525 – coating designation G90 zinc coating, mill-phosphatized.
- D. Supports and Anchors: Fabricate of not less than 16-gauge sheet metal. Galvanize after fabrication all units to be built into exterior walls, complying with ASTM A153, Class B.
- E. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot dip galvanize items to be built into exterior walls, complying with ASTM A153, Class C or D as applicable.
- F. Shop-Applied Paint: Use rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints. Paint galvanized surfaces with rust-inhibiting zinc oxide primer.
- G. All hollow metal window assembly shall be fire rated for exterior wall installation complying with NYC building code.

2.02 FABRICATION – GENERAL

- A. Fabricate hollow metal units to be rigid, neat in appearance and free from defects, warp, or buckle. Accurately form metal to required sizes and profiles. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at Project Site. Weld exposed joints continuously, grind, dress, and make smooth, flush, and invisible. Metallic filler to conceal manufacturing defects will not be acceptable.
- B. Exposed Fasteners: Provide countersunk vandal resistant flat Phillips or Jackson heads for exposed screws and bolts.
- C. Finish Hardware Preparation: Prepare hollow metal units to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling, and tapping in
- D. accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 "Specifications for window Frame Preparation for Hardware".
 - 1. Reinforce hollow metal units to receive surface-applied hardware.
 - 2. Locate finish hardware as shown on final shop drawings, or if not shown, in accordance with "Recommended Locations for Builders' Hardware", published by National Builders' Hardware Association.

2.03 SHOP PAINTING

- A. Clean, treat and paint exposed surfaces of fabricated hollow metal units, including galvanized surfaces.
- B. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of shop paint.

- C. Apply pretreatment to cleaned metal surfaces, using cold phosphate solution (SSPC-PT 2), hot phosphate solution (SSPC-PT 4) or basic zinc chromate-vinyl butyl solution (SSPC-PT 3).
- D. Apply shop coat of prime paint within time limits recommended by pretreatment manufacturer. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 2.0 mils.
- E. Finish Color shall be selected and approved by the Architect. Contractor shall submit paint color chart for color selection.

2.04 FRAMES

- A. Provide hollow metal frames for hollow metal window, vision light panels, trimmed openings and other openings including mullions, all of size and profile, as indicated on the Drawings.
- B. Fabricate frames of full-welded unit construction, with corners mitered, reinforced, continuously welded full depth and width of frame, unless otherwise indicated.
- C. Form frames of 12-gauge hot dipped galvanized steel sheets for exterior.
- D. Finish Hardware Reinforcement: Reinforce frames for required finish hardware as follows:
 - 1. Sash /Pivots: Steel plate 3/16" thick x 1-1/2" wide x full height of frame, continuously welded to frame.
- E. Frame Anchors: Furnish frame anchors as required to secure frames to adjacent existing wall.
 - 1. Masonry Construction: Adjustable, flat, corrugated, or perforated, T-shaped to suit frame size, with leg not less than two (2) inches by ten (10) inches long. Furnish at least six (6) anchors per frame at plus or minus twelve (12') foot eight (8") inches high window.

2.05 STOPS

- A. Provide flush type stops around glazed.
- B. Form flush fixed stops integral with frame. Provide flush fixed stops on inside of hollow metal units exposed to exterior.
- C. Provide flush removable solid bar stops or 16-gauge hollow metal tube. Secure with stainless steel pan head temper-proof screws placed uniformly no more than twelve (12) inches o.c. with Teflon film or tape. Form corners with butted hairline joints. Coordinate width of rabbet between fixed and removable stops with type of glass indicated.

PART 3 – EXECUTION

3.01 INSPECTION

- A. Prior to installation of all Work of this Section, carefully inspect the installed work of other trades and verify that such work is complete to the point where work of this Section may properly commence. In event of discrepancy, do not proceed with installation until such discrepancy has been fully resolved.

3.02 INSTALLATION

- A. Install hollow metal window unit and accessories in accordance with the final shop drawings, manufacturer's data, and as herein specified.
- B. Placing Frames: Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
 - 1. Make field splices in frames and detailed on final shop drawings, welded, and finished to match factory work.
 - 2. Horizontally pivoted sections of window unit and specified Glazing Installation: Fit hollow metal horizontally pivoted sections of window unit and specified Glazing accurately in their respective frames, as per manufacturer's clearances.

3.03 ADJUST AND CLEAN

- A. Final Adjustments: Check and readjust operating finish hardware items in hollow metal work just prior to final inspection. Leave work in complete and proper operating condition. Remove

and replace defective work, including doors or frames which are warped, bowed or otherwise unacceptable.

- B. Prime Coat Touch-Up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

END OF SECTION 0 8 51 00