STEEL DOORS AND FRAMES Section 08 1110

PART I GENERAL

1.01 SUMMARY:

A. Description: This section includes Steel Doors, Frames, Sidelites, Transom and Window Frames where shown on the drawings and as specified herein.
B. Related work not included in this section:.
   1. Builders finish hardware including gaskets and weather-stripping.
   2. Glass and glazing.
   3. Sealant and caulking at joints

1.02 QUALITY ASSURANCE:

a. Applicable standards of the following as referenced herein:
   1. AAMA, American Architectural Manufacturers Association
   2. ANSI, American National Standards Institute
   3. ASTM, American Society for Testing and Materials
   4. ADA, Americans with Disabilities Act
   5. NFPA 80, National Fire Protection Association
   6. NAAMM/HMMA, National Association of Architectural Metals Manufacturers
   7. UL 10C, Standards for Positive Fire Tests of Door Assemblies.
B. Manufacturer shall have been regularly engaged in manufacturing steel door, frames and window assemblies for a period of ten years. Doors and frames shall be fabricated by a single manufacturer. The manufacturer must have an effective quality control system in place.
C. Provide current test reports to substantiate that all products have been tested to meet the following criteria.
   1. Fire Labeled doors and frames, ASTM E2074, UBC 7.2, UL 10C
   2. Performance test, ANSI A250.4
   3. Wind Load, Deflection / ASTM E330, Air Infiltration / ASTM E283, Water Penetration / ASTM E331
D. Allowable Tolerances as stated in NAAMM/HMMA Technical Manual.

1.03 SUBMITTALS: Submittal Drawings: Show door and frame elevations and sections. Show listing of opening descriptions including locations, gages, and anchors. Show location and details of all openings. Include test reports on the following: Cycle test, Air and Water Infiltration.

1.04 WARRANTY: All hollow metal work shall be warranted from defects in workmanship and quality for a period of three (3) years from shipment.

PART II PRODUCTS

2.01 DOORS

A. The Steel Doors are based on Stiles Custom Metal, Inc. (see www.stilesdoor.com) and shall be of the types and sizes shown on the approved submittal draw-ings and shall be constructed in accordance with the specifications.
   1. Vertical Edges: Face sheets shall be joined at center of vertical edges and continuously welded full height of the door with no visible seams on their faces or vertical edges. Welds shall be finished smooth. Single acting doors - beveled 1/8” in 2" profile. At exterior pair openings the meeting stiles shall be furnished with the Air-Tek™, continuous, integral pile weather strip. Adhesive or screw applied weather strip shall not be accepted.
   2. Integral Astragal: Where required astragals shall be formed as an integral part of the door skin with corresponding recessed area formed into adjacent door. Surface mounted flat plate or Z shaped astragals shall not be accepted.
   3. Door thickness shall be 1-3/4”. Doors shall be neat in appearance and free from warpage or buckle. Edge bends shall be true and straight and of minimum radius for the gage of metal used.
   4. Materials: Doors shall be made of commercial quality, cold-rolled steel per ASTM A1008 / A1008M.
      a. Interior doors: Face sheets shall be 0.042 in. (18 gage) min. thickness cold rolled steel.
      b. Exterior doors: Face sheets shall be 0.053 in. (16 gage) min. thickness with zinc coating A 60.

5. Door Core Model Options: (choose one) (see www.stilesdoor.com)

   [Steel Stiffened]: 22 gage min., continuous, vertical, formed steel sections spanning the full thickness of the interior space between door faces. Stiffeners spaced so that the vertical interior webs shall be no more than 6" apart. Spot welded maximum of 4" o.c. vertically. Spot welds shall be sanded smooth to eliminate spot weld marks as much as possible. Spaces between stiffeners shall be filled with: (choose one) [Fiberglass Batt Insulation] or [Recycled Cotton Batt Insulation].

   [Honeycomb]: "Kraft" paper, hexagonal cell, fully faced on both sides. Open cell un-faced honeycomb shall not be acceptable. Core and inside of door skins shall be completely covered with contact adhesive achieving 100% bond.

   [Temperature Rise Core]: Dense Mineral Core rated (choose one) [250° F /121° C] or [450° F / 232° C] and shall be laminated to the inside of the door skins with contact adhesive achieving 100% bond.

   [Polyurethane Core]: Rigid, cellular type, board conforming to ASTM D1622, 1.8 pounds per cubic foot density min., containing no urea formaldehyde resins. Option: [Polyisocyanurate], 2.0 pounds per cubic foot density min., containing no urea formaldehyde resins. Core shall be laminated to the inside of the door skins with contact adhesive achieving 100% bond.

   [Polystyrene Door Core]: Rigid, extruded, closed cell board, 1 pound per cubic foot density min., conforming to ASATM C578, Type 1. Core shall be laminated to the inside of the door skins with contact adhesive achieving 100% bond.

6. The top and bottom edges shall be closed with a continuous channel, 16 gage minimum, spot welded to both face sheets maximum 4" o.c. Top of exterior doors shall be fitted with an additional flush closing channel and sealed water-tight.
7. Door opening tag number shall be permanently engraved into the center hinge reinforcement using a programmable engraver. The engraving shall be deep enough to be read after the hinge reinforcement bar is painted. The use of paper stickers only is not acceptable.
8. Glass moldings and stops: Where specified, doors shall be provided with internal channel type, flush glass moldings, to secure glazing in accordance with glass sizes and thickness shown on approved submittal drawings. Molding channels minimum 18 gauge steel, securely spot welded, maximum 4"o.c., to the inside face of the door skin. Removable glass channel stops shall be minimum 18 gage, A60 galvanized steel, butted at corner joints, secured to the door with zinc plated #8 oval head, countersunk, sheet metal screws. Door lights that are cut out of the door after the door is built are not acceptable. Externally mounted lite kits that protrude from the door face are not acceptable.
9. Louvers: Louvers shall be sight proof, with: (choose one) [embossed, security type kick proof] or [V or Y type] (see www.stilesdoor.com) blades, minimum 18 gage, secured to door with sheet metal screws. Louvers at exterior locations shall be A60 galvanized and be provided with Insect screens. Door skins at louver cutouts shall be reinforced with continuous channel reinforcement, full door thickness and perimeter, spot welded to door face 4" o.c.
10. Finish: After fabrication, all tool marks and surface imperfections shall be removed, and exposed faces of all welded joints shall be dressed smooth.

2.02 STEEL PANELS: Steel panels shall be made of the same material and construction and finished in the same way as specified for doors.

2.03 FRAMES

A. Provisions of this section are applicable to door frames, transom lites, sidelites and window assemblies. Materials: Frames shall be constructed of 16 gage, 0.053 in. (1.3mm) minimum thickness. Exterior frames shall have an A60 zinc coating.

2. Construction: Frames shall be welded units of the sizes and types shown on approved shop drawings. Knocked-down frames shall not be accepted. Jamb, header; mullion and sill profiles shall be in accordance with the frame schedule and as shown on the approved submittal drawings. Mitered corner joints shall have all contact edges closed tight with faces mitered and stops butted. Faces and soffits shall be continuously welded. The use of gussets or splice plates shall not be acceptable. All other joints shall have faces continuously welded. Faces shall be finished smooth. Mineral fillers are not permitted.
3. Exterior windows: Window installer and glazier shall follow Stiles instructions to prevent air and water penetration.
4. Exterior door frames shall have Seal-Tek™ integral weather-strip kerf provided. Adhesive or screw applied weather-strip shall not be accepted. (see www.stilesdoor.com)
5. When shipping limitations so dictate, frames for large openings shall be fabricated in sections designated for assembly in the field by installer. Field joints shall be made in accordance with approved submittal drawings and shall be field welded by installer.

2.04 FINISH HARDWARE: Doors and frames shall be mortised, reinforced, drilled and tapped at the factory for completely templated mortised hardware only, in accordance with the final approved hardware schedule and templates provided by the hardware supplier. Where surface mounted, anchor hinges, or non-template mor-tise hardware is to be applied, doors shall be reinforced, with all drilling and tapping done by others in the field. Reinforcement steel shall comply with NAAMM/HMMA 830 and 861.

2.05 FINISH: Doors and frames shall be treated to insure maximum paint adhesion and shall be painted on all accessible surfaces with one coat of a rust inhibitive, modified Alkyd, Zinc compound, gray primer that meets or exceeds all ANSI A250.10-98 performance criteria. Primer coat shall be fully cured prior to shipment. Red or brown colored primers shall not be permitted.

PART III EXECUTION

3.01 CLEARANCES AND TOLERANCES shall be in compliance with NAAMM / HMMA standards.

3.02 SITE STORAGE AND PROTECTION OF MATERIALS

A. Deliver and store materials to prevent damaging and marring finishes.
B. Protection: Protect metal surfaces from contact with lime, mortar, cement, acids, and other harmful surfaces and from careless handling, storage or machining.

3.03 INSTALLATION:

A. It shall be the responsibility of the installation contractor to perform the following:
B. Installation and tolerances shall meet the requirements of HMMA 840 and as further specified here in. Prior to installation, all frames must be checked and corrected for size, swing, squareness, alignment, twist and plumbness.
C. Any grout or other bonding material shall promptly be cleaned off of frames or doors following installation. Hollow metal surfaces shall be kept free of grout, tar, or other bonding material or sealer.
D. Plaster guards and junction boxes are intended to protect hardware mortises and tapped mounting holes from masonry grout of 4" maximum slump consistency which is hand troweled in place. Grouting materials such as gypsum products which require air to dry (cure) shall not be used in any closed section, such as a mullion.
E. Hardware must be applied in accordance with hardware manufacturer's templates and instructions.
F. Primed or painted surfaces which have been scratched or otherwise marred during in-stallation including field welding and/or cleaning shall be promptly finished smooth, cleaned, treated for maximum paint adhesion and touched up with a rust inhibitive primer.

End of Section