SECTION 081113 - HOLLOW METAL DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES:
   A. The work of this section shall include all labor, materials, equipment and services required and necessary to furnish and install all hollow metal doors as indicated and specified.
   B. Hollow metal doors and hollow metal frames shall be by the same manufacturer/supplier.

1.02 APPLICABLE REQUIREMENTS
   A. All materials and services provided shall comply with provisions of the following specifications and standards:
      3. Steel Door Institute (SDI).
      5. Underwriter's Laboratories, Inc. (UL).
      Where provisions of pertinent codes, specifications, or standards conflict with this Section, the more stringent provisions shall govern.

1.03 SUBMITTALS
   A. Submit Product Data Sheets, shop drawings, and directions for installation of hardware.
   B. Provide the following information on all doors and other related materials specified in the construction documents:
      1. Elevation of all doors, and door frames.
      2. Hardware reinforcing details of doors.
      3. Door location schedule.
      4. Complete door descriptive nomenclature.
      5. Material description and gauges.
      6. Hardware preparation locations.
      7. Louver and vision panel details (if applicable).
   C. Contractor shall use same door, frame and opening designations on shop drawings as indicated on contract documents, with provision for Cross-reference of Shop Drawings to Construction Documents.

1.04 QUALITY ASSURANCE
   A. Regulatory Requirements
      1. OSHA Compliance - All articles and services covered by this specification shall meet or exceed the safety standards established under the Federal Occupational Safety and Health Act, latest edition, together with all amendments in effect as of the date of this specification.
      2. ADA Compliance - All layouts covered by this section shall meet or exceed the requirements of the Uniform Federal Accessibility Standards and the Arizonans With Disabilities Act.
   B. Certification
      1. Fire Rated Assemblies - Submit manufacturer’s written statement that construction of doors is in accordance with requirements for label rating indicated on drawings and/or as required by code.
      2. Product Data - Submit, for approval, manufacturer's literature for prime paint, and description of shop painting method and system.

1.05 DELIVERY, STORAGE AND HANDLING
A. Package, deliver, store and handle doors and frames in a manner to prevent damage and deterioration.
B. Store doors upright in a protected dry area, above ground, with each unit separated at least 1/4" for air circulation.

PART 2 PRODUCTS

2.01 COMPONENTS
A. Hollow Metal Doors
   1. Hollow metal doors shall be flush type, 1-3/4" thick.
   2. Hollow metal door face sheets shall be 18 gauge on all doors. Sheet steel shall be cold or hot rolled conforming to ASTM A366 or A569.
   3. Door stiffeners (or cores) - Doors shall be stiffened by one of the following:
      a. Vertical stiffeners, 20 gauge steel; 6" on center, full height of doors. Weld to face sheets 4" on center. Sound deadening insulation between ribs, consisting of noncombustible fiberglass, rock wool or equivalent.
      b. Water-resistant resin-impregnated kraft honeycomb core stiffener, laminated to both face sheets with water-resistant adhesive.
      c. Expanded foam core, self-extinguishing; resistant to vermin, mildew and rot. Bonded to face panels with thermosetting adhesive.
   4. End channels - 16 gauge steel.
   5. Reinforcements
      a. For mortise hardware - 3/16" thick steel.
      b. For surface hardware - 3/16" thick steel.
      c. For strikes - 12 gauge steel or equal thread depth metal reinforcement.
   6. Noise insulated doors - Doors noted as NC in door schedules shall be completely filled with self-extinguishing rigid urethane core formed in place and chemically bonded to all interior door faces.
   7. Provide louvers, grille and vision panel openings with loose 20 gauge formed steel channel stops having recessed screws for flush countersunk installation.
   8. Vision panels, in non-fire-rated doors, shall be 8 inches wide and 28 inches high; with a 6 inch side stile and head rail at edge of door.
   9. Exterior doors and doors noted as NC shall have automatic door bottom seals, surface mounted, number 365 as manufactured by Zero International, Inc.

2.02 FABRICATION
A. Provide doors of size and design indicated. Doors shall be "full flush" type.
B. Fabrication shall conform to NAAMM or SDI standards and/or modifications contained in Construction Documents.
C. Accurately form metal to required sizes and profiles, including astragals where required.
D. Form and weld with sharp arises, edges and corners; surfaces shall be free from warp, waves, buckles, dents or other defects.
E. Close top and bottom edges by flush welding channels at exterior doors. Door bottom channels shall have the channel legs down. Provide "breather" holes in door bottoms.
F. Return face sheets on vertical edges of doors.
G. Cutouts
   1. Provide cutouts where indicated for louvers and vision panels. Provide removable channel frame type stops on interior side, with recessed head screw anchors. Stops on exterior or outside face shall be formed integrally with door face.
   2. Stops shall be sized to receive louvers and/or vision panels as indicated by the contract documents.
H. Welding
   1. All welding shall conform to applicable AWS standards for hollow metal work.
   2. Weld all connections between component metal parts.
   3. Weld exposed joints and seams continuously full and grind smooth. No visible joints or seams on face or vertical edges.
I. Labeled doors - Conform with UL requirements for all labeled door construction. Doors shall bear label for fire-resistive rating indicated in schedules. Locate label on hinge edge of door.

J. Preparation for Hardware
   1. Reinforce and prepare doors for specified hardware.
   2. Make cutouts and mortises for mortise hardware. Drilling and tapping for mortise hardware shall be done in the factory to approved hardware templates.
   3. Provide 3/16" thick steel reinforcement for hinges.
   4. Provide 14 gauge reinforcement for surface applied hardware.
   5. Reinforce all doors for door closers.
   6. Bevel lock stiles 1/8" in 2" unless otherwise noted.
   7. Drilling and tapping for surface applied hardware will be done in field by door installer.

K. Clearances
   1. Head - 1/8"
   2. Stiles - 3/32"
   3. Meeting stiles (pair doors) - 1/8"
   4. Over threshold - 3/16" or as detailed
   5. Over finish floor material - 3/8"

2.03 FINISHES
   A. Door pieces shall be processed through a power spray washer to clean and phosphatize the steel.
   B. After the power wash, the door pieces shall be dried in a forced hot air dry-off oven and then painted with a primer in a dip priming tank. The pieces shall be completely immersed in the paint, then withdrawn, allowed to drain and then oven baked. The minimum dry film thickness for one coat of prime paint shall be 0.7 mil.
   C. The primer shall be lead-free and contain rust inhibiting pigments and exhibit excellent adhesion to the base metal. The purpose of the primer coat is to provide a preparatory base for finish painting and to protect the metal surface until the top coat is applied.
   D. The baked primer shall meet ANSI Standard A224.1-1980 for salt spray test of 120 hours, humidity test of 240 hours with 20 inch lbs direct impact (1/2” ball).

PART 3 EXECUTION

3.01 EXAMINATION
   A. Examine the areas and conditions under which work of this Section will be installed. Verify that work of other trades is sufficiently complete and in the proper condition to receive the work of this Section.
   B. Coordinate with other trades as required to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

3.02 INSTALLATION
   A. Install standard steel doors and accessories in accordance with final Shop Drawings and manufacturer's data and as herein specified.
   B. Fit hollow metal doors accurately in frames, within clearances specified in SDI-100 and in this specification. Fitting by reducing metal thickness shall not be acceptable.
   C. Place fire-rated doors with clearances as specified in NFPA Standard No. 80 and UL requirements.
   D. Install hardware in accordance with drawings and hardware manufacturer's templates and instructions.
   E. Adjust operable parts for correct function.
   F. Remove hardware, except prime-coated items, tag, box and reinstall after finish painting has been completed.

3.03 ADJUSTING
   Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

3.04 CLEANING
A. 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. Remove all rust before above specified touch-up is applied.
B. When work of this Section has been completed, and at such other times as may be directed, remove all trash, debris, surplus materials, tools and equipment from site.

END SECTION