SECTION 08110

STEEL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated steel doors and frames.

B. Steel frames for wood doors.

C. Steel frames for sound-rated wood doors.

D. Steel glazing frames.

E. Accessories, including louvers.

1.02 RELATED REQUIREMENTS

A. Section 08710 - Door Hardware.

B. Section 08800 - Glazing: Glass for borrowed lites.

C. Section 09900 - Paints and Coatings: Field painting.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council.

B. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames.

C. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.

D. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

E. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames.

F. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc..

G. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.

H. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.

I. UBC Std 7-2, Part II - Test Standard for Smoke- and Draft-control Assemblies; International Conference of Building Officials.

J. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc..

K. UL 10B - Standard for Fire Tests of Door Assemblies.

L. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.

M. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.04 SUBMITTALS

A. See Section 01350 - Submittals for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

E. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Maintain at the project site a copy of all reference standards dealing with installation.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with manufacturer's written instructions.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Steel Doors and Frames:
   1. Assa Abloy: www.assaabloydss.com.
   2. Windsor Republic Doors: www.republicdoor.com.
   3. Steelcraft: www.steelcraft.com.
   4. Substitutions: See Section 01640 - Substitutions and Product Options.

2.02 DOORS AND FRAMES

A. Requirements for All Doors and Frames:
   1. Accessibility: Comply with ANSI/ICC A117.1.
   2. Door Top Closures: Flush with top of faces and edges.
   3. Door Edge Profile: Beveled on both edges.
   4. Door Texture: Smooth faces.
   5. Hardware Preparation: In accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
   6. Finish: Factory primed, for field finishing.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 STEEL DOORS

A. Exterior Doors:
   1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 2, seamless.
   2. Core: Polystyrene foam.
   3. Top Closures: Flush with top of faces and edges.
   4. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
   5. Texture: Smooth faces.
   6. Insulating Value: U-value of 0.50, when tested in accordance with ASTM C 1363.
   7. Weatherstripping: Separate, see Section 08710.
   8. Finish: Factory primed, for field finishing.

2.04 STEEL FRAMES

A. General:
   1. Comply with the requirements of grade specified for corresponding door.
      a. ANSI A250.8 Level 1 Doors: 16 gage frames.

b. ANSI A250.8 Level 3 Doors: 14 gage frames.
c. ANSI A250.8 Level 4 Doors: 12 gage frames.
d. Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 1, 16 gage
e. Frames for Sound-Rated Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 1, 16 gage

2. Finish: Same as for door.
3. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.

B. Exterior Door Frames: Fully welded.
1. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
2. Finish: Factory primed, for field finishing.
3. Weatherstripping: Separate, see Section 08710.

C. Sound-Rated Door Frames: Fully welded type.
1. Finish: Factory primed, for field finishing.

2.05 ACCESSORY MATERIALS

A. Louvers: Roll formed 16 gauge steel with frame; finish same as door components; factory-installed.
1. Style: Sightproof inverted V blade.
2. Louver Free Area: 60 percent.
3. Fasteners: tamper proof fasteners.
4. Size: As indicated on drawings.

B. Grout for Frames: Portland cement grout of maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.

C. Silencers: Resilient rubber or vinyl, fitted into drilled hole; 3 on strike side of single door.

D. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.

2.06 FINISH MATERIALS

A. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.

B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

3.02 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

B. Coat inside of frames with bituminous coating to a thickness of 1/16 inch.

3.03 INSTALLATION

A. Install in accordance with the requirements of the specified door grade standard.

B. In addition, install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.

E. Coordinate installation of hardware.

F. Coordinate installation of glazing.

G. Coordinate installation of electrical connections to electrical hardware items.

H. Touch up damaged factory finishes.

3.04 TOLERANCES

A. Clearances Between Door and Frame: As specified in ANSI A250.8.

B. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.

B. Adjust sound control doors so that seals are fully engaged when door is closed.

C. Test sound control doors for force to close, latch, and unlatch in accordance with ASTM E 1408; adjust as required to comply.

3.06 SCHEDULE - See Drawings

END OF SECTION

SECTION 08117

PRE-FINISHED STEEL DOOR FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-rated and fire rated, shop pre-finished, site assembled steel frames.

1.02 RELATED SECTIONS

A. Section 08211 – Flush Wood Doors.

B. Section 08710 – Hardware, silencers.

1.03 REFERENCES

A. ASTM A1008M – Standard for Cold Rolled Materials.

B. UBC 7-2-97, UBC 7-4-97 Positive Pressure.

C. ASTM D2197 – Standard Test Method for Adhesion of Organic Coatings by Scrape Adhesion.

D. ASTM D2247 – Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.

E. ASTM D2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).

F. ASTM D3361 – Standard Practice for Unfiltered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

G. ASTM E152 – Methods of Fire Tests of Door Assemblies.

H. ASTM B117 – Standard Test for Salt Spray Testing.

I. NFPA 80 – Fire Doors and Windows.

J. NFPA 252 – 1995 Fire Tests for Door Assemblies.

K. ITS (WH) – Fire Tests of Door Assemblies.

L. UL 10B – Fire Tests of Door Assemblies.

M. UL 10C – Positive Pressure Fire Tests of Door Assemblies.

1.04 SUBMITTALS

A. See Section 01350 – Submittals, for submittal procedures.

B. Product Data: Indicate frame configuration and finishes.

C. Shop Drawings: Indicate frame elevations, reinforcement required, and spacing, location of embosses for hardware, and finish.

D. Samples: Submit four standard frame samples, illustrating factory finished frame colors and surface texture.

E. Manufacturer's Installation Instructions: Indicate special installation instructions.

F. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Installers:
   1. Individuals that are "Certified Pre-finished Frame Installers" for the installation of site assembled doorframes.
   2. Refer to manufacturer's Internet web site for listing of Certified Installers.

1.06 REGULATORY REQUIREMENTS

A. Fire Rated Frame Construction: Conform to ASTM E152.

B. Installed Frame Assembly: Conform to NFPA 80 for fire rated class same as fire door.

1.07 DELIVERY, STORAGE, AND PROTECTION

A. Transport, handle, store, and protect products in a dry area off the ground.

B. Accept frames on site in manufacturer's box packaging with identification labels intact. Inspect for damage.

C. Do not open individual boxes until installation is to begin.

1.08 PROJECT CONDITIONS

A. Verify actual measurements / openings by field measurement prior to fabrication.

B. Coordinate the work with frame opening construction, door and hardware installation.

C. Sequence installation to ensure concealed electric wire connections are achieved in an orderly and expeditious manner.

PART 2 PRODUCTS

2.01 FRAME MANUFACTURERS

A. Timely Industries, A Division of SDS Industries, Inc., 10241 Norris Avenue, Pacoima, CA, 91331-2292; Phone toll free: (800) 247-6242 or local at (818) 492-3500; Fax: (818) 492-3530. Web site: www.timelyframes.com.

B. Frames: Provide all frames for project from same manufacturer.

C. Substitutions: Refer to Section 01640 – Substitutions and Product Options.

2.02 FRAMES

A. Frame Material: Cold rolled steel, for interior frames.

B. Frame Throat Opening: To suit finished wall thickness.

C. Frame Profile: Non-rated and fire rated.
   1. "C" Series, 18 gauge thick.

D. Frame Casings:
   1. Materials: Steel casings with corner alignment clips.
   2. Type:
      a. Standard Steel Type: Model TA-8 with 1/4 inch reveal. With corner alignment clips.

2.03 ACCESSORIES

A. Reinforcement Bracket for Closure: Regular arm closer, Model TA-10.

B. Reinforcement Brackets for Rim Exit Device: Model TA-12.

C. Reinforcement Brackets for Door Guards: Model TA-10.

D. Silencers: Vinyl.

E. Fasteners: Drywall type.

2.04 FABRICATION

A. Openings for single swing frame, rated as noted on drawings.

B. Casing Clips: Fabricate frames with factory applied heated treated clips.

C. Fabricate frames with hinge reinforcement plates secured in place.

D. Attached fire rated label to each fire-rated frame.

E. Silencers:
   1. Provide three (3) single silencers for single doors on strike side.
   2. Provide two (2) single silencers on frame head at double doors without mullions.

2.05 FINISH

A. Frame Units: Pre-finished with factory-applied impact, resistant, polyester baked enamel finish.

B. Casing:
   1. Steel: Pre-finished with factory applied impact resistant, polyester baked enamel finish.

C. Colors:
   1. Custom Colors: As noted on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify acceptability of existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

3.02 INSTALLATION

A. Install frames in accordance with manufacturer's requirements.

B. Install pre-finished frames near end of the project after completing wall painting and wall coverings.

C. Install frames using Certified Installers.

D. Coordinate installation of glass and glazing in glazed units.

E. Coordinate installation of frames with installation of hardware specified in Section 08710 and doors in Section 08211.

F. Touch-up blemishes on finished frames.

END OF SECTION