SECTION 08110

STEEL DOORS AND FRAMES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Provide impact resistant Miami-Dade County approved galvanized steel doors and frames as specified in this Section.

B. Commercial steel doors shall be 6'-4" x 7'-0" out swinging double door panel threshold cane bolt at bottom and dead bolt at upper side of inactive leaf, key locked from the outside.

1.02 RELATED WORK

A. Section 08710 - Finish Hardware.

B. Section 09900 - Painting.

1.03 SUBMITTALS

A. Submit as per Section 01340 shop drawings prior to fabrication indicating sizes, elevations, construction details, gauges, finishes, reinforcement, anchors and hardware locations.

B. Submit Certificate of Compliance certifying that doors comply with ASCE-98, Florida Building Code, have Miami-Dade County Product Approval for small and large missile impact , and that they passed tests as prescribed in Protocols PA 201, PA 202, and PA 203.

1.04 QUALITY ASSURANCE

A. Comply with the requirements of the Florida Building Code for wind design requirements, and pass wind pressure tests, cyclic tests, and the small and large missile impact (Protocols PA 201, PA 202, and PA 203).

B. The door and frame provided must have Miami-Dade County Product Approval.

C. Door manufacturer shall warranty all doors for a period of ten (10) years against defects in workmanship and materials, as well as against warping, rotting, decaying, bowing or checking.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Doors shall be as manufactured by Curries Mfg., Ceco Corporation, Steelcraft,

Firedoor or approved equal.

2.02 MATERIALS

A. Hollow Metal Frames for Doors:

1. Exterior frame: 14 gauge, (0.067 in.), (1.7-mm-) cold-rolled steel complying with ASTM A 366, commercial quality, hot-dip galvanized according to ASTM A 924, with A 60 coating designation, mill phosphatized.
2. Fully welded frame, custom type with mitered head and jamb members with integral stops and with combination buck and trim as indicated. Corners shall have continuous welds ground flush and smooth without dishing.
3. Head Reinforcing: Provide head section reinforcement full width of frame with continuous formed channel shapes fabricated of not less than 10 gauge sheet steel.
4. Butt Reinforcing: Steel plate 3/16-inch thick by 1½ inches wide by 10 inches long, offset where required so faces of butts are flush with door frame edge, secured by no less than six spot welds.
5. Strike Reinforcement: Offset clips of 12 gauge steel by 1½ inches by 3 inches long.
6. Surface applied closure and overhead holder reinforcement: 12 gauge steel, 1½ inches wide by 10 inches long, secure by not less than six spot welds.
7. Miscellaneous Reinforcement: 12 gauge sheet steel.
8. Grout guards: Provide 26 gauge sheet metal covers welded in back of frames at hinges, locks, bolts and tapped reinforcements at hardware.
9. Weatherstripping Provisions: For doors with screw attached weatherstripping or gasketing, provide grout guards of sheet metal in stop areas of frame.
10. Jamb anchors: For frames set in masonry provide adjustable type anchors of 14 gauge corrugated steel, 2-inches wide by 10-inches long. Provide three anchors per jamb.
11. Floor anchors: Provide 14 gauge galvanized sheet steel angle shaped anchors for each jamb and mullion which extends to the floor, punched for not fewer than two ¼-inch diameter bolts.
12. Spreaders: Provide spreaders with temporary steel spreader bars tack welded to jambs and mullion to maintain full rigidity and proper alignment during installation.

B. Hollow Metal Doors:

1. Door Construction: Cold-rolled steel complying with ASTM A 366, commercial quality, hot-dip galvanized according to ASTM A 924, with A 60 coating designation.
2. Type: Exterior Type, Grade II, heavy-duty, Model 2, seamless design, galvanized steel sheet faces.
3. Sizes and thickness: Sizes shall be as indicated on the Contract

Drawings and thickness 1-3/4 inches.

4. Face sheet gauges: 16 gauge, 0.053-inch- (1.3-mm-) thick.

5. Door perimeters:

   a. Reinforce stile edges full height with 16 gauge hot dip galvanized steel channels. For single acting doors, bevel stile edges 1/8 inch in 2 inches.
   b. Reinforce tops of doors with full width 16 gauge hot dip galvanized steel channels. Tops of all exterior out-swinging doors shall have a flush surfaces.
   c. Reinforce bottom of doors with full width 16 gauge hot dip galvanized steel channels. Provide weep holes in bottom of exterior doors on each side. Where thresholds are indicated with weatherstripping bulb along top, provide smooth, flush closed bottoms of doors as hereinbefore specified for top of doors. Where door bottoms are indicated with weatherstripping bulbs, provide recessed welded in steel channels coordinated to receive weatherstripping gaskets.

6. Reinforcements and hardware provisions:

   a. Butt reinforcing: Steel plate 3/16 inch thick by 1½ inches wide by 10 inches long, offset where required so faces of butts are flush with door edges, secured by not fewer than six spot welds.
   b. Lock reinforcing: Reinforce doors for locks with 16 gauge steel channels welded in doors around locks, or by special metal reinforcing units supplied by lock manufacturer and welded in place.
   c. Surface Applied Closer Reinforcing: Reinforce each door face internally with 12 gauge, 5-inch by 12-inch steel plates and 16 gauge, 4-inch by 8-inch steel spacer channels welded in place.

2.03 FINISHING AND SHOP PAINT

1. After fabrication, grind exposed weld marks smooth and flush, clean and degrease surfaces, apply metallic filler, sand smooth and apply shop coat of manufacturer's standard rust-inhibitive metal primer, baked on.
2. Prime coat all surfaces with uniform dry film thickness of not less than 1.0 mil without runs, smears, or bare spots. Prime under and inside of all removable stops.

2.04 FABRICATION

A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from defects, warp, or buckle. Where practical, 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. Comply with ANSI/SDI 100 requirements.

1. Internal Construction: One of the following manufacturer's standard core materials according to SDI standards:

    a. Rigid polystyrene conforming to ASTM C 578.
    b. Unitized steel grid.
    c. Vertical steel stiffeners.

2. Clearances: Not more than 1/8 inch (3.2 mm) at jambs and heads, except not more than 1/4 inch (6.4 mm) between non-fire-rated pairs of doors. Not more than 3/4 inch (19 mm) at bottom.

    a. Fire Doors: Provide clearances according to NFPA 80.

B. Fabricate exposed faces of doors and panels from only cold-rolled steel sheet.

C. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.

E. Galvanized Steel Doors, Panels, and Frames: For the following locations, fabricate doors, panels, and frames from galvanized steel sheet according to SDI 112. Close top and bottom edges of doors flush as an integral part of door construction or by addition of minimum 0.0635-inch- (1.6-mm-) thick galvanized steel channels, with channel webs placed even with top and bottom edges. Seal joints in top edges of doors against water penetration.

    1. At exterior locations and where indicated.

F. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

G. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of SDI 107 and ANSI A115 Series specifications for door and frame preparation for hardware.

H. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

I. Locate hardware as indicated on Shop Drawings or, if not indicated, according to the Door and Hardware Institute's (DHI) "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

PART 3 EXECUTION

3.01 INSTALLATION

A. Frames: Install plumb, level and true to line, secured in openings. Install frames in accordance with approved shopdrawings, manufacturer's printed directions, and as follows:

1. In new masonry openings, temporarily brace door frames ready to receive abutting masonry. Secure each frame floor anchor with two ¼-inch diameter wedge anchors.

B. Doors: Install in openings plumb, level and true to line. Apply hardware and adjust to achieve smooth and quiet operation. Install exterior thresholds in sealant. Doors shall be capable of maintaining any degree of opening without movement due to gravity.

C. Hardware Installation:

1. Install door closer with through bolts and grommet nuts.
2. Install panic devices (if required).
3. Install stops and holders as follows:

a. On concrete and masonry with lead shields. Fiber plugs are not permitted.
b. On hollow masonry with toggle bolts or "T" anchors.
c. To doors with through bolts and grommet nuts.

D. Workmanship:

1. Doors shall have 1/8-inch margin at head and jambs.
2. Provide 3/8-inch clearance at floors where there is no threshold or carpet.
3. Door shall not bind at bottom through maximum possible swing, as limited by wall or stop only.
4. All bolts, screws and stops shall be tight.
5. Doors and frames shall not have any surface areas that are gritty or rough to the touch.

END OF SECTION