SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Standard interior hollow metal doors and frames.
2. Borrowed lite frames.

B. Related Requirements:

1. Section 087100 "Door Hardware" for door hardware for hollow metal doors.
2. Section 081416 "Flush Wood Doors" for wood doors to receive hollow metal frames.

1.2 COORDINATION

A. Coordinate installing anchors for hollow metal frames, including sleeves, concrete inserts, and anchor bolts.

B. Coordinate requirements for installing door hardware, including electrified door hardware, and access control and security systems.

1.3 DEFINITIONS

A. Minimum Steel Sheet Thickness: Minimum thickness of base metal without coatings in accordance with NAAMM-HMMA 803.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of specified product.

1. Include construction details, material descriptions, core descriptions, and finishes.
2. Include information indicating compliance with performance requirements indicated.

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B. Shop Drawings:

1. Elevations of each door type.
2. Details of doors, including vertical- and horizontal-edge details and base-metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and base-metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each wall opening condition.
6. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
7. Details of frame anchors, joints, field splices, and connections.
8. Details of accessories.
9. Details of moldings, removable stops, and glazing.

C. Product Schedule: For hollow metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings used on the Drawings and in schedules. Coordinate with final door hardware schedule.

1.6 CLOSEOUT SUBMITTALS

A. Record Documents: For all door assemblies, list of door numbers and applicable room name and number to which door provides access.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic, canvas, or other material that can entrap moisture.

1. Provide additional protection to prevent damage to factory-applied color finishes.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal doors and frames vertically under cover at Project site with head up. Place on minimum **4-inch-** high wood blocking. Provide minimum **1/4-inch** space between each stacked door to permit air circulation.

D. Immediately remove and replace damaged or wet packaging or protective material.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain hollow metal doors and frames from single manufacturer.

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2.2 STANDARD INTERIOR HOLLOW METAL DOORS AND FRAMES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Ceco Door Products. Assa Abloy.
2. Steelcraft.
3. Flemming Door Products. Assa Abloy.

B. Basis of Design, Door Product: Ceco Door Products, "Thrulite" Stile & Rail door.

1. Door Design: "3G" Three glazed lites. (Drawing Designation: LT3)
2. Style & Rail Dimensions:

a. Top, Side & Intermediate Rails: 5-5/8"
b. Bottom Rail: 12-5/8"
c. Lite Dim: (3) three equal lites, reference drawings.

3. Glass Stops: Mfr. Standard square and integral glass stop for glazing specifed.

C. Interior Extra-Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 3; ANSI/SDI A250.4, Level A.

1. Steel Sheet: Uncoated.
2. Doors: **1-3/4 inches** thick.

a. Faces: Steel sheet; minimum **16 gauge** base-metal thickness.
b. Edge Construction: Model 3, Stile and Rail.

1) Stile-and-Rail Center Panels: Steel sheet; minimum **16-gauge** base-metal thickness.
2) Hardware reinforcing for listed hardware. Center rail welded to stile.
3) Stile, side and top, intermediates: Dimension 5-5/8" min for 2-3/4" cylindrical type hardware backset.
4) Top and Bottom Corners: 16-ga. steel tubular construction, reinforcement at rail channel with 22 ga. steel.
5) Glazing Trim: Accommodate 3/8" to 1/2" glazing as specified.
6) Hinge Prep: Mortised for specified hinges, with 7 gauge reinforcements, weleded inside door and drilled and tapped for fasteners in accordance with ANSI A156.7.
7) Edge Construction: Tubular construction with seamless design, fully welded and ground smooth.
8) Performance: Sound transmission class, STC: 30 with sealed glass, 1/4" tempered min.

c. Edge Bevel: Bevel lock and hinge edges 1/8 inch in 2 inches.
d. End Closures: Steel sheet; minimum **16-gauge** base-metal thickness. Inverted top channel and inverted bottom channel.
e. Cores: Fiberglass batting (0.5 lbs/cf).

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3. Frames: Steel sheet; minimum **16-gauge** base-metal thickness.

    a. Construction: Full-profile welded.
    b. Profile: Double Unequal Rabbet for Standard Wall Application, Handed.

        1) Edge Profile: 2" face at head & jambs.
        2) Backbend: 1/2"

    c. Product: Ceco Door & Frame. Series "SU" Steel Frames. (Unequal Rabbet)

4. Exposed Finish: Prime painted.

2.3 BORROWED LITES

A. Borrowed Lite Frames:

1. Minimum Base-Metal Thickness: 16-gauge. .
2. Steel Sheet: Uncoated.
3. Construction: Full-profile welded.
4. Profile: Match profile of door frame, unequal rabbet. Reference drawings.
5. Glazing Stops: Match profile of glazing stops on doors with glazing stops. Square, for glazing specified.

2.4 ACCESSORIES

A. Door Vision Lite Frames: Steel sheet matching door face material; minimum **0.032-inch** base-metal thickness.

1. Profile: Flush type, with square stops.
2. Corner Construction: Butted and welded.
3. Fasteners: Countersunk.
4. Fixed-Stop Location: Secure (key) side of door.

B. Frame Anchors: ANSI/SDI 250.4; steel sheet; minimum base-metal thickness required by door and frame standard indicated.

1. Interior Locations: ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized in accordance with ASTM A153/A153M, Class B.

2. Jamb Anchors: Of minimum size and type required by door and frame standard indicated, and suitable for performance level indicated.

    a. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each **24 inches** of frame height above **7 ft.**.

3. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

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4. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips that allow **2-inch** height adjustment. Terminate bottom of frames at top of underlayment.

2.5 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Inserts, Bolts, and Fasteners: Hot-dip galvanized in accordance with ASTM A153/A153M.

D. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.

E. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.

F. Glazing: Comply with requirements in Section 088000 "Glazing."

2.6 FABRICATION

A. Hollow Metal Frames:

1. Welded Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles, at each joint, fabricated from metal of same or greater thickness as frames.
2. Sidelite and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints fabricated from same material as door frame. Fasten members at crossings and to jambs by welding.
3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
4. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers. Keep holes clear during construction.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

B. Hardware Preparation: Factory prepare hollow metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping in accordance with ANSI/SDI A250.6, the door hardware

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required, and templates.

1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with ANSI/SDI A250.14 for preparing hollow metal doors and frames for hardware.

C. Door Vision Lite Frames:

1. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
2. Rabbets: Coordinate width between fixed and removable stops with glazing and installation types indicated.
3. Fastener Spacing: Not more than **9 inches** o.c. and not more than **2 inches** from each corner.

2.7 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.

B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

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3.3 INSTALLATION OF STANDARD INTERIOR HOLLOW METAL DOORS AND FRAMES

A. Install in accordance with ANSI/SDI A250.8 and ANSI/SDI A250.11.

B. Install hollow metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.

C. Mineral-Fiber Insulation: Solidly pack mineral-fiber insulation inside frames.

D. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow metal door and frame manufacturer's written instructions.

3.4 INSTALLATION OF BORROWED LITE FRAMES

A. Install in accordance with ANSI/SDI A250.8 and ANSI/SDI A250.11.

B. Mineral-Fiber Insulation: Solidly pack mineral-fiber insulation inside frames.

C. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow metal door and frame manufacturer's written instructions.

3.5 FIELD QUALITY CONTROL

A. Repair or remove and replace installations where testing and inspections indicate noncompliance with specified requirements.

B. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

3.6 ADJUSTING

A. Remove and replace defective work, including frames that are warped, bowed, or otherwise defective.

B. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

END OF SECTION 081113

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