SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 – GENERAL

1.01 Summary

A. Section includes hollow metal work.

1.02 Definitions

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.03 Action Submittals

A. Product Data: For each type of product.

B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.

C. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

PART 2 – PRODUCTS

2.01 Manufacturers

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. Curries Company; an Assa Abloy Group Company, or equal

2.02 Regulatory Requirements

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

2.03 Interior Hollow Metal Doors and Frames

A. Heavy-Duty Doors and Frames: SDI A250.8, Level 2. At locations indicated in the Door and Frame Schedule.

1. Physical Performance: Level B according to SDI A250.4.
2. Doors:
   a. Type: As indicated in the Door and Frame Schedule.
   b. Thickness: 1-3/4” inches.
   c. Face: Uncoated, cold-rolled steel sheet, minimum thickness of 0.042 inch.
   d. Edge Construction: Model 1, Full Flush.
   e. Core: Manufacturer’s standard.
3. Frames:
   a. Materials: Uncoated, steel sheet, minimum thickness of 0.053 inch.
   b. Construction: Face welded.
4. Exposed Finish: Prime.

2.04 Exterior Hollow Metal Doors and Frames

A. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3. At locations indicated in the Door and Frame Schedule.

1. Physical Performance: Level A according to SDI A250.4.
2. Doors:
   a. Type: As indicated in the Door and Frame Schedule.
   b. Thickness: 1-3/4 inches.
   c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A40 coating.
   d. Edge Construction: Model 1, Full Flush.
   e. Core: Manufacturer's standard insulation material.

3. Thermal-Rated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than 2.1 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.
4. Frames:
   a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A40 coating.
   b. Construction: Full profile welded.
5. Exposed Finish: Prime

2.05 Frame Anchors

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.

B. Floor Anchors:

1. Monolithic Concrete Slab: Clip-type anchors, with two holes to receive fasteners.

2.06 Materials

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.

G. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.

H. Glazing: Provide as noted on plans.

I. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per

2.07 Fabrication

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Doors:

1. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
2. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated.

C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Sidelight 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 butt welding.
2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
5. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:
        1) Two anchors per jamb up to 60 inches high.
        2) Three anchors per jamb from 60 to 90 inches high.
        3) Four anchors per jamb from 90 to 120 inches high.

    b. Stud-Wall Type: Locate not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows
        1) Three anchors per jamb up to 60 inches high.
        2) Four anchors per jamb from 60 to 90 inches high.
        3) Five anchors per jamb from 90 to 96 inches high.

6. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers.
    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
    b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce doors and frames to receive non-templated, mortised, and surface-mounted door hardware.
2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

2.08 Steel Finishes

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
   1. Shop Primer: SDI A250.10.

2.09 Accessories

A. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

PART 3 – EXECUTION

3.01 Installation

A. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

   1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
      a. At fire-rated openings, install frames according to NFPA 80.
      b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splices smooth, flush, and invisible on exposed faces.
      c. Install frames with removable stops located on secure side of opening.
      d. Install door silencers in frames before grouting.
      e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
      f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
      g. Field apply bituminous coating to backs of frames that will be filled with grout containing anti-freezing agents.

   2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post installed expansion anchors.
      a. Floor anchors may be set with power-actuated fasteners instead of post installed expansion anchors if so indicated and approved on Shop Drawings.

   3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.

   4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.

   5. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
      a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
      b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
      c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
      d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

B. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Steel Doors:
   a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
   b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
   c. At Bottom of Door: 3/4 inch plus or minus 1/32 inch.
   d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

3.02 Adjusting and Cleaning

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.

C. 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.

D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer’s written instructions.

E. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION

SECTION 08 14 16

FLUSH WOOD DOORS

PART 1 – GENERAL

1.01 Section Includes

A. Flush wood doors; flush and flush glazed configuration; fire-rated, non-rated.

1.02 Submittals

A. See Front Sections for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type, and characteristics.

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing, and other details.

D. Specimen warranty.

E. Warranty, executed in Owner's name.

1.03 Warranty

A. Interior Doors: Provide manufacturer's warranty for the life of the installation.

B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 – PRODUCTS

2.01 Manufacturers

A. High Pressure Decorative Laminate (HPDL) Faced Doors:

1. VT Industries, Inc.
2. Marshfield Door Systems, Inc.
3. Graham Wood Doors.
4. Or Equal
5. See Sections 01 60 00 – Material and Equipment

2.02 Doors and Panels

A. Doors: See drawings for locations and additional requirements.
   1. High Pressure Decorative Laminate (HPDL) Faced Doors: 5-ply unless otherwise indicated.

B. Interior Doors: 1-3/4 inch thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at each location.
   2. Fire-Rated Doors: Tested to 20 minutes, 60 minutes, 90 minutes, and ratings as indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc. (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.

2.03 Door and Panel Cores

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.04 Door Facings

A. High Pressure Decorative Laminate (HPDL) Facing for Fire Doors: NEMA LD 3, SGF; pattern and color to be selected by the Architect; textured, low gloss finish.

2.05 Door Construction

A. Fabricate doors in accordance with door quality standard specified.

B. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

C. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

D. Provide edge clearances in accordance with the quality standard specified.

PART 3 – EXECUTION

3.01 Installation

A. Install Doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

3.02 Tolerances

A. Conform to specified quality standard for fit and clearance tolerances.

B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.03 Adjusting

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION

SECTION 08 36 00

SECTIONAL OVERHEAD DOORS

PART 1 - GENERAL

1.01 Section Includes

A. Insulated Sectional Overhead Doors.

B. Electric Operators and Control.

C. Operating Hardware, tracks, and support.

1.02 Design/Performance Requirements

A. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.03 Submittals

A. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

B. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

1.04 Quality Assurance

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

B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.

C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.05 Warranty

A. Warranty: Manufacturer's limited door and operators system warranty for 10 years against delamination of polyurethane foam from steel face and all other components for three (3) years or 25,000 cycles, whichever comes first.

PART 2 - PRODUCTS

2.01 Manufacturers

A. Basis of Design: Overhead Door Corp Sectional Steel Door MODEL 418 or equal.

2.02 Insulated Sectional Overhead Doors

A. Insulated Steel Sectional Overhead Doors: Model 418 Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:

1. Door Assembly: Metal/foam/metal sandwich panel construction, with PVC thermal break and weather-tight ship-lap design meeting joints.
   a. Panel Thickness: 2 inches (51 mm).
   b. Exterior Surface: Flush, textured.
   c. Exterior Seal: 16 gauge, hot-dip galvanized.
   d. Back Cover: 26 gauge steel.
   e. End Stiles: 16 gauge with thermal break.
   f. Spring Counterbalance: Sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable. Sized with a minimum 7 to 1 safety factor.

      1) High cycle spring: 25,000 cycles.

   g. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
   h. Thermal Values: R-value of 7.35.
   i. Air Infiltration: 0.08 cfm at 15 mph; 0.08 cfm at 25 mph.
   j. High-Usage Package: Provide with optional high-usage package.
   k. Full Glazed Aluminum Sash Panels:

      1) 1/2 inch (12.5 mm) Tempered Insulating Glass.

2. Finish and Color: Two coat baked-on polyester.
   a. Interior color, white
   b. Exterior color, white

3. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.

4. Lock:
   a. Interior mounted slide lock.
   b. Interior mounted slide lock with interlock switch for automatic operator.
   c. Keyed lock.
   d. Keyed lock with interlock switch for automatic operator.
   e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.

5. Weatherstripping:
   a. EPDM bulb-type strip at bottom section.
   b. Flexible Jamb seals.
   c. Flexible Header seal.

6. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
   a. Size: 3 inch (51 mm).
   b. Type: Standard lift.

7. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL 325/2010 requirements for continuous monitoring of safety devices.
   a. Entrapment Protection: Required for momentary contact, includes radio control operation.
      1) Photoelectric sensors monitored to meet UL 325/2010.

b. Operator Controls:
   1) Push-button and key operated control stations with open, close, and stop buttons.
   2) Surface mounting.
   3) Both interior and exterior location.

PART 3 - EXECUTION

3.01 Examination

A. Do not begin installation until openings have been properly prepared.

B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

C. Verify electric power is available and of correct characteristics.

D. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 Preparation

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 Installation

A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.

B. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.

C. Anchor assembly to wall construction and building framing without distortion or stress.

D. Securely braces door tracks suspended from structure. Secure tracks to structural members only.

E. Fit and align door assembly including hardware.

F. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

3.04 Cleaning and Adjusting

A. Adjust door assembly to smooth operation and in full with weatherstripping.

B. Clean doors, frames, and glass.

C. Remove temporary labels and visible markings.

3.05 Protection

A. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

B. Protect installed products until completion of project.

C. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

END OF SECTION

SECTION 08 54 13

COMPOSITE WINDOWS

PART 1 - GENERAL

1.01 Section Includes

A. Composite Windows: Double Hung window complete with hardware, glazing, weather strip, insect screen, grilles-between-the-glass, jamb extension, sheet rock return, j-channel, standard or specified anchors, trim, and attachments as window specified.

1.02 References

A. ASTM, International:

1. E283: Standard test method for determining rate of air leakage through exterior windows, skylights, curtain walls, and doors under specified pressure difference across the specimen.

2. E330: Standard test method for structural performance of exterior windows, doors, skylights, and curtain walls by uniform static air pressure difference.

3. E547: Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls, by cyclic air pressure difference.

4. E2190: Standard specification for insulating glass unit performance and evaluation.

B. North American Fenestration Standard (NAFS) – American Architectural Manufacturer's Association/Window and Door Manufacturer's Association/Canadian Standards Association (AAMA/WDMA/CSA 101/I.S.2/A440):

1. AAMA/WDMA/CSA 101/I.S.2/A440-17: NAFS: North American Fenestration, Standard/Specification for windows, doors, and skylights.

C. Insulating Glass Certification Council (IGCC) and Fenestration Glazing Industry Alliance (FGIA) Glass Products Council (GPC).

1. AAMA 2605: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.

1.03 Submittals

A. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

B. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

1.04 Delivery

A. Deliver in original packaging and protect from weather.

1.05 Storage and Handling

A. Store window units in an upright position in a clean and dry storage area above ground to protect from weather.

1.06 Warranty

A. Provide manufacturer's standard warranty.

PART 2 - PRODUCTS

2.01 Manufactured Units

A. Basis of Design: Marvin Essential® Double Hung and related stationary or picture units as manufactured by Marvin Windows and Doors; or equal window units.

2.02 Frame Description

A. Interior: Reinforced fiberglass 0.070 inch (2mm) thick.

B. Frame width: 3 3/32 inches (79 mm).

C. Jamb depth: 2 inches (51 mm).

2.03 Sash Description

A. Reinforced fiberglass, 0.077 inch (2 mm) thick.

B. Composite sash thickness: 15/16 inch (24 mm).

1. Operating sash tilt to interior for cleaning or removal.

2.04 Glazing

A. Select quality complying with ASTM C1036. Insulating glass SIGMA/IGCC when tested in accordance with ASTM E2190. STC/OITC ratings are tested to the stated performance level in accordance with ASTM E90-09.

B. Glazing Method: Insulating glass.

C. Glass Fill: Air with capillary tubes, Argon.

D. Glass Type: Low E1

E. Glass Type: Standard

F. Glazing Seal: Silicone bedding at exterior and a glazing boot to interior.

G. Perimeter Spacer: Default color is mill finish (stainless). An optional black perimeter spacer color is available for all interior color selections.

2.05 Mulling

A. Standard Mulling
1. Ribbon mull limits: 6 wide by 1 unit high ; Rough Opening not to exceed 114" x 78" (2896 mm x 1981 mm).

2.06 Finish

A. Exterior: Fiberglass, with a cross-head extruded acrylic organic coating system. Meets AAMA 624-10 requirements.

B. Interior: Fiberglass, with a cross-head extruded acrylic organic coating system.

C. Color: Stone White exterior with Stone White interior.

2.07 Hardware

A. Balance System:
   1. Coil spring block and tackle with nylon cord, glass filled nylon shoe, and zinc locking mechanism.

B. Sash Lock:
   1. Zinc die cast contoured sash lift
   2. Standard Color: White on Stone White interior
   3. Two (2) locks installed on units with a rough opening width greater than 30 inches.

C. Sash Lift:
   1. Zinc die cast contoured sash lift.
   2. Standard color: White

D. Top and Bottom Tilt Latches: Ergonomic tilt latches attached to the upper corners of the top and bottom sash for easy tilting and sash removal.

E. Sash Limiters: None.

2.08 Weather Strip

A. At Sill: Combination foam filled bulb – Color: Black

B. At Bottom Sash: Combination foam filled bulb – Color: Black

C. At Top Sash: Combination hollow vinyl bulb – Color Black

D. At Interlock: Rigid ABS with flexible hollow bulb – Top Sash Cover Color: Black

2.09 Jamb Extension

A. Standard two (2) inch jamb.

2.10 Insect Screen

A. Factory-installed full screen
   1. Screen mesh: 18 by 16 – Charcoal fiberglass

B. Rolled form aluminum frame finish

C. Color: Stone White

2.11 Grilles-Between-the-Glass (GBG)

A. Manufactured from aluminum in a 23/32 inch (18 mm) wide contoured profile placed between the two panes of glass.

B. Colors:
   1. Interior: White
   2. Exterior: White

C. Patterns:
   1. Rectangular

2.12 Accessories and Trim

A. Installation Accessories:

   1. Factory-installed vinyl nailing fin/drip cap at head, sill, and jamb.
   2. Mullion kit: standard mullion kit for field assembly of related units available in horizontal, vertical, and 2-wide and/or 2-high configurations. Kit includes instructions, interior and exterior mull covers, kerf weather strip, mull plugs, and brackets.
   3. Sheet rock return:
      a. Available Colors: Stone White

PART 3 - EXECUTION

3.01 Examination

A. Verification of Condition: Before installation, verify openings are plumb, square, and of proper dimensions. Report frame defects or unsuitable conditions to General Contractor before proceeding.

B. Acceptance of Condition: Beginning installation confirms acceptance of existing conditions.

3.02 Installation

A. Assemble and install window/door unit(s) according to manufacturer's instruction and reviewed shop drawing.

B. Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants. Do not use expansive foam sealant.

C. Install accessory items as required.

3.03 Field Quality Control

A. Remove visible labels and adhesive residue according to manufacturer's instructions.

3.04 Cleaning

A. Remove visible labels and adhesive residue according to manufacturer's instructions.

3.05 Protecting Installed Construction

A. Protect windows from damage by chemicals, solvents, paint, or other construction operations that may cause damage.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 – GENERAL

1.01 Summary

A. Section Includes:
   1. Mechanical door hardware for the following:
      a. Swinging Doors.

1.02 Action Submittals

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

B. Other Action Submittals:

   1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

      a. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
      b. Content: Include the following information:

         1) Identification number, location, hand, fire rating, size, and material of each door and frame.
         2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
         3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.

1.03 Quality Assurance

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.

B. Source Limitations: Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

C. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.

D. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meet requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. at the tested pressure differential of 0.3-inch wg of water.

E. Means of Egress Doors: Latches do not require more than 15 lbf to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

F. Accessibility Requirements: For door hardware on doors in an accessible route, comply with ICC/ANSI A117.1.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
2. Comply with the following maximum opening-force requirements:

    a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
    b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high and 3/4 inch high for exterior sliding doors.
4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

PART 2 – PRODUCTS

2.01 Scheduled Door Hardware

A. Provide door hardware for each door as scheduled to comply with requirements in this Section.
1. Door Hardware Set: Provide quantity, item, size, finish, or color indicated, and products equivalent in function and comparable in quality to named products.

B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Drawings. Products are identified by using door hardware designations, as follows:
1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 – Door Hardware Schedule Article.
2. References to BHMA Designations: Provide products complying with these designations and requirements for description, quality, and function.

2.02 Hinges

A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
    a. Hager Companies
    b. Sargent
    c. Schlage
    d. Von Duprin
    e. Yale
    f. Or equal manufacturer

2.03 Mechanical Locks and Latches

A. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.
4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.

B. Bored Locks: BHMA A156.2; Grade 1 & 2 as shown on plans
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
    a. Stanley
    b. Hager Companies
    c. Sargent
    d. Schlage
    e. Von Duprin
    f. Yale
    g. Or equal manufacturer

2.04 Exit Locks and Exit Alarms

A. Exit Locks and Alarms: BHMA A156.29, Grade 1.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
    a. Detex Company
    b. Hager Companies
    c. Sargent
    d. Schlage
    e. Von Duprin
    f. Yale

    Or equal manufacturer

2.05 Exit Devices and Auxiliary Items

A. Exit Devices and Auxiliary Items: BHMA A156.3.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
    a. Detex Company
    b. Hager Companies
    c. Sargent
    d. Schlage
    e. Von Duprin
    f. Yale
    g. Or equal manufacturer

2.06 Lock Cylinders

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Detex Company
      b. Hager Companies
      c. Sargent
      d. Schlage
      e. Von Duprin
      f. Yale
      g. Or equal manufacturer

2.07 Operating Trim

A. Operating Trim: BHMA A156.6; stainless steel, unless otherwise indicated.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Detex Company
      b. Hager Companies
      c. Sargent
      d. Schlage
      e. Von Duprin
      f. Yale
      g. Hiawatha
      h. Or equal manufacturer

2.08 Surface Closers

A. Surface Closers; BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Norton Door Controls; an ASSA ABLOY Group Company
      b. Detex Company
      c. Hager Companies
      d. Sargent
      e. Schlage
      f. Von Duprin
      g. Yale
      h. Or equal manufacturer

2.09 Mechanical Stops and Holders

A. Wall- and Floor-Mounted Stops: BHMA A156.16; polished cast brass, bronze, or aluminum base metal.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. IVES Hardware; and Ingersoll-Rand Company
      b. Detex Company
      c. Hager Companies
      d. Sargent
      e. Schlage
      f. Von Duprin
      g. Yale
      h. Or equal manufacturer

2.10 Door Gasketing

A. Door Gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Reese Enterprises, Inc. IVES Hardware; and Ingersoll-Rand Company
      b. Detex Company
      c. Hager Companies
      d. Sargent
      e. Schlage
      f. Von Duprin
      g. Yale
      h. Or equal manufacturer

2.11 Thresholds

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      A. Reese Enterprises, Inc. IVES Hardware; and Ingersoll-Rand Company
      B. Detex Company
      C. Hager Companies
      D. Sargent
      E. Schlage
      F. Von Duprin
      G. Yale
      H. Or equal manufacturer

2.12 Metal Protective Trim Units

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch thick stainless steel; with manufacturer's standard machine or self-tapping screen fasteners.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Hiawatha, Inc. or Stanley
      b. Hager Companies
      c. Sargent
      d. Schlage

e. Von Duprin
f. Yale
g. Or equal manufacturer

2.13 Fabrication

A. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.

2. Fire-Rated Applications:

a. Wood or Machine Screws: For the following:
1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
2) Strike plates to frames.
3) Closers to doors and frames.

b. Steel Through Bolts: For the following unless door blocking is provided:
1) Surface hinges to doors.
2) Closers to doors and frames.
3) Surface-mounted exit devices.

3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.

4. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, “Recommended Fasteners for Wood Doors.”

5. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.14 Finishes

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 – EXECUTION

3.01 Installation

A. Steel Doors and Frames: For surface applied door hardware, drill, and tap doors and frames according to ANSI/SDI A250.6.

B. Wood Doors: Comply with DHI WDHS.5 “Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors.”

C. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI WDHS.3, “Recommended Locations for Architectural Hardware for Wood Flush Doors.”

D. Install each door hardware item to comply with manufacturer’s written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

E. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

F. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores.
2. Furnish permanent cores to Owner for installation.

G. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant.

H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

J. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

K. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

L. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

END OF SECTION