SECTION 08 71 00
DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes commercial door hardware for wood and steel doors.

B. Related Work: Hardware for aluminum entrance doors is specified in Section 08 41 13, Aluminum-Framed Entrances and Storefronts.

C. Work Not in Contract: Owner will provide permanent lock cylinders and final keying for doors provided under this Contract.

1.02 SUBMITTALS

A. Product Data: For each product indicated.

B. Door Hardware Schedule: Organized into door hardware sets indicating type, style, function, size, label, hand, manufacturer, fasteners, location, and finish of each door hardware item.

C. Product certificates.

1.03 QUALITY ASSURANCE

A. Supplier Qualifications: Person who is or employs a qualified DHI Architectural Hardware Consultant.

B. Templates: Obtain and distribute templates for doors, frames, and other work specified to be factory prepared for installing door hardware.

C. Standards: Comply with BHMA A156 series standards, Grade 1.

D. BHMA Certification: Provide door hardware that is listed in BHMA directory of certified products.

1.04 WARRANTY

A. Special Warranty: Manufacturer's standard form; repair or replace components of door hardware that fail in materials or workmanship within warranty period.

B. Warranty Period for Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 DOOR HARDWARE

A. Scheduled Door Hardware: Provide door hardware conforming to these specification according to Door Hardware Sets at the end of Part 3.

B. Butt Hinges: ANSI A156.1, full-mortised, template-produced, ball-bearing, butt-hinges, 5-knuckle type, with non-rising, flat-top pins. Provide non-removable pins in out-swinging doors.
   1. Manufacturers:
      a. Hager Companies.
      b. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc.
      c. Stanley Commercial Hardware; Div. of The Stanley Works.
   2. Size: 4-1/2 by 4-1/2 inches unless otherwise scheduled, or unless hinge manufacturer recommends larger size based on weight of door.
   3. Exterior Hinges: Heavy-duty, Stanley FBB199 or equal; stainless steel with stainless steel pin; brushed finish US 32D.
   4. Interior Hinges: Medium duty, Stanley FBB 179 or equal; brass, with stainless steel pin body and brass protruding heads; satin chromium-plated finish, US 26D.
   5. Screws: Phillips flat-head screws; screw heads finished to match surface of hinges.
      a. Metal Doors and Frames: Machine screws (drilled and tapped holes).
      b. Wood Doors: Wood screws.

C. Mechanical Locks and Latches: ANSI A156.2, Series 4000, Grade 1, standard-duty commercial grade cylindrical lockset, and as follows:
   1. Basis-of-Design: Subject to compliance with requirements, provide Schlage; AL Series, or comparable product by one of the following:
      a. Corbin Russwin
      b. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc.
   2. Functions: Obtain information from Owner.
   3. Trim: Schalge; Neptune.
   4. Latch and Bolt Throw: 1/2 inch minimum.
   5. Strikes: Wrought box strike with curved lip extended to protect frame; finished to match lockset trim; furnish box strike for each latch and lock bolt.
   6. Backset: 2-3/4 inches.
   7. Dummy Trim: Match lever lock trim and escutcheons.

D. Exit Device: ANSI A156.3, 2001, Grade 1; rim exit device, no exterior trim.
   1. Basis-of-Design: Von Duprin; 22EO.

E. Dead Latch, Aluminum Doors: Adams Rite; 4900 Series.

F. Exit Paddle, Aluminum Doors: Adams Rite; 4590.

G. Programmable Pushbutton Locksets: Kaba-Ilco; Simplex L1000 Series.

H. Surface-Mounted Closers:
   1. Basis of Design: LCN; 4040/4041 Super Smoothee.

2. Size: Factory-sized, adjustable to meet field conditions, including wind pressures, and requirements for opening force.
3. Where closer is indicated to be mounted on stop face of out-swinging exterior door, furnish with parallel arm and provide closer unit one-size larger than recommended for use with perpendicular arm.
4. Opening Force and Closing Speed: 15 lbs maximum opening force; adjustable backcheck, stop, closing and latching speeds.
   a. Provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.
5. Body and Case: Cast iron body with 1/2" cylinder bore. Rectangular case with eased edges; painted finish in color matching the mounting surface of the door.

I. Flush Bolts: Provide flush bolts with dust proof strikes that conform to ANSI/BHMA A115.4; Hager 282D, H. B. Ives, 458, or DCI, 780 F.

J. Protective Trim Units:
1. Manufacturer: Hager Companies, H. B. Ives, or Rockwood Manufacturing Company
2. Material: Stainless steel.
3. Kick Plates: 8" high by width of door minus 2"; 0.050 inch thick.
4. Fasteners: Exposed machine or self-tapping screws.

K. Stops: Provide floor stops for doors. Do not mount floor stops where they will impede traffic.
1. Manufacturer: Glynn-Johnson, H. B. Ives, or Rockwood Manufacturing Company.
2. Product: Resilient dome set into cast metal base; H. B. Ives 436 or equal. Furnish with anchors of type appropriate for concrete floors.

L. Overhead Stops: Glynn Johnson; 100 Series; concealed overhead stop, adjustable.

M. Door Gasketing: Provide continuous weather-strip gasketing on exterior doors. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
1. Manufacturers:
   a. National Guard Products, Inc.
   b. Pemko Manufacturing Co., Inc.
   c. Reese Enterprises, Inc.
   d. Zero International, Inc.
2. Head and Jamb Weatherstripping: Flexible hollow bulb type intended for mounting on door stops.
3. Door Bottom Weatherstripping: Solid neoprene or flexible vinyl sweep seal in extruded aluminum frame with color anodized finish.
4. Gasketing Materials: Comply with ASTM D 2000 and AAMA 701/702.

N. Thresholds: BHMA A156.21, extruded or cast aluminum, mill finish, raised thresholds with grooved surface, beveled with a slope of not more than 1:2, with maximum height of 1/2 inch.
1. Manufacturers and Products:
   a. National Guard Products, Inc.; 424 Series.
   b. Pemko Manufacturing Co., Inc.; 198 Series
   c. Reese Enterprises, Inc.; S204 Series.
   d. Zero International, Inc.; 654

O. Silencers: Neoprene or rubber; fabricated for drilled-in application to frame. Furnish 3 per leaf for single-leaf doors; 2 per opening for double-leaf doors.

P. Strikes: For each door opening with latch or lock bolt, furnish manufacturer's standard strike with curved lip to protect frame.

Q. Entrance Door Push/Pulls: Wire pull and push bar; stainless steel, BHMA 630 finish; 1-inch diameter solid wire.
1. Pull: 9 inches center to center with 2-1/4 inches projection from face of stile.
2. Push Bar: Full width of door projecting 2-1/2 inches from face of stile.

R. Office Door Pull: Wire pull, straight-design, 1 inch diameter, 12 inch centers.
1. Product: Rockwood, RM4410.

S. Sliding Door Hardware: Heavy duty sliding door hardware, capacity 300 lbs. Provide extruded aluminum track, adjustable 4-wheel hangers, floor guides and stops.
1. Basis-of-Design Product: Johnson; 2000.

T. Electric Strikes: 24V DC operation, fail secure; BHMA E09321, UL listed.
1. Power Supply: Provide power supply as required for operation of strike. Coordinate with access control system and low-energy door operator systems. Utilize power from other systems if available.

U. Power Transfer: Armored door cord with caps for mounting in edge of door.

V. Restroom Signage: ADA-compliant sign with raised tactile lettering and Braille; with pictograms for sex and accessibility.
1. Basis-of-Design: Hager; 368. Color, blue with white pictograms and lettering.

W. Peephole: One-way viewing device with revolving lens; "Peek-O" as manufactured by Herbert L. Flake Co.; no substitutions.
1. Mounting Height: 57 inches AFF.

2.02 FABRICATION

A. Base Metals: Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18 for finishes. Do not furnish manufacturer's standard materials if different from specified standard.

B. Finishes: Comply with BHMA A156.18.

C. Fasteners for Steel: Phillips flat-head screws with finished heads to match surface of door hardware.

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

E. Fasteners for Wood Doors: Comply with requirements of DHI WDHS.2, "Recommended Fasteners for Wood Doors."

PART 3 - EXECUTION

3.01 INSTALLATION

A. Examine doors and frames for compliance with requirements for installation tolerances, wall and floor construction, and other conditions affecting performance.

B. Steel Door and Frame Preparation: Comply with DHI A115 series. Drill and tap doors and frames for surface-applied hardware according to SDI 107.

C. Wood Door Preparation: Comply with DHI A115-W series.

D. Mounting Heights: Comply with the following requirements, unless otherwise indicated:
   1. Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
   2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

E. Adjust and reinforce attachment substrates as necessary for proper installation and operation. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Thresholds: Set thresholds for exterior doors in full bed of sealant complying with requirements specified in Section 07 92 00, Joint Sealants.

G. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with accessibility requirements.
   1. Door Closers: Adjust sweep period so that from an open position of 70 degrees, the door will take at least three seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

3.02 DOOR HARDWARE SETS

A. Set Number 1:

6	Butt Hinges	
1	Deadlatch	
1	Mortise cylinder	
2	Push/Pull	Affix push/pull labels to door stiles
1	Closer	
1	Low energy operator	Including controls
1	Flush bolt	Top and bottom
1	Electric strike	
1	Power transfer	
2	Overhead stops	
1	Threshold	
2	Door sweep	
1 set	Gasketing	
1	Lock guard	

B. Set Number 1A:

3	Butt Hinges	
1	Deadlatch	
1	Mortise cylinder	
1	Push/Pull	Affix push/pull labels to door stiles
1	Low energy operator	Including controls
1	Overhead stops	
1	Threshold	
1	Door sweep	
1 set	Gasketing	
1	Lock guard	

C. Set Number 2:

3	Butt Hinges	
1	Deadlatch	
1	Mortise cylinder	
1	Exit Paddle	
1	Push/Pull	Affix push/pull labels to door stiles
1	Overhead stops	
1	Threshold	
1	Door sweep	
1 set	Gasketing	
1	Lock guard	

D. Set Number 3:

1	Cylinder	
	Lock and track provided by door manufacturer	

E. Set Number 4:

3	Butt Hinges	
1	Lockset	Storeroom function
1	Peephole	
1	Floor stop	

F. Set Number 8:

3	Butt Hinges	
1	Lockset	Storeroom Function
1	Closer	
1	Floor stop	

G. Set Number 9:

3	Butt Hinges	
1	Exit Device	
1	Closer	
1	Threshold	
1	Door sweep	
1	Gasketing	
1	Floor stop	
1	Sign	Sign Text: "EMERGENCY EXIT, ALARM WILL SOUND"

H. Set Number 10:

3	Butt Hinges	
1	Push button lock	
1	Closer	
1	Peephole	
1	Kickplate	
1	Floor stop	

I. Set Number 11:

3	Butt Hinges	
1	Privacy Set	
1	Closer	
1	Kickplate	
1	Floor stop	
1	Restroom Sign	Text: "MEN" or "WOMEN"

J. Set Number 12:

3	Butt Hinges	
1	Lockset	Entrance function
1	Closer	
2	Kickplate	
1	Floor stop	

K. Set Number 13:

3	Butt Hinges	
1	Lockset	Classroom function
1	Closer	
2	Kickplate	
1	Floor stop	

L. Set Number 14:

1	Offset pull
1	Sliding Door set

END OF SECTION 08 71 00