

**SECTION 08 71 00
DOOR HARDWARE**

PART 1 GENERAL

1.1 SECTION INCLUDES:

- A. Hardware for wood and hollow steel doors
- B. Lock Cylinders for gates, folding partitions, wire cages, and doors
- C. Thresholds
- D. Gaskets

1.2 REFERENCES

- A. NFPA 80 – Standard for Fire Doors and Other Opening Protectives
- B. AWI - Architectural Woodwork Institute
- C. BHMA - Builders' Hardware Manufacturers Association
- D. DHI - Door and Hardware Institute
- E. Florida Building Code: Accessibility NAAMM - National Association of Architectural Metal Manufacturers
- F. FFPC – Florida Fire Prevention Code
- G. SDI - Steel Door Institute
- H. FBC - Florida Building Code
- I. FFPC _ Florida Fire Prevention Code

1.3 COORDINATION

- A. Coordinate work of this Section with other directly affected Sections involving manufacturer of any internal reinforcement for door hardware.

1.4 QUALITY ASSURANCE

- A. Manufacturers: Companies specializing in manufacturing door hardware with minimum 5-years of experience.
- B. Hardware Supplier: Company specializing in supplying institutional door hardware with minimum 5-years documented experience.
- C. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this Section and be readily available for consultation.

1.5 REGULATORY REQUIREMENTS

- A. Conform to the FBC for requirements applicable to both fire rated doors/frames and accessibility for the physically disabled.
- B. Conform to the applicable sections of FFPC.

1.6 CERTIFICATIONS

- A. Architectural Hardware Consultant shall inspect complete installation and certify that hardware and installation is in accordance with manufacturer's instructions and this specification.
- B. Provide two copies of certifications to the Architect.

1.7 SUBMITTALS

- A. Submit schedule and product data under provisions of Section 01 33 00.
- B. Indicate locations and mounting heights of each type of hardware.
- C. Provide product data on specified hardware.
- D. Submit samples under provisions of Section 01 33 00.
- E. Submit samples of hinge, latch set, exit device, door closer, threshold, illustrating style, color, and finish.

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- F. Samples: Incorporate the samples within the Work.
- G. Submit manufacturer's parts lists, templates, and installation instructions under provisions of Section 01 33 00.
- H. Submit manufacturer's certificate under provisions of Section 01 40 00 that fire rated hardware meets or exceeds specified requirements.

1.8 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of Section 01 77 00.
- B. Include data on operating hardware, and inspection procedures related to preventative maintenance.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01 60 00.
- B. Store and protect products under provisions of Section 01 60 00.
- C. Package hardware items individually, label and identify package with door opening code and hardware group to match hardware schedule.
- D. Deliver all final keys and construction key voiding devices to Owner's Lock Department by security shipment direct from hardware supplier.
 - 1. Delivery Address:
The School District of Palm Beach County
Department of Facilities Services
Quality Assurance Section
West Palm Beach, Florida 33406-4108
- E. Deliver two copies of factory key biting schedule to the Owner's Lock Department in conjunction with delivery of final keys.
- F. Protect hardware from theft by cataloging and storing in secure area.

1.10 WARRANTY

- A. Provide a minimum of a 5-year warranty period under provisions of Section 01 77 00.
- B. Warranty: Include coverage of door closers, locksets, latch sets, exit devices hinges and all items listed in the hardware schedule

1.11 MAINTENANCE MATERIALS

- A. Provide special wrenches and tools applicable to different or special hardware component.
- B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Hinges: Hager, Stanley
- B. Reinforcing Pivots: Hager Companies
- C. Cylinder Locks: Schlage IC Core
- D. Latch Sets: Schlage
- E. Cabinet Locks: Schlage, Olympus with Schlage IC Core
- F. Cylinder: Schlage IC Core
- G. Mortise Locks: Schlage IC Core
- H. Exit Devices: Von Duprin, Monarch
- I. Removable Mullions: Von Duprin, Monarch as required - Removable using IC Core
- J. Manual Automatic Bolts: Ives, Glynn-Johnson, DCI
- K. Coordinators: Monarch, Ives, DCI
- L. Push/Pulls: Quality, Rockwood, Baldwin

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M. Protection Plates: Quality, Rockwood, Baldwin

N. Gaskets: Pemko, National Guard, Reese

O. Power Supplies: Von Duprin

P. Power Transfer: Von Duprin

2.2 HINGES

A. Size: Provide 4½" wide x 4½" high, FBB1191 at exterior and FBB1291 at interior locations.

B. No less than three hinges on any door and add a reinforcing pivot on all doors over 3' 0" wide.

C. Ball Bearing hinges on doors with door closers and provide Non-Removable Pin type on all exterior out-swing doors.

2.3 LOCKSETS

A. Supply in the following functions:

LOCATION	FUNCTION
1. Passage	10S
2. Privacy	40S(44S in Grades K-2)
3. Offices / Classrooms	ND95RD x RHD x 626
4. Storeroom/Mechanical Room	ND94RD x RHD x 626
5. Deadlocks (student areas)	B663R
6. Deadlocks (non-student areas)	B660R
7. Driveway Gates	Knox Padlock 3753

B. Electronic Lever Lock: Schlage L9080REU x 06 x 630 or D80RDEU X RHO X 626

2.4 DOOR CLOSERS

A. All door closers shall be a 4040/4041 series.

B. Furnish Parallel arms on all doors scheduled for closers except where they are mounted showing in corridors.

C. Supply nylon spacer for fifth mounting screw on parallel arm installations where required due to frame configuration.

D. Supply with EDA arm on installations in main corridor entrances, gymnasiums, locker rooms, and restrooms.

2.5 EXIT DEVICES AND POWER SUPPLY

A. Supply in the following functions:

LOCATION	FUNCTION
1. Non-fire rated	19R NLP, 19R DT or 19R BE with 560-strike as required
2. Fire-rated	F19R SE or F19R BE with 570-strike as required
3. Non-fire rated (pairs)	19R NLP, 19R DT or 19R BE with 560-strike and 4023 mullion as required.
4. Fire-rated (pairs)	F19R SE or F19R BE with 570 strike and F4023 mullion as required.
5. Fire-rated (Electronic)	ELLX98L-F X 992L X 06 X 26D
6. Non-fire-rated (Electronic)	SD ELL X 98NL X 990NL X 26D
7. Power Supply	PS873B X 4TD
8. Electrical Power Transfer	EPT-10 X SP28

* Note - Removable Mullions shall be key removable with IC cylinders.

2.6 DOOR TRIM

A. All push plates, pull plates and kick plates manufactured of .050 stainless steel.

B. Push plates and pull plates 4" wide x 16" high.

C. Kick plates shall be 10" high x 2" less than door width.

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2.7 DOOR STOPS

A. Door stops of the follow types, as determined by the hardware schedule:

1. If wall mounted, Contractor shall supply and install proper blocking in the wall to prevent failure of the drywall.

2.	WALL	FLOOR
MANUFACTURER	MODEL	MODEL
Ives	WS 400 series	FS13 or FS17
	as required	as required
Rockwood	400 - 411	440 -443
	as required	as required
Baldwin	4015 Series	4000 series
		as required

2.8 AUTOMATIC FLUSH BOLTS, SURFACE BOLTS AND COORDINATORS

A. Supply door bolts of the following type:

1.	NON-FIRE	
MANUFACTURER	RATED	FIRE RATED
H. B. Ives	454-F26D 8"	456-B26D, 459-B26D
		as required.
Glynn-Johnson	1631 or 1632	FB8 or FB7
DCI	1008-US26D	842-US26D

B. Supply coordinators of the following type:

1.	MANUFACTURER	MODEL
	Monarch	B-1277 with B-1278-opening bar
	H. B. Ives	469-B26D with 478-carry bar
	DCI	500 with carry bar

2.9 THRESHOLDS AND SEALS

A. Supply thresholds and seals of the following types:

1.	MANUFACTURER	THRESHOLD	WEATHER STRIP	ASTRAGAL
	Pemko	2005 AT	303-BS	355-CS
	National Guard Products	896 V	135 NA	146 V
	Reese Enterprises, Inc	S483 AV	815 A	275 A

2.10 OVERHEAD RAIN DRIP

A. Provide overhead rain drip of the following types at all exterior door frame locations or as scheduled within these specifications:

1.	MANUFACTURER	MODEL
	Pemko	346PW

2.11 FASTENINGS

A. All screws of matching finish to their product and to manufacturer's standards for that item and its intended use.

B. All surface mounted hardware, use manufacturer's supplied bolts for through bolting of hardware.

2.12 KEYING

A. Pre-Order Meeting: Hardware Supplier shall meet with a representative of the Owner's Lock Department and Department Head to establish a keying schedule before placing any orders.

B. Locks:

1. Provide keying as established in pre-order meeting with Hardware Supplier.

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2. All locks to be Construction Master Keyed using the split key method.
- C. All locks and cylinders factory keyed to Palm Beach County School District Schlage EVEREST D245 or Schlage 1456 restricted keyway, as determined by the Owner.
- D. Hardware Supplier and a representative of the Owner's Lock Department will meet and establish final count of locks and cylinders.
 1. The Owner's Lock Department will transmit a letter to the Schlage Lock Company releasing locks and cylinders in the amount established in the final count to the Hardware Supplier.
- E. Supply two keys for each lock with a maximum of four keys of keyed alike sets.
- F. Supply keys in the following quantities:
 1. Five Master Keys
 2. Five Grand Master Keys
 3. Five Great Grand Master Keys
 4. Two Control Keys (for interchangeable cores)
 5. Twelve Construction Master Keys
- G. Key Delivery: Refer to Section 08 71 00 1.09, D.
- H. Visual Key control: Use visual key control – stamp keys only. Stamp all keys “Do Not Duplicate”.

2.13 KEY CABINETS

- A. Key Cabinet: Sheet steel construction, piano hinged door with pin tumbler lock of brass construction.
- B. Cabinet Size: Provide a size for known project keys plus 10%.
- C. Horizontal metal strips for key hook labeling with clear plastic strip cover over labels.
- D. Finish shall be baked enamel finish, gray color.

2.14 KNOX BOX

- A. Provide the required Knox box as manufactured by Knox Company to meet the local Fire Department criteria.
 1. Coordinate ordering and locating with the Fire Department having jurisdiction.
- B. Provide a Knox box as manufactured by Knox Company to meet the School District's Police Department criteria.
 1. Coordinate ordering and locating with the School District's Police Department
- C. Provide two Knox padlocks to meet the local Fire Department criteria.
 1. Coordinate ordering and locating with the Fire Department having jurisdiction.

2.15 FINISHES

- A. Exterior Hinges: US32D
- B. Interior Hinges: US26D
- C. Exterior Locks: US32D
- D. Interior Locks: US26D
- E. Coordinators: US26D
- F. Push, Pull & Kick Plates: US32D
- G. Door Closers: AL
- H. Exit Devices: US32D
- I. Door Stops & Holders: US32D
- J. Thresholds & Weather-strip: AL

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2.16 CLOSER / MAGNETIC HOLD OPEN SYSTEM:

A. Furnish closer/electromagnet complete with required accessories necessary for a complete working system. Supply a 2-year warranty.

1. MANUFACTURER	SERIES
LCN	4041
RIXSON	998

PART 3 EXECUTION

3.1 INSPECTION

- A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
- B. Beginning of installation means acceptance of existing conditions.
- C. Do not install any hardware until after the hardware manufacturer's representative pre-installation class.
 - 1. Class is to insure proper installation of the specified products.

3.2 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions and requirements of DHI.
- B. Use the templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item:
 - 1. Locksets: 38 inches
 - 2. Push/Pulls: 42 inches
 - 3. Dead Locks: 48 inches
 - 4. Exit Devices: 38 inches
- D. Conform to Florida Accessibility Code for Building Construction for positioning requirements for the disabled.
- E. Set all thresholds in a full bed of butyl rubber.

3.3 ADJUST AND CLEAN

- A. Adjust and check the operation of each item of hardware and each door, to ensure the proper function of every item.
 - 1. Adjust or replace all items that to operate freely and smoothly.
- B. Made final adjustments after all ventilating systems are in operation.
- C. Clean all hardware and adjacent surfaces after hardware installation.
- D. Instruct Owner's personnel in adjustment and maintenance of hardware and hardware finishes.

END OF SECTION