

SECTION 08710
FINISH 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. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- B. ANSI/NFPA 80 - Fire Doors and Windows.
- C. AWI - Architectural Woodwork Institute.
- D. BHMA - Builders' Hardware Manufacturers Association.
- E. DHI - Door and Hardware Institute.
- F. Florida Accessibility Code for Building Construction, Chapter 11, FBC.
- G. NAAMM - National Association of Architectural Metal Manufacturers.
- H. NFPA 101 - Life Safety Code.
- I. SDI - Steel Door Institute.
- J. Florida Building Code.

1.3 COORDINATION

- A. Coordinate work of this Section with other directly affected Sections involving manufacturer of any internal reinforcement for door hardware.
- B. Coordinate the supply and delivery of all final cores/cylinders, final keys and construction key voiding devices to Owner's Lock Department by security shipment direct from hardware supplier.
- C. Coordinate Storefront Systems to accept Campus Standard Cores and Keys.
- D. Coordinate door and frame preparation to accept electronic locking devices where called for.

1.4 QUALITY ASSURANCE

- A. Manufacturers: Companies specializing in manufacturing door hardware with minimum five years experience. Campus Standard cores & keying to be Best System.
- B. Hardware Supplier: Company specializing in supplying institutional door hardware with minimum five years documented experience, approved by manufacturer.
- C. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this Section.

1.5 REGULATORY REQUIREMENTS

- A. Conform to the Florida Building Code for requirements applicable to both fire rated doors / frames and accessibility for the physically disabled.
- B. Conform to the applicable sections of NFPA 101.

1.6 CERTIFICATIONS

- A. Architectural Hardware Consultant shall inspect complete installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified herein.
- B. Provide two copies of certifications to the Architect.

1.7 SUBMITTALS

- A. Submit schedule and product data under provisions of Section 01300.
- 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 01300.
- E. Submit samples of hinge, latch set, exit device, door closer, threshold, illustrating style, color and finish.
- F. Samples: Shall be incorporated in the Work.
- G. Submit manufacturer's parts lists, templates, and installation instructions under provisions of Section 01300.
- H. Submit manufacturer's certificate under provisions of Section 01400 that fire rated hardware meets or exceeds specified requirements.

1.8 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data.
- 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 01600.
- B. Store and protect products under provisions of Section 01600.
- C. Package hardware items individually; label and identify package with door opening code and hardware group to match hardware schedule.
- D. Deliver all final Best cores/cylinders, final keys and construction key voiding devices to Owner's Lock Department by security shipment direct from hardware supplier.
 - 1. Delivery Address:
Locksmith Shop
Florida Institute of Technology
150 W. University Blvd.
Melbourne, FL 32901
- E. Deliver two copies of factory key biting schedule to the Owner's Locksmith Shop 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 five-year warranty period under provisions of Section 01700.
- 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
- C. Cylinder Locks: Best
- D. Latch Sets: Best
- E. Cabinet Locks: Best
- F. Rim Cylinder: Best
- G. Mortise Locks: Best
- H. Exit Devices: Von Duprin, Monarch
- I. Manual Automatic Bolts: Ives, Glynn-Johnson, DCI
- J. Coordinators: Monarch, Ives, DCI
- K. Push/Pulls: Quality, Rockwood, Baldwin.
- L. Protection Plates: Quality, Rockwood, Baldwin
- M. Gaskets: Pemko, National Guard, Reese
- N. Power Supplies: Von Duprin.
- O. Power Transfer: Von Duprin

2.2 HINGES

- A. Size: 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:

1. LOCATION	FUNCTION
2. Passage	10S
3. Privacy	40S
4. Offices / Classrooms	D94PD x RHD x 626
5. Storeroom/Mechanical Room	D94PD x RHD x 626
6. Deadlocks (student areas)	B663
7. Deadlocks (non-student areas)	B660
- B. Electronic Lever Lock: Schlage L9080PEU x 06 x 630 or D80PDEU X RHO X 626
- C. Or Best equivalent – coordinate with Florida Tech Architect/Project Manager.

2.4 DOOR CLOSERS

- A. All door closers to 4040/4041 series as required.

- 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:

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

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 10" high x 2" less than door width.

2.7 DOOR HOLDERS

- A. Door holders of the following type:

1. MANUFACTURER	MODEL
2. Ives	445 or 446 as required.
3. Rockwood	473 or 477 as required.
4. Baldwin	4091 or 4096 as required.

2.8 DOOR STOPS

- A. Door stops of the follow types:

1.		WHERE DOORS INTERFERE WITH ANOTHER
MANUFACTURER	MODEL	
Ives	443 or 436	470 or 471
	as required	as required
Rockwood	475 or 441	455 or 456
	as required	as required
Baldwin	4001 or 4086	4130 or 4140
	as required	as required

2.9 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	

2.10 THRESHOLDS AND SEALS

- A. Supply thresholds and seals of the following types:
 - 1.

MANUFACTURER	THRESHOLD	WEATHER STRIP	ASTRAGAL
Pemko	2005 AV	303-AS	355-AS
National Guard	896 V	135 N	146 V
Reese	S483 AV	815 A	275 A

2.11 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

2.12 FASTENINGS

- A. All screws of matching finish to their product and to manufacturer's standards for that item and it's intended use.
- B. All surface mounted hardware, use manufacturer's supplied sex bolts for through bolting of hardware.

2.13 KEYING

- A. Pre-Order Meeting: Hardware Supplier will meet with a representative of the Owner's Lock Shop and Department Head to establish a keying schedule before orders are placed.
- B. Locks: Keying as established in pre-order meeting with Hardware Supplier. All locks to be Construction Master Keyed using the split key method.
- C. All locks factory keyed to Florida Tech's restricted keyway.
- D. Hardware Supplier and a representative of the Owner's Lock Shop will meet and establish final count of locks and cylinders. The Owner's Lock Shop will transmit a letter to the Best Lock Company releasing locks and cylinders in the amount established in the final count to the Hardware Supplier. Hardware Supplier shall include the cost of providing all lock cores/cylinders, keys and direct delivery to Owner as described herein as a part of their costs in this project.
- 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. Twelve Construction Master Keys
- G. Key Delivery: Refer to Section 08710 1.09, D.
- H. Visual Key control: Use visual key control – stamp keys only. Stamp all keys “Do Not Duplicate”.

2.14 KEY CABINETS

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

2.15 KNOX BOX

- A. Provide the required Knox box as manufactured by Knox Company to meet the local Fire Department criteria. Coordinate ordering and locating with the Fire Department having jurisdiction.
- B. Provide a Knox box as manufactured by Knox Company to meet the Florida Tech Security Department criteria. Coordinate ordering and locating with the Florida Tech Security Department

2.16 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

2.17 CLOSER / MAGNETIC HOLD OPEN SYSTEM:

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

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. Replace all items that cannot be adjusted to operate freely and smoothly.
- B. Final adjustment is to be made 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