

08700: FINISH HARDWARE

GENERAL REQUIREMENTS

One set of instruction sheets and parts list for each movable item.

One each of any non-standard installation tool.

GUARANTEES

Finish hardware shall have the following extended warranties against all defects in materials and workmanship, including without limitation against failure to perform as required as follows from date of acceptance.

Door Closers: 10 years.

Locksets: 5 years.

Exit Devices: 3 years.

All Other Hardware: 2 years.

HINGES

Manufacturer: Stanley, McKinny, Hager and Ives Hinge Division

Type: Five-knuckle, button tips, except as otherwise required. Hinges for doors with closers shall be ball bearing.

Exterior out swinging doors shall have non-removable pins and shall be non-ferrous.

Labeled Doors: Steel or Stainless Steel.

Bearings and raceways shall be stainless steel.

Hinges shall be secured with stainless steel or silicone bronze screws. Riveted or welded hinges are not acceptable.

The size of hinges will be determined by the following:

Doors 1-3/4 Inches Thick and up to 41 Inches Wide: 4-1/2 inches.

Doors 1-3/4 Inches Thick and 41 Inches to 48 Inches Wide: 4-1/2 inches, extra heavy.

Widths: Sufficient to clear trim projection when door swings 180 degrees.

Quantity: Two hinges for doors up to 5 feet high and one additional hinge for each 2-1/2 feet of height or fraction thereof over 5 feet.

LOCKSETS AND LATCHSETS

Provide all locks, latches, and cylinders of the same manufacturer to ensure compatibility and warranty.

General:

Type: Mortised.

Lever design at renovation projects shall match existing.

Backset: 2-3/4 inches.

Mortise: Schlage L9000 series or Best 35H; no equal.

Levers shall operate in both up and down direction.

Provide mortise housing to accept either, based on the project's key system, Schlage FSIC or SFIC.

Cylindrical: Schlage D Series (based on project location, either "J" – FSIC or "B" SFIC type) or Best 93K, no equal, to accept small format core and 7-pin cylinders.

Strikes: Standard curved lip, or with extended curved lips where required to protect trim and jamb from being marred by latch bolt. Provide with dust pockets.

Dead bolts shall have a 1-inch projection.

EXIT DEVICES

Models: Von Duprin 99 Series or Sargent 80 series based on compliance of performance specifications as specified below.

Selected devices shall have the following characteristics:

Material: Aluminum, Brass, Bronze or stainless steel base metal, plated or finished to match required hardware finish. Moving parts of die-cast "pot" or "white" metals are not acceptable.

Provide certification by independent testing laboratory that specified devices have completed over 1,000,000 cycles and still perform in accordance to ANSI/BMHMA A156.3 – 1994.

Compression spring engineering.

Non-handed basic device design with center case interchangeable with all functions.

All devices shall have the ability of conversion to electrified usage.

All devices shall have quiet return fluid dampeners.

All surface strikes shall be roller type and utilize a plate underneath to prevent movement.

Furnish glass bead kits for vision lites where required.

The unlatching force shall not exceed 15 pounds applied in the direction of travel.

Wide stile devices shall have dead latching latch bolts to ensure security.

Electrified devices shall use a electric power transfer unit to wire transfer between the frame and the door.

Stair Tower Doors

Single Doors: Von Duprin L99, Sargent 80 or 8800 series with Sarguide, no equal.

Double Doors with Vertical Rod Combinations: Von Duprin 9927L, Sargent 80 series, no equal.

Exterior Doors

Single Doors: Von Duprin L99, Sargent 80 series, no substitution.

Double Doors with Vertical Rod Combinations: Von Duprin 9927L, Sargent 80 series, no equal.

Operation:

Lock automatically when closed-key retracts latchbolt.

When push pad is locked down by hex key dogging, latchbolt is retracted and doors operate push-pull.

CLOSERS

Manufacturers: LCN or Sargent – based on compliance with performance specification listed below.

Internal closers: LCN 1460 or Sargent Series 281; no equal.

External closers: LCN 4040 or Sargent Series 281; no equal.

All closers shall be by the same manufacturer to facilitate maintenance and servicing. An authorized factory representative shall inspect closers after installation to ensure proper adjustment and operation.

All door closer cylinders shall be of high strength cast iron.

All door closers shall be fully hydraulic and have full rack and pinion action with a shaft diameter of a minimum of 11/16-inch and piston diameter of 1-1/2 inches. Closer shall utilize full complement bearings at shaft.

Closers shall be non-handed and shall be capable of mounting hinge side, top jamb, stop side or on a bracket.

All closers shall utilize a temperature stable fluid capable of withstanding temperature ranges of 120 degrees F to -30 degrees F without requiring seasonal adjustment of closer speed to properly close the door.

Use parallel-arm closers at reverse-bevel doors and where doors swing full 180 degrees.

Closers shall have separate and independent screw valve adjustments for latch speed, general speed, and hydraulic backcheck. Backcheck shall be located to effectively slow the swing of door at minimum of 10 degrees in advance of the dead stop location.

Parallel arm closers shall incorporate one-piece solid forged steel stud shoulder bolts and shall be incorporated in regular arms and hold-open arms. All other closers shall have forged steel main arms. Built-in stop arms or “cush” stop arms are not acceptable.

Exterior or vestibule doors where conditions would be better suited for floor closers, use Rixson #27 or equal including an intermediate pivot.

Warranty: All closers shall be guaranteed by manufacturer for 10 years.

ELECTRONIC HARDWARE

Card key control systems shall conform to U.C. Police control equipment and policy—see Division 16. Architectural hardware shall conform to Division 8.

Automatic swing entrance hardware shall be electronic; Horton C7100; no equal.

Electronic hardware shall be fail secure with provision for emergency exiting where required.

Electronic systems shall be of the same manufacturer (locking device, power supply, etc.)

FASTENERS AND ANCHORS

Hardware shall be furnished with required fasteners in accordance with the following guidelines:

Finish on exposed fasteners shall match finish on item being fastened.

Fasteners shall be appropriate to substrate which hardware is being fastened.

Closer at wood fire doors shall be attached using sex bolts.

Exposed screws shall have Phillips style head.

Hardware fastened to concrete or masonry shall be installed with manufactured supplied fasteners.

MISCELLANEOUS ITEMS

Doorstops: Provide where required to prevent door or hardware from striking an adjacent wall or obstruction.

Push and Pull Plates:

Manufacturers: Ives, Rockwood, DonJo

Size: 4 inches by 16 inches.

Pulls shall be without screw holes when used with pulls. Pulls shall be through-bolted at grip only.

Doors with push plates and pulls with the cylinder on the push side shall have recessed pulls used in conjunction with the push plates; Rockwood No. 95, or equal.

Vestibule Doors (including Aluminum Doors):

Door Pulls: Rockwood #146 or similar

Push Plates: 18 gage Stainless Steel

Kick Plates: Provide at doors with closers.

Surface and Flush Bolts:

Automatic Flush Bolts shall be of the low operating force design. Utilize the top bolt only model for interior door where applicable and as permitted by testing.

Manual Flush Bolts only permitted on storage or mechanical openings as scheduled.

Provide dust proof strikes at openings using bottom bolts.

Flush Bolts:

Metal Doors: Glynn-Johnson Constant Latching FB50 series

Wood Doors: Glynn-Johnson Constant Latching FB60 series

Flush bolts shall have a lever arm that is connected to the bolt mechanism and is not friction-operated.

Face plates shall be shaped to match the door edge.

Operating mechanism for bottom flush bolts shall be not more than 12 inches above finish floor and top flush bolt shall be not more than 72 inches above finish floor.

Bottom flush bolts shall have dustproof strikes.

Surface bolts shall have a dustproof strike or easy-to-clean floor strike.

Lifting handles on surface bolts shall be mechanically fastened, not press fitted.

Stops, Holders, and Bumpers:

Stops:

Preferred: Wall type; Ives WS407, or equal.

Where wall type is not suitable, use floor type; Ives FS436, FS437, or equal.

Overhead Stops and Holders: Glynn-Johnson 90M.

Holdings and Bumpers: Glynn-Johnson F9, F10 or W2, or equal.

Stops shall be solid or forged bronze; wrought is not acceptable.

Wall-mounted stops shall be secured with concealed fasteners.

Rubber bumpers shall be fastened by a pin or screw that goes through the rubber and seats into the metal on the opposite side. A rubber bumper that is screwed into the metal holder is acceptable.

Stops and holders shall be secured with tamping in concrete. Use screws to stud or backing at framed walls in high-traffic areas.

Automatic holders at exterior doors are not allowed.

Thresholds:

Manufacturers: NGP, Pemko

Design shall have center reinforcing leg as designed by manufacturer.

Threshold shall extend full width of opening as a single piece with ends cut to jamb profile except where floor closers are installed. In this situation, the threshold must be cut in half to facilitate changing closers without the need to pull a pair of doors to change a single closer.

Silencers:

Provide at exterior and interior doorframes except at frames to receive sound seals or weatherstripping.

Quantity:

Single Doors: Three each lock jamb frame.

Double Doors: Two for each leaf at head frame, plus 3 each on astragal.

Manufacturer and Product:

Metal Frames: Glynn-Johnson 64 or equal.

Wood Frames: Glynn-Johnson 65 or equal.

Smoke Seals and Weatherstripping:

20 Minute Rated Wood Doors: NGP 5050 Self Adhesive Gasketing - Silicone

60 – 90 Minute Rated Wood Doors: NGP 9440 Self Adhesive Gasketing - Intumescent Batwig

Padlocks shall be provided with Schlage Full Size IC or Small format IC core as required, keyed to building master keying system.

Coordinators: Provide at double doors with closers to assure proper closing.

KEYS AND KEYING

New buildings: Schlage Everest Primus Full Size Interchangeable Core; no substitute:

All housing, locking (rim, mortise or cylindrical) devices to accept the Schlage FSIC.

For construction purposes, use FSIC temporary construction core.

PPCS Lockshop to provide final cores based on Schlage Everest Primus system as established with the Schlage Lock Company. Keying shall be in accordance with schedules prepared by University.

Major Additions, Renovations to Existing Buildings: Cores to match existing building key system or Schlage Everest Primus Small Format Interchangeable Core (as directed by PP-CS Lockshop); no substitute:

All housing, locking (rim, mortise or cylindrical) devices to accept the Schlage SFIC cylinder.

For construction purposes, use SFIC temporary construction core.

PPCS Lockshop to provide final cores based on Schlage Everest Primus system as established with the Schlage Lock Company. Keying shall be in accordance with schedules prepared by University.

Mechanical, Electrical, Utility, Data Rooms: Schlage Everest Primus Small Format Interchangeable Core; no substitute:

All housing, locking (rim, mortise or cylindrical) devices to accept the Schlage SFIC cylinder.

For construction purposes, use SFIC temporary construction core.

PPCS Lockshop to provide final cores based on Schlage Everest Primus system as established with the Schlage Lock Company. Keying shall be in accordance with schedules prepared by University.

Keyed Elevator Switches: Schlage Everest Primus Small Format Interchangeable Core; no substitute:

Key-Operated Mailboxes: Schlage Everest Primus Small Format Interchangeable Core; no substitute:

FINISHES

Campus standard is satin chromium plated, 626, 612, or oil-rubbed bronze, 613.

Finishes for hardware in existing facilities shall be as listed or to match existing.

INSTALLATION

Locksets and latchsets shall be installed after doors have received final finish coat. If installed prior to application of final coat, lockset or latchset shall be removed to permit painting.

Locksets and latchsets in wood doors shall be installed in mortise or holes prepared by using a mortising or boring jig.

RECOMMENDED HARDWARE BY ROOM TYPE

General:

Lockset: Mortise preferred. Cylindrical may be considered for renovation projects when required to match existing or where based on Building Type.

Function: Listed functions for each space are general guidelines. Final function shall be determined based on usage of space.

Additional hardware shall be provided as required in accordance with these guidelines, code, and specific project conditions.

Mortise Locksets: Schlage or Best; no equal			
Room Type	Schlage	Best	Remarks
Office	L9050	35H7J3H	Latchbolt retracted by lever from either side unless outside is made inoperative by key outside or by lever inside. Outside lever remains locked until thumbturn is returned to vertical or by counter clockwise rotation of key. Auxiliary latch deadlocks latchbolt when door is closed.
Labs, Entrances	L9060	35H7G3H	Latchbolt retraced by lever from either side unless outside is locked by key from inside. When locked, latchbolt retracted by key outside or lever inside. Auxiliary latch deadlocks when door is closed.
Storage & Mechanical Rooms	L9080	35H7EW3H	Latchbolt retraced by key outside or by lever inside. Outside lever always inoperative.
Passage, non-locking	L9010	35H7N3H	Latchbolt retracted by lever from either side at all times.
Classroom, Public Toilets	L9070	35H7J3H	Latchbolt retraced by lever from either side unless outside is locked by key. Unlocked from outside by key. Inside lever always free for immediate exit.
Uncontrolled Library Exit	All Exterior doors shall be equipped, in coordination with the exterior door hardware, with an emergency exit similar to Detex EA500 or Alarm lock PG21 or PG21e. The emergency exit alarm locks may be key operated from inside, outside or both as		

Mortise Locksets: Schlage or Best; no equal

Room Type	Schlage	Best	Remarks
	directed by the Project Manager and Library Architect.		

Cylindrical Locksets: Schlage or Best; no equal

Room Type	Schlage	Best	Remarks
Office	D53JD or BD	93K7AB15D	Pushing button locks outside lever until unlocked by key or by turning inside lever.
Labs, Entrances	D60JD or BD	93K7C15D	Unlocked by key from outside when outside lever is locked by key in inside lever. Inside lever is always unlocked.
Storage & Mechanical Rooms	D80JD or BD	93K7D15D	Outside lever fixed. Entrance by key only. Inside lever always unlocked.
Passage, non-locking	D10S	93K7N15D	Latchbolt retracted by lever from either side at all times.
Classroom, Public Toilets	D70JD or BD	93K7R15D	Latchbolt retracted by lever from either side unless outside is locked by key. Unlocked from outside by key. Inside lever always free for immediate exit.

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