

## SECTION 08710 – FINISH HARDWARE

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

The General Provisions of the contract, including the General Provisions for Construction Projects (2016), Special Provisions, and General Requirements of the Specifications, apply to the work specified in this Section.

#### 1.02 SUMMARY

- A. Provide all labor, materials, equipment, tools, etc. for installation of finish hardware as indicated on the drawings and/or specified herein.

#### 1.03 GENERAL REQUIREMENTS

- A. Furnish and deliver to the building site, all finish hardware required for all doors, etc., complete as indicated on the drawings and as specified herein.
- B. It is the intent of these specifications to cover in general the class and character of all finish hardware required.
- C. The hardware list specified hereinafter has been made for the convenience of the Contractor and covers in general the necessary hardware for doors, casework, etc., but all other doors, etc., shown on the plan and not covered by the general characterization shall be fitted with appropriate hardware of the same standards as the hardware described throughout these specifications. Contractor shall furnish hardware schedule as hereinafter specified.
- D. Suppliers proposing substitutes of equivalent products of other than manufacturers named hereinafter shall submit schedules listing products and manufacture specified and product and manufacturer of proposed substitute. This schedule shall be submitted according to the general conditions of the project specifications.
- E. This project shall be keyed to the existing master system. Products which are not locally stocked or which must be special ordered are not acceptable.

#### 1.04 SUBMITTALS

- A. SUBMITTALS: Submit six copies of schedule per Section 01300 – SUBMITTALS. Organize vertically formatted schedule into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening. Include following information:

- 1. Type, style, function, size, quantity and finish of hardware items.

2. Use BHMA Finish codes per ANSI A156.18.
  3. Name, part number and manufacturer of each item.
  4. Fastenings and other pertinent information.
  5. Location of hardware set coordinated with floor plans and door schedule.
  6. Explanation of abbreviations, symbols, and codes contained in schedule.
  7. Mounting locations for hardware.
  8. Door and frame sizes, materials and degrees of swing.
  9. List of manufacturers used and their nearest representative with address and phone number.
  10. Catalog cuts and descriptive literature.
  11. Date of jobsite visit.
- B. Bid and submit manufacturer's updated/improved item if scheduled hardware listed in schedule below is discontinued.
- C. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

1.05 DELIVERY

- A. Examine the plans, specifications, and details in order to check all items so they will be suitable and of perfect fit and delivered where and when required.
- B. All Hardware shall be delivered at the site, packed separately with all trimmings, screws, etc., for the particular door, all properly labeled and numbered so that they can be checked with the hardware list which shall be furnished with the goods when delivered.
- C. Upon delivery of the finishing hardware to the job site by the hardware supplier, the General Contractor shall have a responsible person check in the material at the place for storage. The hardware shall be protected from damage at all times, both prior to and after installation.

#### 1.06 REPRESENTATIVE

Provide services of a competent hardware specialist who is familiar with installation and operation of all finishing hardware items furnished.

#### 1.07 WARRANTY

- A. Provide manufacturer's standard written warranty (1 year minimum).
- B. Contractors Surety shall not be held liable beyond 2 years from project acceptance date.

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

Asbestos Prohibition: No asbestos containing materials or equipment shall be used under this section. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.

#### 2.02 GENERAL CHARACTER

- A. All hardware shall be of the best quality in construction, design and finish, and free from any defects. Any defective pieces shall be replaced by the Contractor at his own expense.
- B. Hardware shall be of the manufacture, type, weight, function and quality as shown by factory numbers on the hardware schedule. The products of Corbin/Russwin, CCL, Dorma, Hager, LCN Closers, Schlage, Stanley, Telkee, Trimco and Von Duprin, meeting or exceeding the quality and finish of the products specified are also acceptable. The products of other manufacturers are acceptable provided they meet or exceed the quality and finish of the products specified herein and are approved by the Engineer.
- C. Locksets: Mortise locksets shall be the product of a single manufacturer. Cylinders and the locks in which they are used shall be the product of the same manufacturer. All locks shall be classified as Grade I, "Heavy Duty" with six-pin tumblers.
- D. Hinges: Regular bearing and ball bearing types as indicated. hinges for reverse bevel doors with locks shall have pins that are nonremovable by a set screw in the barrel. All hinges shall be 4-1/2 X 4-1/2 unless otherwise noted.
- E. Closers
  - 1. Surface Closers:

- a. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome-silicon steel spring.
- b. ISO 2000 certified. Units stamped with date-of-manufacture code.
- c. Independent lab-tested 10,000,000 cycles.
- d. Non-sized, non-handed, and adjustable. Place closer inside building, stairs, and rooms.
- e. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
- f. Mount closers on interior door and frame faces.
- g. Adjustable to open with not more than 8.0-pounds pressure to open at exterior doors and 5.0-pounds at interior doors.
- h. Separate adjusting valves for closing speed, latching speed and backcheck.
- i. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.
- j. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.
- k. Exterior doors: seasonal adjustments not required for temperatures from 120 degrees F to -30 degrees F, furnish checking fluid data on request.
- l. Non-flaming fluid, will not fuel door or floor covering fires.
- m. Pressure Relief Valves (PRV) not permitted.

F. Other Hardware:

- 1. Door Stops: Provide stops to protect walls, casework or other hardware
  - a. Unless otherwise noted in Hardware Set, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide overhead type.
- 2. Seals: Inelastic, rigid back, not subject to stretching. Self-compensating for warp, thermal bow, door settling, and out-of-plumb. Adhesive warranted for life of installation.

3. Thresholds: As scheduled and per details. Comply with ICC/ANSI A117.1 Section 404.2.4 & 303. Substitute products: certify that the products equal or exceed specified material's thickness. Proposed substitutions: submit for approval, in accordance with the General Provisions and Special Provisions.
  - a. Saddle thresholds: 0.125 inches minimum thickness.
  - b. Exteriors: Seal perimeter to exclude water and vermin. Use sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Minimum 0.25 inch diameter fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).
  - c. Fire-rated openings, 90-minutes or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use threshold unit as scheduled. If none scheduled, request direction from Engineer.
  - d. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.
  - e. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.
4. Silencers: Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Leave no unfilled/uncovered pre-punched silencer holes. Intent: door bears against silencers, seals, make minimal contact with minimal compression- only enough to effect a seal.

G. Finish: Except as otherwise indicated, finish of hardware shall be 626.

H. ADA Compliance: All hardware for doors indicated on the drawings as ADA accessible shall conform to the requirements of the Americans With Disabilities Act Accessibility Guidelines (ADAAG), Sections 4.13.8, 4.13.9, 4.13.10, and 4.13.11.

## 2.03 KEYING

Locks shall have four (4) keys each. Locks for the same rooms shall be keyed alike. All locks shall be master keyed and Grandmaster keyed to the existing keying system. During period of construction, all locks shall be operated by a special master key. Regular day and master keys are to be retained by the Contractor so they cannot be obtained or duplicated by unauthorized persons. All keys shall be stamped "DO NOT DUPLICATE" at the point of manufacture. The special construction master key shall

become inoperative when regular keys are turned over to the Engineer. Proper certification of factory assembly of all locks and cylinders as well as factory master keying shall be furnished by the Contractor prior to final acceptance of this portion of the work. Certificate shall then be given to the Engineer. Provide ten (10) construction master keys, six (6) grand master keys, and six (6) master keys per set. Contractor shall coordinate keying system with that of the state.

#### 2.04 FASTENINGS

- A. Furnish necessary screws, bolts, and other fastenings for proper application of hardware. Fastenings shall be of suitable size and type of securing hardware for heavy use. Fastenings must harmonize with the hardware as to material and finish .
- B. Furnish necessary expansion shields, toggle bolts, machine or wood screws or other suitable approved anchoring devices where hardware is to be installed on concrete, masonry or other type of backing.

#### 2.05 TOOLS AND INSTRUCTIONS

All tools and maintenance or installation instruction packed with the closers and locksets shall be given to the State of Hawaii when the project is complete.

#### 2.06 SPARE LOCKSETS

Furnish spare locksets to the Engineer, in quantities and functions as indicted in the Hardware Schedule. All spare locksets shall be furnished in manufacturer's packaged boxes, clearly marked, and complete with all parts, core, screws, etc., including four (4) blank keys.

### PART 3 – EXECUTION

#### 3.01 PRE-INSTALLATION MEETING

Prior to the start of installation of the finish hardware, the Contractor, hardware installer, hardware supplier and/or manufacturer's representative, and the Engineer, shall have a pre-installation meeting to review the hardware installation instructions and installation conditions.

#### 3.02 HARDWARE SUPPLIER'S INSPECTION

Before final inspection of the work under this contract and acceptance of the project by the Engineer, the supplier of hardware and other items specified in this Section shall visit the site and carefully inspect all parts for conformance to this specification, adequacy for intended use, proper functioning, appearance, finish and successful operation, assuming joint responsibility with the General Contractor.

### 3.03 KEYING OPERATION AND ORIENTATION

The General Contractor and/or hardware supplier shall together with the Engineer and/or representative(s) from the State, conduct an orientation of the operation of all hardware and locks

### 3.04 HARDWARE SCHEDULE

Furnish the following hardware groups in the amounts indicated on the drawings or required for a complete and proper installation.

#### Abbreviations:

MCK McKinney Products Company  
SAR Sargent Manufacturing Co.  
TRI Trimco  
PEM Pemko  
SCH Schlage Lock Company  
LCN LCN Closers  
VON Von Duprin

#### Hardware Group No. 1

For use on Door #(s): Second Floor Restroom Door

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CORRIDOR LOCK	ND73P6D RHO	626	SCH

#### Hardware Group No. 2

For use on Door #(s): All interior office/storage doors

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	ENTRANCE/OFFICE LOCK	ND50P6D RHO	626	SCH

Hardware Group No. 3

For use on Door #(s): Control Tower Access Door (Verify Conditions)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	98-L-06	US26DAM	VON
1	EA	RIM CYLINDER	20-057	626	SCH
1	EA	SURFACE CLOSER	4040XP EDA SRI	689	LCN
1	EA	FLOOR STOP	FS439	630	IVE
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	545A-223	A	ZER

PART 4 – MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the price bid for the various items of work in this project.

END OF SECTION