

DIVISION 8 -- DOORS AND WINDOWS

A. FINISH HARDWARE AND SPECIALTIES

1. General

- a. It is the intent of this document to provide guidelines for the Architect's specifications section 08710, finish hardware
- b. Products detailed herein are the standard of quality to be used on new projects and renovations or additions to existing buildings
- c. Coordinate all products to meet the requirements of life safety codes, ADA requirements, and applicable building codes
- d. All hardware for aluminum doors shall be specified and provided in this section.

2. Quality Assurance

a. Supplier

- (1) The supplier must be a factory authorized distributor of all materials to be furnished
- (2) The supplier must have an office and warehouse within a one hundred fifty-mile radius of the project to properly service the projects

b. Installer

- (1) Firm with three (3) years experience in the installation of commercial or institutional grade hardware
- (2) Hardware must be installed accurately, applied securely, and adjusted properly
- (3) Install the hardware only with fasteners furnished by the manufacturer. Warranties and/or labels will be void on material installed with unauthorized fasteners
- (4) The installer will clean and make final adjustments of each item of hardware to insure proper operation and function. Adjust door control devices for final operation after air handling equipment is operational

3. Field Quality Control

- a. The finish hardware distributor shall provide the field quality control services as listed
- b. Furnish a complete report to the Architect and General Contractor after each field visit

- c. Prior to installation
 - (1) Visit the project site with the General Contractor and installer and check the hardware for any shortages or shipment damage
 - (2) Instruct the installer on any special conditions and the adjustments required for the proper installation of the finish hardware
- d. After Installation
 - (1) Check the project for the proper application of the finish hardware according to the approved hardware schedule
 - (2) Check that all items, including door control devices, have been properly adjusted and are operating properly
 - (3) Notify the Architect of any hardware not installed in accordance with the approved hardware schedule or properly adjusted
 - (4) If hardware is found that is not installed correctly or properly adjusted, the General Contractor must adjust, repair, or replace, as directed by the Architect.
 - (5) Instruct the owner personnel in the proper operation, adjustments, and maintenance of the finish hardware
- e. One Year Review
 - (1) If requested by the Architect, the hardware distributor and hardware installer shall visit the project and make any final adjustments to the hardware as required

B. WARRANTIES

- 1. Manufacturers' standard warranties to cover defects in materials and workmanship
 - a. Warranty period to begin at date of substantial completion
 - b. Copies of all warranties shall be provided to the University at completion of the project
 - c. Minimum ten years
 - (1) Heavy duty surface mounted door closers
 - d. Minimum five years
 - (1) Heavy duty grade one mortise locks
 - (2) Heavy duty grade one exit devices

- e. Minimum one year
 - (1) Electrical products

 - (2) All other items not listed above

C. FINISH HARDWARE SCHEDULE

1. Prior to approval of the finish hardware schedule, the Architect shall provide a copy to the University's Office of Planning, Design and Construction (PDC) for review - Attention: PDC Project Manager

2. Finish hardware schedule shall include the following
 - a. A complete list of all manufacturers used

 - b. A complete list of all abbreviations used

 - c. A complete list and description of all finishes used, including base metals

 - d. A complete set of cut sheets illustrating all products proposed

 - e. Hardware heading are to be arranged to correspond with specification hardware sets

 - f. Hardware heading shall include
 - (1) A complete description of the opening, including "LSU" room numbers, to be provided by Facility Services and Architect's room numbers

 - (2) Key set numbers (See keying requirements)

 - (3) A complete description of the products, including finishes

D. KEY CYLINDERS AND KEYING REQUIREMENTS

1. All key cylinders shall be provided from one of the following manufacturers who have established proprietary Great Grand Master Key Systems for the Baton Rouge campus.
 - a. All new buildings shall be keyed to a new Building Grand Master

 - b. All existing buildings shall be keyed to that building's existing Grand Master Key

 - c. Acceptable manufacturers for key cylinders. No exceptions will be considered.
 - (1) Medeco - All New facilities or complete rekey projects

 - (2) Best Lock Co. - All New facilities or complete rekey projects

 - (3) Corbin Russwin - Only use when matching existing facility master key systems

(4) Sargent - Only use when matching existing facility master key systems

(5) Yale Security - Only use when matching existing facility master key systems

2. All key cylinders shall be provided with removable cores. Cores shall be removable by a control key without removing cylinder from locking device.
3. Construction cores shall be provided to the contractor by the supplier for use during construction.
4. At completion of the project, the General Contractor shall remove the construction cores and install the permanent cores.
5. All permanent keys shall be delivered to LSU's Lock Shop. The Lock Shop will then transmit master control keys to contractor for use on project.
 - a. Two copies of the manufacturer's bitting list shall be included.
 - b. The bitting list shall include the following
 - (1) LSU room number (This information will be provided by LSU PDC)
 - (2) Key set number
6. All permanent keys shall be delivered in individual envelopes and tagged as follows
 - a. Hardware heading number
 - b. LSU room number and location description
 - c. Architects room numbers
 - d. Key change number
 - e. Number of keys enclosed
7. All keys and permanent cores shall be stamped as follows
 - a. Key bows; manufacturers name and key set number only
 - b. Removable cores; stamp key set number on back of core.

8. **Key Meeting**
 - a. The finish hardware supplier will meet with the Architect, Contractor, representative from LSU Office of Facility Services and Department Client to establish the final keying requirements
 - b. ***This meeting shall be set up by the Architect and coordinated with LSU a minimum of 3 months prior to scheduled completion date***
9. Key Quantities
 - a. Construction Masters (10)
 - b. Control Keys (3)
 - c. Change keys per cylinder (2 each)
 - d. Master and grand master keys (12 each)
 - e. Key blanks for each cylinder (4 each)
10. Exception to the above keying requirements
 - a. When 50 percent or more of a building's hardware is being replaced, provisions must be made to provide new key cylinders for the existing locking devices that are not being replaced
11. All questions regarding keying shall be directed to
 - a. LSU's Security Manager
LSU Office of Facility Services, Lock Shop
225-578-7474
12. Provide five extra cylinders and cores of each key way used for LSU inventory

E. ACCEPTABLE MANUFACTURERS AND PRODUCTS

Specify materials only from the acceptable manufacturers listed

1. CONTINUOUS GEARED HINGES

Acceptable manufacturers, products and applications

a. Types

(1) Bommer; FS--HD1

(2) Hager; 780-210HD1

(3) McKinney; MCK22HD1

(4) Pemko; FS-HD1

(5) Stanley; 655HD

b. Provide for all exterior high frequency doors and all exterior doors equipped with exit devices

c. Provide for retrofit work where new doors are being installed into existing frames

d. Provide heavy duty full surface types

e. Finish: Satin aluminum or Dark Bronze for all Storefront or Brown/Bronze Painted Doors **Finish to match door, not Hardware**

2. BUTT HINGES

Acceptable manufacturers, products and applications

a. Types

(1) Bommer; BB5005, BB5004, BB5001, & BB5000

(2) Hager; BB1199, BB1168, BB1191, & BB1279

(3) McKinney; T4A3386, T4A3786, TA2314, & TA2714

(4) Stanley; FBB199, FBB168, FBB191 & FBB179

b. Provide anti-friction types for all butt hinges

c. Provide non removable pins for all out swing exterior doors

d. Provide stainless steel types for all restroom doors, toilet doors, and all other areas which may require non-ferrous material

- e. Provide heavy weight types for all interior doors equipped with exit devices and all other high frequency doors, such as entrance doors to classrooms, labs, libraries, cafeterias, auditoriums, restrooms, and all doors over 36" wide
 - f. Size; 4.5"x4.5" for doors up to 36" wide, 5.0"x4.5" for all doors over 36" wide
 - g. Finish
 - (1) Satin stainless steel for non-ferrous types
 - (2) Satin chrome plated for steel base types
3. EXTERIOR SECURITY EXIT DEVICES
Acceptable manufacturers, products and applications
- a. Types
 - (1) Corbin Russwin; ED5200S x M52 series (SecureBolt)
 - (2) Yale Security; 7155 series (SquareBolt)
 - (3) Precision; Apex 2100
 - (4) Von Duprin; CD-xp98 Series
 - b. Provide heavy duty ANSI grade 1, type 28 types
 - c. Provide for all exterior doors requiring exit devices
 - d. Provide devices with direct throw latch bolts; Pullman latches are not acceptable
 - e. ***Concealed or surface vertical rod devices are not acceptable***
 - f. ***Provide key cylinder dogging, no tool***
 - g. Provide offset pull exterior trim
 - h. Finish: Satin stainless steel

4. INTERIOR STANDARD AND FIRE EXIT DEVICES

Acceptable manufacturers, products and applications

a. Types

(1) Corbin Russwin; ED5200 series

(2) Sargent; 8800 series

(3) Von Duprin; 98 series

(4) Yale Security; 7100 series

(5) Precision; Apex 2100 series

b. Provide heavy duty, ANSI grade 1 devices

c. ***Provide all non-rated devices with inside key cylinder dogging feature***

d. Provide offset pulls for all high frequency non-rated doors

e. Provide lever trim for all fire rated doors

f. Mount all devices with thru-bolts at all mounting points

g. ***Concealed vertical rod types are not acceptable***

h. Surface applied vertical rod types less bottom rods are acceptable only for use on double egress doors, as required by codes

i. Finish: Satin stainless steel

5. REMOVABLE MULLIONS

Acceptable manufacturers, products and applications

a. Types

(1) Precision KR822, KR822F

(2) Corbin Russwin; 710KM, 707AKM, or 808

(3) Sargent; L980, 12-L980, or 650A

(4) Von Duprin; KR4954, KR9954, or 656

(5) Yale Security; KRM100, KRM100F, or M300

b. Provide key removable types

- c. Provide wall mounting brackets to store mullion when out of the opening
 - d. Provide removable mullions with stabilizers
 - e. Finish
 - (1) Primed for painting, steel mullions
 - (2) Satin aluminum, for aluminum mullions
6. LOCK SETS - No Cylindrical Locks unless given consent by Facility Services
Acceptable manufacturers, products and applications
- a. Types
 - (1) Best; 45H series x 3J lever trim
 - (2) Corbin Russwin; ML2000 series x LSM lever trim
 - (3) Sargent; 8200 series x LS1J lever trim
 - (4) Yale Security; 8800FL series x CRxCN lever trim
 - (5) Schlage; L9000 Series x 03N lever trim
 - b. Provide heavy duty ANSI grade 1 mortise types
 - c. Provide key cylinders, as required. See keying requirements.
 - d. Provide lever trim that meets ADA requirement
 - e. Provide cast levers x wrought escutcheon trim, thru-bolted to door
 - f. Provide wrought box strikes for all locks
 - g. All locks shall be free for egress from inside room at all times
 - h. Finish: Satin chrome plated

7. DOOR CLOSERS

Acceptable manufacturers, products and applications

a. Types

(1) Corbin Russwin; DC6000 series

(2) LCN; 4040 series

(3) Sargent; 351 series

(4) Yale Security; 4400 series

(5) Stanley QDC111

b. Provide top jamb mounted closers for exterior swing out doors

c. Provide top jamb mounted closers for interior swing out corridor doors

d. Provide regular arm mounted closers for all other doors

(1) Parallel arm closers are allowed in situations where limit arms are needed as well as situations where door swings into a hallway

e. Provide heavy duty barrier free & field adjustable types

f. Provide closers UL listed for fire rated doors.

g. Provide mounting brackets or plates, as required by opening and mounting conditions

h. All closers shall be equipped with adjustable back check

i. Hold open closers shall be held to a minimum

j. Fusible link closers are not acceptable

k. All closers shall comply with ADA requirements

l. Provide sex nut & bolt mounting to doors

m. Finish: Satin aluminum painted

8. OVERHEAD HOLDERS AND STOPS

Acceptable manufacturers, products and applications

a. Types

(1) ABH 9000 Series

(2) Glynn Johnson; 900 series

(3) Rixson; 9 series

(4) Sargent; 590 series

b. Provide heavy duty, surface applied types

c. Provide thru bolted to doors

d. Provide size as required by opening conditions

e. Finish

(1) Satin stainless steel, for exterior doors

(2) Satin chrome plated, for interior doors

9. DOOR TRIM AND AUXILIARY ITEMS

Acceptable manufacturers, products and applications

a. Types

(1) Hager; 30S, 33G, 190S, 269F, 259F

(2) Ives; 8200, 8302, 8500, FS18S

(3) Rockwood; 70, 107x70, K1050, 466, 480

(4) Trimco; 1001, 1017B, K0050, 1209, 1214

b. All plates .050 thick

c. Push plates; 6" x 16", door stile permitting

d. Door pulls; 8" pull mounted on 4" x 16" plate

e. Thru bolt mounting for all pulls

f. Kick plates; 12" high

g. Mop plates; 4" high

- h. Armor plates; 34"
- i. Provide heavy duty door stops
- j. Finishes
 - (1) Satin stainless steel / push, pulls, & protection plates
 - (2) Black rubber / heavy duty floor stops
 - (3) Grey rubber / door silencers
 - (4) Primed for paint / coordinators
 - (5) Satin chrome plated / all other items

10. DOOR SEALS AND THRESHOLDS

Acceptable manufacturers, products and applications

- a. Types
 - (1) Hager; 896SS, 891SV, 627S, 421S, 520SV
 - (2) McKinney; MCK316AS, MCK303AV, MCK1715A, MCK171A, MCK2005AV
 - (3) National Guard; 137NA, 135NA, 425E, 896N
 - (4) Pemko; 316AS, 303AV, 1715A, 171A, 2005AV
- b. Fire & smoke seals to meet positive pressure requirements
- c. All seals to be screw in types. Adhesive mounted types are not acceptable.
- d. Heavy duty thresholds for all corridor entrance doors and all other heavy traffic doors
- e. Thresholds must meet handicap requirements
- f. Finishes
 - (1) Slip resistant finish, similar to Pemko's "PemKote" or Hager's "Sure Step" for thresholds
 - (2) Satin aluminum for all other items

11. ELECTRIC HARDWARE

General requirements for electric hardware

- a. All electric hardware shall be pre-wired at the factory with standardized connector
- b. ***Devices used for Card Access. These Devices should use low in rush voltage to open and hold open. (under 1.2 amps)***
- c. Coordinate with door and frame manufacturers for wiring harness
- d. Wiring Elevations: Provide, as part of the hardware schedule, a door and frame elevation that shows location of each item of electric hardware, including a written description of operation
- e. Wiring Diagrams: Provide point-to-point wiring instructions with all electric hardware
- f. Coordinate all electrical hardware with access control supplier (Johnson Controls) specified in other section

F. FACILITY MANAGEMENT SYSTEM (ACCESS CONTROL CONTROLLERS)

1. The Access Control capabilities shall include, but are not be limited to, access controllers, terminal interfaces, card readers, conduit, wire and accessories required to provide a complete operational system.
2. The equipment and installation shall comply with the current applicable provisions of the following standards
 - a. National Electric Code
 - b. Local and state building codes
 - c. All requirements of the local authority having jurisdiction
 - d. Underwriters Laboratories, Inc.
 - e. The system and all components shall be listed by Underwriters Laboratories, Inc, for use in Access Control Systems under the following standards as applicable. UL 294 Access Control System Unit

3. All access controller panels shall be housed in a cabinet designed for mounting directly to a wall or vertical surface. Its doors shall contain a key lock. The integrated intelligent access controller shall provide or be capable of expansion to the following capacities
 - Card Readers 16
 - Card Capacity 16,000
 - Alarm Points 128
 - Access Levels Unlimited
 - Time Zones 8
 - Password Levels 2
 - Card Issue Levels 8
 - Reports 5
4. The system shall be capable of storing 16,000 cards per intelligent access control panel
5. The system shall be capable of storing a maximum of 640,000 card transactions on a single operator workstation file. A user definable limit shall cause the operator interface to warn the operator when the number of transactions in the file has exceeded that limit
6. The intelligent central access controller shall be able to interface directly into the same Operator Workstation used for the HVAC and fire functions. Please refer to the Operator Interface section of this specification for more detail
7. The entire database of the intelligent central access controller shall be definable at the Operator Workstation. The operator interface shall allow the operator to perform commands including, but not limited to, the following
 - Override All Doors to the Access Mode of Operation
 - Release Overrides
 - Command Door to Access Mode
 - Command Door to Secure Mode
 - Command Door to Temporarily Open
 - Silence Local Alarms

System operators shall, from the operator interface, be able to manually unlock controlled doors for a variable time period, or program an event to automatically unlock and lock doors during a particular time period

Reports shall be generated automatically or manually, and directed to either OWS displays, printers, or disk files. At minimum, the system shall allow the user to easily obtain the following

- List of all cardholders
- List of all transactions currently available

The system shall provide on-line query generation which can be used to obtain specific information from the above logs based on user defined parameters. These queries, once defined, may be stored and used again when needed.

8. The system shall be provided complete with all equipment and documentation necessary to allow an operator to independently perform the following additional functions:
 - Add/Delete/Modify Access Control Panels
 - Add/Delete/Modify Smart Terminal Interfaces/Readers
 - Add/Delete/Modify Cardholder User Data
9. Graphical programming shall be used to define processes whereby other FMS functions may be controlled by a valid card transaction. Up to 64 cardholder groups shall be definable per intelligent access control panel connected.
10. The Access Controller shall communicate with the Smart Terminal Units of the system. Failure of a Smart Terminal Unit shall be detected and reported to the printer connected to the OWS.
11. When a card is read at a reader, the card number and issue level are sent to the controller. If the reader is equipped with a keypad, a 4 or 5 digit PIN number may be entered and verified at the reader. The controller, which shall be programmed to control access by both location and time periods, shall verify all information and immediately grant or deny access and record the transaction including date, time and location. The option of having the transactions printed as they occur shall also be provided. If access is granted, the controller shall send a signal to the appropriate reader to activate the door lock. If access is denied, the transaction will be recorded and/or printed identifying the reason.

The system shall be capable of supporting Magnetic Stripe card to be the existing LSU ID Card. The system shall be designed to maintain access control through two levels of degradation. The intelligent terminal controller shall continue to provide, using its local data base, a full level of access control upon loss of communications with the Facilities Management System. Upon loss of communications with the intelligent terminal controller, the readers shall continue to control access using verification of the facility code in the card and, if used, a PIN entry.

The system shall be able to designate certain readers to control only entry or exit, and shall require a cardholder using a card at an entry reader to subsequently use it at an exit reader before again entering the secured area. This shall prevent “passing back” a card to an unauthorized second user.

Individual cards may be programmed for special privileges to override access level and time zone parameters.

The controller shall provide an interface which permits data to be stored on a tape cartridge.

In the event of a power loss, a backup battery shall provide full controller operation for up to eight hours, and memory retention up to 24 hours.

Cards shall be programmed into the controller individually; additions, deletions, and changes shall be completed rapidly.

Alarms may be programmed by the user for suppression during specific time periods.

The intelligent terminal controller shall provide an output for annunciation of alarms.

The intelligent terminal controller shall provide a buffer to store 1000 historical transactions if communication is lost with the Facilities Management System.

12. *The card readers shall consist of an intelligent terminal interface and magnetic stripe readers.*

The intelligent terminal interface shall control the electric door lock, visual access indicators, access and shunt timers, and an auxiliary access input.

The intelligent terminal interface shall monitor door status via a door or lock contact. An alarm shall be reported when the door is not closed and locked, and when the door is forced open.

All readers (except proximity) shall provide a red and green visual indicator for granted and denied access, and tamper detection capability.

Readers shall be surface or flush mounted. Outdoor readers shall be supplied with special weather-resistant housings. Where required, readers shall be configured with integral 16-position keypads.

Readers with 16-position keypads shall be able to verify PIN codes even during loss of communications with the intelligent terminal controller. If the readers lose communications with intelligent terminal controller, they shall be able to determine authorized access based on the facility code and PIN, if used, which shall be verified at the reader.

Proximity readers that are capable of proper operation without the need of standoffs when mounted to walls containing substantial amounts of metal construction shall be available.

13. Magnetic Stripe Cards for this security system shall be constructed of top quality, durable, and resilient PVC laminated with a magnetic stripe of low coercivity material designed for use with magnetic stripe readers.

Each shall be encoded with a facility code unique to the security system, an individual card number, and one of eight issue level numbers. At the system owner's request, the manufacturer shall provide the equipment necessary for the system owner to encode magnetic stripe cards for use only in the owner's system.

Standard cards shall be available with minimal printing and permanently marked with respective card number and reference code. The standard LSU ID card is to be used.

The manufacturer shall provide custom print cards, in accordance to the manufacturer's guidelines, to meet the needs specified by the system owner.

14. All Card Access Control parts shall comply with the following:
 - a. ***Normally Secure Electronic Strikes are the preferred hardware method for card access doors and must be compatible with access system and wiring harness.***
 - b. ***Magnetic Lock: No magnetic locks are to be used unless authorized by LSU and State Fire Marshal Office.***
 - c. Crash Bar and Cable: Provide double pole, double throw with release button.
 - d. Door contacts: Provide door status contacts that mount to surface of door and frame.
 - e. Provide 2" by 2" button for egress where called for.
 - f. Power Supply: Provide 12/24-volt power supplies with independent load switches and battery backup.