DOORS HARDWARE

GENERAL INFORMATION

1.1 This section includes hardware for doors.

1.2 Columbia University has standardized door hardware, and required products are to be used without substitution on new construction and modernization projects unless alternate acceptable products are specifically approved.

1.3 It is the intent of this section to provide guideline specifications that should be coordinated to meet the requirements of the applicable building codes, life safety codes, and ADA requirements.

1.4 The required hardware items for doors are described herein. Should any opening on a project be omitted from the specification, hardware shall be provided as specified for other doors of similar locations, function, quality and design.

1.5 Submittals:

   a. Product Data: Submit two (2) copies of the manufacturer's data for each item of hardware. Include whatever information may be necessary to show compliance with requirements.

   b. Hardware Schedule: Submit three (3) copies of the hardware schedule. Follow Door and Hardware Institute (DHI) guidelines for scheduling. At the end of the schedule list each door number with appropriate heading number and hardware set number. Furnish initial draft of schedule at the earliest possible date, in order to facilitate the fabrication of other work. Furnish final schedule after samples, manufacturer's data sheets have been approved.

   c. Keying Schedule: A key schedule showing all key numbers and spaces to which each permits entry, shall be provided. Consult with OWNER before submitting final key schedule. After final approval has been received, the schedule along with the key gathering envelopes containing keys for each lock endorsed with lock number and space designation shall be turned over to the OWNERS.

   d. Samples: Prior to submittal of the final hardware schedule and prior to delivery of hardware, submit one (1) sample of each exposed hardware unit. Sample will be reviewed by the ARCHITECT for design, color and texture only. Compliance with other requirements is the exclusive responsibility of the CONTRACTOR. Samples approved by the ARCHITECT shall be turned over to the OWNER.

1.6 Reference Standards: All finish hardware shall conform to one or all the following standards:
a. Testing Laboratories: Underwriters Laboratory (UL) and or Warnock Hersey Fire Laboratories Division: All fire rated doors shall have hardware assemblies approved by one of the listed laboratories.


c. Builders Hardware Manufacturers Association (BHMA).


e. American Disabilities Act (ADA).

f. Where required, products shall have MEA approval.

1.7 Supplier: Finish hardware shall be furnished by those having a minimum of 5 years of builders hardware experience and shall have in their employ at least one certified Architectural Hardware Consultants (AHC) to correctly interpret the plans, detailed drawings and specifications.

1.8 Product Handling

a. Handle, store, distribute, protect and install in accordance with the manufacture’s instructions. Deliver packaged material in original containers with seals unbroken and labels intact. Deliver assemblies completely identified and with adequate protection for storage, handling and installation.

b. Provide secure lock-up for hardware delivered to the project, but not yet installed. Control the handling and installation of hardware which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses; both before and after installation.

1.9 Project Conditions:

a. Coordinate hardware with other work. Tag each item or package separately, with identification related to the final hardware schedule, and include basic installation instructions in the package. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated and as necessary for proper installation and function. Deliver packaged hardware items to the proper locations for installation.

b. Furnish hardware templates to each fabricator of doors, frames and other work to be factory prepared for the installation of hardware.

1.10 Warranties: The hardware manufacturers shall provide full replacement warranty as listed below. Replacement warranty shall not include any labor cost.
a. Surface Closers  25 years, as long as it is standard

b. Locksets etc.  1 year

c. Balance of hardware  1 year

DESIGN REQUIREMENTS

2.1 Materials and Fabrication

a. Hand of Door: The drawings show the swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of the door swing shown.

b. Base Metals: Produce hardware units of the basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness but in no case of lesser quality material.

c. Fasteners: Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws.

d. Screws: Furnish screws for installation, with each hardware item. Finish exposed screws to match the hardware finish.

e. Tools for Maintenance: Furnish a complete set of specialized tools as needed, for the OWNERS continued maintenance, removal and replacement of hardware.

f. Concealed Fasteners: Provide concealed fasteners for hardware units which are exposed when the door is closed except to the extent no standard manufacturer's units are available with concealed fasteners. Use thru bolts only where necessary to adequately fasten hardware to the door.

2.2 Locksets, Latchsets, etc.

a. Unless otherwise noted, all locksets and latchsets shall conform to ANSI A156.13 Series 1000 Grade 1. Furnish wrought steel box strikes and curved lip strikes with proper lip lengths as required.

2.3 Keys, Keying, and Cylinders

a. Keys: shall be nickel silver. Furnish 3 key blanks per cylinder.
b. Keying: All locks shall be great grand master keyed to the existing Mult T Lock restricted key way keying system. The Owner will do the final keying

2.4 Door Closing Devices

a. All surface closers shall meet ANSI A156.4 Grade 1 requirements. Furnish all required brackets, filler plates and any others items required to insure proper installation and operation.

b. All closers shall be installed so that closer bodies are positioned on room side of doors to and from corridors, i.e., in-swing doors shall be regular arm. Out-swing doors shall have a parallel arm. Regular arm shall be used in connecting doors between rooms.

2.5 Protection Plates

a. All kick plates shall be 8" high x 2" less door width x .050 thick.

CONSTRUCTION REQUIREMENTS

3.1 General:

a. Templates: As soon as the hardware schedule is approved the hardware supplier shall furnish to the various fabricators, required templates for fabrication purposes. Templates shall be made available not more than (10) days after receipt of the approved hardware schedule.

b. Packaging and Marking: All hardware shall be shipped with proper fastenings for secure application. Each package of hardware shall be legibly marked indicating the part of the work for which it is intended. Markings shall correspond with the item numbers shown on the approved hardware schedule. Keys shall be tagged within each package set and plainly marked on the face of the envelope with the key control number, door designation and all identification as necessary.

c. Delivery: Delivery shall be made to the project site to the attention of the GENERAL CONTRACTOR. Where delivery of special hardware is required at any fabricator’s plant, the hardware supplier shall make such delivery.

3.2 Installation

a. Mount hardware units at heights recommended in "Recommended Locations for Builders Hardware" by BHMA, unless otherwise noted or directed by the ARCHITECT.

b. Install each hardware unit in compliance with the manufacturer’s recommendations.
3.3 Adjust and Clean

a. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Lubricate moving parts with type lubrication recommended by manufacturer. Replace units that cannot be adjusted.

b. Wherever hardware installation is made more than one (1) month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance make a final check, and adjust all hardware items in such space or area. Adjust door control devices and compensate for final operation of heating and ventilating equipment.

c. Instruct OWNERS personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

3.4 Hardware Item | Mfr. | Catalog | Acceptable Alternate
--- | --- | --- | ---
a. Butt Hinges | Ives | 5BB1 5BB1HW | No Substitution

Product Notes and Applications:
1. Provide NRP hinges on out-swinging doors with keyed locks.
2. Provide NRP and Security Stud hinges on exterior doors with butt hinges.
3. Provide sufficient width hinges to clear trim and wall conditions as shown on drawings.
4. Provide 4 ½” x 4 ½” for doors up to 3’0” wide, 5” x 4 ½” for doors over 3’0” wide.
5. Provide heavy weight hinges at high traffic doors.

b. Continuous Hinges | Ives | 224HD | No Substitution

Product Notes and Applications:
1. Use continuous hinges when retrofitting new doors into existing frames.
2. Use 224HD-EPT prep (where EPT ‘electric power transfer’ is used)
3. Use continuous hinges on public spaces’ doors (i.e. corridor doors, delivery doors, etc)

c. Electric Power Transfers | Von Duprin | EPT-10 | No Substitution

Product Notes and Applications:
1. Provide at all new construction electrified hardware openings – frames must be prepped for these originally -coordinate with manufacturer for templating information

d. Cylinders and Keying

   Mul-T-Lock  225 ICC SH  By Owner

   Cylinder Housing and Schlage  20-057 ICX Rim  No Substitution

   Construction Core Cylinder 30-008-

   ICX Mortise

   Cylinder

Product Notes and Applications:

1. Facility key system is maintained on-site. All new keying must be coordinated through the facilities’ department.

2. All Blumcraft Doors to be provided with a Schlage removable core housing (30-016)

3. All locksets provided during new construction to be equipped with a removable construction core (Schlage 23-030)

e. Locks and Latches

   Schlage  L Series (mortise)  No Substitution

   ND Series (cylindrical)

   06/Rhodes Trim Design

Product Notes and Applications:

1. All locksets provided during new construction to be equipped with a removable construction core (Schlage 23-030)

2. Lock type and function depends on location and use of door. Contact manufacturer representative for more information.

3. Faculty Restroom Toilets to have L9496 Privacy lock with occupied indicator

4. Instructional Classrooms to have L9071 Classroom Security Lock (double cylinder)

5. Offices to have L9070 Classroom Lock
f. KeyPad/ Schlage KC2 Series No Substitution
   Push Button Lockset Electronics

Product Notes and Applications:

1. Unican L1000 Series acceptable only when matching an existing installation.

   Machine rooms to have KC5596-2 Mortise KC2 Lockset

g. Offline Locksets Schlage AD series No Substitution
   (Magnetic Access Cards) Electronics

Product Notes and Applications:

1. To be used in new installations and retrofits of legacy CM lockset.

2. Must be managed by SMS software. If not interfacing with current SMS system, contact the locksmith department.

h. Exit Devices Precision 2200 Series No Substitution

Product Notes and Applications:

1. Provide rim devices on single door application.

2. Provide rim devices x keyed removable mullions on pair of doors application.

3. Use concealed vertical rod devices, less bottom rod, on cross-corridor pairs of metal doors.

4. Use surface vertical rod devices, less bottom rod, on cross-corridor pairs of wood doors.

5. Provide cylinder dogging on non-fire labeled doors.

i. Removable Mullions Von Duprin KR4954/9954 No Substitution

Product Notes and Applications:

1. Lockable, steel, key removable. Key is not required to reinstall mullion.

2. Provide mullion stabilizers at each opening.

3. Provide storage kit per mullion to secure mullion when out of opening.
4. Provide manufacturer’s quick-connection fittings when electric or monitor strikes are used for mullion removal without damaging electrical connections.

j. Magnetic Locks  
   Schlage  390+ Series  No Substitutions  
   Electronics  350+Series

Product Notes and Applications:
1. Product Notes and Applications:
2. Auto Voltage Selection

k. Electric Strikes  
   Von Duprin  6000 Series  No Substitutions

Product Notes and Applications:
1. Fail Safe electric strikes not permitted for use on fire doors
2. Fail Secure electric strikes not permitted in a path of egress
3. Surface mounted electric strikes are not acceptable

l. Door Closers  
   LCN  4041 (nonhanded)  No Substitutions  
   4011 (pull side)  
   4111 (push side)

Product Notes and Applications:
1. Provide cast iron body, forged forearms, and non-ferrous covers.
2. Provide non-sized closers, to meet maximum opening force requirements of ADA.
3. Provide drop plates, brackets, or adapters for closer arms as required.
4. Mount closers on non-corridor side of openings for interior doors.
5. Mount closers on inside of exterior doors.
6. Use application specific closers for all new construction openings

m. Low Energy Operators  
   LCN  4640 4630 9550  No Substitutions
**Product Notes and Applications:**

1. Provide wall-mounted actuator switches by same manufacturer as the operator.
2. Wireless actuators available where necessary (operated by 9V battery)
3. Provide necessary sensors, relays, and point-to-point wiring diagram for each application.
4. Conform to ANSI/BHMA standard A156.19 and meet UL requirements for fire labeled openings.

**n. Flush Bolts**

   Ives

   FB458 FB41P

   FB31P DP2

**Product Notes and Applications:**

1. Manual or automatic flush bolts as necessary for code compliance.
2. Provide extended top rod for doors exceeding 7’0” in height when using manual flush bolts.

**o. Coordinators**

   Ives

   COR Series

   No Substitutions

**Product Notes and Applications:**

1. Provide filler bars, closer mounting brackets, carry bars, special templating and preparation where applicable.

**p. Protection Plates**

   Ives

   8400 Series

   No Substitutions

**Product Notes and Applications:**

1. Material: Stainless steel .050” thick with countersunk holes, beveled four edges.
2. Size: 8” high Kick plates, 6” high Mop plates, 36” high Armor plates.
3. Width: 2” less door width at single doors when mounted on push side. 1” less door width at pairs and when mounted on pull side of single doors.

**q. Overhead Stops/ Holders**

   Glynn Johnson 900 Series/100 Series

   No Substitutions
Product Notes and Applications:

1. Use special templating with closers to allow offset arms for surface applied stops.

2. Install overhead stops where conditions limit the use of wall stops and where floor stops would pose a tripping hazard.

r. Thresholds and Gasketing

NGP

---

Pemko Reese

Product Notes and Applications:

1. Provide aluminum extrusion, 1” wider than door frame depth.

2. Provide saddle-type wherever possible.

3. Provide gasketing as required for smoke and fire labeled doors.

s. Push/Pulls

Ives

8200 Series Push Plate No Substitutions

8302 Series Pulls

9103EZ Series Push/Pull

Combo Bars

Product Notes and Thresholds:

1. Use concealed type mounting method wherever possible.

2. Provide 4” x 16” minimum plate size, except when limited by door stile width.

t. 3.4.21 Wall/Floor Stops

Ives

WS400 Series (Wall) No Substitutions

FS430 Series (Floor)

WS40 Series (Stop/Holder)

REFERENCE

4.1 The applicable CSI Specification Section is 08 71 00.