SECTION 08710D - DOOR HARDWARE

A. SPECIFICATIONS FORMAT

1. It is preferred that this section include all items of door hardware. Window hardware and operators should be specified in the window section. This approach will facilitate the writing of hardware specifications in the form usually used by Architectural Hardware Consultants.

B. GENERAL REQUIREMENTS

1. Allowance: Consult the University Project Manager regarding provisions for a contingency allowance to cover items inadvertently omitted in hardware schedules. Provisions for this allowance might be particularly desirable for remodeling projects in which some existing hardware is scheduled for reinstallation. Allowance stipulated should not exceed 1 percent of the estimated cost of contract subdivision for finish hardware. Permission to specify this allowance shall in no way relieve the Associate of responsibility to furnish a complete and accurate hardware schedule.

2. Hardware for entrance doors: All hardware for entrance type doors shall be furnished by the door manufacturer.

3. Pulls: Bases for grips shall project straight out, perpendicular to face of door. Offset type pulls are prohibited.

4. Quality and Design: Hardware must be adequate for the intended use and must satisfy code requirements, but shall not be excessively sophisticated nor unnecessarily expensive. Specifications for finish hardware shall be reviewed with the University Project Manager, the using agency, and the Department of Facilities Management prior to completion of construction documents. Make submittal at a time which will allow for adequate review and for making required changes before final printing.

5. Standards and Approved Equals: For each item, specify and schedule products of one manufacturer as the standard and, whenever possible, name two other manufacturers whose products are proven equal.

6. A complete list of items proposed as the standard, together with manufacturers’ names must be included in the outline specifications for the Basic Submittal. Approval of the items must be obtained before their inclusion in the hardware schedule in final documents.

7. Removable Mullions: Pairs of double doors shall have a removable mullion with lock strike unless exception is approved by The University Architect.
C. HINGES

1. Five-knuckle, wrought-steel. Butts shall be heavy duty, with 4 bb for exterior doors and interior doors over 3 feet wide; use standard weight butts with 2 bb for interior doors up to 3 feet wide. Specify ball bearing (bb) hinges for all doors with closers and in areas subject to high frequency of use.

2. Stainless steel butt hinges must be used on exterior doors and doors in areas with high humidity, such as locker rooms, showers, computer rooms, etc.

3. Pivot type hinges are prohibited unless approved by the University Project Manager.

D. LOCKSETS

1. Specify heavy duty, mortise locks only, with 2-piece metal antifriction latch. Locks shall be reversible and shall have capability for changing function within any one case. Locksets must be compatible with the University standard cylinders as manufactured by Best Corporation.

2. Lever handles shall be wrought brass, bronze or stainless steel of simple design, heavy duty, and must have inside lever handle secured in place by a dowel screw and the outside lever handle (secure side) pinned to the spindle. Key cylinders in knob or lever are prohibited unless approved by University Project Manager.

3. Knobs are prohibited unless approved by the University Project Manager. Square roses are prohibited.

4. In the event special security locks are required, such as electric locks or electric strikes, it is recommended that electric locks be used. Consult with the University Project Manager.

5. The use of electric magnetic locks on narrow styled or full glass doors is prohibited.

E. FUNCTIONS

1. Unless instructed otherwise by the University Architect, select locksets and latchsets having the following functions. Specifications or door schedules shall show both the Federal Specification Numbers and the manufacturer’s numbers to aid checking of documents and reduce the opportunity for error in function. Functions are based on ANSI/BHMA A156.13 and ANSI/BHMA A156.3. Door Location and Number Function.
Door Function and Location or Usage               Number

ENTRANCE                                           F121
Latch bolt by lever either side unless outside lever locked by stop button; when outside lever locked, latch bolt by key outside and lever inside; deadbolt by key outside and turnpiece inside; continuous turn of key retracts both latch and dead bolt.

• High Security Areas

OFFICE                                             F04
Latch bolt by lever either side unless outside lever locked by stop button; when outside lever locked, latch bolt by key outside and lever inside; auxiliary latch deadlocks latch bolt.

• Offices

STOREROOM                                           F07
Latch bolt operated by knob inside and key outside. Outside knob is always rigid. Auxiliary bolt deadlocks latch.

• Mechanical Equipment Rooms
• Storage Closets

CLASSROOM                                           F05
Latch bolt by lever either side unless outside lever is locked by key outside; inside lever always free; when outside lever is locked, latch bolt by key outside and lever inside; auxiliary latch deadlocks latch bolt.

• Classrooms

PASSAGE                                             F01
Latch bolt by lever either side.

• Conference Rooms

CYLINDER CLASSROOM DEADLOCK                         Best R
Deadbolt key outside; inside turnpiece will retract dead bolt but will not project it; no levers.
Pipe Chases

EXIT DEVICE

04 Similar

Outside by key only; pull handle outside with no thumb piece; panic bar with dogging by hex wrench; latch bolt, no vertical rod, Von Duprin 99 Series.

Entrances

Exits

F. CYLINDERS FOR MISCELLANEOUS LOCKS

1. Specify Best Lock Corporation cylinders with 7-pin tumbler cores for all locking devices specified in any division of the specifications. Ascertain that locking devices will accept Best Lock Corporation cylinders.

2. Key Cabinets: The University will furnish key cabinets.

G. CLOSERS

1. Specify only LCN 1460/1461 or 4040 as applicable. Closers shall be surface mounted, non-handed, with full rack and pinion hydraulic action. Specify very heavy duty type with broad range of adjustments permitting adjustment of door. Open pressure of 8 pounds to 15 pounds. Covers shall be of clean line design with lacquer finish and shall be type which DOES REQUIRE removal to make adjustments.

2. Closers for interior doors shall be installed on room side of doors and shall not be visible from corridors, lobbies, and other public spaces.

3. Floor closers and closers concealed in door heads are prohibited.

4. Door closers with integral smoke detectors are prohibited. Smoke detection systems must be made a part of the documents for fire protection work.

H. EXIT BOLTS

1. Rim type with flat crossbar.

I. STOPS

1. Wall mounted convex rubber bumpers, with concealed fasteners. Provide blocking in wall as required for bumper installation.

2. Floor mounted door stops are prohibited.
J. OVERHEAD STOPS AND HOLDERS

1. Size as recommended by the manufacturer. Degree of opening, as determined by building conditions.

K. FLUSH BOLTS

1. Specify extension type, top and bottom; avoid the use of vertical bars, either concealed or exposed.

L. KICK PLATES

1. Plastic laminate for wood doors. Do not use kick plates on steel or aluminum doors.

M. THRESHOLDS

1. Thresholds raised above floor levels at doors to trash and receiving rooms and over 1/2 inch high at doors intended for handicapped use.

N. EXIT DEVICES

1. Where Exit devices are required, use only Von Duprin panic Series 99 touch bar exit devices. Inside turn pieces shall be straight type (without hook) and mounted vertically.

O. FINISHES

1. US32D finish shall be specified for butt hinges on exterior hollow metal doors. Closers shall be finished to suit room decor. For all other hardware, specify US-10 or US-26D. Other finishes may be used only where necessary to match materials to which hardware is applied.

P. AUTOMATIC DOOR OPERATORS

1. Handicapped accessible operators may be surface-mounted or concealed in door head.

2. Provisions for noise control: On machine room doors and other doors where excessive noise is anticipated, weather-stripping at heads and jambs and surface applied automatic door bottoms shall be specified.

3. Electric operator switches may be wall-mounted or post-mounted.

4. Installation and equipment shall be provided by a factory authorized and trained distributor.
5. Automatic reset is required. If the door is locked or if door encounters an obstacle when the operator is activated, the operator system will do one of the following:
   a. Continue to push gently on the door until the time delay period expires, then close.
   b. Sense the resistance, shut off power and close.

6. Operator system shall have:
   a. Adjustable time delay period (opening time plus hold-open time) shall be approximately 20 seconds, adjustable from at least 40 seconds to 7 seconds minimum.
   b. Adjustable opening speed (time from activation until door is fully open) shall be approximately 7 seconds, adjustable from at least 11 seconds to 5 seconds minimum.
   c. Slow closing speed of approximately 7 seconds. Adjustability is desirable but not mandatory.
   d. Full compliance with ADA and Ohio Basic Building Code.
   e. Weatherproof controls and circuitry.
   f. Low voltage current from operators to controls.
   g. Heavy-duty “supermarket” quality.
   h. Easy manual door operation. In event of power failure or pedestrian impatience, pressure on strike side of door equal to that required to open a conventional 36” wide door with closer shall be adequate to open the door manually.
   i. Easy access for maintenance. Access covers, if provided, must also have vandal resistant screw attachment.
   j. Operation must be smooth and quiet.
   k. Closer shall be spring type which functions with power on or off.
   l. Only Dor-O-Matic model operators shall be specified. Dor-O-Matic operators are “Push In Go”, or Dor-O-Matic, “Astro Senior-Swing” electro-mechanical units for most applications. Provide “Junior Swing” operators on interior doors with light traffic.
   m. The use of air systems are prohibited.

Q. CONSIDERATIONS FOR VESTIBULES AND OPERATORS

1. Use single doors only (automatic double doors allow too many air changes).

2. Use door operators with a vestibule. If possible, arrange so one door closes before the other door opens. If both doors open simultaneously the blast of cold air in the winter will chill lobby areas.

3. Do not put automatic operators on main doors. The University preference would be three doors, one set for use by public and one door for handicap access.
4. Specify forced air heat (not radiant heat) into all vestibules when "push-n-go" operators are used.

5. Operators should be mounted in the vestibule (warm in winter side).

END