

SECTION 8710

DOOR HARDWARE

PART 1 DESIGN DIRECTIVES

1.1 GENERAL

- A. The purpose of this section is to insure the continuing high standard of finish hardware for all Dartmouth buildings and to ensure system maintainability.
- B. Changes may be made to suit individual conditions as needed by the College, but must be approved by FOM and the PDC Project Manager in advance. In the instance of existing conditions, great care must be taken to insure proper fit and alignment of hardware chosen.
- C. The hardware supplier shall be responsible for developing the keying schedule cooperating with the FOM lock shop in accordance with College policy. The format of the schedule shall be directed by the lock shop. Please contact lock shop personnel through the FOM office (603/646-2485).
- D. All lockers, *architectural access doors*, and mailboxes shall be included in the master keying plan.
- E. All lock cylinders for non-dormitory buildings are to be removable 6 pin removable core manufactured by Corbin Russwin. Dormitory buildings must be able to accept Best style 7 pin cores using Best or KSP lock cylinders on all doors.
- F. A design phase review meeting shall be scheduled by the architect to review the hardware and security needs of the building. FOM, Safety & Security, PDC, the project architect, and the user group shall be involved in this meeting. It is important that this meeting is scheduled early in the process on renovation projects.
- G. When remodeling existing buildings, new hardware should match existing / remaining hardware styles & finishes.
- H. All doors up to 90" high shall have a minimum of three (one and one half pair) hinges. For each additional 30" (or fraction thereof) of height add one additional hinge. Use ball bearing hinges for all exterior doors and frequently used interior doors. Infrequently used doors, such as closet doors, shall be heavy duty hinges or standards duty ball bearing hinges. Hinge type shall be reviewed with FOM via the PDC project manager during Schematic Design.
- I. Electrified power transfer (EPT) devices are the preferred means of providing power to door mounted electrified hardware. Electrified hinges shall be used only where an EPT is not practical. Armored cable may be used only where EPT or electrified hinges are not practical.
- J. Refer to DC Standards 08210 & 08211, Steel Doors & Frames and Flush Wood Doors for additional requirements.
- K. Refer to DC Standards 13825, SECURITY MANAGEMENT SYSTEMS, for coordination guidelines.

1.2 HARDWARE INSTALLATION TIME FRAME

- A. Planning and preparation of cylinders for installation can be a lengthy process. Additionally, depending on the quantity of locks required on a project, the time frame will vary as will the process of obtaining cylinders. *It is important to meet very early in the construction phase to develop and finalize the ordering of the keys and cores. ~~When there are over one hundred~~*

~~cyinders on a project, the order will be processed through the manufacturer. With orders of less than one hundred, the order will be processed through a local FOM authorized supplier. Very small projects will be processed in-house, at the discretion of FOM. The following charts reflect the time frames that need to be allocated for this process. Both charts compile time backwards from the occupaney date.~~

<b>Projects &gt;100 Cylinders</b>		
<b>Task</b>	<b>Time (business days)</b>	<b>Responsible Party</b>
<del>Core Installation</del>	<del>Total cyinders divided by forty plus three days.</del>	<del>FOM</del>
<del>Hardware Installation</del>	<del>Total cyinders divided by twenty plus three days.</del>	<del>Contractor</del>
<del>Database set up &amp; key production</del>	<del>Forty five days prior to hardware installation</del>	<del>FOM</del>
<del>Key &amp; core delivery</del>	<del>Fifty five days prior to hardware installation</del>	<del>Contractor</del>
<del>Order cyinders</del>	<del>Fifty days (pending current manufacturer's delivery schedules)</del>	<del>Contractor</del>
<del>Final approval of bitting list</del>	<del>Two days prior to cylinder order</del>	<del>FOM</del>
<del>Bitting list returned to FOM for review</del>	<del>Ten days</del>	<del>Mfgr.</del>
<del>Preliminary order submitted to the mfgr. Mfgr. Creates bitting list</del>	<del>Thirty days</del>	<del>FOM / Contractor</del>
<del>Formulate plan and develop order for mfgr.</del>	<del>Ten days prior to preliminary order</del>	<del>FOM</del>
<del>Keying Core Group Meetings</del>	<del>Time frame uncertain due to variables of individuals and the complexity of the project.</del>	<del>FOM, PDC, architect, User Group</del>

<b>Projects &lt;100 Cylinders</b>		
<b>Task</b>	<b>Time (business days)</b>	<b>Responsible Party</b>
<b>Core Installation</b>	<b>Total cylinders divided by forty plus three days.</b>	<b>FOM</b>
<b>Hardware Installation</b>	<b>Total cylinders divided by twenty plus three days.</b>	<b>Contractor</b>
<b>Database set up &amp; key production</b>	<b>Forty five days prior to hardware installation</b>	<b>FOM</b>
<b>Key &amp; core delivery; order cylinders; final approval of bitting list; bitting list returned to FOM for review; preliminary order submitted to the supplier; FOM Lock shop is responsible for bitting list, formulate plan, &amp; develop order for supplier</b>	<b>Fifty days</b>	<b>FOM / Contractor / Supplier</b>
<b>Keying Core Group Meetings</b>	<b>Time frame uncertain due to variables of individuals and the complexity of the project.</b>	<b>FOM, PDC, architect, User Group</b>

**PART 2 – MATERIAL**

**2.1 NEW LOCKSETS**

- A. All new locks are to be ML2000 Series by Corbin Russwin with solid cast levers. Function and trim styles to be coordinated with the College for each project.

**2.2 PANIC DEVICES**

- A. All new panic hardware to be Von Duprin 99/98 & 33/35 series or Corbin ED5000. In all cases panic devices shall have exterior trim being a minimum of a blank plate; exterior doors in Academic Buildings are to have NL heavy duty escutcheon type trim. All exterior panic devices, electrified and non-electrified, are to be provided with cylinder dogging.

**2.3 CLOSERS**

- A. All closers are to be DC6000 Series by Corbin Russwin, non-sized with painted finishes to match hardware or LCN 4000 series handed door closers with delayed action, where applicable.
- B. All exterior doors to have heavy duty backstop or heavy-duty spring stop type arms and shall have extreme temperature fluid.

2.4 ELECTRIC DEVICES

- A. All electric locking applications shall be 24 volt DC.
- B. Electric mortise locks
  - 1. Corbin ML20900 ECL series.
- C. Electric Strikes
  - 1. Specific project requirements may require alternate devices.
  - 2. Mortise lockset applications without a deadbolt -
    - a. Von Duprin 6210
  - 3. Mortise lockset applications with a deadbolt -
    - a. Von Duprin 6216
- D. Electric Panic Devices:
  - 1. Von Duprin EL99/98 or EL33/35 series with heavy duty trim, pulls, and key override.
  - 2. Corbin series ED5000, with heavy duty trim, pulls, and key override.
- E. Power Supplies:
  - 1. Provide power supplies manufactured or approved by the door hardware supplier.
  - 2. Corbin Russwin 781N controller
    - a. Battery backup shall be Ultratech #1460 series or other approved Corbin Russwin supplier.
  - 3. Von Duprin PS873B with 871-2 two zone controller
    - a. Provide 873-AO option if door is equipped with an automatic operator.
    - b. Provide 873-FA option if door is connected to the fire alarm system.
- F. Power transfer devices:
  - 1. ~~a.1.~~ Electrical Power Transfer Device: Von Duprin EPT Series.
  - 2. Electrified Hinge: Stanley, or other approved manufacturer to suit project conditions.
  - 3. Armored cable: Cable shall be chrome plated.
- G. Electromagnetic Shear Locks
  - 1. Normal Security: Ingersoll-Rand series 40 & 70.
  - 2. High Security: Ingersoll-Rand Locknetics series 390+
  - 3. Delayed Egress: Ingersoll-Rand Locknetics series 101+

2.5 POWER DOOR OPERATORS

- A. All door operators shall be low energy style.
- B. All door operators shall be surface mount, not concealed.
- C. Door operators shall be equipped with all weather fluid.
- D. Where operators are located in series forming a vestibule, the doors shall be operated independently.
- E. Where applicable, door operators shall be access control compatible
  - 1. LCN 4630& 4640 series

2.6 CARD READERS OR PIN PAD APPLICATIONS

- A. Refer to DC Standards 13825, SECURITY MANAGEMENT SYSTEMS, for requirements.

**PART 3 EXECUTION**

**3.1 GENERAL**

- A. Only temporary construction cores will be permitted during construction period. All must be keyed alike with change keys to be delivered only to job supervisor for distribution. Control key for temporary construction cores to be sent Registered Receipt Mail to Dartmouth College, McKenzie Hall, Hanover, NH 03755-3552 Attn: Lock Shop.
- B. All final cores and keys must be sent directly to:  
Dartmouth College  
McKenzie Hall  
Hanover, NH 03755-3552  
Attn: Lock Shop  
Installation of final cores will be performed by College personnel.
- C. Locate power supplies and battery backup in the access control mechanical space when wire run lengths permit. Where wire runs exceed manufacturer's written recommendations, coordinate the location with FO&M.
- D. Door closers and panic devices shall be installed with through-bolts.

**3.2 ALTERNATE SUPPLIER**

- A. When required, Corbin High Security Hardware may be provided by any vendor who will meet the above specifications, but the final keying and cores for the project must be supplied through the college High Security Hardware vendor listed below:  
Western Mass Door and Hardware  
190 Moody Street  
P.O. Box W  
Ludlow, MA 01056

**3.3 SCHEDULE**

- A. The general contractor shall develop the project schedule including the FOM Lock Shop timetable for final keying.

**3.4 ADJUSTING**

- A. Approximately six months after the Date of Substantial Completion, the installer shall perform the following:
  - 1. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified hardware.
  - 2. Consult with and instruct DC-FO&M personnel on recommended maintenance procedures.
  - 3. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

END OF SECTION 08710