

**080000 - DOORS AND WINDOWS**

I. DESIGN

- A. Specify a key cabinet. The cabinet should be designed to accommodate 50% more keys than the current project requirements. The specifications shall require the Contractor to sort, label, and tag all keys (as applicable); set up key cabinet with index; and review it with the Owner.
- B. The A/E shall coordinate keying schedule with the DPWES, Facilities Management Department (FMD) and the using agency. Using agency will sign off on an approved schedule. All changes will be coordinated with FMD.
- C. Provide adequately sized access doors or panels in all walls and ceilings to permit access to all mechanical, plumbing, electrical, or fire alarm equipment which may require maintenance or updating. A minimum access door dimension is 15"; a minimum access door size in ceilings is 24" x 24".
- D. Steel sash windows should not be used. All new or replacement windows shall utilize thermo-pane glass, with thermal break sash and low-E coating. All windows shall have proper flashing (or thru wall flashing, if applicable) and sill receptor if required.
- E. The A/E shall specify field quality control and testing for curtain wall systems. The testing must be conducted by a qualified independent testing and inspections agency and issue test report. The testing shall include air infiltration (ASTM E783), water penetration (ASTM E 1105), and water spray (AAMA 501.2) tests on two or more representative areas of curtain wall conditions to determine compliance of installed system with the specified requirements. Curtain wall shall be repaired or replaced where test results and inspections indicate that it does not comply with specified requirements. Additional testing and inspections at contractor's expense will be performed to determine compliance of replaced or additional work.
- F. All doors within a building, both interior doors and fire rated doors, shall have matching finishes.
- G. Office, meeting, training and data room doors that exceed 7 feet in height require FMD approval.
- H. If possible, industrial use areas (mechanical, shop, electrical, data centers, etc.,) shall have double access doors. A/E shall confirm that door opening allows for all equipment within the space to be taken out of the space for repairs and replacement.
- I. All roof access doors shall have a minimum of 6" height above finished roof or platform level.
- J. All coiling grilles shall be designed with governors. Additional structural support for coiling grilles and overhead doors shall be shown on the plans.

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K. Door numbers in the design documents shall match the final operational door numbers/room numbers so that signage, keying and move-in are made easier. The numbers & signage should reflect East, West, North or South sides of buildings in large facilities.

L. In areas with drywall partition, all doors shall have floor mounted door stops.



M. Operable windows are permitted only when approved in writing by DPWES and FMD for specific use type. Locking mechanisms with key must be provided for such windows. Screens must be provided for operable windows when approved. **Where operable windows are approved, windows shall be interlocked to BAS so that the HVAC shuts off for that area when a window has been opened. AE shall review with BDCD Project Manager if this impacts other areas in the building other than the room where the window is open.**

N. The maximum recommended clearance for the bottom of any vehicle security gate in county facilities is 6”.

O. Accessible Design

1. Use automatic door openers on main entry door. Ensure barrier-free access to door opening mechanism. Doors may be push button or automatic sensor operated. Verify with the BDCD Project Manager.
2. Do not install door closers unless necessary. If necessary, provide delayed action door closers that open freely before the closing cycle begins. If delayed action door closers can not be used, be mindful of closers on heavy doors. The door closing speed and operating pressure must comply with ADAAG.
3. If accessible corridor is less than 60” wide, provide recessed doors. Recess door design for space and approach must comply with ADAAG.
4. Dead-end hallways should be designed with sufficient wheelchair turnaround space.

P. Plans showing all door and hardware locations and a complete hardware schedule detailing all lock manufactures, functions, designs and finishes shall be provided at the start of construction to DPWES and FMD locksmith. A lock cylinder keying meeting with the building users, DPWES, general contractor, lock hardware supplier and the FMD locksmith shall be held at the start of construction. Upon completion of the building and acceptance by the Owner, Fairfax County’s permanent Schlage security lock cylinders shall be installed by FMD.



Q. ~~Electronic Access Control System~~ – *Moved to new section 280000 Electronic Safety and Security.*

R. Hardware Design for Doors with Electronic Access

080000-2

March 2024 Update

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1. Builder's locksets for electric access controlled doors - The preferred lockset shall be a mortise lock with a  $\frac{3}{4}$  inch latch bolt throw, it may be of a standard type (non-electric operation) and an electric strike may be used to open the door or it may be an electric operation mortise lock. All locksets used on fire doors shall be fire rated. The trim of the lock shall be a lever handle that returns to the door within  $\frac{1}{2}$  of an inch of the door face. All finishes shall be either US 626 or US 32.
2. Non-acceptable builder's locksets for electric access control doors - Cylindrical key in lever locksets shall not be used with electric strikes.
3. Panic exit hardware devices for electric access controlled doors - The preferred panic exit hardware device shall be a rim mounted latch retraction panic hardware device or a mortise panic hardware device with electric operation. Standard rim mounted panic hardware devices may be used with jamb mounted electric strikes. Panic hardware devices shall be of the standard panic hardware device type or fire exit panic hardware device as required by the Fairfax County VA fire code. The operating trim of any panic hardware device shall be a lever handle that returns to within  $\frac{1}{2}$  inch of the door face. All finishes shall be either US 626 or US 32
4. Non acceptable panic hardware devices for electric access controlled doors - Vertical rod panic hardware devices shall not be used with any electric access controlled door.
5. Electrical specifications: Voltage of electric access control hardware- Voltage of all electric access control hardware shall be determined by the requirements of the controlled access system. Consult the BDCD Project Manager and FMD for details.
6. Electrical specifications: Fail secure or fail safe function for electric access hardware- The function of all electric access control hardware shall be as required by the Fairfax County fire code.



- S. Residential grade windows shall not be specified in any County building. Only commercial grade windows are acceptable.



- T. Interior doors in apparatus bays that are located such that they may be exposed to exterior conditions when apparatus bay doors are left open, shall be specified as exterior grade doors.

II. PRODUCTS



- A. All locksets and hardware shall be compatible with 6 pin tumbler Large Format Interchangeable Core (LFIC), also known as Full Size Interchangeable Core (FSIC), lock cylinders to accommodate Owner's permanent Schlage cylinders. Owner's permanent

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cylinders for door hardware shall be Schlage cylinders to be purchased by the contractor, and installed by the Owner (FMD). A/E shall note in the Hardware Schedule “Schlage 6 pin Large Format cylinder to be installed by Owner but purchased by contractor” for each hardware set (group). Refer to Section III for additional coordination requirements for locksets and hardware.



- B. Construction cores shall be provided by the Contractor on an as needed basis to secure the building. Construction master keys and cylinder core removal keys (control keys) shall be provided to DPWES immediately after **turnover**. Upon completion of the building FMD will remove all construction cores and FMD shall install owner's permanent lock cylinder cores purchased by contractor. FMD shall retain all construction cores and keys.

- C. All finish hardware with exception of electronic access control doors, exterior accessed mechanical and electrical rooms shall be selected from the following manufacturer (cylindrical lockset with 6 pin lock cylinder).



1. Schlage, ~~Corbin\*\*~~, or ~~Sargent\*\*~~ (No Equal Products or Substitutions)  
a. Schlage ND-Series US 32D or 626 Finish Rhodes Design Lever

- D. All finish hardware used on doors for securing exterior accessed mechanical and electrical rooms shall be from the following manufacture (mortise locksets).



1. Schlage, ~~Corbin\*\*~~, or ~~Sargent\*\*~~ (No Equal Products or Substitutions)  
a. Schlage L-Series US 32D or 626

- E. All hardware for electronic access doors shall be from the following manufacture (mortise locksets). These locksets shall be furnished with 6 pin tumbler Large Format Interchangeable Core Cylinders (LFIC) for manual key bypass in the event of fire or emergency.

- a. Electric mortise locks



1. Schlage, ~~Corbin\*\*~~, or ~~Sargent\*\*~~ (No Equal Products or Substitutions)  
a. Schlage L series electrified mortise locks. 06 or ND Rhodes lever design trim

- b. Non electrical mortise locks to be used with electric strikes



1. Schlage, ~~Corbin\*\*~~, or ~~Sargent\*\*~~ (No Equal Products or Substitutions)  
a. Schlage L series mortise locks. 06 or ND Rhodes lever design trim.

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c. Electric strikes to be used with non-electrical mortise locks

1. HES 4500 series electric strikes

F. All hardware for panic exit devices for electronic access doors shall be selected from the following manufacture (electric operation panic exit hardware). This hardware shall be furnished with 6 pin tumbler Large format interchangeable core cylinders for manual key bypass in the event of fire or emergency.



a. Electric operation panic or fire exit device hardware

1. Von Duprin (Schlage), ~~Corbin, or Sargent~~ (No Equal Products or Substitutions)

- a. Von Duprin 99EL series electric rim device  
99E electric mortise E7500 device with 06 lever design trim



b. Electric strikes to be used with non-electric operation rim latch panic hardware

1. HES 9500 series electric strikes (fire rated doors)
2. HES 9600 series electric strikes (non-fire rated doors)

G. Where handicap accessibility is not required, surface mounted door closers should be Norton #1603 or #1604 or Approved Equal. Handicap accessible closers should be LCN 1461 or Approved Equal.

H. Floor type door closers should be Rixson #27 or #28, or Approved Equal. Where handicapped access is required, use Rixson PH27 or PH28, or Approved Equal.

I. Coordinate panic hardware with ADA requirements to ensure that a minimum of 32" clearance for door opening width, exclusive of hardware, is maintained.

J. Hydraulic actuators should not be used for accessible door openers.

K. Hinges at all doors should be ball bearing type.

L. Fairfax County Fire Prevention Code requires the installation of an approved emergency building entrance system (key box or Knox box) for all buildings with the exception of single-family dwellings. See Fairfax County Fire Prevention Code at <https://www.fairfaxcounty.gov/fire-ems/fire-marshal/fire-department-key-boxes>



M. Electric Strikes shall meet Underwriters Laboratories burglary resistance specification UL 1034. The preferred electric strike shall be ~~Folger Adam Series 310~~ HES 4500 series.

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All electric strikes shall be US 626 or US 32D finish. Electric strike voltages and functions shall be compatible with access control system requirements.

- N. For partial renovations, all door hardware shall be specified to match the existing hardware in finish, style and keyway in order to maintain continuity. A propriety or sole source procurement approval must be prepared and identified in the specifications as required.
- O. Door Hardware Functions: The door hardware is to be specified with the following functions. Coordinate with BDCD Project Manager for additional variations:

<b>Door Type</b>	<b>Hardware Function</b>
1. Standard Offices	Push button office or entry function – Allows quick simple locking with no key required.
2. Doors without locking function	Passage lockset- No locking needed just latching.
3. Restroom - Single Fixture Use i.e. family toilet room, unisex toilet rooms)	Bathroom function- Allows privacy but can be opened with any key in emergency.
4. Meeting Rooms, Classrooms in Offices, Group Rooms, Large Suite Public Areas	Classroom lockset- Can only be locked with a key.
5. Storage Room/Mechanical Or Electrical Rooms	Storeroom lockset -Stays locked can only be opened with a key.
6. Public Restrooms- Multi-fixture Use	School house safety deadbolt lock -Can be locked by key only from exterior. Person locked in can release deadbolt but can not lock themselves in, used to lock off bathrooms in case of plumbing problem.
7. Roof Access	Double Sided Storeroom lock- Stays locked on both sides.

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| 8. School Classroom , Child Day Care Centers         | Classroom intruder lockset- Always free to exit, locks only by key from inside the classroom, door does not need to be opened to lock from outside as a regular classroom lock.   |
| 9. Exterior accessed mechanical and electrical rooms | Hotel function- provides a self-locking storeroom function lockset and a separate deadbolt to provide extra security  |
| 10. Hotel function                                   | Hotel function is specified as it provides a self-locking storeroom function lockset and a separate deadbolt to provide extra security to exterior accessed mechanical and electric rooms. These mortise locks shall be provided with removable core lock cylinders as section A of this specification indicates. |

Note:

These functions are for standard finish hardware. Electric hardware on electronic access doors stays locked at all times and opens only with a card access or keypad. The key is only to open the door in an emergency like a storeroom lock. Electric locks can be left "open" at all times but are either powered up and unlocked (fail secure is locked with power off) or they are fail safe and not powered (fail safe is unlocked with no power going to the lock).

III. LOCKSETS AND HARDWARE

All locksets and hardware shall be Schlage full size/large format interchangeable core lock cylinders to accommodate Owner's permanent Schlage cylinders. Owner's permanent Schlage cylinders will be purchased by the Contractor. Permanent full size/large format interchangeable core cylinders in Schlage Classic ~~C, CE, E, EF or F~~ keyways shall be provided by the contractor. **AE shall include in drawings and specifications for Contractor to request CM contact the FMD Lock Shop to determine final keyway types required prior to placing order. (CM or PM can initiate work order through FMD's ESMP system or contact the Lock Shop Supervisor).**

