

# NC State University Design and Construction Guidelines

## Division 08 Finish Hardware

### 1.0 Purpose

- A. These guidelines provide requirements for finish hardware.

### 2.0 General Requirements

- A. All building hardware schedules shall be prepared by an AHC certified hardware consultant.
- B. All new buildings shall have US26D finish. All additions and renovation projects shall use finishes to match predominant existing finish.
- C. NC State uses the small format interchangeable core system for grandmaster keying. All lock-sets and lock cylinders shall accept small format cores. Hardware shall be shipped with temporary construction cores. Final cores will be shipped to the NC State Lock Shop. NC State will remove the construction cores upon final keying of the building prior to acceptance.

### 3.0 Materials and Standards

- A. Panic hardware devices shall be rim or mullion type. Vertical rod type shall be non-concealed and shall be used in double doors where rim or mullion-type cannot be used. Device shall be through-bolted to door.
- B. Locksets shall be heavy-duty, mortise type. Handles shall be lever type with lever return back to door surface.
- C. Closers shall have adjustments for back check closing speed, latch speed, and spring power. Bracket types shall be specified. Closer shall be mounted on interior side of doors in parallel arm position or in regular arm position. Concealed or semi-concealed closers are unacceptable.
- D. Electric Automatic Door Openers shall be equal to LCN Electric Auto-Equalizer . The following shall be included:
  - 1. Systems compatible with keypads or card readers and have built-in supply for actuators and peripherals, power actuators, and electric latch retraction or magnetic locks.
  - 2. All units covered by a two (2) year warranty. Warranty shall begin after installation and not upon delivery.
  - 3. Wall plate actuators for exterior applications shall be hardwired low voltage and shall have a stainless steel 4 ½” round plate with engraved blue filled handicap symbol. Where applications require a surface-mounted actuator, the system shall include a surface mounting box made of heavy industrial-grade components providing weather-resistant installation. Specified models shall be equal to LCN 958 or LCN 956.
  - 4. New door and/or frames receiving automatic door operators, shall be prepped for electrified hardware and hinge for future installation of a card reader. Selected products shall be equal to Von Duprin or Folger-Adams.

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- E. All doors shall have minimum of three (3) hinges. Doors over 90 inches high shall have one additional hinge for each additional 30 inches in height. Exterior doors, corridor doors, doors over 36 inches wide, and all doors with closers shall have ball bearing hinges.
- G. Push/Pulls must be through-bolted to each other.
- H. Location of stops may not damage door skin or adjacent walls during door operation. Locate stops 2/3 the door width from the hinged edge of door. Wall bumper stops shall be reinforced with additional studs or intermediate blocking in the wall.
- I. Fire-rated doors shall be tied into fire alarm and shall only use magnetic hold-open devices.
- J. Cast-in-place threshold anchors shall be used for the installation of all thresholds. Acceptable products shall be equal to threshold anchoring devices by National Guard Products model 720, or Rixon Thresholder. Flush thresholds shall be used at accessible entrances.
- K. Specific Door Type Hardware Requirements
  1. Entrance door closers shall not be exposed to weather. Hold-open or select-hold-open features on overhead stops are unacceptable. Heavy-duty mortised dead latches with a minimum throw of 3/4 inch shall be used. The latch shall be capable of latching in a retracted position. The latch shall be 48 inches above finish floor.
  2. Doors to roofs, penthouses, mechanical rooms, transformer vaults, elevator equipment rooms and custodial closets shall have closers and self-locking locks with a free lever handle on the inside and key access only.
  3. Corridor doors acting as fire or smoke doors that sustain heavy use shall be equipped with magnetic hold-open devices and include a coordinator, a closer and automatic flush bolts.
  4. Double doors shall be equipped with a coordinator, an astragal, and a pair of automatic flush bolts on one leaf. Dust-proof strikes shall be provided for the floor bolt.
  5. Yard hydrant cabinet access doors shall be equipped with slot-type locks operable with a screwdriver. Key locks are not acceptable.