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# 08 00 00 – OPENINGS

**SECTIONS INCLUDED:**
08 10 00 – DOORS AND FRAMES
08 30 00 – SPECIALTY DOORS AND FRAMES
08 40 00 – ENTRANCES, STOREFRONTS AND CURTAINWALLS
08 50 00 – WINDOWS
08 70 00 – HARDWARE

## 08 10 00 – DOORS AND FRAMES

DOORS – GENERAL

- Exterior doors shall be Hollow Metal or Aluminum and glass.

- Do not specify wood exterior doors without Facilities management approval

- Remodel Projects: all existing doors and hardware shall be salvaged for Owner during demolition. Salvage is at the Owner's discretion; contractor shall dispose items not salvaged.

- Coordinate door and frame installations to enable 180-degree door swing where possible.

- Refer to Card access system specifications for additional information.

WOOD DOORS

– Interior wood doors shall be 1 3/4" solid core, LSL (laminated shredded lumber) Premium Grade, vertical grain oak or birch veneer, 5 ply skin with hardwood stiles (fire doors to also have hardwood rails). Staved core doors are acceptable if needed for LEED points. Provide suitable blocking for hardware. Doors should be by Marshfield or equivalent. Warranty to include full life of original installation.

– Particle core doors are not acceptable.

– Laminate doors at not acceptable, unless prior approval has been granted to match existing conditions.

– Frames for interior doors shall be hollow metal.

- Fire rated wood doors should be Marshfield DFM series or equivalent. Specify lifetime warranty.

- Mineral core doors, if used, shall be provided with full width inner blocking located at the top, center and bottom of the door. Specify lifetime warranty.

- Doors shall be pre-fit and beveled at the factory to fit the openings. Pre-fit tolerances shall be in accordance with the requirements of WDMA I.S 1-A and AWI Section 1300, latest editions.

- Doors shall be machined in the factory for mortised hardware items, including pilot holes for hinge screws and lock fronts.

- All wood doors shall be shipped pre-finished on six sides and should be refinished immediately after any field machining.

- Vision frames: furnish wood species to match door veneer, W-2 profile. Provide wood wrapped steel vision frames for fire rated openings unless otherwise authorized.

- Height: 7’-0” recommended. Doors taller than 7’-0” must be approved by Facilities Management.

HOLLOW METAL DOORS AND FRAMES

- Hollow metal doors and frames shall comply with SDI-100 Extra Heavy Duty ANSI A 250.8 Level 3 Interior, Level 4 exterior or NAAMM 861 standards for construction. Facilities Management must approve all manufacturers prior to inclusion in the specifications.

- Hollow metal doors to be minimum 16 GA., fully welded, steel stiffened with hardware reinforcement.

- Metal frames shall be minimum 16 GA for interior applications, and 14 GA for Exterior applications. Frames shall be fully welded with corners mitered, reinforced and continuously welded full depth and width of frame including faces, rabbet and fixed stops. Reinforce frames for all required hardware.

- Factory-applied coat of baked-on rust inhibiting primer.

- Hardware reinforcements:
  - Hinges: 3/16-inch.
  - Lock Strike: 14-gauge.
  - Closer: 12-gauge.

  - Heads over 42-inch width: 14-gauge frame or 12-gauge angle or channel stiffener

- Hinge reinforcement at exterior frames and potentially abusive openings:
  - Continuously welded top, bottom and both sides. Fully width hinge reinforcement defined as the “profile” width, less dimension of one return. 12-inch long; 7-gauge (0.179)

- Concrete & Masonry: 16-gauge adjustable strip anchors at least 2 ½-inch x 10-inch; T-Strap, wire or corrugated/perforated stirrup and strap configuration welded to frame.

- Metal Stud Framing: 18-gauge anchors welded to frame.

- Frames in masonry or concrete openings shall be grouted solid. Frames in masonry walls are to be “toothed in”. Bolt anchors are not acceptable unless specifically approved.

- Do not specify knock-down type frames.

## 08 30 00 – SPECIALTY DOORS AND FRAMES

OVERHEAD COILING DOORS AND GRILLS

- Coiling Doors and Grilles: The Cookson Company, substitutions by approval.
- Motorized operation preferred for doors, manual operation for grilles.
- Horizontal operation by approval.
- Lock: keyed per Facilities Management lock shop.
- Provide generous means of accessing housing for maintenance purposes.
- Fire-rated coiling doors.
- Coiling Fire Doors shall not require manual spring re-tensioning following fire alarm activation.
- Design wind load: 70 M.P.H. minimum.
- Aluminum or stainless steel is preferred; fiberglass and wood are prohibited.
- Drawbar or Jackshaft 110V motor operator.

## 08 40 00 – ENTRANCES, STOREFRONTS AND CURTAINWALLS

ALUMINUM DOORS AND FRAMES

- Aluminum doors shall be heavy duty construction with 5” vertical stile, 8” midrail, 5” top rail and 10” bottom rail. Minimum gauge: 3/16-inch (0.188), 6063-T5 or T6 aluminum. Hardware mounting location reinforcement: ¼-inch

minimum. Corner construction: concealed, duel welded. Provide additional reinforcing at closer mounting location.

- Products by Kawneer 500 Tuffline series or Tubelite Architectural Products (Monumental doors) . Other manufacturers must be approved by owner prior to specification.

- Do not use manufacturers standard hardware for aluminum doors. Use the UNC standard manufacturers as listed below for closers, panic devices, locksets, cylinders and hinges.

- Cabling for electric hardware shall be housed in conduit. Cabling is not permitted to be pulled in aluminum storefront. Place doors with electric hardware adjacent to wall construction where possible to facilitate conduit for cabling.

- Storefront framing: Kawneer “Trifab II 451T” is specified as a minimum level of quality. Storefront framing sections shall be .080” minimum wall thickness. Door framing sections shall be .188” minimum wall thickness.

- Submit shop drawings to Owner for review for all aluminum door and framing systems.

**08 50 00 – WINDOWS**

WINDOW AND WINDOW SYSTEMS

- Design shall consider a reasonable means of cleaning and re-glazing windows. Windows shall be capable of being cleaned and re-glazed from the inside where possible.

- Prefer operable windows where possible. Specify double hung or pivoting type. Avoid the use of crank operated units.

- Operable windows shall include integral screens.

- Avoid the use of wood windows. Specify custom aluminum pre-finished units where possible.

**08 70 00 – HARDWARE**

FINISH HARDWARE

- **All finish hardware <u>must</u> be carefully coordinated with the owner, early in the design process. This is one of the hardest aspects of the design**

**to get right. All hardware submittals must be reviewed by UNC Facilities Management.**

– All hardware shall be installed by specialists in the field. Installers shall be certified by the manufacturer for all items where such certification is available. Specify a pre-installation conference with the installing contractors.

– Hardware finish will generally be US10 / US26D verify with UNC

HINGES

- Ball bearing type, steel, 4.5" X 4.5" heavy duty (.180 - .190 gauge) for exterior applications – Ives, Hager, McKinney, Stanley
- 4.5" X 4.5" standard duty (.134 or .145 gauge) for interior applications – Ives, Hager, McKinney, Stanley
- Exterior and other high traffic doors – provide stainless steel or brass base metal hinges.
- All exterior out swinging doors to have non removable pins
- Doors 36” – 48” shall use 5” heavy duty hinges. Doors wider than 48” shall use 6” heavy duty hinges. Doors over 37” wide or over 84” in height to have 2 pair of hinges.
- **Refer to the card access system specifications for additional information.**

LOCKSETS

- Heavy duty mortise – Schlage “L9000” series with **06A lever handle**
    - Bathrooms shall have Schlage L 9056 mortise lock
    - Restroom Indicators
        - Outside Indicator - Arrow ASC190 1 ¾ V20
        - Inside Indicator - Arrow ASC194 1 ¾ V10
    - Offices L9050 06A
    - Storage, custodial closets, mechanical & electrical rooms L9080
    - Other lockset types as determined after consultation with Facilities Management
- Residential facilities will use Schlage AD series card locks for interior applications as directed by Facilities Management
- Finish US10 / US26D verify with UNC
- Lock function shall be determined by the Owner.
- For minor rekeying and remodel work: consult with Owner.
- All locksets removed as part of remodeling projects are to be returned to Facilities Management.
- Residence Halls will be specified with an ”off-line” card reader lock with PIN. Current specifications will be provided by the Owner.

- **Refer to the card access system specifications for additional information.**

CYLINDERS

- Cylinders will generally be Medeco or ASSA products consistent with the University's existing systems. The ASSA V-10 system in use on campus uses removable cores. Facilities Management will specify which type of core is to be used for each project. Contractor shall provide housing and escutcheon to match the cores.

- All cylinders will be purchased by the University with project funds, for installation by the contractor. The cylinder order will be based on the final approved hardware submittal provided by the general contractor.

- Contractor shall provide a construction key system for use during construction. UNC will install permanent keying.

EXIT DEVICES

- Exit Devices - Von Duprin series 99 or as approved by Facilities Management
    - Exterior door trim 990 series night latch X dummy trim
    - Interior door trim 996L-06 lever X dummy trim. Lever handle trim to have a mechanism to disengage lever from operating should excessive force be applied, and allow lever to be reset to its operating position.
    - Selected doors shall be keyed on the outside as directed by Facilities Management.
- Prefer rim type devices in conjunction with removable mullions.
- Equip exit devices with dead locking latchbolts.
- Through bolts on exit devices are prohibited unless approved by Facilities Management.
- If vertical rods are needed for an application, they shall be surface mounted only. Specify without bottom rod. Use must be approved by UNC. Concealed rods and cables are not acceptable.
- **Refer to the card access system specifications for additional information.**

CLOSERS

- Closers - LCN 4040XP EDA and /or LCN 4110 EDA Series.
- Adjust closers to comply with manufacturer's recommendations for size of door control unit depending upon size of door, exposure to weather, wind conditions and anticipated frequency of use.
- All closers to be parallel arm mounted, unless directed otherwise

- Closers installed on exterior doors and interior high traffic areas shall be equipped with advanced variable back check ABV function.
- Install closers to allow maximum degree of opening, position back check to activate well in advance of the stop position to cushion the opening swing and prevent door and frame damage. Unless specified, install closers with through bolt mounting method on metal and wood doors.
- Where doors will not swing to wall for wall stop applications, use overhead stops. The use of SCUSH/CUSH arms is discouraged.
- For Residence Halls exterior doors, use LCN special template arms ST-2738 or Rixon 997 Electromagnetic hold opens, with keyed switch using standard sized mortise cylinder.
- Powder coated aluminum finish 689 and/or 691, door closers and automatic operators

AUTOMATIC DOOR OPERATORS

- Automatic door operators for swinging doors shall be LCN 4800 series pneumatic powered type.
- Compressor location and mounting must be coordinated to eliminate structure borne vibration.
- Location and power for air compressor must be coordinated with the electrical division. Hardware supplier shall provide point-to-point wiring diagrams for automatic operator(s) to general and electrical contractor prior to electrical rough in. Electrical contractor shall provide 120VAC power to control box and provide and install wiring from control box to actuators.
- Push buttons for the automatic door shall be mounted on goose neck style pedestals on both interior and exterior side of opening where possible. ADA actuator plates; hard-wired, with shrouded escutcheon to prevent abuse. Actuators at new construction shall have keyed switch to turn power on/off to ADA operator and/or ADA actuators. Buttons to be mounted at 32” AFF to center. The location of all pushbuttons shall be coordinated with the UNC project Manager and the UNC Disability Access Center. Pedestal to be equivalent to Linear Corp. GNB-1 (burial mount) or GNC-1(surface mount).
- For exterior door installations equipped with card access, the operator button must interface with the card access controller and electric strike. This installation will require additional relays and wiring between devices. and associated relays. Coordinate specific wiring and equipment details with Facilities Management.

ELECTROMAGNETIC DOOR HOLDERS:

- Openings requiring electrically controlled door holding magnets shall be equipped with units, which are fail-safe and hold until current is interrupted.

Provide holders with through bolt attachment for door-mounted armatures. Plastic housings covers are prohibited use only die-cast housings.

- Preferred Manufacturer: LCN Door Closers SEM 7800 Series
- Provide 2x4 reinforcement backing for wall mounted, electromagnetic door holders. Holders must be through-bolted.
- Tri-voltage design, 12VAC/DC, 24VAC/DC and 120VAC, with a minimum of 35 pounds of holding force.
- Door armature extensions strictly prohibited. Maximum distance between door face and wall mounted electromagnet not to exceed the distance required for clearance of operating trim.

MISCELANEOUS HARDWARE PROVISIONS

- Where paired exit doors are required, they shall be served with a keyed removable center mullion and rim mounted panic devices.
- Thresholds for perimeter doors to be saddle type with sweep. Pemco commercial grade or approved equivalent.
- Specify brush type seals. Pemko or equivalent.
- Flush bolts, automatic flush bolts & coordinators:
    - Manufacturer: Ives; substitutions by approval.
    - All flush bolts must be approved
    - Automatic flush bolts are prohibited
    - Constant Latching Flush Bolts:
        - Fire rated Wood Door: FB61P
            - Top bolt with auxiliary fire latch: FB62
        - Non fire rated wood door: FB51P/FB51T
        - Metal Door: FB51P/FB51T
            - Top bolt with auxiliary fire latch: FB52
    - Manual Flush Bolts: to be used on the inactive leaf of storage room doors and utility closets only. NOTE: a closer may be required on the active leaf.
        - Manufacturer: Ives, substitutions by approval.
            - Metal and wood Doors: IVES FB458
    - DP1 dust proof strike (set in construction adhesive).
    - Provide coordinator for labeled pairs of doors equipped with constant latching flush bolts. Provide filler bars for total opening width, closer mounting brackets, carry bars, and special preparations where applicable. All Coordinators must be approved.
- Provide wall mounted door stops with appropriate backing in wall. Bollards/stops or overhead stops are preferred at exterior doors where door does not swing to wall. Avoid the use of floor mounted stops.
- Provide kick plates for wood doors. 18-gauge stainless steel; 10-inch high, beveled edges 3-sides, mount 1/2-inch from bottom of door, width 2-inch less door width on single doors; 1-inch on pairs.
- All doors and frames shall be painted prior to installation of the hardware.

- Contractor shall salvage for Owner all of the contents from hardware packaging not used in installation

CARD ACCESS SYSTEM –

- Designers will need to verify specific requirements for the card access system with the owner. **Refer to the 28 10 00 Access Control Standards for detailed system information**.

- Most new or renovated facilities will need to be connected to the UNC Card Access system. This system requires careful coordination between the hardware and electrical specifications and drawings.

- Provide raceways at each exterior door extending to the main building telephone room for connection to the card access system. Wiring will be furnished and installed by the contractor.

- Exterior doors will need to have provisions for the following: Card reader, power transfer hinge for request to exit device and door position switch. Some older systems may include motion sensors and an electrified locking device but this should NOT be specified without Facilities Management prior approval.

- The main entry will need to allow for the above as well as a handicapped operator with push buttons.

- Lenel System control panels and PC will be located in the main telephone equipment room in each building.