

8 Doors and Windows

GENERAL

Designers shall verify that all applicable portions of these standards are incorporated into the project's design, drawings, specifications and final construction. Requests for variances from these standards shall be submitted in writing to the DCM Project Manager, using the KU Standards Variance Request Form found in [Appendix A1.1](#), for review and written approval or rejection as indicated on the form.

RELATED DOCUMENTS & REQUIREMENTS

Refer to the following for requirements that also apply to work of this section.

- [Division 1 - General Requirements](#)

DOORS AND WINDOWS – DESIGN GUIDELINES

Windows: University buildings shall be provided with operable windows in each occupied space. Window types for multi-story buildings shall be selected to allow cleaning from the interior.

- Frames:** All exterior windows shall have thermal-break frames and insulating glass units.
- Glazing:** Exterior windows are recommended to be tinted bronze and have a low-E coating. Verify specific criteria for each project with DCM.
- Window Screens:** Operable windows shall NOT receive window screens, due to problems the University has had retaining them in-place and in undamaged condition.
 - Exception:** Projects for the Dept. of Student Housing typically include screens on operable windows. Verify with DSH for each project.
- Window Locking Devices:** Provide more than one locking device on windows 3' or more in width.
- Fire-Rated Locations:** Designers shall verify and clearly indicate all window locations which are to be fire-rated, and shall schedule appropriate steel frames and wired glass or fire-rated glazing systems.

Doors and Frames: Exterior building entry doors and frames shall be heavyweight, wide stile, pre-finished aluminum units, due to lower maintenance requirements than painted hollow metal frames.

- Power-assisted or automatic doors shall be provided at the primary building entrance(s), to assist the handicapped in overcoming the force of wind in opening exterior doors.

- In vestibules, provide door operators on both an interior and exterior door in the same path of travel, independently operable from each side and within the vestibule.
- Specify 4" square, over-sized push buttons for power operators, and mount on walls or posts outside of door swing footprints.
- Exterior Service Entry Doors: Specify to be 18 gauge steel face materials, insulated core doors in 16 gauge steel frames.
- Magnetic Hold-Opens: High-traffic interior doors and doors on stairs or elevator door openings should be held open with magnetic hold-open devices.
- Kickplates: Provide on all doors into janitor closets, mechanical/electrical rooms, storage rooms, kitchens, loading dock doors and other spaces where equipment may be wheeled in and out through doors. Depending on equipment expected to move through and potentially damage doors, Designers shall consider the provision of taller armor plates to protect door surfaces.
- Pairs of Doors: The use of removable center mullions is discouraged, especially within corridors, at fire-rated door locations or other high-traffic areas.
- Hardware Schedule: At entrances with multiple doors ganged together, only one door shall be keyed from the exterior. Other doors in multiple gangs shall be pull only, with key-dogging on interior panic devices. Omit dogging on fire-rated doors.
- Humid Environments: Consultants shall carefully review environmental criteria for door and window units in humid environments, and select units capable of withstanding those conditions for long periods of times.

ACCESS DOORS – DESIGN GUIDELINES

General: Bid documents shall show location and size of all wall or ceiling access doors that are required to access mechanical/electrical equipment, devices or plumbing lines for maintenance or initial balancing.

- Minimum size: 24" wide x 36" high, to facilitate entry into tight spaces by maintenance personnel.
- Other size doors will be acceptable if existing conditions dictate otherwise, or if provided for hand access to valves and similar elements.

FLUSH WOOD DOORS – 08211

General: In existing building partial remodels or additions, match species and finish of existing wood doors.

- Interior Doors: Solid core construction.
- Jamb edges of wood doors shall be hardwood to match the door's face material species.

ALUMINUM ENTRANCES AND STOREFRONTS – 08410

Aluminum Frames: Provide in thermal-break construction. Color & Finish for the following shall be:

- New Construction or Total Renovations:* Medium Bronze Anodized, unless otherwise approved or directed by DCM and University Architect.
- Additions or Partial Renovations:* Match existing, unless otherwise approved or directed by DCM and University Architect.

Glazing: Refer to Section 08800 – Glazing requirements.

DOOR HARDWARE – 08710

Hardware Finishes:

- New Construction or Total Renovations:* Satin Brass or Satin Chrome, as selected with DCM and University Architect. Note: Bright Brass or Polished Finishes are discouraged, due to University experience with poor long-term durability and high maintenance demands.
- Additions or Partial Renovations:* Match existing, unless otherwise approved or directed by DCM and University Architect.

Lockset Manufacturers: Facility Operations stocks replacement parts for the following manufacturers and for maintenance reasons, the University will allow the provision of products by one of the following acceptable manufacturers only:

- Schlage
- Sargent
- Corbin
- Best (this is the preferred lockset for the Dept. of Student Housing only; not to be used on other campus buildings)(DSH)
- Falcon (only alternative manufacturer for DSH projects)

Replacement Locksets: New locksets replacing existing locksets shall be required to match the manufacturer, model, style and finish of the unit being replaced.

Locksets in Additions or Partial Renovations: The University prefers that locksets installed within each building be limited to only one manufacturer's, for ease of maintenance and continuity of appearance. Specs shall require new locksets to match the manufacturer, model, style and finish of the units predominant in the areas adjacent to the area to be remodeled. Verify with DCM.

Lockset Grade of Construction: Heavy-duty; not less than the following.

- Bored: ANSI 156.2, Grade 1.
- Mortise: ANSI 156.13, Series 1000, Grade 1.

Lockset Functions: Review and verify operation of door locks with the University's user group, DCM Project Manager & Architectural Support personnel, and FO Lock Shop representatives. The following are typical functions to be used

- Mechanical Rooms, Janitor Closets and NTS Rooms:* Sargent #04 - Storeroom Function, or equal; with rigid outside lever handle.
- Classrooms:* Sargent #37 - Classroom function, or equal.
- Offices:* Sargent #05 - Office Function, or equal.
- Public Toilet Rooms:* Sargent #114 – Hospital Latch, or equal; with “Push” and “Pull” lettering engraved in top of escutcheons, with both lever handles extending down.

Lockset Trim Styles:

- Partial Renovations or Additions: Lockset handles, roses and finishes shall match those in existing buildings.
- New Construction or Total Renovation: Tapered lever handle with continuous curved return to door face, OR round wire lever handles with a radiused, perpendicular return to door.
 - Sargent Style LNP (curved) or LNJ (round)
 - Schlage Style #17 (curved) or #73 (round)
 - Others only as approved or requested by DCM and University Architect.
 - Straight lever handles that do not return to within ½" of door face are NOT acceptable, since they can more easily catch and damage clothing, backpacks, etc.

Panic Device Manufacturers: Due to maintenance requirements, the University will only allow the provision of products by one of the following:

- Von Duprin
- Sargent

Panic Device Functions:

- Keyed Exterior Doors: Sargent function #04 or equal; key retracts latchbolt on exterior.
- Non-keyed Doors: Sargent function #10.
- Do NOT use Sargent function #13, since building users may accidentally leave this unlocked after-hours.

Panic Device Trim Style: Pull devices with round, $\frac{3}{4}$ " nominal diameter pulls and standard width plates are preferred.

Pairs of Doors: Where pairs of doors at exits or stairwells are required and individual doors within frames cannot be used, rim-type exit devices which are center-locking should be installed with a removable mullion.

- Astragals for pairs of fire doors that do not have a center mullion shall be fiber type, NOT a metal overlapping astragal with coordinators.
- Vertical rod latching systems shall be used only where doors are held open with magnetic hold-opens.

Vertical Rod Panic Devices: Vertical rod panic devices shall omit the bottom rod, per the current ADA Accessibility Guidelines and due to KU maintenance problems.

Magnetic Hold-Open Devices: These are to be specified and provided as part of the fire alarm system work, in Division 13.

Closers: LCN 4040 Series, Super Smoothee is preferred KU model, or approved equal. Provide with parallel arm, to greatest extent possible.

Hinges: Provide not less than 3 per door, heavy-duty type, mortised. An option is to provide continuous "Roton" type hinges, if approved or requested by DCM.

Silencers: Provide 3 minimum per door, unless door is to receive weatherstripping.

Stops: Provide one stop per door. First choice is to provide wall stops. If wall stop is infeasible, provide a floor stop unless it may pose a hazard to walking. If floor stop is infeasible, provide an overhead stop.

Keying:

- Cylinders: Lockset cylinders shall ONLY be provided by Medeco Security Locks, Inc., with a high-security keyway corresponding with the University of Kansas system.
 - Exception: The KU Dept. of Student Housing uses Best cylinders.
- Construction Keying: Required on all University projects. The final lockset keys shall NOT be used during construction, and shall not be delivered to the jobsite, or stored in an unsecured manner.
- Keying Conference: Within 30 days after execution of the contract, the Contractor shall initiate a keying conference between the Hardware Contractor, representatives of

Facilities Operations and Design and Construction Management, and representatives of the occupants of the building.

- Hardware Delivery Confirmation:** As soon as hardware is ordered, the Hardware Contractor shall send to the Department of Facilities Operations the factory order number and the factory shipping date.
- Delivery of Keys:** Keys shall be delivered directly to the University locksmith, along with a typed schedule of keys, before Substantial Completion of the project. Keys shall be sent via certified mail or personal delivery, with a copy of the receipt that has been signed by FO Lockshop personnel given to the DCM Construction Manager.
- Refer to Division One for criteria regarding temporary keys for access to existing spaces.

POWER DOOR OPERATORS – 08716

Acceptable Manufacturers/Models: Besam "Easy Swing" or equal.

Operation: Provide over-sized push pads, that display the universal symbol of accessibility on 4" +/-square or 6" diameter pads, to actuate door operation.

- Mount a push pad on the interior and exterior side of each power-operated door at 36" AFF to actuate operation.
- Mount push pads on sidewalls or free-standing posts at the outer edge of power-operated doors when they are in the open position, being certain that disabled persons will not be within the door swing path when actuating the door operation.
- Specify operators to come with an automatic shut-off to disengage motor when door is activated but is locked in the closed position.
- Identify each door equipped with an operator by adhering to the exterior door face.

GLAZING – 08800

Exterior Locations:

- Construction:** Double-pane insulating glass units.
- Color/Tint:**
 - New Construction or Total Renovations:* Bronze tint, unless otherwise approved or directed by DCM and University Architect.
 - Additions or Partial Renovations:* Match existing, unless otherwise approved or directed by DCM and University Architect.
- Low-E Coating:** Include on all exterior insulating glass, on the #3 surface.