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Division 08 OPENINGS

This design standard is directed to the Design Professional to be incorporated into the Project specifications.
The Owner encourages improved concept, method and products by the Design Professional; however Project compatibility with existing campus systems, processes and procedures is most desirable.

08 1000 GENERAL

A. RELATED DIVISIONS
1. Division 06 - WOOD, PLASTICS, AND COMPOSITES
2. Division 23 - HVAC
3. Division 26 - ELECTRICAL
4. Division 28 - ELECTRONIC SAFETY AND SECURITY

B. GENERAL
1. When possible specify products that contribute to LEED qualification
2. Specify inspection of frame installation accuracy prior to drywall installation. Contractor shall submit inspection report to the Design Professional.
3. Prior to substantial completion the Design Professional shall verify all frames, windows, doors and hardware are installed and operating as specified.
4. Early in design development ensure the following topics are fully addressed.
   a. Card access
   b. Surveillance
   c. Type of hardware and lock function
   d. Prep exterior doors for card access
5. In design phase include Facilities and Services in review of value engineering of openings.
6. Specify that detail drawings are required when utilizing an interface between electrified door hardware and fire alarm, access control, security and building control system.
7. All lockable personnel entrances and padlocks must have 7 pin small format interchangeable cores. Discuss other project specific requirements.

08 1000 DOORS AND FRAMES

A. GENERAL
1. Select doors and frames that meet the following criteria:
   a. Minimal maintenance
   b. Designed to meet appropriate operating frequency.
2. Doors and frames must be designed to meet or exceed ADA requirements.
3. When door pairs are used, specify keyed removable mullions with rim cylinder devices.
   a. F&S may consider manual flush bolts for low frequency use doors (special consideration at exterior doors)
4. Specify ½” beveled threshold at all exterior doors to allow for entrance mat clearance. Interior vestibule doors must also provide ½” clearance for walk-off mats.

B. EXTERIOR DOORS AND FRAMES
1. Specify high frequency use components
2. Design to place hinge on windward side
3. Specify full insulation, full weather-strip and where no overhang exists, a drip edge.
4. Specify overhead doors, penthouse doors and roof hatches with full insulation, weather-strip and astragal where needed (heavy duty door limiters)
5. Specify heavy duty brush seals at jams and headers for exterior roll up door.
   a. Specify field fabricated flashing as necessary to seal corners of door frames.

C. DOOR FRAMES
1. Hollow metal or aluminum frames are preferred.
2. Specify factory installed reinforcing and preparation when possible
   a. Specify reinforcing for door closer on all frames.
   b. Specify preparation for 4 ½” hinges on all frames.
3. Fully welded frames are preferred, knockdown frames may only be used in remodeling and with Facilities and Services approval.
4. Specify frames factory primed for corrosion resistance
5. Interior remodeling projects should use frames that match existing building characteristics with approval from Facilities and Services.

D. HOLLOW METAL DOORS
1. Specify steel doors factory primed for corrosion resistance
2. Specify doors to be factory prepared for hardware
3. Exterior metal doors shall be fully insulated.

E. WOOD DOORS
1. Interior doors
   a. Specify lifetime warranty
   b. Specify only solid core doors
   c. Specify
      1) AWI premium grade or WDMA grade AA veneer doors only.
      2) Matching vertical edges
   d. If doors are specified “field finished” specify that top and bottom edges must be stained and completely sealed following door manufacturers recommendation
      1) Stain and sealer must not obscure manufacturers labeling
   e. Specify hinged closet doors where possible, exceptions may be allowed by Facilities and Services.
   f. Specify 42” doors for research lab space.
2. Exterior doors
   a. Avoid using wood doors at exterior, moist or humid locations
      1) Exterior wood doors will only be considered when attempting to match historical appearance and must be approved by Facilities and Services.
3. Minimum stile thickness shall be 6”min.
4. Use kick-down stops on RR doors to allow doors to remain open during cleaning – non rated openings?

08 3000 SPECIALTY DOORS AND FRAMES

A. INCLUDE
1. Counter doors
2. Coiling doors
3. Sectional overhead doors
4. Gates
5. Access doors
6. Shop/storage doors such as hydro-swing or sliding
7. Elevator doors (requiring keys)
8. Pocket doors
   A. Pocket doors may only be used with Facilities and Services approval.

B. KEYING
1. All specialty doors shall meet keying specification in Division 08 7000
   A. All locking devices shall accept 7 pin small format interchangeable core.

08 4000 ENTRANCES, STOREFRONTS, AND CURTAIN WALLS

A. GENERAL
1. During design development address the options and costs associated with the use of curtain walls versus storefronts.
2. Take into consideration operating humidity levels when specifying aluminum walls or windows.
3. Specify hardware for aluminum systems in accordance with Division 08 7000.

08 5000 WINDOWS

A. GENERAL
1. Specify manufacturer supplied sill flashing where possible
2. Specify window supplier to provide all required hardware
3. Specify windows to have factory installed weather strip
4. Operability of windows shall be discussed early in design development.
5. If operable windows are used, specify insect screens made of aluminum or non-corroding copper
6. Specify thermal break design on all exterior windows. Take into consideration operating humidity levels when specifying windows.
7. Specify hollow metal frames be factory primed for corrosion resistance
8. Select frames designed to withstand abuse and require minimal maintenance
9. See Division 06 - WOOD, PLASTICS, AND COMPOSITES for information on window sills.
10. Use of wood framed windows will only be considered when matching historic appearance and must be approved by facilities and services.
11. No vinyl windows

08 7000 DOOR HARDWARE

A. GENERAL
1. Contractor is responsible for security until substantial completion.
2. In the case of a remodel or addition, an effort must be made to match existing hardware style and finish.
3. Specify a grade of hardware consistent with above requirements for all doors to minimize adjustment, maintenance and repair
4. Include hardware in the base bid, not an allowance
5. Specify that the hardware supplier provide templates to door and frame suppliers (if different suppliers)
6. Review hardware finishes with Project Manager.
7. Finish US 26D is the campus standard. Exceptions may be approved by Facilities and Services
8. Specify integral weather stripping which shall be secured to prevent slipping
9. Specify commercial grade weather stripping, not vinyl, residential grade.
10. All hardware must be ADA compliant
11. Specify access control locksets to have 7 pin small format interchangeable core key override
12. Stand-alone electro-mechanical push button locksets are not allowed.

B. APPROVED HARDWARE MANUFACTURERS/MODELS
1. Hinges: McKinney, Stanley, Penrod
2. Locksets: Sargent 8225 LWIJ or approved equal
3. Exit Devices: Von Duprin 99 series or, Sargent 8000 series
4. Mullions: Von Duprin or approved equal
5. Closers: LCN 4041 or approved equal
6. Stops: Ives or Quality or approved equal
7. Door operators: Ditec 8100 series on exterior doors, or doors wider than 36”. Use 6100 series for interior doors or doors smaller than 36” or approved equal

C. HINGES
1. Specify heavy weight 4.5” X 4.5” ball bearing hinges on all doors, closet or low frequency use doors may be exceptions. Exterior doors shall have 2 pairs per leaf.
2. Specify hinge to require no maintenance or lubrication
3. Specify hinge guaranteed for life of building

D. EXIT DEVICES AND CYLINDERS
1. Do not specify hardware with moving parts on the exterior trim
2. Specify surface mounted, single point latching rim cylinder panic devices of the flat bar design
3. Specify keyed cylinder dogging on exit devices
4. Specify night latch function on exterior doors.

E. LATCH SETS, LOCKSETS, AND CYLINDERS
1. Specify mortise locksets
2. Specify all metal construction in mortise locksets
3. All locking hardware must have 7 pin small format interchangeable core.

F. ELECTRONIC ACCESS
1. See Division 28 for information pertaining to use and installation.
2. Preferred method of electronic security is electric strike
3. A significant amount of system integration is required in the setup and programming of the ADA opener and Card Access system.
4. Coordination between the contractor(s), SDSU lock shop, SDSU electrical shop and SDSU Card Services is essential. An initial coordination meeting is required with the design team at the CD phase of design.
5. A typical schematic detail has been developed for inclusion or adaption in the CD’s.

G. KEYING AND CYLINDERS
1. Specify that SDSU will create the keying schedule and furnish cut keys and final cores for the project
2. During construction documents phase be prepared to participate in discussing hardware keying and program requirements with owners representative
3. Specify the owner shall provide and install final cores

H. MISCELLANEOUS HARDWARE
1. Door operators: Ensure operator and access systems do not interfere with each other’s intended operation.
2. Closers
   a. Specify field adjustable varying spring power non handed closers with separate checking valves for:
      1) Back check
      2) Speed
      3) Latching adjustment
   b. Specify minimum 10 year warranty
   c. Specify heavy duty arms at exterior and high frequency / high abuse doors
3. Where fire rated doors are held open by electromagnet and release when in alarm, specify blocking/backing for wall-mounted electromagnetic holders.
4. Stops
   a. Specify wall bumper stops when possible.
      1) Resilient round dome style is preferred.
   b. Specify wall blocking for wall mounted stops
5. Specify stainless steel kick plate on push side of exterior or high traffic doors centered horizontally in the door and within ½" of bottom of door or directly above the sweep.
6. Smoke seals / weather strip / sweeps
   a. Provide full weather strip and sweep at all exterior locations
   b. Specify weather-strip at interior cold room/hot room where conditions exist
7. Specify power door operators should be hard wired

08 8000 GLAZING
A. GLASS
   1. During design development discuss glass requirements where security and sound isolation is required.
   2. Where renovating or adding on to a building provide matching glazing
   3. Specify all exterior glass shall be double pane, insulated, low-e glass.
   4. Specify compliance with the State Glazing Law.

08 9000 LOUVERS AND VENTS
A. GENERAL
   1. Specify non-corroding copper, galvanized steel or aluminum screens with openings no smaller than ½” to prevent bird nesting.
      A. Refer to Division 23 for information related to intake louvers
      B. Consideration must be given to ongoing maintenance and cleaning accessibility.

END OF DIVISION 8 OPENINGS