DIVISION 08 – DOORS AND WINDOWS

08 1000 –DOORS AND FRAMES

A. Select materials, products and design assemblies to withstand abuse, high frequency use, and minimal maintenance.

B. Number all new doors and existing doors when modified in the project scope.
   1. Coordinate with Facilities Management to verify room numbering as early in the design as possible.
   2. If remodeling an existing building, consult with Facilities Management to obtain existing room and door numbers.

C. Provide vision panels or sidelights in doors of high security and high traffic areas: review preferences with the Building Committee. Vision panels shall be no more than 43 inches above the floor to be usable by persons with disabilities in wheelchairs and those of short stature: this height will also allow panic devices to be mounted at approximately 40 inches above the floor. Vision panel size and installation shall conform to current Code at the time of design.

D. To ensure durability, avoid full height vision panels on high frequency use doors unless constructed of aluminum or steel.

E. Provide wide openings for dock areas and for laboratories to accommodate moving of oversize equipment. Wide openings may be accomplished by:
   1. A single door to maximum 4’-0” wide. Use of a single door is preferred over use of a pair of doors, which must be approved by UND Facilities Management.
   2. A pair of doors with minimum 3’-0” wide active leaf and minimum 1’-0” wide inactive leaf. Discuss required hardware with Facilities Management and Code Officials. Specify fire rated doors without astragals to avoid using coordinators: consult with Facilities Management on other hardware options.
   3. Use of overhead sectional, rolling door shall be reviewed with Facilities Management.

F. Provide labeled doors and frames where required by current Code.
   1. The use of pocket doors shall be limited and approved by Facilities Management.
   2. Doors and frames to special storage or hazardous areas shall be steel.
   3. Provide doors usable by persons with disabilities. Comply with current IBC and Americans with Disabilities Act Accessibility Guidelines to provide proper hardware, adequate approach, and maneuvering space for those in wheelchairs.
   4. Consult with Facilities Management before selecting fire shutters, folding doors, coiling doors, storm and/or screen doors, access doors, roof hatches, cold storage doors, sound isolations doors, power opened doors or other special use doors.
   5. Specify submissions of shop drawings for doors and frames with the associated hardware schedule.
   6. The use of fire-rated ceramic glazing with the associated frames shall be limited: review with Facilities Management. The installation is very costly and difficult to maintain.
G. Specify that doors and/or frames that are not manufactured to specified size and planar tolerances shall be removed from the site and replaced without charge to Facilities Management or the project fund on the owner’s behalf.

H. Specify that frames that are not installed plumb, level and to specified planar tolerances shall be removed from the site and replaced without charge to Facilities Management or the project fund on the owner’s behalf.

I. Hinge doors on windward jamb whenever possible to minimize damage by wind when compatible with other design concerns.

J. Exterior doors shall have full insulation, closers and weather-stripping; where no overhang exists, provide drips at head.
   1. Provide exterior overhead doors with motorized operators, full insulation and weatherstrip.
   2. Provide penthouse doors and roof hatches with insulation and weather-striping.
   3. At primary entries to Academic and large Residential Life buildings, use electrically operated sliding or swinging automatic entrance doors: “Horton” and “KM” are preferred. Sliding doors shall be considered where the wind exposure is severe. Entries shall have electronic latches, monitoring and security card access. The Architect shall coordinate and clearly indicate all electrical and other interfaces required for the door operation. Review applications and locations with Facilities Management.
   4. Provide door and frame reinforcing at all hardware installation locations.
   5. Wood doors and frames are recommended for remodeling projects to match existing construction or design. In historic projects, special care and detailing shall be maintained. Review with Facilities Management.
   6. On pairs of doors, avoid vision panels and hardware visible on face of inactive leaves.
   7. In renovation projects, electrical operators shall be considered when the required accessibility clearances cause extensive remodel work.
   8. On Special Use Doors, acoustic rated, elevator smoke enclosure, etc., specify door/frame systems when possible.
   9. The use of folding partitions shall be limited. Although requested for flexibility, sound isolation is inadequate.

08 1113 – HOLLOW METAL DOORS AND FRAMES

A. The same manufacturer shall be used for all hollow metal doors and frames throughout the project.
   1. Preferred sizes for exterior doors are: 3’-0” x 6’-8” for residential and 3’-0” x 7’-0” for academic. Use 1-3/4” thick unless approved otherwise by Facilities Management.
   2. All joints shall be welded and ground smooth. Minimize use of knock down frames. Knock down frames shall only be used when approved by Facilities Management.
   3. Where grouted into masonry construction, coat interior of frames with bituminous coating approved by manufacturer.
   4. Factory installed reinforcing and preparation for mortised hardware, when approved by UND Facilities Management.
   5. All removable mullions shall be key operated.
   6. Factory corrosion resistant standard primer and galvanized in moist area.
7. Field painted with alkyd enamel.
8. Coordinate with Facilities Management for requirements on vision panels and / or sidelights. Sidelights shall have a rail at latch height of the door.
9. For glazed doors use 6” minimum stile, head and center rail depth; 10” minimum bottom rail depth; 7” minimum head rail required when using parallel mount closers.

08 1116 – ALUMINUM DOORS AND FRAMES

A. The same manufacturer shall be used for all aluminum doors and frames throughout the project.

1. Frame Assembly:
   a. Frames shall be 1⅜” x 6” with a minimum wall thickness of 0.125” extruded aluminum. The corner brackets shall be extruded aluminum with fully welded corners and fastened with stainless steel screws.
   b. Hinge side of the frame shall be reinforced with a full length 1½” x 1½” x 3/16” steel angle; butts are to be tapped directly into steel angle.
   c. Frame finishes shall be clear anodized, dark bronze anodized, black anodized or be coordinated with Facilities Management.
   d. Brush style weather stripping shall be installed where door meets frame.
   e. Exterior sidelights and transoms shall be glazed with 1” tempered insulated low-E glazing to reduce energy loss.
   f. Interior sidelights & transoms are to be glazed with ¼” laminated glazing.

2. Aluminum Doors:
   a. Aluminum Door material shall be extruded aluminum with a minimum wall thickness of 0.125”. The corner brackets shall be extruded aluminum with fully welded corners and fastened with stainless steel screws.
   b. Hinge style of door shall be reinforced with a full length 3/16” x 1½” flat steel bar. The butts are to be tapped directly into the steel bar.
   c. Doors are to have a minimum 8” top rail, 6” mid rail, 10” bottom rail and a 4½” stile. Provide a minimum of 8” stile on doors with panic devices.
   d. Door finishes shall be clear anodized, dark bronze anodized, black anodized or be coordinated with Facilities Management.
   e. Exterior door light kit glazing shall be 1” tempered low-E insulated to reduce energy loss.
   f. Brush style weather stripping shall be installed at the base of all exterior doors.

08 1119 – STAINLESS STEEL DOORS AND FRAMES (MASTERSPEC)

A. Steel frames.

1. 14 gauge G60 galvanized hot dipped factory primed. Require letter from manufacturer that frames are galvanized as specified.
2. Use extra reinforcement or use structural steel sections at dock areas.
3. Field paint with high alkyd enamel.

B. Steel Doors.

1. Exterior Door
   a. 6 gauge G60 galvanized hot dipped or factory primed. Require letter from manufacturer where galvanized frames are used. Bottom provided with weep holes or equivalent.
   b. Joints welded, filled and ground smooth.
   c. Factory installed reinforcing and preparation builder’s hardware.

2. Exterior Door Reinforcing
   a. Minimum 10 gauge steel or equivalent thread depth for hinges.
   b. Minimum 12 gauge steel for lock front, closers, and overhead hold open/stop arms.
   c. Minimum 14 gauge steel for other hardware.
   d. Special reinforcing shall be used on panic hardware.

3. Interior Steel Doors
   a. 18 gauge.
   b. 16 gauge and reinforced as required for doors and 3'-0” x 7'-0” with high frequency use or subject to occasional impact.
   c. G60 hot dipped galvanized in very moist or corrosive environments with high performance paint a system. Require letter from manufacturer that frames are galvanized as specified before delivery. Specify high performance field applied coating.

4. Interior Door Reinforcing
   a. Minimum 7 gauge steel or equivalent thread depth for hinges.
   b. Minimum 12 gauge steel for closets and overhead hold open/stop arms.
   c. Minimum 14 gauge steel strikes and other hardware.

08 1117 – ALUMINUM TERRACE DOORS

08 1213 – HOLLOW METAL FRAMES – See section 081113 Hollow Metal Doors and Frames for frame information.

08 1400 – WOOD DOORS (MASTERSPEC)

A. Recommended for interior doors where 20-minute fire rating is required.

B. Use 7'-0” maximum height x 4'-0” maximum width, 6'-8” height for residential and 7'-0” height for academic are preferred.
C. Use 1-3/4” minimum thickness for all academic, administrative, and residential installations. There may be limited residential situations where 1-3/8” thick doors are acceptable; review with Facilities Management.

D. Hollow core doors shall be limited to residential applications only

E. Use hollow core doors only when approved by Facilities Management.

F. NOTE: Gypsum core doors are NOT ACCEPTABLE.

08 1416 – FLUSH WOOD DOORS

A. Flush door with standard lockset and vision panel require minimum 11” from edge of door to glass to main warranty.

B. Normally, used in interior and residential buildings. Consult with Facilities Management.

C. Specify cut to exact size, prepared for hardware and all surfaces sealed.

D. Specify lifetime warranty.

E. Five ply hardwood veneer faced with hardwood edges and transparent finished is preferred. Review wood species selection with Facilities Management.

F. Plastic laminate faced are not acceptable, unless approved by UND Facilities Management.

G. Gypsum core doors are NOT ACCEPTABLE, unless approved by UND Facilities Management.

H. Closet doors in residential applications
   1. Prefer swinging doors. Prefer quality, top hung bi-fold doors over bi-pass doors.
   2. Specify heavy-duty hardware.

08 1433 – STYLE AND RAIL WOOD DOORS

A. 7” minimum stile, head and center rail depth, 11” minimum bottom rail depth for panel doors.

B. Five ply particle board core construction equal to: (a) Algoma Super Novodor, or (b) Eggers Master Flush Particle with 6” stiles and rails, or Weyerhaeuser DFP with 6” stiles and rails. There may be historic and residential project where other door styles are more appropriate; review with Facilities Management.

C. Five ply wood stave core construction also acceptable.

D. Use when a wood finish is desired. Factory or field applied finish is acceptable.

E. Normally hardwood with transparent finish.

F. Normally for non-fire rated openings, but are available shop prefabricated for 20-minute label; Review with Facilities Management.
08 1613 – FIBERGLASS DOORS
A. Not to be used without prior approval from UND Facilities Management.

08 1700 – INTEGRATED DOOR OPENING ASSEMBLIES

08 3100 – ACCESS DOORS AND PANELS
A. Not to be used without prior approval from UND Facilities Management.

08 3200 – SLIDING GLASS DOORS
A. Not to be used without prior approval from UND Facilities Management.

08 3223 – SLIDING/FOLDING GLAZED DOORS/WALLS

08 3313 – COILING COUNTER DOORS

08 3323 – OVERHEAD COILING DOORS
A. Steel, aluminum or wood construction may be used if installed in non-fire rated wall. Avoid use in fire rated construction. Consult with Facilities Management for alternative solutions.

B. Where used in fire rated construction, doors must be steel and have the following features:

1. Smoke and draft gaskets.
2. Labeled door and frame.
3. Release mechanism controlled by smoke detection system that releases door when in alarm; use delayed release when acceptable to the Code and Manufacturer.
4. Easily tested and reset by maintenance personnel.
5. Counterbalanced manual operation preferred for small sizes and with easy access to the door.
6. Power or crank operation preferred for larger sizes or with difficult access to the door.

C. Acoustic rated doors shall be specified as opening assemblies and are required to be field tested.

D. Automatic Entrances

1. Use at primary entries to the larger Academic and Residential Life buildings.
2. May be appropriate for handicapped accessibility in remodel projects with clearances difficulties due to existing construction.

08 3326 – OVERHEAD COILING GRILLES
08 3458 – RECORDS VAULT DOORS

08 3513.13 – ACCORDIAN FOLDING DOORS

08 3513.23 – FOLDING FIRE DOORS

08 3613 – SECTIONAL DOORS

08 3815 – DOUBLE-ACTING TRAFFIC DOORS

08 4013 – FIRE-RATED GLAZED WALLS

08 4113 – ALUMINUM - FRAMED ENTRANCES AND STOREFRONTS (Masterspec)

A. Not to be used without prior approval from UND Facilities Management.
B. Recommended for main building entries and limited use elsewhere.
C. Aluminum Entry Doors
   1. 4-1/2” minimum stile, head and center rail depth; 6-1/2” minimum bottom rail depth.
   2. 3’-0” x 7’-0” maximum size.
   3. 1-3/4” thickness.
   4. Anodized or high performance paint coating.
   5. Use a thermal-break system with insulated glazing on exterior installations.
   6. The use of a storefront system shall be based on the require performance characteristics of the specific application. The documents shall clearly distinguish storefront from curtain wall.
   7. The Architect shall design storefront within reasonable limits of the manufacture’s recommendations for live loads and performance. Use reasonable glass sizes.
D. Aluminum Frames
   1. Generally, use 2” minimum face x 4” minimum depth.
   2. Provide internal steel reinforcement around door openings and for hardware installation.
   3. Use anodized or high performance painted coating.
   4. Thermal break on exterior installations.

08 4126 – ALL-GLASS ENTRANCES AND STOREFRONTS
08 4227– FRAMELESS SLIDING GLASS DOORS

08 4229– AUTOMATIC ENTRANCES

08 4233– REVOLVING DOOR ENTRANCES

08 4236– BALANCED DOOR ENTRANCES

08 4243– INTENSIVE CARE UNIT/Critical Care Unit ENTRANCES

08 4313– ALUMINUM-FRAMED STOREFRONTS

08 4327– CHANNEL GLASS STOREFRONTS

08 4413– GLAZED ALUMINUM CURTAIN WALL

A. Curtain wall systems shall be used when the Project design requires a structural grade glazed wall system and shall be specifically identified on the Drawings and in the Specifications.

B. Specify structural calculation to be provided with the Shop Drawings.

C. Provide glazing appropriate for the sun and wind exposure. Fritted glazing may be used to control difficult sun exposures.

D. Provide reasonable and adequate structural members to provide attachment points for the framing system.

E. Butt-glazing systems are discouraged, review alternatives with Facilities Management prior to selection.

F. The Architect shall design curtain wall systems within reasonable limits of the manufacture’s recommendations for live loads and performance. Use reasonable glass sizes.

08 4418– GLAZED STEEL CURTAIN WALLS

08 4313– STRUCTURAL GLASS CURTAIN WALLS

08 4500 – TRANSLUCENT WALL AND ROOF ASSEMBLIES

08 5000 – WINDOWS (Masterspec)
A. Require shop drawings to be submitted with full size sections and glazing details.

B. Specify window supplier to provide all required hardware.

C. Specify windows to have factory-installed weatherstrip. Factory installed glazing is preferred.

D. Operable units in most locations are preferred. Consult with Facilities Management for each project specific requirement.

E. Where possible, provide pivoted sash to enable cleaning of both sides of glass from inside of building. Provide hardware operable only by maintenance personnel.

F. Provide windows with commercial grade or monumental sections except in residential or utility buildings; review selection with Facilities Management.

G. Design to permit easy access for maintenance and repair.

H. The Architect shall specify the performance criteria and the manufacturer shall provide all engineering and installation information.

I. The Architect shall design operable sash sizes to be within reasonable limits of the manufacturer’s recommendation for live loads and performance. Do maximize the sash size and select a window series compatible with the design, unless approved by UND Facilities Management.

085113 – ALUMINUM WINDOWS

A. Aluminum windows finish shall be anodized or high performance coating.

B. Generally, use thermal break aluminum window for exterior applications.

C. Insect screens with aluminum fabric shall be provided on all operable windows.

085123 – STEEL WINDOWS

085200 – WOOD WINDOWS

A. Wood window construction

1. Aluminum is preferred over steel or primed wood. Primed wood shall only be used when approved by Facilities Management.

2. Aluminum clad with a high performance coating wood windows are preferred over vinyl clad wood windows.

085200 – WOOD WINDOWS

085313 – VINYL WINDOWS
08 5413 – FIBERGLASS WINDOWS

08 5654 – SECURITY AND DETENTION WINDOWS

08 5659 – SERVICE AND TELLER WINDOWS UNITS

08 6150 – CLERESTORY WINDOWS

A. Clerestory windows are preferred over skylights.
B. Avoid curved glazing.
C. Avoid plastic glazing.
D. Design to permit easy access for maintenance, repair and cleaning.

08 6200 – UNIT SKYLIGHTS

A. Skylights shall be limited and shall be approved by Facilities Management.

08 6223 – TUBULAR SKYLIGHTS

08 6300 – METAL-FRAMED SKYLIGHTS

08 7100 – DOOR HARDWARE

A. General

- Determine requirements of door of hardware and keying with users and Facilities Management during the Design Development phase.
- Specify submission of complete hardware schedule to be reviewed by Facilities Management and the building users at Design Development phase, Construction Documents and Shop Drawings.
- Hardware must be included in the base bid, not as an allowance.
- Specify that hardware supplier provides templates to door and frame suppliers.
- Specify the Contractor shall provide skilled and experienced installers. Installation shall be in accordance with the manufacturer’s recommendations.
- Specify that Facilities Services shall inspect the entire hardware installation on the project and the Contractor shall repair all defects before final acceptance will be issued.

1. Hinges – General
a. Specify heavy weight concealed bearing for high frequency use and standard weight concealed bearing for medium and low frequency use.
b. Specify flat style pins that are non-removable for exterior and interior doors that swing out; otherwise specify non-rising pins.
c. Specify hinge to require no maintenance or lubrication.
d. Specify hinge guaranteed for life of building if installed per manufacturer’s recommendations.
e. Specify Stanley CB 168 series, five knuckle hinges; US26D or other as approved by Facilities Management.

2. Panic Devices – General

b. Specify BEST 7 pin lock cylinders as required for locking panic devices and associated keyed switches.
c. Do not use thumb piece operation.
d. Avoid coordinators and automatic flush bolts wherever possible. Consult with Facilities Management if use is required.
e. Rim devices and mullions are preferred over vertical rod devices.
f. Removable mullions shall be BEST keyed removable.
g. Surface rod devices are preferred over concealed rod devices.
h. Avoid use of vertical rod devices wherever possible. Vertical rod usage must be approved by Facilities Management if required by design.
i. Specify that vertical rod hardware be checked and adjusted by a qualified manufacturing field representative:

1) During hardware installation.
2) Before final acceptance and turnover of the space.
3) Six months after building occupancy.

3. Locksets – General

a. New construction:

1) Mortise lockset:

   1. BEST series 45H or Schlage L Series
   2. Lever & Trim: BEST 14H or 17N

2) Cylinder lockset:

   1. BEST series 9k or
   2. Lever & Trim: BEST 14D

3) At aluminum entry doors, locksets latching to the floor are not acceptable.
4) On aluminum entry doors, the manufacture’s “standard” hardware shall not be used. Specify Stanley/BEST.
5) Cylinders: BEST 7 pin
b. Remodel of existing academic administration and large residential buildings.
   1) Match existing series and finish where possible.
   2) Use lever handles.

c. Lock Functions:
   1) Use 04 function for custodial closets and mechanical/electrical/data/telephone spaces.
   2) Use 05 functions for all offices, research laboratories, classrooms and classroom laboratories.
   3) Use 04 function or 54 function for dormitory rooms. Verify function with Facilities Management.
   4) Other functions may be used for special conditions.
   5) Design consultant to verify desired hardware functions and keying requirements with users. Provide the preliminary and final hardware schedule to Facilities Management for review and approval.

d. Provide lever handles (ADA compliant) to all spaces.

e. Knurl lever handles on doors to areas potentially hazardous to a person with impaired vision.

f. Specify BEST 7 pin lock cylinders and curved lip strikes for all Stanley/BEST locksets.

g. Remodel of existing small residential buildings.
   1) Cylinder lockset; BEST series 9k or lever & Trim: BEST 14D

4. Closers – General

a. Specify LCN 4040 XP / 4040 - 4041 series closures.

b. Closures shall be surface mounted, regular arm mount preferred. Closures shall not be mounted in hallways or highly visible areas. Provide an extra heavy duty arm when closer is installed with a parallel arm mounting.

c. Closers used as doorstops are not acceptable.

d. Specify closers to meet opening resistance requirements by Americans with Disabilities Act Accessibility Guidelines and Iowa Handicapped Code, yet close door properly. Where manual closers prevent compliance, install slow opening power door operators.

e. Where fire doors are likely to be propped open by occupants for their convenience, consider use of magnetic hold-open devices, integral closer-holders and closers with swing-free arms, each of which permit closing of fire doors when the fire detection system is in alarm.

f. Wall mounted magnetic hold open devices preferred over integral closer holders where possible.

g. LCN Sentronic single-point and multi-point integral closer holders shall be considered within budgetary concerns.

h. Attach closers to wooden or mineral core doors using through bolts.

i. Specify minimum 10-year warranty.

5. Power Door Openers – General
a. Consult Facilities Management where power door operators must interface with security requirements to allow access of persons with disabilities when building is locked.

b. Where maximum durability is required for high frequency operation. Horton, Inc. new installations, horizontal sliding doors are preferred.

c. Power openers shall include power close feather where possible air and wind pressure will interfere.


a. Use on push side of doors, especially wood doors.

b. Provide non-rusting stainless steel or other if verified with Facilities Management to match other hardware finishes.

c. Specify metal kick-plates 16” high x width of door less 2 inches, mounted flush with bottom of door.

d. Bottom edge even with bottom of door.

e. Centered within width of door on push side.

7. Flush Bolts – General

a. Acceptable vendors: Ives, Door Controls, Glynn-Johnson.

b. Avoid automatic flush bolts.

c. Where self-latching flush bolts must be used:

   1) Verify with Facilities Management prior to specification.
   2) Specify Ives 356 for labeled wood doors.
   3) Specify Ives 357 for labeled metal doors.

d. Where manual flush bolts must be used, specify:

   1) Specify Ives 358 or approved equal for labeled wood doors.
   2) Specify Ives 458 or approved equal for labeled metal doors, and
   3) Specify Ives 262 or approved equal for non-labeled doors.

8. Door Stops – General


b. Wall bumpers are preferred over any other type of stops.

c. Provide solid anchorage and backup framing in hollow wall cavities for wall bumpers.

d. Do not use floor stops except as specifically required my manufacturer of magnetic hold opens, closer holders and overhead stops.

e. Consult with Facilities Management for alternative solutions.

9. Overhead Stops & Holder/Stops – General

a. Acceptable vendors: Glynn-Johnson (90 series), Rixson (9 series) and Sargent (590 series).

b. Avoid concealed types.

c. Specify type which slides in captive track.
d. Prefer Glynn-Johnson 90FS series or approved equal.

1) Suffix S-stop only.
2) Suffix F-friction Hold Open—Series 90S or 90F.

10. Coordinators – General

a. Avoid use of coordinators when possible. Consult with Facilities Management to discuss alternative solutions.
b. Where coordinators must be used, specify Ives 469 series or approved equal for doors requiring frequent operation of coordinator, or Ives 900 series or approved equal for doors rarely operated or magnetically held open.

11. Keying – General

a. Specify BEST 7 pin restricted.
b. Specify BEST to furnish cores and key blanks to Facilities Management.
c. Facilities Management will provide keying instructions directly to BEST.
d. Contractor is to turn over all cores a minimum of 90 working days prior to move-in unless otherwise approved. Verify with Facilities Management.
e. Specify as noted:
   1) Cylinders to be installed by Contractor.
   2) Cylinders (quantity) and key blanks (quantity) to be turned over to Facilities Management.

f. Keyway of new cores is completed by Facilities Management.
g. Elevator key Switches:
   1) Elevator manufacture to furnish pre-installed switches in elevator prior to delivery.
   2) Contractor to forward keys to Facilities Management lock shop.

12. Hardware Locations – General

a. General: Location of all hardware shall be indicated on the Construction Documents and shall conform to current Code requirements.
b. Remodeling Existing Buildings:
   1) Match existing locations except when current codes dictate otherwise.
   2) State specific locations of existing hardware, such as “… centerline 36 inches above finished floor”, instead of using a general phrase such as “match existing”.
c. New Buildings
   1) Hinges:
      1. Top hinge: Manufacturer’s standard range of 7” to 10” from frame head rabbet to centerline of hinge. Prefer 7-1/4”. Not more than bottom hinge location dimension.
2. Bottom hinge: Manufacturer's standard range of 9” to 13” from finished floor to centerline of hinge. Prefer 12-1/4”. Not less than top hinge location dimension.

3. Center hinge(s): Equal spaced between top and bottom hinges.

2) Latch/Locksets and Panic Bars:

1. Centerline of bolt for latch sets and lock sets: 40-5/16” above finish floor or as specified by manufacturer.
2. Centerline of panic device touch bars: 39-13/16” above finish floor or as specified by manufacturer (Von Duprin 98/99 series).

3) Deadbolts:

2. Not to be used on any exit doors.
3. Double locking deadbolts shall not be used in any case.
4. Deadbolt BEST HD 8T37K-STK-626

4) Pulls and Push Plates:

1. Centerline of pulls: 42” above finish floor.
2. Centerline of push plates: 48” above finish floor.

B. Exterior:

1. Hinges – Exterior
   b. Stainless Steel preferred or plated non-ferrous.

2. Panic Devices – Exterior

3. Weather-strip – Exterior
   b. Head and Jamb
      1) Prefer small angled brush type with recessed screws. Reese 961D or approved equal.
      2) Second choice is high performance polyurethane bulb (jamb up) type with screws recessed to avoid snagging skin or clothing. Reese 769D or approved equal.
   c. Sweeps and Astragals
      1) Prefer straight brush type.
2) Specify Reese 964D or approved equal at astragal locations and Reese 967D or approved equal at sweep locations.

4. Thresholds – Exterior
   a. Specify maximum 1/2 inch high with low slope ramps each side. Reese S206A or approved equal. Dimensions—6” wide by ½” high (Continuous)
   b. Lower thresholds preferred at weather protected entrances. Reese S406A or approved equal. Dimensions—6” wide by ¼” high (Continuous)
   c. Finish—Clear aluminum or stainless steel.

5. Drips – Exterior—sweep w integral astragal
   a. Acceptable vendors: Reese series 354 or approved equal.
   b. Specify at non-weather protected entrances.
   c. Specify Reese R199D or approved equal at head frame locations.
   d. Specify Reese R201D or approved equal at door sweep locations.

C. Interior

1. Hinges – Interior
   a. Usually plated steel.
   b. Non-ferrous or stainless steel in high humidity or wet locations.

2. Panic Devices – Interior
   a. Specify fire rated devices.
   b. Specify Von Duprin 98/99 series with panic hardware.

3. Smoke Seals – Interior
   a. Prefer high performance polyurethane bulb (jamb up) type with screws recessed to avoid snagging skin or clothing. Reese 769D or approve equal.

4. Door Bottoms – Interior
   a. Avoid automatic door bottoms except for very low frequency use doors.
   b. Prefer alternative solution using low threshold and sweep where possible.

5. Closet Door Hardware – Interior
   a. Swinging Doors:
      1) Prefer Sargent 6500 series.
   b. Sliding/Bi-Fold Doors
      1) Where sliding or bi-fold doors must be used, specify heavy-duty hardware.
08 8000 – GLAZING

A. Meet or exceed applicable Code requirements. Identify the glazing types and areas where used on the Construction Documents.

B. Glazing selection is integral to the thermal performance of a building and shall be carefully selected and specified. This shall not be a budget or purely aesthetically driven selection.

C. Exterior glazing shall be in insulated glazing units with a warranty period of not less than ten years.

D. Specify Low-E glass.

E. Review, during the design process, high performance glazing, exterior shading, and daylighting devices with Facilities Management to verify these devices fall within the design and budget constraints, these design features are desirable.

F. Door Vision Panels
   1. Provide safety glass in non-fire rated doors.

08 8300 – MIRRORS

A. In restrooms, one large mirror is preferred over small individual mirrors over lavatories.

B. Specify vandal resistant concealed mounting.

C. In residence type buildings, review the specific requirements with Facilities Management.

D. For the installation, comply with all ADA Accessibility Guidelines.

08 8717 – SAFETY AND SECURITY GLAZING FILMS

A. Multi-layered laminated glass offers different levels of fire-resistance but is costly. Ceramic glazing in generally discouraged because maintenance issue as well as cost. Size openings according to the tested application with the proper edge engagement and frame system. Fire-rated glazing shall be selected appropriate to the application and budget; review with Facilities Management.

B. Prefer transoms to be safety glazed.

C. Multi-layered laminated glass shall be used in high security area. Security glazing shall be selected appropriate to the application and shall be reviewed with Facilities Management.

08 9100 - LOUVERS

A. Louvers
   1. When louvers are design elements, Architectural grade products shall be specified.
2. Provide bird screens mounted on the exterior face of louvers to avoid bird nesting.

B. Screens

1. Privacy screens shall be copper or aluminum.
2. Except in residential type buildings, insect screens are not required. See Division 8 - Doors and Windows.

08 9200 – LOUVERED EQUIPMENT ENCLOSURES

END OF DIVISION 08