DIVISION 8   DOORS AND WINDOWS

08000. DOORS - GENERAL PROVISIONS

08001. REFERENCE STANDARDS

08001.1   SUS COST CONTAINMENT GUIDELINES (CCG) Latest Edition.

08001.2   Particular attention is called to STANDARDS PUBLISHED by the following with regard to work associated with this Section.

08001.2.1. Steel Door Institute.

08001.2.2. Hollow Metal Manufacturers Association.

08001.2.3. Architectural Woodwork Institute

08001.2.4. Compliance with all codes and ordinances applicable to the particular project is mandatory. The Architect and/or Engineer shall be responsible for all such compliance matters.

08001.2.5   Install fire doors and windows according to NFPA 80.

08002. QUALITY ASSURANCE

08002.1   DOORS

08002.1.1   Doors shall generally have a minimum width of three (3) feet and a minimum height of seven (7) feet. Medical, research, storage and access needs may require doors of larger sizes. Residential usage may permit smaller door sizes. The preferred exterior door materials are usually anodized aluminum or galvanized steel. The material and finish of interior doors must also be suitable for the particular project. In addition, plastic laminate doors with appropriate metal edge protection may be used on interiors. Tops and bottoms of wood doors must be sanded and sealed.

08002.1.2   All doors shall be of a type to withstand the abuse to which they will be subjected. Therefore, the Architect, in coordination with the Project Manager and the User, shall determine the usage characteristics for doors throughout the project.

08002.1.3   In general, non-insulated exterior doors shall not be specified.

08002.2   FRAMES

08002.2.1   For exterior frames, standard rectilinear profiles of anodized aluminum or galvanized steel are preferred. All exterior frames must be weather-stripped. Interiors shall usually have paintable hollow-metal frames, though wood frames may be approved by the University upon request and justification. Knocked down frames are acceptable only when welded frames are not practicable. All frames shall be adequately constructed to receive the hardware being used and to withstand abuse.

08003. SUBMITTALS - See Division 1.
08004.  PROHIBITED MATERIALS AND INSTALLATIONS

08004.1  Sliding or bi-fold doors, pocket doors, and hollow-core wood doors shall not be used on any University project. Such doors may be applicable for residential use, but only with the specific approval of the University.

08004.2  MINERAL CORE LABELED DOORS ARE PROHIBITED because the narrow rails and stiles, required to obtain UL approval, have shown to reduce the service life and security of these doors in rigorous service.

08004.3  USE OF INK MARKING PENS ON SURFACES of any kind of materials is prohibited. Experience has shown that such marks bleed through paint and other finishes.

08004.4  RECONDITIONED OR USED DOORS ARE PROHIBITED.

08004.5  NARROW STILE AND NARROW TOP AND BOTTOM RAIL ALUMINUM DOORS ARE PROHIBITED.

08100.  METAL DOORS AND FRAMES

08110.  STEEL DOOR AND FRAMES

08111.  STEEL DOORS

08111.1  EXTERIOR DOORS shall be not less than sixteen (16) gauge galvanized metal. The top channel of each metal door shall be turned web up, to avoid a dirt pocket or moisture trap. Louvered doors and full glazed doors shall have twelve (12) inch bottom rails.

08111.2  INTERIOR DOORS shall be not less than eighteen (18) gauge metal. Louvered doors and full glazed doors shall have twelve (12) inch bottom rails.

08112.  STEEL FRAMES

08112.1  STEEL FRAMES shall be one-piece, welded frames of not less than sixteen (16) gauge metal for interior doors, fourteen (14) gauge for frames over three (3) feet, six (6) inches. Frames in interior walls through eight (8) inch thickness shall be full width of wall. Knock-down frames are generally prohibited; however, such frames may be used in movable partitions. In remodeling work, permission will be granted by the Project Manager to use knock-down frames if conditions justify their use.

08112.2  Frames for exterior doors shall be one-piece, welded frames of fourteen (14) gauge or heavier metal. All frames shall be heavily reinforced at hinge, strike and closer locations. Exterior frames shall be galvanized to prevent rust and corrosion.

08200.  WOOD AND PLASTIC LAMINATE FACED DOORS

08210.  WOOD DOORS

08210.1  WOOD VENEERS: Judicious selection of face veneers shall be exercised. The A/E shall be required to make a grain selection, subject to the approval of the University Architect.

08210.2  INTERIOR WOOD DOORS shall be flush type solid core, hardwood.

08210.3  GUARANTEE: Wood doors shall have lifetime guarantee. Guarantee to include rehanging of doors at no cost to the University.

08210.4  PLASTIC LAMINATE shall conform to NEMA HPDL.
08400. ENTRANCES AND STOREFRONTS

08410. ALUMINUM ENTRANCES AND STOREFRONTS

08410.1 Doors shall be aluminum and glass. All glass installed in hazardous locations shall be fully tempered safety type.

08410.2 DIMENSIONS of components shall be at least:
- Metal thickness - 1/8 inch
- Head rail size - 4 1/2 x 1 3/4 or 4 x 2 inches
- Jamb size - 4 1/2 x 1 3/4 or 4 x 2 inches
- Bottom rail size - 6 ½ x 1 ¾ or 6 x 2 inches
- Hardware reinforcement - ¼ inch thick metal material
Architectural hardware should be included in the specifications.

08411. ALUMINUM ENTRANCE AND STOREFRONT FRAMES

08411.1 DIMENSIONS of components shall be at least:
- Metal thickness - 1/8 inch
- Head size - 4 ½ x 1 ¾ or 4 x 2 inches
- Jamb size - 4 ½ x 1 ¾ or 4 x 2 inches
- Hardware reinforcement - ¼ inch thick metal material

08412. EXTERIOR DOORS SUBJECT TO HIGH WIND conditions shall be balanced type.

08413. REMOVABLE MULLIONS: Pairs of double doors shall have a removable mullion with lock strike unless approval is given by the University Architect to deviate from this requirement.

08414. GLAZING: Glass in entrances and storefronts shall be fully tempered (FT) safety type.

08500. METAL WINDOWS

08501. GENERAL PROVISIONS

08501.1 REFERENCE STANDARDS

08501.1.1 SUS COST CONTAINMENT GUIDELINES (CCG) Latest Edition.

08501.1.2 FLAT GLASS MARKETING ASSOCIATION “Glazing Manual”.

08501.1.3 SEALED INSULATING GLASS MANUFACTURERS ASSOCIATION (SIGMA) Standards/Specifications.

08501.1.4 Metal windows shall meet the requirements set forth by the SWI (Steel Windows Institute).

08501.2 QUALITY ASSURANCE

08501.2.1 PERFORMANCE REQUIREMENTS: The manufacturer shall submit copies of test reports, made or witnessed by an independent testing laboratory, which show conformance to the specified performance standards.

Careful coordination is required between the materials being specified for the various types of flashing, and in each instance, the Architect needs to follow the requirements of the Cost Containment Guidelines, and ensure that when questionable materials are specified, such as aluminum, especially when being
used in a salt environment, the Architect must ensure that it will meet the "40-year life cycle" test, and shall obtain supporting data from manufacturers.

When flashing materials are used in conjunction with roofing systems, roofing manufacturers must also verify that specified materials are compatible with their materials, and that combined systems will not void required guarantees and warranties.

A window mock-up is required for each type of window. In addition to window mock-ups, it will be required that after the first window has been installed by the regular work crew, it shall be inspected and tested to ensure full compliance with approved shop drawings, and with all related standards and specified requirements, before the remaining windows are installed. The Architect, General Contractor, Sub-Contractor, and related trades, together with the window manufacturer’s representative will be required to be present at this first installation, and be expected to give a written report of approval before proceeding further.

08501.2.1.1 Such standards shall be specified by the A/E.

08501.2.2 GUARANTEE: Provide a written guarantee, guaranteeing that all parts of the installation will meet specified performance requirements and will be free from defects in materials and workmanship for a period of two (2) years following acceptance. Weather-stripping shall be guaranteed for a period of five (5) years. Guarantee shall certify that all work is in accordance with the Contract Documents and shall contain a statement that should any defect develop during the guarantee period, caused by improper workmanship or materials, such defects will be repaired or windows will be replaced at no expense to the University.

08520. ALUMINUM WINDOWS:

08520.1 WINDOW FRAMES AND SASHES in new construction shall generally be of anodized aluminum. Only commercial grade “C” or heavy commercial grade “HC” are acceptable. Family of paints, such as the Fluoropolymers, offering a 5yrs warranty for Southern Florida exposure, should be also considered.

08520.2 ENERGY CONSERVATION must be given thorough consideration when incorporating fenestration into the building design.

08520.3 FOR MAINTENANCE PURPOSES, it is preferred that all windows be arranged, manufactured and installed so that complete maintenance can be accomplished from the room side, including glazing, washing, screening and normal repairs. Windows with fixed sashes should be designed to allow the “fixed” sash to be operable only for cleaning and maintenance, thus indicating the use of sliding, pivoted or tilting sashes at such locations.

08520.4 CERTIFICATION (signed and sealed) shall be provided by a Florida registered engineer on anchorage method of windows and openings.

08520.5 Performance requirements per Section 08501.2.1 of the Guidelines.

08521. GLAZING

08521.1 EXTERIOR GLAZING. Coordination with the HVAC design is required. Consideration should also be given to the use of tinted glass, sun-shade materials, and any other devices which will prevent excessive solar gain. Therefore, glazed areas should be kept to a minimum compatible with design objectives. Window frames shall be weather-tight.
08521.2 WHERE TEMPERED GLASS IS USED, when required by code, glazing stops covering mill marks in the glass shall be provided. Tempered glass which passes testing requirements of USAS Z97.1-1966 shall be used in all fully glazed doors as well as any entrance or exit doors having over six (6) square feet of glass.

08521.3 WIRE GLASS which is specified to have Underwriters’ Laboratories approval shall have the label left on the glass. The University will remove the labels after acceptance of the building. Direction of wire (i.e., horizontal/vertical or diagonal) shall be specified by the Architect.

08521.4 GLAZING FOR INTERIOR PARTITIONS shall have a minimum thickness of ¼ inch.

08521.5 SPECIAL GLAZING is required when transmission of radioactivity is to be prohibited.

08521.6 INSULATING AND REFLECTIVE INSULATING GLASS, GUARANTEE: Provide manufacturer’s written guarantee that, for ten (10) years from date of building completion, a replacement will be provided for any unit which develops edge separation or other defects which materially obstruct vision through the glass or safety or affects the insulating qualities; except, that guarantee shall not cover glass breakage from physical abuse, earthquake, storm, or similar causes.

08521.7 PARTIAL SHADING OF INSULATING GLASS can cause stress breakage. Manufacturer’s consider this to be a design error and will not replace glass broken by temperature differential stresses. Avoid partial shading of large panes.

08700. FINISH HARDWARE

08701. GENERAL PROVISIONS

08701.1 REFERENCE STANDARDS

08701.1.1 SUS COST CONTAINMENT GUIDELINES (CCG), latest edition.

08701.1.2 All doors, hardware, closers hardware adjustments, etc., shall provide means for easy access and use by the physically disabled, (paying special attention to ADA Standards, and to the Florida Accessibility Code).

08701.2 ITEMS INCLUDED

08701.2.1 SPECIFICATIONS FORMAT: It is preferred that this section include all items of finish hardware, including items listed in the CSI MASTERFORMAT, with the exception of window operators, which should be included with section in which windows are specified. Such a format will facilitate the writing of hardware specifications in the form usually used by Architectural Hardware Consultants. It is also preferred that storefront entrances include hardware.

08701.3 QUALITY ASSURANCE

08701.3.1 QUALITY AND DESIGN: Hardware must be adequate for the intended use and must satisfy code requirements, but shall not be excessively sophisticated nor unnecessarily expensive. Specifications for finish hardware shall be reviewed with the University Project Manager, the using agency, and the Physical Plant Locksmith prior to completion of construction documents. Make submittal at a time which will allow for adequate review and for making required changes before final printing.
STANDARDS AND OTHER MANUFACTURERS MEETING THE REQUIREMENTS: For each item, specify and schedule products of one manufacturer as the standard and, whenever possible, name two other acceptable manufacturers meeting the requirements. Lock set shall be Sargent with no substitutions.
08701.3.2.1 A complete list of items proposed as the standards, together with manufacturers’ names and with the names of manufacturers whose products meet the requirements must be included in the outline specifications for the Design Development Submittal. Approval of the items must be obtained before their inclusion in the hardware schedule in final documents.

08701.3.3 For renovation projects, all door hardware shall match existing, unless directed otherwise by the University Project Manager.

08701.3.4 The Architect must verify, for function and finish, the compatibility of proposed hardware with that already in use at the University. This is particularly critical on renovation projects. All submittals must be accompanied by manufacturers’ cut sheets and sufficient related data to ensure a thorough evaluation. Door and hardware assemblies in the University, Residence Halls, and the Health Sciences Center frequently experience extreme stress and heavy usage. Therefore, all door assemblies (doors, hardware, frames, anchors, etc.) shall be designed as appropriate to the specific use and location. It is recommended that hardware installations be designed by a properly qualified member of the American Hardware Consultants Association. All hardware on fire doors shall comply with the applicable codes.

08701.3.5 To avoid expensive stockpiling of an extensive variety of repair parts and replacement items and to help the Owner to achieve cost effective maintenance, it is required to standardize brands, types, styles, and finishes of all hardware products.

08701.4 SUBMITTALS

08701.4.1 Simultaneous hardware and wood, steel and aluminum door submissions are preferred, in order to promote closer coordination.

08701.4.2 HARDWARE SCHEDULES

08701.4.2.1 Facilities Planning and Construction will provide project construction documents to Physical Plant Locksmith to review and identify format for Key Schedule.

08701.4.2.2 Physical Plant Locksmith and Facilities Planning and Construction will coordinate meeting with departments to review process for developing Key Schedule.

08701.4.3 A complete parts list for all finish hardware shall be included in the final close-out documents prior to Substantial Completion.

08701.4.4 HARDWARE FOR ENTRANCE DOORS: Aluminum entrance manufacturer to provide door hardware except cylinders.

08701.5 PROHIBITED MATERIALS AND INSTALLATIONS

08701.5.1 THRESHOLDS RAISED ABOVE FLOOR LEVELS at doors to trash and receiving rooms and over ½-inch high at doors intended for use of disabled persons.

08701.5.2 FLOOR MOUNTED DOOR STOPS.
08701.5.3  DOOR KNOBS OR LEVERS CONTAINING LOCK CORES OR KEYING DEVICES.

08701.5.4  FLOOR CLOSERS AND CLOSERS CONCEALED IN DOOR HEADS.

08701.5.5  DOOR CLOSERS WITH INTEGRAL SMOKE DETECTORS. Smoke detection systems must be made a part of the documents for fire protection work.

08702. HINGES

08702.1  BUTTS: Five-knuckle, wrought-steel. Specify ball bearing butts for doors equipped with closers. Butts shall be heavy duty, with four (4) bb for exterior doors and interior doors over 3 feet wide; use standard weight butts with two (2) bb for interior doors up to three (3) feet wide. Specify non-bb for all doors without closers.

08702.2  STAINLESS STEEL BUTTS with non-removable pins shall be used on exterior doors.

08703. LOCKS

08703.1  LOCKS: Specify heavy duty, mortise locks only, stainless steel ¾-inch one-piece with two (2) piece metal antifriction reversible latch bolt. Locks shall be reversible and shall have capability for changing function within any one case. Lock sets shall be Sargent Series 8200 lever type, LL trim, 26D finish, on interior doors and 32D finish on exterior doors, with no substitutions.

FUNCTIONS: Unless instructed otherwise by the University Project Manager, select lock sets and latchsets having the functions shown on the following page. Specifications or door schedules shall show both the Federal Specification Numbers and the manufacturer’s numbers to aid checking of documents and reduce the opportunity for error in function.
<table>
<thead>
<tr>
<th>DOOR LOCATION OR USAGE</th>
<th>FED. SPEC. NUMBER</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. High Security</td>
<td>86A</td>
<td>Latch bolt by lever either side unless outside lever locked by stop button; when outside lever locked, latch bolt by key outside and lever inside; dead bolt by key outside and turnpiece inside; continuous turn of key retracts both latch and dead bolt.</td>
</tr>
<tr>
<td>2. Normal Office</td>
<td>86E</td>
<td>Latch bolt by lever either side unless outside lever locked by stop button; when outside lever locked, latch bolt by key outside and lever inside; auxiliary latch deadlocks latch bolt.</td>
</tr>
<tr>
<td>3. Private Office Door, Mech. Equip. Rooms, Storage Closets</td>
<td>86EW</td>
<td>Latch by lever inside and key outside key outside; outside lever rigid; auxiliary latch deadlocks latch bolt.</td>
</tr>
<tr>
<td>4. Classroom Door</td>
<td>86J</td>
<td>Latch bolt by lever either side unless outside lever is locked by key outside; inside lever always free; when outside lever is locked, latch bolt by key outside and lever inside; auxiliary latch deadlocks latch bolt.</td>
</tr>
<tr>
<td>5. Communicating Doors</td>
<td>86N</td>
<td>Latch Bolt by lever either side.</td>
</tr>
<tr>
<td>6. Pipe Chase</td>
<td>191</td>
<td>By key outside; turnpiece inside will retract dead bolt but will not project it; no levers.</td>
</tr>
<tr>
<td>7. Outside Entrance Door</td>
<td>810H</td>
<td>Outside by key only; pull handle outside with no thumb piece; panic bar with dogging by hex wrench; latch bolt, no vertical rod.</td>
</tr>
<tr>
<td>8. Entrance Door</td>
<td></td>
<td>Similar to 810H except outside by key or thumb piece; inside key disengages from Lobby or thumb piece; pull handle outside; panic stairwell bar with dogging by hex wretch; latch bolt, no vertical rod.</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>Lever Handles shall be wrought brass, bronze or stainless steel of simple design, heavy duty, and must have inside lever handle secured in place by a dowel screw and the outside lever handle (secure side) pinned to the spindle.</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>Knobs to be used only as directed or approved by the University Project Manager.</td>
</tr>
<tr>
<td>11. Residence Halls</td>
<td></td>
<td>Residence Halls - coordinate with University Project Manager.</td>
</tr>
</tbody>
</table>
08704. KEY WAYS

08704.1 Keys and one bitted cylinders to be by Sargent for all facilities on the Tampa Campus.

08704.1.1 INTERIOR AND EXTERIOR DOORS: Sargent “LA” series key way, one bitted.

08704.1.2 INTERIOR DOORS: Key way series to be assigned for building during Physical Plant Review.

08704.2 PROVIDE TWO BLANK KEYS PER CYLINDER. Contractor shall install key way series as per contract documents (construction cores).

08704.3 HEALTH SCIENCES CENTER (College of Medicine, College of Nursing, College of Public Health) shall be Best “M” series keyway 7-pin cylinders.

08704.4 RESIDENCE HALLS coordinate with University Project Manager.

08704.5 FMHI shall be by Yale “Y” series keyway, with removable core.

08705. CLOSERS

08705.1 Closers shall be Sargent surface mounted, non-handed, and full rack and pinion hydraulic action. Specify very heavy duty type with broad range of adjustments permitting adjustment of door. Open pressure of five (5) pounds maximum for interior doors, 8.5 pounds maximum for exterior doors. Covers shall be of clean line design, high impact, with aluminum enamel finish and shall be type which DOES REQUIRE removal to make adjustments.

08705.2 Use concealed or minimum profile paralleled arm closers.

08705.3 INTERIOR DOOR CLOSERS shall not be visible from corridors, lobbies, and other public spaces. Room side visibility is desirable.

08705.4 OVERHEAD CLOSERS shall be mounted so that they are not exposed to the weather and so that they do not hit walls or other surfaces when doors are opened to full swing (minimum full swing: 90 degrees). Closers shall be mounted to doors with through bolts.

08706. STOPS

08706.1 Overhead stops are preferred on exterior doors. They shall be coordinated to stop the door simultaneously with the door closer check mechanism, when provided. Hold-open or select-hold-open features on overhead stops of exterior doors are not permitted, except where the building function requires such, in which case the select-hold-open type is to be used.

08706.2 INTERIOR DOORS

08706.2.1 Wall mounted convex rubber bumpers, with concealed fasteners shall be used. Provide blocking in wall as required for bumper installation.
08706.3 EXTERIOR DOORS

08706.3.1. Specify extra heavy-duty door checks or some other means of protection from wind damage.

08707. KICK PLATES: Kick plates shall extend the full door width.

08708. POWER DOOR OPERATORS

08708.1 DISABLED ACCESS

08708.1.1 On new buildings and major renovations, at least one entrance door shall be electrically operated sliding door, to facilitate access by disabled persons.

08708.2 DOOR OPERATORS may be surface-mounted or concealed in door head.

08708.3 ELECTRIC OPERATOR SWITCHES may be wall-mounted or post-mounted.

08708.4 INSTALLATION AND EQUIPMENT shall be provided by a factory authorized and trained distributor.

08708.5 MAINTENANCE MANUALS in triplicate shall be included in the close-out documents showing templates, wiring diagrams and full maintenance instructions.

08708.6 AUTOMATIC RESET is required. If the door is locked or if the door encounters an obstacle when the operator is activated, the operator system will do one of the following:

08708.6.1 Continue to push gently on the door until the time delay period expires, then close.

08708.6.2 Sense the resistance, shut off power and close.

08708.7 OPERATOR SYSTEMS shall have:

08708.7.1 Adjustable time delay period (opening time plus hold-open time) shall be approximately twenty (20) seconds, adjustable from at least forty (40) seconds to seven (7) seconds minimum.

08708.7.2 Adjustable opening speed (time from activation until door is fully open) shall be approximately seven (7) seconds, adjustable from at least eleven (11) seconds to five (5) seconds minimum.

08708.7.3 Slow closing speed of approximately seven (7) seconds. Adjustability is desirable but not mandatory.

08708.7.4 Full compliance with ANSI 117, and Life Safety Code.

08708.7.5 Weatherproof controls and circuitry.

08708.7.6 Low voltage current from operators to controls.

08708.7.7 Heavy-duty “supermarket” quality.
08708.7.8 Easy manual door operation. In event of power failure or pedestrian impatience, pressure on strike side of door equal to that required to open a conventional thirty-six (36) inch wide door with closer shall be adequate to open the door manually.

08708.7.9 Easy access for maintenance. Access covers, if provided, must also have vandal resistant screw attachment.

08708.7.10 Operation must be smooth and quiet.

08708.7.11 Closer shall be spring type which functions with power on and off.

08708.7.12 Suggested operators are Gyro-Tech “System 500”, Dor-O-Matic, “Astro-Swing electro-mechanical unit, Besam “Econo-Swing” Model 350, or Besam “Electra” Model 150.

08709. PANIC DEVICES

08709.1 Doors required by code to have Panic Devices: Panic devices shall be Sargent 80 series push-rail type, with no substitutions, with “ETL” lever type function. Outside doors shall lock automatically when closed. Such doors shall have a TP-2 thumb-piece function. All emergency exits must be equipped with panic devices. Panic devices shall be through-bolted where possible. Vertical rod devices shall be used at double doors. Emergency Exit alarm locks may be key-operated from the inside, the outside or both, as directed by the University.

08709.2 RESIDENCE HALL PANIC HARDWARE: Coordinate with University Project Manager.

08710. MISCELLANEOUS

08710.1_THRESHOLDS shall be set in mastic and thoroughly anchored to concrete floors. Expansion shields of any kind are generally not acceptable, particularly at construction joints.

08710.2_SILENCERS or mutes shall be provided at all door frames, at a minimum of three per door.

08710.3 CLOSERS and/or magnetic hold-open devices shall be specified in accordance with all applicable codes. They shall be integral, the one with the other, when possible.

08710.4 PUSH/PULL finishes shall match other hardware used. Where both a push and pull are used, they shall be through-bolted to each other.

08710.5 PULLS on exterior doors shall be of a design that will not create a lever action at the point of attachment to the doors; i.e., mountings shall be made with two-point connections to the door.

08710.6 FINISHES: USP finish may be specified for butts on exterior hollow metal doors which are not exposed to public view. Closers shall be finished to suit room decor. For all other hardware, specify US-10 or US-26D. Other finishes may be used only where necessary to match materials to which hardware is applied.

08710.7_HOLD OPEN DEVICES

08710.7.1 Magnetic hold-open devices should be specified in areas where automatic door closers are required, but traffic patterns force the doors to be normally open.
The hold-open devices shall automatically release the doors upon activation of the fire alarm system or power failure.

08710.8 PROVISIONS FOR NOISE CONTROL: Refer to PART ONE and to the Program of Requirements for possible special requirements. On machine room doors and other doors where excessive noise is anticipated, weather stripping at heads and jambs and surface applied automatic door bottoms shall be specified.

08710.9 AREAS OF RESCUE. Doors shall have closers and have a tight fitting.

08711. HARDWARE

08711.1 Physical Plant Locksmith will cut keys and prepare cylinders per Key Schedule.

08711.2 Physical Plant Locksmith will replace key-way (construction core) series installed by contractor with different key-way series per Key Schedule.

08711.3 Door closers shall be adjusted prior to Substantial Completion so that doors shall be operable by a maximum required pressure of eight (8) pounds.

08800. GLAZING

08801. Use of tinted, mirrored, fritted, translucent glass, and/or spandrel panels is subject to approval of the University Architect.

08802. DESIGN FOR ENERGY CONSERVATION: Refer to PART ONE.

08814. WIRED GLASS: Borrowed light windows (where used in partitions between corridors and rooms) shall be glazed with ¼-inch wired glass set in hollow metal frame or as required by code. Size of wire glass panel as permitted by doe.

08822. LAMINATED GLASS: Shall be ¼-inch thick laminated safety glass, or an approved equal.

08823. INSULATING GLASS: The following paragraph shall be included in the specifications; edit the heading to apply to the particular type of glass specified.

08823.1 INSULATING AND REFLECTIVE INSULATING GLASS, GUARANTEE: Provide manufacturer’s written guarantee that, for ten (10) years from date of building completion, a replacement will be provided for any unit which develops edge separation or other defects which materially obstruct vision through the glass or safety or affects the insulating qualities; except, that guarantee shall not cover glass breakage from physical abuse, earthquake, storm, or similar causes.

08823.2 PARTIAL SHADING OF INSULATING GLASS can cause stress breakage. Manufacturers consider this to be a design error and will not replace glass broken by temperature differential stresses. Avoid partial shading of large panes.

08830. MIRROR GLASS: Framed mirrors for toilet and shower rooms should be included in Division 10. Large mirrors unframed, or in custom made frames, should be included in this division.