



## **DIVISION 08 00 00 OPENINGS**

1. GENERAL.
  - A. Contractor shall be responsible for retaining and re-installing existing door bells, door alarms, handicapped door openers and other door accessories on all door replacement installations. Contractor will verify these items are in working condition before the job is considered complete.
  - B. Fire Rated Doors.
    1. Doors designated to be fire rated shall bear the label of a recognized independent testing laboratory indicating the applicable fire rating.
    2. Fire rating door labels shall be installed on the hinge side only and should not be removed, tampered with or covered at any time.
    3. Doors shall have lock blocks, door closer blocks, and continuous blocking on hinge side.
    4. Fire rated doors shall have fire rated hardware and frames.
  - C. For exterior double doors, TTU prefers that all doors have central mullion in lieu of vertical rod panic hardware. The central mullion must be removable.

### **SECTION 08 11 13 HOLLOW METAL DOORS AND FRAMES**

1. GENERAL.
  - A. All interior door frames on campus should be hollow metal unless matching existing wood millwork.
  - B. Typically hollow metal doors should only be used for exterior door locations. Hollow metal is also acceptable for mechanical room doors, service access doors, roof access doors, or other heavy-duty use areas not accessed by typical building occupants.
2. PRODUCTS.
  - A. Hollow metal doors shall be flush type. Tops of exterior doors shall be closed flush with filler channel so no water can accumulate. Interior doors shall be treated with sound deadening material. Exterior doors shall be thermal insulated.
  - B. Hollow metal door frames shall be combination buck, frame and trim type. Exterior frames shall be minimum 14-gauge; interior frames shall be minimum 16-gauge. Stops shall be formed integral with frame. Corners and connections shall be mitered and continuously welded with exposed welds ground smooth.
  - C. Fire Rated Doors and Frames. Doors and frames designated to be fire rated shall bear the label of a recognized independent testing laboratory indicating the applicable fire rating. Fire rated doors and frames shall be constructed and installed in accordance with NFPA 80. Fire rating door labels shall be installed on the hinge side only and shall not be tampered with, removed or painted over at any time. Fire rated doors shall have fire rated frames and hardware.
  - D. Finish: Doors and frames shall have factory applied coat of rust inhibitive primer. Coordinate with section 09 00 00 FINISHES for paint color guidelines.



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### **SECTION 08 14 00 WOOD DOORS**

1. GENERAL.
  - A. Typically, wood doors shall be used for interior openings only. Only solid core wood doors may be used.
  - B. Wood doors shall have a five (5) year warranty against warping or delamination.
2. PRODUCTS.
  - A. Structural Composite core is preferred.
  - B. Tops and bottoms of doors shall be sealed.
  - C. Finish.
    1. Verify wood species and desired stain color for new buildings with TTU Representative during the design process. Stain color for new doors should be coordinated with interior finishes and presented for review with other proposed finishes.
    2. For existing buildings, finish is to match existing doors. Stain or paint color selection shall be approved by TTU Representative and an applied sample approved prior to finishing new doors.
3. EXECUTION.
  - A. All vision panels shall be caulked. Vision panel frames should typically be painted to match door frame, coordinate with TTU Representative.

### **SECTION 08 41 13 ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS**

1. GENERAL.
  - A. Aluminum entrances and storefronts shall be used in lieu of steel doors and frames wherever possible. Rigid frames should be provided with reduced glass areas.
  - B. Large glass storefront panes are undesirable in that they present a hazard to sighted persons. If used, they should be provided with protective railings and laminated glazing.
2. PRODUCTS.
  - A. Aluminum framing shall be fabricated of extruded aluminum section. Fasteners shall be 18-8 stainless steel.
  - B. Aluminum entrance doors shall be wide stile type with mid-rails. Provide 9" horizontal mullion at doors and sidelights center at exit device mounting height. Provide stainless steel reinforcing plates at hinge locations in doors and frames. See Finish Hardware Section 08 70 00 HARDWARE.
  - C. Glazing.
    1. Storefront systems shall be designed to be glazed with tempered glass only.
    2. Provide Low-E coating on all glazing.



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- D. Finish for aluminum entrances and storefronts shall be clear anodized, white, or dark bronze to match existing building. Final finish selection to be approved by TTU representative.

### **SECTION 08 53 13 VINYL WINDOWS**

1. GENERAL.
  - A. Windows on new buildings and renovations shall complement the prevailing architectural style across campus. Renovations may refer to original building design for replication of original style and proportions.
  - B. Provide windows rated for heavy commercial use.
2. PRODUCTS.
  - A. Provide fiberglass mesh screens for all operable sashes.
  - B. Finish should be white or to match existing building. Coordinate with TTU Representative.
  - C. All windows shall receive Low-E coating.
  - D. All operating hardware to be metal.
3. EXECUTION.
  - A. Contractor shall provide TTU with all operating instructions, manufacturer product and warranty information, and specialized tools related to window operations and maintenance after installation is complete.

### **SECTION 08 70 00 HARDWARE**

1. GENERAL.
  - A. In renovation projects, specify hardware which matches the existing hardware for type of function, appearance, trim, and finish, except where other overriding considerations such as handicapped accessibility require deviations. The Designer must determine the existing conditions and specify materials which match those conditions. Requiring the contractor to "match existing where required" is unacceptable.
  - B. All hardware shall be brought up to current ADA standards when spaces are renovated.
  - C. All hardware items shall utilize appropriate fasteners provided by the manufacturer.
  - D. Warranty: Furnish a written guarantee against defective materials and workmanship for a period of ten (10) years for door closers and mortise lock/latches, seven (7) years for HD cylindrical locks/latches, five (5) years for exit hardware, and two (2) years for the remainder of the hardware.



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- E. Contractor will coordinate with manufacturer(s) for all hardware items specified. TTU Representative will coordinate keying requirements and cores required in a keying meeting. Contractor will provide a keying schedule to the Designer based on the keying meeting.
- F. Where door hardware requires electrical or low voltage service in new construction, provisions should be made for service to be hidden. TTU will not accept surface mounted conduit or wire mold in new construction projects. Attempts should be made in all renovation projects to conceal wiring and minimize surface mounted conduit.
- G. All classrooms, labs, and other program spaces shall have thumb turn operation allowing the hardware to be locked from the inside without a key to accommodate lockdown situations.
- H. All door hardware supplied for TTU shall meet Grade 1 requirements.
- I. For cabinet hardware, refer to section 06 40 00 ARCHITECTURAL WOODWORK.

### 2. PRODUCTS.

#### A. APPROVED MANUFACTURERS:

- 1. Stanley-Best, 9K (basis of design)
- 2. Von Duprin, 99 series
- 3. Precision, grade 1

#### B. BUTTS

- 1. Minimum 1-1/2 pair per door
- 2. Ball-bearing type
- 3. Non-removable pins

#### C. CLOSERS

- 1. All closers shall be door frame mounted. Floor mounted closers will not be accepted.
- 2. All closers shall be fully adjustable type with complete spring power adjustment; field adjustable according to door size and frequency of use. Closers shall have adjustable back check to provide a cushioning effect toward the end of the opening cycle.
- 3. Where closers are indicated to be closer/stop, provide units with a rigid arm assembly and a heavy duty bracket with built-in lug to provide a means of positive stop. For closer/holder, provide units with an additional built-in holder mechanism designed to hold open against normal wind and traffic conditions. Holder shall be activated manually. Closers to be through-bolted.
- 4. Where closers are indicated to be delayed action (DA or DEL), provide units designed with an adjustable delay that holds the door open before the closing cycle begins.
- 5. All closers are required to be accessible to persons with disabilities. Provide units complying the ANSI A117.1 and ADA provisions for door opening force and delayed action closing.
- 6. Furnish corner brackets or parallel arm brackets for all closers opening out. Furnish flush mount transom brackets where no transom bar exists. Furnish top jamb closer and bracket where



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required by job conditions. Indicate in hardware schedule all doors requiring parallel arm, flush mount or top jamb brackets.

7. Where closers are indicated to be smoke-check, provide units with integral electro-magnetic holder mechanism designed to hold door in open position under normal usage and to release and automatically close upon signal from fire alarm or smoke detector. Provide units with integral smoke detector where listed in hardware sets.

### D. EXIT DEVICES

1. All dogging devices shall be key operated and accept a Best core. Device shall be operable by the control key for the door.

### E. LOCKSETS & LATCHES

1. All locksets shall be cylindrical. Only an existing condition shall receive a mortise lockset if required.
2. Provide locks with knurled knobs or levers at entry side to stairs, mechanical equipment rooms, electrical equipment rooms, hazardous storage, loading docks or other doors that are potentially dangerous to visually impaired persons.

### F. CYLINDERS & KEYING

1. TTU uses only Best cores.
2. The Contractor or his representative (Best Access Systems) shall meet with TTU Representative to develop a keying schedule.
3. All cylinders and keys shall be shipped directly to TTU Facilities:
  - a. Attn: TTU Locksmith, 220 W. 10<sup>th</sup> Street, Cookeville, TN 38505
4. All locks and latches to be shipped without permanent cylinders unless specifically requested by TTU.
5. TTU will install all permanent cylinders.
6. All locksets and cylinders shall be Grand Master Keyed into the existing (7) pin Best Access System interchangeable core Grand Master Key System. Interchangeable cores shall be small format (SFIC).
  - a. Academic buildings: Furnish four (4) change keys per lockset or cylinder. Provide six (6) master keys per master key system, three (3) grand master keys for each grandmaster system, and three (3) control keys. Permanent keys shall be properly tagged and identified and delivered to the Designer or Owner as directed.
  - b. Residential buildings: Furnish three (3) change keys per lockset or cylinder. Provide six (6) master keys per master key system, six (6) grandmaster keys for each grandmaster system, and two (2) control keys.
  - c. Verify number of additional spare cores required by Owner for project.
7. Contractor responsible to provide all temporary construction, installation and testing cylinders. Provide a Construction Core Key System for all locks and cylinders for use during building construction. Provide TTU with four (4) Construction Master Keys and two (2) control keys.



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8. At the completion of the project, Owner shall remove the construction core key system and return the construction cores to the Contractor. Permanent cores and keys shall be delivered directly from Best Access Systems to the Owner.

### G. STOPS.

1. TTU prefers that all door stops shall be wall stops, either convex or concave with proper anchorage and blocking as required. Where two interfere with one another, stops shall be coordinated. Only where wall stops are not practical, use floor stops of proper height as required. Consideration should be given to placement of any floor stops required so as to avoid a tripping hazard.

- ### H. SILENCERS.
- All interior wood and metal door frames shall have door silencers.

### I. FINISH.

1. For partial building renovations, hardware finish shall match existing building.
2. For new construction or total renovations:
  - a. Exterior hinges and all kick plates shall be US32D, satin stainless steel.
  - b. Closers shall be US28 clear anodized aluminum.
  - c. All other hardware shall be US15 finish satin nickel.
3. Verify all finish selections with TTU Representative.

### 3. EXECUTION.

- A. Contractor is to install all locksets and hardware. TTU Locksmith will install cores and perform keying after Substantial Completion.
- B. Contractor is responsible for coordinating installation requirements for specialty door hardware such as handicapped door openers and card readers. See also sections 27 20 00 DATA COMMUNICATIONS and 28 10 00 ELECTRONIC ACCESS CONTROL.
- C. Upon Substantial Completion, contractor must deliver to TTU all adjusting tools, keys, dogging keys, and other maintenance materials to campus representative.



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### **SECTION 08 74 13 CARD KEY ACCESS CONTROL HARDWARE**

1. GENERAL.
  - A. TTU prefers standard cylindrical locksets and a pass-thru hinge with 6 conductors for access control hardware. A standard door frame accommodates a pass-thru hinge.
  - B. The lockset must be capable of sending the security signal.
  - C. BASIS OF DESIGN:
    1. Schlage NDE-80
  - D. See also section 28 10 00 ELECTRONIC ACCESS CONTROL.

### **SECTION 08 80 00 GLAZING**

1. GENERAL.
  - A. Exterior glazing may be tinted, but not reflective type glass.
  - B. Provide safety glazing and wire glass as required by applicable codes.
  - C. Large panes of glazing are discouraged in that they present a hazard to sighted individuals. If used, provide safety rails to prevent accidental collision with the glazing.
  - D. Use obscure glass in bathrooms and toilet rooms.