



## TABLE OF CONTENTS

### **DIVISION 08 — DOORS AND WINDOWS**

- 08100 — DOORS AND FRAMES
- 08500 — WINDOWS
- 08700 — HARDWARE and ACCESSORIES
- 08900 — GLAZING

END OF SECTION



**DIVISION 8**

**SECTION 08100 — DOORS & FRAMES**

**PART 1 – GENERAL**

**1.01 EXTENT OF SECTION**

- A. This SECTION contains the requirements for doors and frames.
- B. The intent of the PCSB STANDARDS is for the DESIGN PROFESSIONAL (DP) to comply with the minimum general project requirements and the specific project specifications shall be generated and provided by the DP.

**1.02 REFERENCE STANDARDS**

- A. PERFORMANCE REQUIREMENTS:
  - 1. SDI (Steel Door Institute)
  - 2. NAAMM (National Association of Architectural Metal Manufacturers);
  - 3. NWWDA (National Wood Window and Door Association);
  - 4. AWI (Architectural Woodwork Institute) for wood doors.
- B. DP shall specify the CONTRACTOR shall agree to repair or replace defective doors that have warped (bow, cup or twist) or that show telegraphing of core construction in face veneers, or does not conform to the tolerance limitations of referenced quality standards. Defective doors shall be removed and replaced at no cost to the OWNER.
- D. Installed exterior products shall indicate compliance with design loads and include within submitted shop drawings, structural analysis data signed and sealed by the qualified Florida DP responsible for their calculations in determining the following:
  - 1. Structural test pressures and design pressures from basic wind speeds indicated.
  - 2. Deflection limitations of glass framing systems.
- C. The CONTRACTOR'S Responsibilities shall be to replace or refinish doors where their work contributed to rejection or to voiding of manufacturer's warranty.

**PART 2 – MATERIALS**

**2.01 METAL DOORS**

- A. DP shall specify hollow metal doors and frames in lieu of aluminum storefront. The use of heavy-duty aluminum entrance doors (storefront) shall require the prior approval of the PROJECT COORDINATOR.
- B. All exterior doors shall be insulated metal doors
- C. Reinforcing backing for hinges (including continuous hinges) on jamb, closures, and header metal doors shall be at least  $\frac{3}{16}$ -inch steel and factory welded in place.
- D. Steel doors shall comply with the SDI's standards.



**DIVISION 8**

**SECTION 08100 — DOORS & FRAMES**

- E. The top and bottom of door shall be closed with flush channels.

**2.02 WOOD DOORS**

- A. Interior doors shall be specified as solid core wood doors with minimum style width of 1¾-inches.
  - 1. Closure hardware shall be fastened with through bolts.
  - 2. Solid core, 5-ply wood stave.
  - 3. The top and bottom of wood doors shall be coated at the jobsite after hanging with clear varnish to seal the exposed wood. This shall be required even if doors are “Factory Sealed”.
- B. VENEER SPECIES:
  - 1. AWI AA Premium Grade plain sliced red oak or birch veneers, both sides. Match existing, adjacent veneers or finish in remodel work.
- C. DOOR MANUFACTURER'S WARRANTY: The CONTRACTOR shall provide copies of written agreement in door manufacturer's standard form signed by Manufacturer, Installer and the CONTRACTOR agreeing to repair or replace defective doors that have warped (bow, cup or twist) or that show telegraphing of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards.
  - 1. Warrant doors in writing for life of installation against defects including:
    - a. De-lamination.
    - b. Warp or twist of ¼-inch or more.
    - c. Telegraphing of core through face veneer.
    - d. Surface variation exceeding 0.01-inch or more in 3-inches span.
    - e. Other defect that may impair or affect performance of door for purpose intended.
  - 2. Remove and replace defective doors; include cost of removal of defective units, re-hanging and refinishing of replacement units.

**2.03 GENERAL METAL DOOR FRAME REQUIREMENTS:**

- A. GENERAL REQUIREMENTS:
  - 1. Frames shall include shipping bar at bottom to ensure frame integrity during shipping. Install frames per manufacturers and SDI (Steel Door Institute) standards and instructions.
  - 2. Fire rated frames and doors require metal applied label indicating rating designation.
  - 3. Reinforce frames for surface mounted hardware and cut-out, drilled and tapped to receive mortised hardware.
  - 4. Electrified Openings: Doors shall be pre-wired with sufficient number of concealed wires to accommodate electric function of specified hardware. Provide Molex type standardized plug in connectors to accommodate up to twelve wires.
  - 5. All Door Openings 3-ft., 4-inches wide and larger are to have a “High Frequency” type extra reinforcement applied to the top hinge prep/ reinforcement.
  - 6. Knockdown frames shall not be specified, unless otherwise approved by the PROJECT COORDINATOR.
- B. EXTERIOR DOOR FRAMES shall be a minimum of 14 gauge steel, mitered corners, pre prepped to receive required recess mounted security devices and seamless.
  - 1. A60 galvanized.



**DIVISION 8**

**SECTION 08100 — DOORS & FRAMES**

2. Continuous face welded, dressed and ground smooth, prime paint.
  3. Steel door frames shall be 18-gauge interior and 16-gauge galvanized exterior with mitered continuous weld at corners, factory finish with prime coat.
  4. Exposed vertical riser bars on doors with panic devices shall be as specified in SECTION 08700.
- C. INTERIOR DOOR FRAMES shall be minimum 16 gauge steel (exception: frames over 3-ft., 6-inches shall be 14 gauge steel) Hot dipped galvanized steel seamless with mitered corners. Minimum hinge reinforcement at frames shall be 7gauge steel (at all locations).
1. Continuous face welded, dressed and ground smooth, prime paint.
  2. Reinforcements shall be factory welded in place.

**2.04 HARDWARE SCHEDULE**, see also SECTION 8700.

**PART 3 – INSTALLATION & MAINTENANCE**

**3.01 INSTALLATION**

- A. ALL DOOR AND WINDOW METAL FRAMES SET IN MASONRY
1. Shall have the interior field coat before installation with a brushed applied bituminous coating and grouted solid in place where frames are in contact with concrete/ masonry during installation.
  2. All metal door frames set in masonry walls shall be set into the masonry with masonry anchors, except in renovation work.
  3. At the door frame 4-inch heads are preferred.
  4. All doors and frames shall be placed in a dry area on blocking at least 4-inches off floor. Heavy cardboard or other separators shall be placed between pieces to prevent scratching.
  5. Do not wrap doors and frames tightly in plastic.
  6. Frames with any rust shall be removed and replaced.

**3.02 FINAL ADJUSTMENTS AND CARE**

- A. With manufacturer's instructions and prior to turning project over to OWNER, CONTRACTOR shall clean and make any final adjustments to the finish hardware.

END OF SECTION



## PART 1 – GENERAL

### 1.01 EXTENT OF SECTION

- A. This section contains the requirements relating to thermal and moisture protection as specifically provided by window systems that include glazing systems and storefront systems. Systems typically have aluminum horizontal and vertical framing members that support glazing systems and transfer loads to the structural framing systems of the building.
- B. The intent of the PCSB STANDARDS is for the DESIGN PROFESSIONAL (DP) to comply with the minimum general project requirements and the specific project specifications shall be generated and provided by the DP.

### 1.02 REQUIREMENTS

- A. DP Required: All new, repair, and replacement window glazing projects shall have plans and specifications prepared by a registered architect or engineer licensed by the State of Florida.
- B. DP shall specify the installer shall have a minimum of five (5) years direct experience in window installation.
- C. DP shall specify current Florida Product Approval or Miami-Dade Notice of Acceptance (NOA) indicating that the system has been satisfactorily tested for wind design pressures as determined by the project structural engineer. The wind design pressures shall be indicated on the plans according to the FBC. Window assemblies must have the impact resistance ratings required by code for the intended application.
- D. Design References and Guides: All installations shall comply with following industry standards and guidelines:
  - 1. FBC & SREF, latest edition
  - 2. American Society of Civil Engineers – Minimum Design Loads for Buildings and Other Structures (ASCE 7-02, or edition referenced by the current edition of the Florida Building Code).
  - 3. PCSB Design and Construction Standards
  - 4. American Architectural Manufacturers Association (AAMA)
  - 5. GANA Glazing Manual, Glass Association of North America
  - 6. ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959, [www.astm.org](http://www.astm.org)
  - 7. ASTM C1036 – Standard Specification for Flat Glass
  - 8. ASTM C1048 - Standard Specification for Heat Treated Glass
  - 9. ASTM E2112 – Standard Practice for Installation of Exterior Windows, Doors and Skylights.
  - 10. Florida Product Approval and/or Metropolitan Dade County Building Code Compliance Department Product Control Notice of Acceptance (N.O.A.) installation requirements.



**DIVISION 8**

**SECTION 08500 — WINDOWS**

- D. Installed products indicated to comply with design loads, shall include within submitted shop drawings, structural analysis data signed and sealed by the qualified professional Florida engineer responsible for their preparation and used to determine the following:
  - 1. Structural test pressures and design pressures from basic wind speeds indicated.
  - 2. Deflection limitations of glass framing systems.

**1.03 PRIOR TO COMMENCING WINDOW INSTALLATION**

- A. A PRE-CONSTRUCTION CONFERENCE shall be required within the specifications to require the Owner, DP, Window Manufacturer, Window Installer, and Sub-contractor installing the wall; where window is to be placed to coordinate all windows in QUALITY CONTROL.

**PART 2 – DESIGN**

**2.01 DESIGN COMPONENTS**

- A. Depending on the application, framing systems may be thermally broken or thermally isolated to resist condensation.
- B. Windows shall be glazed in accordance with the requirement of the glass and glazing section 08900 of standards.
- C. All connections and flashing conditions shall be detailed (including heads, jambs, sills, corners, terminations, and flashings).
- D. Where possible, window assemblies shall bear on integral sub-sill or independent sill pan flashing with end dams. The sill pan flashing shall be sealed to the wall opening substrate. Structural connections through the sill pans shall be avoided if possible. Glazing systems shall be designed and constructed with flashing and internal drainage and weep details to manage water infiltration.
- E. Crime Prevention through Environmental Design: In keeping with the principals of CPTED, windows are encouraged to overlook exterior spaces near building entries, parking lots, bicycle parking, walkways and areas with high pedestrian use.
- F. Appropriate use of wall space shall be considered in specification of window mounting heights, e.g. in the Media Center high windows are preferable to low windows to provide more usable wall space. Hopper vents or projecting vents of windows within 6-ft. of the floor shall not extend into passages or room beyond the wall line at jambs.
- G. The Media Center design shall not have windows with a sill height that prevents the installation of 48-inches high wall mounted shelving units or book shelves.
- H. FLASHING SHALL BE EMPHASIZED IN ALL DETAILS; especially window sill/ stools, head and jambs. Metal sill flashing and pans must be used, and must be installed per Manufacturer Recommendation, see also SECTION 07000.



- I. Emergency egress windows shall be installed typically in classrooms (even though not required by code in buildings with sprinkler system).

## **2.02 GLAZING SYSTEMS FOR RENOVATIONS**

- A. Window refurbishment or replacement shall be considered for all significant building renovations, both for performance and esthetic reasons. The new or refurbished windows shall be in character with the building architecture, while still meeting or exceeding the requirements of this section as fully as possible.

## **2.03 VIEW WINDOWS AND SIDE LIGHTS:**

- A. View windows in new corridor and stairwell fire/smoke doors shall be vertical style in a fire rated metal frame. The height of the glass shall be 25-inches clear. The width shall be 6-inches clear unless Life Safety and Fire Codes require 100 square inches maximum, in which case the width shall be 4-inches clear. Locate the window frame edge 10-inches from the door edge (latch side), with bottom edge of the window frame 48-inches from the floor.
- B. In new buildings, or areas of major renovation in existing buildings, view windows in doors shall be vertical style, 25-inches clear height and 6-inches clear width unless Life Safety and Fire Codes require 100 square inches maximum, in which case the width shall be 4-inches clear. Locate the window frame edge 10-inches from the door edge (latch side), with bottom edge of the window frame 48-inches from the floor.
- C. As a preferred method in all PCSB facilities, vertical sidelites in hollow metal frames, which are integral with the doorframe, shall be utilized where there is a request or need for an entrance view window into an office suite, reception area, or similar public destination point. The height and width of the side lite and horizontal mullions shall match that of the building standard.

## **2.04 ALUMINUM WINDOWS**

- A. Aluminum windows are preferred in exterior school construction.
- B. Window functions shall be single hung HC 65 rating or casement or casement projected out windows as allowed by code.
- C. Jalousie windows are prohibited.
- D. Window frames shall have integral thermal breaks and sill pans with end dams at corners.
- E. Windows shall have external weeps.
- F. For new construction and where possible on renovation/ remodeling work, factory standard sizes are preferred.



**DIVISION 8**

**SECTION 08500 — WINDOWS**

- G. Do not apply Colonial muntin or decorative designs such as flat horizontal or vertical members to the inside or outside of the glass.
- H. The number of differing window sizes shall be minimized.
- I. Visual contact with the outdoors is desirable from all student-occupied areas.
- J. All ALUMINUM WINDOWS shall have 0.125-inch minimum thickness with stainless steel hardware and fasteners.
  - 1. Screens shall be included in all operable windows.
    - a. Screen frames shall be extruded aluminum.
    - b. Screen mounting holes in the window frame shall be factory drilled.
    - c. Screen mesh shall be stainless steel.
- K. Windows shall have solar control by means of tinted glazing, overhangs or shading devices.
- L. Individual sashes shall not be less than 30-inches.
- M. EMERGENCY ESCAPE OPENING using casement windows shall use heavy duty counter balance system:
  - i. Shall be operable without keys or tools and from inside the room.
  - ii. Push out, latching only.

**2.05 WOOD WINDOWS**

- A. Wood windows shall only be used as replacement units in existing structures where it is necessary to match historically established style and only with approval of PROJECT COORDINATOR.
- B. Must be commercial grade to meet required wind and infiltration standards as required by all applicable codes.
- C. Window functions shall be single or double hung or fixed.
- D. Windows shall be glazed in accordance with the requirements of the Glass and Glazing Section of the Standards.
- E. Finish systems for wood windows shall be of a cladding material with a permanent finish.

**2.06 MATERIALS**

- A. ELECTROLYSIS PREVENTION: paint dissimilar metals, except stainless steel, white, bronze and/or solid zinc, with one heavy brush or spray coat of zinc-chromate primer and one coat of aluminum paint; or paint with one heavy brush coat of alkali-resistant bituminous paint; or separate from aluminum by heavy coat of mastic caulking compound or non-absorptive tape or gasket. Include dissimilar metals used in locations where drainage from them passes over aluminum.





**DIVISION 8**

**SECTION 08500 — WINDOWS**

**B. FINISH**

1. Windows shall be capable of having separate interior and exterior finishes.
2. Selection of one of the following shop finishes shall be determined by specific job requirements and have OWNER approval:
  - a. AA-M10-C22-A41 or A31, AAMA611, Architectural Class I, Clear Anodic Coating.
  - b. AA-M10-C22-A44 or A34, AAMA611, Architectural Class I, Color Anodic Coating. Color as selected from Manufacturer's colors.
  - c. AA-M12-C42-R1X, Kynar 500<sup>®</sup> / Hylar 5000<sup>®</sup> Fluoropon<sup>®</sup>, AAMA Guide Spec. 2605. Color as selected from Manufacturer's colors.

**2.07 WINDOW MANUFACTURERS:** (listed in alphabetical order)

- A. EFCO Corporation,
- B. Graham Architectural Products,
- C. Kawneer North America,
- D. Wausau Window and Wall,
- E. Winco Windows.

**PART 3 INSTALLATION & MAINTENANCE**

**3.01 QUALITY CONTROL**

- A. Pre-Construction Conferences: PCSB shall coordinate a window or building envelope preconstruction conference for all window installation and replacement projects. Participants shall include but not limited to: the PROJECT COORDINATOR responsible for administering the project, the DP, CONTRACTOR, Window Installation Contractor, Window Manufacturer's representative, and other related trades.
- B. Mock up panel assembly: Depending on the facility, a mock up panel assembly may be required to demonstrate the interfaces of building envelope systems. The project specifications shall indicate the nature of the mock up panel(s). Depending on the complexity of the building envelope systems, it may be necessary to provide schematic details of the mock up panel(s).
- C. Quality Control: The installer shall be certified by the manufacturer and the manufacturer shall certify the installation on completion.
- D. Moisture Intrusion Testing: Depending on the facility, performance testing of installed glazing systems shall be performed to verify that they are installed properly. The project specifications shall indicate the frequency and use of standard field test procedures developed by AAMA and ASTM.
  1. AAMA 501 – Voluntary Specification for Field Testing of Windows and Sliding Glass Doors.



**DIVISION 8**

**SECTION 08500 — WINDOWS**

2. AAMA 502 – Voluntary Specification for Field Testing of Metal Storefronts, Curtain Walls and Sloped Glazing Systems.
  3. Building Commissioning shall be performed per ASTM E1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference.
- E. The OWNER reserves the option to Commission the Building Envelope as part of the project requirements. For certain projects, the Building Commission shall include the Building Envelope, which includes window glazing systems. The project specifications shall provide information to outline the Building Envelope Commissioning requirement installation procedures.

**3.02 INSTALLATION**

- A. Do not field install windows system as a kit of parts window wall.
- B. Multiple units, such as, Twins, Triplets, Quads windows shall be factory mulled to as much as possible, e.g. size and weight, to the window opening width. Head flashing must be continuous in opening; flashing for Twins, Triplets, Quads window units may not be pieced.
  1. All window units shall be properly balanced.
- C. On units with insulated glazing, a minimum of two setting blocks are required per each lite of glass.
- D. Special attention shall be given to the proper connection, structural support and expansion/contraction for aluminum window units and window groupings.
- E. Care must be taken in the placement of aluminum windows to avoid contact with dissimilar materials which may cause corrosion.

END OF SECTION



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

**PART 1 – GENERAL**

**1.01 EXTENT OF SECTION**

- A. This section contains the requirements relating to hardware and gaskets for doors and windows. Includes electronic, magnetic, hydraulic, and pneumatic components for operating, controlling, and monitoring doors and windows. Also includes accessories for doors and windows not specifically covered in other sections. Door hardware covers hinges, pivots, sliding and folding door hardware, and other hanging hardware; locks, keys, exit devices, cylinders and other latching hardware; closers, holders, self-closing hinges and other controlling hardware; and push plates, pulls, kick plates, weather-stripping, gaskets, thresholds, and other door trim.
- B. The intent of the PCSB STANDARDS is for the DESIGN PROFESSIONAL (DP) to comply with the minimum general project requirements and the specific project specifications shall be generated and provided by the DP.

**1.02 DESIGN REQUIREMENTS:**

- A. All doors and associated hardware shall comply with the FBC - Accessibility, latest edition.

**1.03 RENOVATIONS:**

- A. On partial renovation projects, it is desirable for all new door hardware (except locksets and cylinders) to match existing, where allowed by code. Locksets and cylinders shall be upgraded to meet requirements within these Standards. Finishes shall be selected to match existing, where practical.
- B. Provide rain drip or other door top protection at exterior doors without overhead protection for at least full door frame width.
- C. DP to coordinate exterior door hardware components with FPA or NOA requirements.
- D. For pairs of doors with locks and flush bolts or in smoke or rated assemblies, supply an astragal.
- E. The manufacturer shall provide warranty for all closers for a period of ten years. All closers shall be inspected at start of and at finish of installation and 6 months after Substantial Completion by a factory representative to ensure proper adjustment and operation.
- F. At fire rated door locations, provide equivalent fire rated hardware.

**1.04 QUALITY ASSURANCE:**

- A. MANUFACTURER:



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

1. Single Manufacturer For Each Item: Obtain all hardware of each type (latch and locksets, lock cylinders, hinges, closers) from one manufacturer of that item type, (e.g., all hinges from one manufacturer, all closers from one manufacturer), although several manufacturers may be indicated as offering products complying with requirements.
  2. Single Manufacturer for Locksets and Cylinders: In addition to the above requirement, lock cylinders and locksets shall be from the same manufacturer.
- B. SUPPLIER: A builder's hardware supplier who has been furnishing architectural hardware for a period of not less than two (2) years and has in employment an experienced hardware consultant who is available for consultation.
- C. DOOR CLOSER INSTALLATION CERTIFICATE: The CONTRACTOR shall furnish a certificate executed by a representative of the manufacturer of the door closers that all closers have been inspected and adjusted, are operating as designed, and have been installed in accordance with the manufacturer's instructions; also see, the FBC - Accessibility, latest edition.

**1.05 SUBMITTALS:**

- A. PRODUCT DATA: Submit manufacturer's technical information for each item of hardware. Include information to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.
- B. HARDWARE SCHEDULE: Hardware schedules are intended for coordination of work and are required for the PROJECT COORDINATOR prepared by DP for the PCSB Locksmith to verify final hardware schedule that includes the information described below:
1. Type, style, function, size and finish of each hardware item.
  2. Name and manufacturer of each item.
  3. Fastenings.
  4. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
  5. Explanation of abbreviations, symbols, and codes contained in schedule.
  6. Mounting locations for hardware.
  7. Door and frame sizes and materials.
- C. SUBMITTAL SEQUENCE:
1. Submit schedule where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames), which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of work affected by hardware, and information essential to the coordinated review of hardware schedule.
  2. The CONTRACTOR's attention shall be drawn to the lead-time required for delivery of certain hardware items and the required date of Substantial Completion. Extensions of the contract shall not be accepted because of the CONTRACTOR's failure to order hardware in a timely manner.



**DIVISION 8**

**SECTION 08700 — HARDWARE & ASSESSORIES**

3. The CONTRACTOR's attention shall also be drawn to the lead-time required for PCSB to produce a keying schedule after receiving the hardware schedule. Coordinate this process with the PROJECT COORDINATOR allowing sufficient time for timely completion

**1.06 KEYING:**

- A. All locks and cylinders on all exterior doors; Principal's Office, Bookkeeping Office, Administrative Storage Room, Records Room, Kitchen Manager's Office, Dry Storage Room, Instrumental Music Room, Computer Labs, CCTV Studio, Media Center, Vocational Labs, Technology Labs and Business Labs shall be 11 Pin Schlage Primus.
- B. LEVEL 3
  1. All other openings are to have conventional Schlage cylinders.
  2. Removable core cylinders are not acceptable, except at exit device trim and key removable mullions.
  3. Match Polk County School Board's existing Great Grandmaster key system:
    - a. All new biting's shall be issued by Schlage Lock in order to maintain the integrity of the existing grandmaster key system.
- C. The permanent cylinders and keys are to be shipped directly to the PCSB Project Locksmith at: The School Board of Polk County  
Leon Scherlock – PCSB Project Locksmith  
1785 East Wabash Street  
Bartow, FL 33830.
- D. Provide five (5) each change keys per lock and four (4) control keys.
  1. All cut keys and key blanks shall be Primus.
- E. Hardware supplier to provide construction cylinders or cores during the construction phase.
- F. At substantial completion, the Hardware Supplier/Distributor shall adjust and install the pre-keyed Schlage Primus cylinders and turn over all permanent keys to: Leon Sherlock - PCSB Project Locksmith, 1785 East Wabash Street, Bartow, FL 33830.
- G. Provide keys as follows.
  1. Grandmaster keys
    - a) Four (4) for Elementary Schools
    - b) Four (4) for Middle Schools
    - c) Four (4) for High Schools
  2. Master keys
    - a) (10) Ten for each sub-master key group
  3. All Grandmaster and Master keys use only Primus no substitutions allowed.
  4. All stamped keys with the key group per PCSB standard provided by PCSB Locksmith.
  5. Final key schedule shall be provided by PCSB Project Locksmith prior to ordering hardware.



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

H. Knox Box shall be located per City or County Fire Department recommendations.

I Key Cabinets:

1. For new Campuses location shall be in the Records Room.
2. For existing Campuses verify location with PCSB Project Locksmith.

**1.07 GUIDE FOR GROUPING ROOMS TO A KEY**

A. Master key areas as grouped below except where they extend into more than one building.

B. Each building requires a master key to open every door within the building. Each instructional space is to be keyed separately and master keyed as indicated.

1. Administration and all related spaces
2. Kitchen/Dining and all related spaces
3. Media Center and all related spaces
4. Multi-Purpose Room or Auditorium, and related spaces
5. Gymnasium and related spaces (all PE)
6. At middle and high schools only, instructional program areas are to be sub-master keyed within each building as follows:
  - a. Music Classrooms and related spaces such as storage rooms and teacher planning areas, typ.
  - b. 6<sup>th</sup> Grade Classrooms and related spaces.
  - c. Language Arts Classrooms and related spaces.
  - d. Math Classrooms and related spaces.
  - e. Social Studies Classrooms and related spaces.
  - f. Science Laboratories and related spaces.
  - g. Exceptional Student Education Classrooms and related spaces.
  - h. Vocational Classrooms and Laboratories and related spaces.
  - i. Provide the Records Room (in Administration or Guidance) with a “single key different”.
  - k. Provide passage hardware on the doors to all single occupant toilet rooms that are provided for the use of elementary students (grades Pre-K through 5).
7. Each kitchen and food service room shall have at least one ceiling height door adequate to pass refrigerators and other tall equipment. These doors shall be double (2-3/0) width doors, with a key-controlled, removable mullion or a single 4/0 door.
  - a. The design of the kitchen/serving area shall avoid the use of the fire-rated roll-up doors.

**PART 2 – COMPONENTS**

**2.01 LOCKSETS**

A. INTERIOR AND EXTERIOR DOORS shall be ND-series with Primus. Provide keys as follows:



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

1. Grandmaster.
  2. Building sub-masters (per building).
  3. Classroom change keys (per classroom).
  4. Control keys (remove core).
- B. Double doors with panic hardware use 98 series with steel or aluminum key-removable center mullion, compatible with door frame material.
- C. All panic hardware shall be 98 series.

**2.02 ACCESSORIES**

A. Table

<b>PRODUCT</b>	<b>ACCEPTABLE BUT NOT LIMITED TO MANUFACTURERS</b>
1. Butt Hinges	Hager Co./ Stanley, Ives
2. Continuous Hinges	Roton/ Pemko Hinge
3. Locksets, Latchsets, & other locking devices	Schlage
4. Exit Devices (Panic Devices)	Von Duprin 98/ Precision
5. Pull Handle doors with exit device with lever	Precision, Von Duprin
6. Door Closers	LCN/ NORTON
7. Bolts & Misc. Overhead Stops & Holders, Magnetic Holders	Glynn Johnson/ Rixson
8. Push/ Pull Plates, Handles & Kickplates,	Rockwood Mfg. / Ives
9. Wall Bumpers, Floor Stop & Holders	H.B. Ives/ Rockwood
10. Threshold & Weatherstripping,	Pemko National Guard
11. Lockbox – Fire Marshal	Knox Box 3200 Series
12. Electronic Locks	Schlage AD-Series Hardwired

**2.03 HARDWARE FINISHES:**

- A. Exterior Hinges shall be Stainless Steel (32D).
- B. Interior Hinges shall be Stainless Steel (32D).



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

- C. Door Closers to be Aluminum, parallel arm and thru bolt mounted to door.

**2.04 HARDWARE SETS:**

**A. FINISHES**

- Locks to be Satin Chrome (26D).
- Exit Devices to be Satin Chrome (26D).
- Overhead Holders to be Stainless Steel (32D).
- Flat Goods to be Stainless Steel (32D).
- Thresholds to be Mill Finish Aluminum.

**B. CLASSROOM DOORS.**

1. To meet ANSI F86.
2. ND 96 – Outside lever always disengaged. Entrance by key only. Inside lever always unlocked for immediate egress; also available with Request to Exit (RX).

**C. CLASSROOM ENTRANCE DOORS TO CORRIDORS TO:**

1. To meet ANSI F84.
2. ND94 – Outside lever disengaged and unlocked by key. Inside lever always unlocked for immediate egress.
3. Van Duprin 98

**D. OFFICE DOORS:**

1. To meet ANSI F84.
2. ND94 – Outside lever disengaged and unlocked by key. Inside lever always unlocked for immediate egress.

**E. PRIVACY BATHROOM DOORS (used only at Staff toilets)**

1. To meet ANSI F76.
2. ND 40 – Latch bolt by lever either side except when outside lever is locked by projecting dead bolt. When dead bolt is projected a turn of inside lever retracts latch and dead bolts simultaneously-automatically unlocking outside lever, dead bolt by turn piece inside and emergency key outside.

**F. TEACHER PLANNING AND OTHER SHARED TEACHER ROOMS**

1. To meet ANSI F76
2. ND 40 – Latch bolt by lever either side except when outside lever is locked by projecting dead bolt. When dead bolt is projected a turn of inside lever retracts latch and dead bolts simultaneously-automatically unlocking outside lever, dead bolt by turn piece inside and emergency key outside.

**G. GROUP BATHROOM DOORS**

1. As required by design.
2. Look at each group bathroom situation and then determine.
3. Either passage or classroom function dead-bolt with frame prep cylinder lock. Turn piece inside to retract dead bolt but not project it. Exception: where used in a fire-rated assembly, a Classroom function lockset shall be used.





**DIVISION 8**

**SECTION 08700 — HARDWARE & ASSESSORIES**

4. For all Middle and High School provisions shall be made for group toilet doors to remain in open position during school hours.

**H. PASSAGE DOORS**

1. To meet ANSI F75.
2. ND10 – Both levers always unlocked and where applicable per Life Safety Codes with closer LCN 441.

**I. HAZARDOUS STORAGE, ELECTRICAL, MECHANICAL, FLAMMABLE STORAGE, AND CUSTODIAL ROOMS**

1. To meet ANSI F86.
2. ND 96 – Outside lever always disengaged. Entrance by key only. Inside lever always unlocked for immediate egress. Available with Request to Exit (RX).

**J CLASSROOM SECONDARY EXIT ONLY DOORS**

1. Specify either ND 96 to meet ANSI F86 – Outside lever always disengaged, entrance by key only. Inside lever always unlocked for immediate egress or,
2. ND 25 to meet ANSI F89 – Blank plate outside and inside lever always unlocked.

**K. EXTERIOR GATES REQUIRING PANIC HARDWARE**

1. Refer to current PCSB standard design for this application.
2. To meet ANSI F84.
3. Latch bolt by key outside and lever either side unless outside lever is locked by key outside, inside lever always retracts latch bolt, and auxiliary latch deadlocks latch bolt.

**L. SAFE SCHOOL COMPUTER MANAGED ACCESS CONTROL SYSTEMS**

1. Required at all new schools.

**2.04 HINGES AND PIVOTS**

**A. Butt hinges to be specified for exterior doors, and shall be Stainless Steel.**

1. Butts on all out swinging doors shall be furnished with non-removable pins (NRP).
2. Supply standard weight 4.5-inches by 4.5-inches hinges for doors up to 40-inches
3. Supply heavy weight 4.5-inches by 4.5-inches hinges for doors 42-inches or wider, or as specified in Hardware Sets.
4. Ball Bearing hinges required except for fire-rated doors.
5. At specified locations of high use and wide doors, provide continuous geared hinges.

**B. Interior butts shall be stainless steel.**

1. For existing door openings, supply standard weight 4.5-inches by 4.5 half or full surfaced or fully concealed mounted Roton hinges for door up to 40-inches.
2. Supply heavy weight 4.5-inches by 4.5-inches hinges for doors 42-inches or wider, or as specified in Hardware Sets.
3. Doors 5-ft. or less in height shall have two (2) butts.
4. Furnish one (1) additional butt for each 30-inches in height or fraction thereof. Dutch door shall have two (2) butts per leaf.
5. For existing door openings in corridors, concealed Roton hinges at double doors.



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

6. Hinges at wet-rooms or where rooms where chemicals shall be used or store, shall be stainless steel.
7. In doors that are to open 180 degrees, provide concealed hinges.

**2.05 LOCKSETS**

- A. Locksets shall be cylinder lock type, ND series.
- B. Locksets used for any student occupied instructional space are to be Classroom Security Lock L9071 as manufactured by Schlage, or equal by Corbin/Russwin. This lockset shall have the ability to key lock from either side.

**2.06 EXIT DEVICES:**

- A. Devices shall be Von Duprin 98 Series or Precision or equal in types and functions specified. All devices must be listed under "Panic Hardware" in accident equipment list of Underwriters Laboratories. All labeled doors with "Fire Exit Hardware" must have labels attached and be in strict accordance with Underwriters Laboratories. All pairs of doors to be supplied with rim type devices and removable mullions and all single doors to be supplied with rim devices. All Removable Mullions shall be Von Duprin KR4954/ KR9954 as specified in the hardware sets.
- B. All exit devices shall be tested to ANSI/BHMA A156.3 test requirements by a BHMA certified testing laboratory. A written certification showing successful completion of a minimum of 1,000,000 cycles must be available for submittal upon request.
- C. All surface strikes shall be roller type and come complete with a plate underneath to prevent movement; and shall be provided with a dead-latch feature to prevent latch bolt tampering. Acceptable Substitutions: No Substitutions.
- D. Exposed vertical riser bars on doors with panic devices shall be specified as stainless steel with stainless steel vertical rod guards. Aluminum shall not be specified or accepted.

**2.07 DOOR CLOSERS**

- A. All closers shall be LCN 4111 EDA Series having non-ferrous covers, forged steel arms separate valves for adjusting back check, closing and latching cycles and adjustable spring to provide up to 50 percent increase in spring power. Closers shall be furnished with parallel arm mounted on all doors opening into corridors or other public spaces and shall be mounted to permit 180 degrees door swing wherever wall conditions permit. Furnish with non-hold open arms unless otherwise indicated "Door Hardware".
- B. Back check shall be properly located so as to effectively slow the swing of the door as required by openings.

**2.08 TRIM AND PLATES:**



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

- A. Kick plates, mop plates, and armor plates, shall be .050 gauge with 32D finish, and order 2-inches shorter than the door width.
  - 1. Kick plates to be 8-inches high, mop plates to be 4-inches high, armor plates up to 36-inches high maximum.
- B. Push plates, pull plates, door pulls, and miscellaneous door trim shall be shown in the hardware schedule.

**2.09 DOOR STOPS**

- A. Doorstops shall be furnished for all doors to prevent damage to doors or hardware from striking adjacent walls or fixtures.
  - 1. Wall bumpers are preferred but where not practical use LCN 441 Ohsa series door Closer Cush Stop.
  - 2. Where conditions prohibit the use of wall stops, use LCN 441 Ohsa series door Closer Cush Stop.
  - 3. For Overhead Door Stops see 2.02.A Table Accessories.

**2.10 THRESHOLDS AND WEATHERSTRIP**

- A. Thresholds and weather-strip shall be as listed in the hardware schedule.
- B. Provide sound-seals and automatic door bottoms at acoustical doors and sound sensitive areas.

**2.11 DOOR SILENCERS**

- A. Furnish rubber door silencers at interior doors only, use Ives SR64 or equal to for all new interior hollow metal frames, (2) per pair and (3) per single door frame.

**2.12 ELECTRIC HARDWARE**

- A. Where required, electric mortise locksets and latch retracting exit devices shall be used. Electric strikes shall not be used. Low voltage electrical power shall be transmitted from frame to door by way of either mortised power transfers or electric hinges as recommended by the manufacturer. Surface mounted door loops are not acceptable. The DP shall coordinate these requirements with the Electrical Engineer to insure proper in place conduit. The hollow metal frame fabricator shall prepare frames in masonry with mortar boxes to facilitate the appropriate electrical connection. Furnish the appropriate low voltage power supply as recommended by the manufacturer.

**PART 3 INSTALLATION & MAINTENANCE**

**3.01 INSTALLATION**

- A. All hardware shall be applied and installed in accordance with the Finish Hardware schedule. Care shall be exercised not to mar or damage adjacent work.



**DIVISION 8**

**SECTION 08700 — HARDWARE & ACCESSORIES**

---

- B. CONTRACTOR to provide a secure lock-up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items that are not immediately replaceable, so that the completion of the work shall not be delayed by hardware losses both before and after installation.

**3.02 ADJUSTING AND CLEANING:**

- A. CONTRACTOR shall adjust all hardware in strict compliance with manufacturer's instructions. Prior to turning project to OWNER, CONTRACTOR shall clean and make any final adjustments to the finish hardware.

**3.03 PROTECTION**

- A. CONTRACTOR shall protect all hardware, as it is stored on construction site in a covered and dry place.
- B. CONTRACTOR shall protect exposed hardware installed on doors during the construction phase number, key code number, hook number and key description.

END OF SECTION



**DIVISION 8**

**SECTION 08900 — GLAZING**

**PART 1 – GENERAL**

**1.01 EXTENT OF SECTION**

- A. This section contains specifics on glazing and what types are located in certain areas.
- B. The intent of the PCSB STANDARDS is for the DESIGN PROFESSIONAL (DP) to comply with the minimum general project requirements and the specific project specifications shall be generated and provided by the DP.

**1.02 DESIGN AND SPECIFY THE FOLLOWING**

- A. Insulating glazing is not a requirement; it can be used at exterior windows and other glazing openings, where sound reduction and thermal capacity is desirable.
- B. Exterior glazing shall meet all wind load requirements of applicable codes; verify compliance with product approval requirements for glazing within exterior storefront, or window openings.
- C. Tinting. Surface applied window film shall not be used.
- D. Safety glazing shall be used in all secure and hazardous areas, and where required by code.
- E. The types of glass and location shall be indicated on the DP's Design and Construction Documents.
- F. The DP shall make every effort to minimize the number differing window sizes.
- G. Visual contact with the outdoors is desirable from all student-occupied areas.
- H. Windows shall have solar control by means of tinted glazing, Low E glazing, overhangs or shading devices. Glazing options may need to be analyzed as part of energy modeling requirements.
- J. Windows shall have solar control by means of tinted glazing, overhangs or shading devices.
- K. Schedule obscure glass in toilet and bathroom windows.

**PART 2 – PRODUCTS**

**2.01 MATERIALS**

- A. Provide tempered glass (in lieu of wire glass) in safety glazing locations, such as areas adjacent to pedestrian travel and adjacent to doors. Tempered glass is also the preferred glazing material to be used in all window and door openings, at both exterior and interior locations.



**DIVISION 8**

**SECTION 08900 — GLAZING**

- B. No safety plastic glazing shall be used.
- C. All tempered and fire rated glazing shall have a permanent stamp or factory-applied label which identifies the rating of the unit.
- D. Impact resistant glazing shall be provided in all exterior doors and windows in areas designated to be vandal or impact resistant, such as in the gymnasium or EHPA buildings.

**2.02 GLASS TYPES AND LOCATIONS**

- A. ¼-inch Grey or Bronze tint as selected.
  - 1. All exterior glazed lights in doors, fixed frames and storefronts.
- B. Locations requiring tempered or safety type:
  - 1. All storefronts, exterior doors and windows, interior doors and windows shall be ¼-inch tempered glass unless located in a fire rated wall or assembly.
- C. All interior glazed lights in doors and fixed frames shall be ¼-inch Clear Tempered Glass in non-rated partitions.
- D. All glazing in steel frames and doors shall be Clear Fire Rated Glass, (5/16-inch Firelite Plus as manufacture by Technical Glass Products or approved equal), in fire rated walls or assemblies. All frames and glazing stops are to be steel and shall be labeled.
- E. All exterior window, door and glazed light glazing at EHPA buildings shall be tinted impact resistant glass
- F. All glazing required be tempering, laminating or safety glass shall have etched identification.

**2.03 MIRRORS**

- A. ¼-inch Clear float glass, q3 glazing quality with chemically deposited silver and copper coating and a protective coating. Include a safety mat backing. Seal all edges with manufacturer's recommended edge sealer, after cutting to size and polishing the edges.
- B. Plywood backing and finish perimeter trim – by Division 6.
- C. ADHESIVE: construction adhesive.



## **PART 3 – EXECUTION**

### **3.01 GLAZING SYSTEMS**

- A. All Hollow Steel Doors and Frames: glazing compound, in pressed steel bead stops.
  - 1. Windows: are factory pre-glazed. Refer to Section 08520/Aluminum Windows.
  - 2. Door Lights: wood stops finished to match wood doors. Painted steel stops in UL rated doors and corridor doors. All set in glazing compound.

### **3.02 EXECUTION**

- A. Glass sizes indicated on drawings are nominal or approximate only. Determine actual sizes by measuring frames which are to receive glass, or from frame manufacturer, then fit glass to openings with an even clearance all around. Conform to glazing procedures published in Flat Glass Jobber's Association Glazing Manual, for specified glazing systems. Do not do glazing work when ambient temperature is below 40 deg. F. or when rain, fog, mist or detrimental amounts of airborne dust are present.

### **3.03 CLEANING**

- A. After installation and before OWNER'S acceptance, clean labels, soil and excess glazing compound from glass and adjacent work with cleaning materials recommended by manufacturer, then wash glass clean.

### **3.04 MAINTENANCE AND PROTECTION**

- A. Maintain all glass; replace all broken or permanently impaired glass, until building is accepted by OWNER.

END OF SECTION