DIVISION 8 - DOORS AND WINDOWS

I. GENERAL

A. This division contains the following elements:

1. Doors and Frames.
2. Windows.
3. Finish Hardware.
4. Glazing.

B. Comply with Florida Department of Education, Office of Educational Facilities - State Requirements for Educational Facilities - 1999 (SREF), M-DCPS Design Standards, program requirements, and other applicable codes.

C. According to SREF student occupied spaces shall have a window or a door leading directly to the exterior unless the building is fire sprinklered.

D. Wind loading design shall comply with American Society of Civil Engineers (ASCE) 7-98.

E. Integrate doors and windows into the design of the facility to provide access, egress, light, and ventilation.

F. Designated doors and windows are elements of means of egress and shall comply with applicable life safety codes.

G. Doors and windows are subject to vandalism and heavy usage. Safety, security, and maintenance are important criteria for designing and specifying doors, windows, and hardware.

H. Safety concerns shall always have priority over security during the selection of doors and windows.

I. Fire resistance ratings for exterior doors, windows, and other openings shall meet and not exceed SREF and Florida Building Code Table 600 - Fire Resistive Ratings and Table 705.1.2 - Minimum Fire Resistance of Walls, Partitions, and Opening Protectives.

1. Buildings or wings of the same building facing each other shall comply with Table 600, Section 705.1.2, and the following to determine fire resistance ratings or distance separation requirements:

a. Using Table 600, locate an assumed property line from the existing or new wall determined by its type of construction, rating and type of exterior wall, and percentage of openings.
b. The second facing building wall shall then be located from the assumed property line based upon its type of construction, rating and type of exterior wall, and percentage of openings.

II. DOORS AND FRAMES (08100-08499)

A. Before Phase 3 - 100 percent submittal, consult with M-DCPS Facilities Operations Central Lock Shop and M-DCPS School Police for the locations of card access control systems, motion detectors, and other security measures.
B. Submit plans, specifications, and tentative hardware schedule to Central Lock Shop at least 4 weeks before Phase Three - 100 percent. Hardware schedules with M-DCPS review comments shall be resubmitted with corrections.
C. Doors and attachment/support system shall be designed to withstand wind loads based on American Society of Civil Engineers (ASCE) 7-98.

    1. Provide calculations, signed and sealed by a Florida registered professional engineer, establishing wind velocity pressure values for the specific project according to ASCE 7-98 using a wind speed of 146 mph.
    2. Use ASCE 7-98 Exposure Category "C" for wind design at M-DCPS additions and new construction.
    3. According to ASCE 7-98 occupancy types, educational facilities are classified as Category 3 and shall have a wind load importance factor of 1.15.
    4. SREF recommendations to use map wind speed plus 40 mph and a wind importance factor of 1.0 are not to be used.

D. High security door locations include interior and exterior entrance/exit doors at the following:

    1. The building perimeter.
    2. Administration areas.
    3. Vocational shops.
    4. Exterior corridors.
    5. Building and classroom accessed from courtyards.
    6. Vaults.
    7. Food service receiving door and serving line doors.
    8. Equipment and flammable storage rooms.
    9. Computer and business labs.
    10. Music suites.
    11. Media center.
    12. Gymnasium/physical education areas.
    13. Auditorium.
    14. Other rooms according to program requirements and M-DCPS Central Lock Shop.

E. Exterior doors shall be hollow metal.
F. Minimum security door locations include classrooms not mentioned above, accessed from interior corridors and doors to spaces located in minimum security classrooms.
G. Hollow metal doors require hardware reinforcement. See Appendix - Doors and Hardware. Doors with dimensions larger than 3'0" wide and 7'0" high require additional hinges and special closers.
H. Particleboard is not allowed in door construction or in any other building component.

I. Door and Frame Types:

1. Use 16 gage A60 hot-dip zinc-iron alloy coated steel doors and frames grout filled and securely anchored at:

    a. Exterior doors and frames.
    b. Interior doors and frames at kitchens, dining rooms, toilets, locker/showers, custodial, and other similar spaces with hard or resilient flooring subject to wet mopping.
    c. High security interior doors and frames.
    d. STC sound rated doors and frames.
    e. Fire labeled doors and frames.
    f. Minimum security interior doors.

2. For minimum security interior doors, use 16 gage A60 hot-dip zinc-iron alloy coated steel doors or solid core wood doors with 16 gage A60 hot-dip zinc-iron alloy coated steel frames, grout filled.
3. Exterior gates requiring exit devices shall be exterior doors and grout filled frames. Provide with 24 inch minimum width side panels or other means to prevent access to locking devices.

    a. Steel picket gates with security grilles and protective guards to prevent access to activate exit device may be accepted by M-DCPS on a per condition basis. See Appendix - Doors and Hardware.

4. Acoustical doors shall be hollow metal filled with glass fiber or be solid core wood with STC ratings according to program requirements.

    a. Provide sound seals and drop seals.
    b. Vision panels at acoustical doors shall be double glazed with 1/4" and 3/8" tempered glass and be resiliently mounted, except when other glazing is required to comply with fire rating requirements. Provide security grilles at exterior vision panels.

5. Bifold doors shall not be used unless accepted by M-DCPS on a per condition basis.
6. Storefront glass may be used at secured areas on a per condition basis with M-DCPS School Police and M-DCPS acceptance only.

    a. Door and frame storefront construction shall be hollow metal.
    b. Use center rail to conceal back of exit device. See vision panels for additional requirements.
    c. Aluminum storefront is not allowed.

7. Louvered doors shall be metal and full louver doors shall have center rails.

    a. Provide security grille on inside of exterior louvered doors to prevent access to locking device.

8. Access doors shall be at least 12 inches by 12 inches where hand access is sufficient. Provide larger sizes as required.
9. Accordion folding doors shall be rated at least STC 40.

    a. Specify vinyl clad steel panel folding doors at student spaces.
    b. Accordion or non-steel panel folding doors may be used at administrative areas.
    c. Above ceiling tracks, provide an acoustical barrier having a sound transmission loss equal to or greater than the accordion/ folding door, when including the ceiling.

10. Provide doorframes with 6 inch high cutoff sanitary or hospital type stops with 45 degree caps at locations subject to wet mopping and not requiring vermin protection.
11. At doors of food service areas, provide 6 inch high stainless steel spats at doorframes with or without stops.
12. Doorframes shall be double rabbeted.
13. Grout Filled Frames:

    a. Doorframes, except those at metal studs, shall be grout filled in place. Doorjambs grout filled before installation are not allowed.
    b. Doorframes at metal stud walls shall be grout filled.
    c. Doorframes at precast construction shall be cast-in-place.

14. Provide hollow metal doors at mechanical equipment rooms. Include soundseals and aluminum thresholds at mechanical room locations accessed by interior corridors or adjacent to sound sensitive spaces.
15. Door transoms are not allowed.
16. Fire separation shall be achieved by smoke stop swing doors closed by magnetic hold open devices activated by the fire alarm system. Protect door edges from accidental closure. Center mullions are not allowed.
17. Overhead rolling fire doors with speed controls and obstruction sensors may be accepted by M-DCPS at locations on a per condition basis.

J. Specify solid core doors without a cardboard layer between veneer and core.
K. Wood doors are not allowed as fire labeled doors.
L. Wood doors shall have painted finishes, natural finishes, or plastic laminate with exposed edges smoothed or rounded.
M. Pedestrian swing doors shall be a minimum size of 3'0" wide, 7'0" high and 1-3/4" thick

or larger according to program requirements

N. Doors shall accommodate the largest piece of equipment or furniture scheduled to in the space.

O. Kitchen receiving door shall be 4'0" wide, 7'6" high, and 1-3/4" thick with a 180-degree outswing, 2 pairs of hinges, and a door hold open device.

P. Satellite wiring closets shall have a pair of 3'0" wide by 7'0" high louvered hollow metal doors, with head and foot bolts. Use a deadbolt or exit device at exterior doors and a cylindrical lockset at interior doors or a single door 4'0" x 7'0".

Q. Flammable storage rooms shall have one of the following according to program requirements:

1. One 4'0" wide by 7'0" high hollow metal door.
2. A pair of 3'0" wide by 7'0" high hollow metal doors with head and foot bolts. Use a labeled exit device with a pull and no center mullion.

R. Exterior doors, except transformer vault doors, shall receive security switch preparation and shall be noted in door schedule. See Appendix - Doors and Hardware for metal door details.

S. Door Swings and Recessed Doors:

1. Doors shall swing in the direction of exit travel. In-swing doors may be used at spaces with an occupant load of less than 6.
2. Doors opening into corridors or traffic patterns shall be recessed and not project into the corridor or traffic pattern, except as follows:

    a. At mechanical rooms, telephone switching rooms, electrical rooms, custodial closets, and other service spaces with low traffic use with an outswing door of 180-degrees or less if able to be held against an adjacent wall without reducing the required corridor width or traffic pattern except by the door thickness and hardware. See Appendix - Doors and Hardware for details.
    b. In-swing doors at spaces with an occupant load of less than 6.
    c. Additional locations accepted by M-DCPS Safety, Environment, and Hazards Management and M-DCPS School Police to eliminate hidden corners from supervision.

3. The depth of a recess shall not exceed the width of the widest door panel.
4. Stagger recesses at least 8 feet for instructional space access at double loaded corridors.
5. Provide 180 degree door swings, or less if able to be held against an adjacent wall, for non-recessed exterior and non-recessed interior doors. See Appendix - Doors and Hardware for doorframe details.

6. Provide maneuvering clearances at doors to comply with accessibility requirements.

7. Recess exterior swing doors at EHPAs.

T. Doors at Multiple Openings:

1. Interior and exterior pairs of doors require a removable 2" x 3", 11 gage steel center hardware mullion except at specific program required mechanical rooms and storage rooms with no center mullion. Fixed mullions are not allowed.

    a. Removable center hardware mullions at exterior doors shall be grout filled.
    b. Provide removable center hardware mullions with secure anchorage.
    c. Provide fin walls at multiple pairs of doors to prevent interference at door swings during operation or provide for 180 degree door swings. See Appendix - Doors and Hardware.

2. Pairs of double egress doors with each leaf opening in opposite directions shall not be used at auditoriums, media centers, locker rooms, corridors, stairwells, and any other areas restricting student access or requiring security.

U. Vision Panels.

1. Provide vision panels only at interior entrance doors in facilities that house pre-K through grade 3, smoke stop doors, clinics, door from media to the CCTV editing room, counselors at student personnel, practice rooms at music suites, and other locations according to program requirements.

    a. Vision panel shall be at least 4 inches wide.
    b. Locate bottom of vision panels at 30 inches above the floor and top at 72 inches above the floor.
    c. Vision panels at smoke stop doors shall not exceed 1296 square inches.
    d. Sidelights are not allowed.

2. For security purposes, vision panels shall not allow interior locking devices to be visible from the exterior.
3. Provide metal grilles over vision panels if located at exterior doors.

    a. Locate metal grilles at exterior side of glazing and use tamper-proof fasteners.
    b. Metal grilles shall withstand a 200-pound force applied to any point from any direction.
    c. Metal grilles shall reject a 1/2" diameter sphere.
    d. Exterior metal grilles at EHPAs shall be missile impact resistant.

4. Polycarbonates, such as "Lexan", are not allowed for glazing materials exposed to the interior of the building.

5. Doors with vision panels shall comply with required fire ratings.

V. Viewports.

1. Provide 1/2" diameter viewports with 180 degree view (peep holes), allowing for outward viewing from within a space in place of door vision panels at the following locations. M-DCPS School Police will assist in determining additional locations.

   a. Kitchen receiving door, also equipped with a doorbell.
   b. Exterior entrance/exit doors without vision panels.
   c. According to program requirements.

2. Doors with viewports shall comply with required fire ratings.

W. Door Ratings:

1. Fire rated doors shall be hollow metal. Locate according to code requirements to include, but not limited to, the following:

   a. Doors opening into adjacent enclosed corridors.
   b. Interior doors with fire rated magnetic hold open devices opening into stairwells and cafeteria dining areas from food service kitchen areas.
   c. Doors accessing fire rated corridors, or fire rated rooms.
   d. Other doors as required by applicable codes.

2. Non-fire rated doors shall be at:

   a. Exterior doors in non-rated walls opening into adjacent exterior corridors or directly to the exterior.
   b. Doors in non-fire rated walls.
   c. Exterior doors at food service/kitchen receiving areas opening into loading dock area.

X. Use folding doors, "door-within-a-door," and overhead coiling doors or grilles, according to program requirements.

1. Comply with NFPA 101 for secondary exit access requirements in rooms using folding or movable partitions.
2. Folding doors shall not contain particleboard.
3. Overhead coiling doors shall be manually operated.
4. Coiling doors between air-conditioned spaces and the exterior shall be insulated.
5. Dutch doors are not allowed. See Appendix - Doors and Hardware for "door-within-a-door" detail.

Y. Toilet Rooms:

1. Do not provide entrance doors to interior group toilet rooms.
2. Group toilet rooms accessed from the exterior are not allowed at new construction, except on a per condition basis approved by M-DCPS.

Z. Individual student toilet rooms shall be accessible from instructional spaces or other staff controlled spaces and not from corridors or exterior areas.

1. An individual student toilet room with exterior or corridor access requires M-DCPS acceptance on a per condition basis, a toilet partition privacy stall, and one of the following:

a. An exterior door with a classroom function deadbolt, pull, and closer.
b. An interior labeled door with a classroom function cylindrical lock and closer.

AA. For special security systems at doors, see Divisions 13 and 16.

III. WINDOWS (08500-08699)

A. Projects will be reviewed for window protection, motion detectors, and security devices.
B. According to SREF student occupied spaces shall have a window or a door leading directly to the exterior unless the building is fire sprinklered.
C. Comply with SREF for areas required to have openable windows and as directed by program requirements for additional areas.
D. The Florida Board of Building Codes and Standards has determined accessibility requirements do not apply to normal window operation, but do apply to exiting through emergency rescue openings.

1. Emergency rescue openings shall open from the inside with one 5 pound outward or upward movement, and without tools. Screens, louvers, or shutters of egress windows shall open with the same one movement opening of the egress window.

E. Windows shall provide the following:

1. Sunlight control to protect interiors from direct sunlight and to control natural lighting.
2. Security to prevent intruder access.
3. Storm protection to protect interiors from hurricane wind forces, driving rain, or flying debris.

F. Accepted Windows:

1. Windows scheduled for use at a M-DCPS facility require M-DCPS evaluation, testing by M-DCPS Materials Control, and M-DCPS acceptance.
2. Exterior Windows:

    a. New construction shall receive single-hung or double-hung windows with tempered glass and manually operated certified missile impact resistant metal louvers.
    b. Louverless window replacements required to match existing conditions at designated historical buildings shall receive certified missile impact resistant glass.
    c. Steel windows with rated glass, fusible links, and manually operated louvers may only be used at fire rated wall locations and be certified missile impact resistant.

3. Egress windows shall have a similar appearance to adjacent windows.
4. Communication window at the food service manager's office shall be a horizontal steel sliding pass-through window 48" x 44" high with wire glass, and with a sill height of 42 inches above the finish floor. Verify fire rating requirements.

G. Maximum length of egress window adjustable louvers shall not exceed 3'4".
H. Maximum head height of windows shall not exceed program required ceiling elevations. Clerestory windows require M-DCPS acceptance on a per condition basis.
I. The interior sill of a window shall not be below abutting built-ins or FF&E.
J. Inswing casement or inswing projecting windows are not allowed.
K. Replacement outswing casement or outward projecting windows shall be located at least at door head height at walkways or corridors.
L. Windows shall be metal framed except as follows:

    1. Restorations, renovations, or additions at designated historical buildings where metal would not be aesthetically acceptable and with M-DCPS acceptance on a per condition basis.
    2. M-DCPS specific directive to use another material.

M. Sunlight control for room darkening for audiovisual presentations at instructional spaces shall be provided by the following methods for aesthetic, security, and low maintenance requirements.

    1. Exterior operable metal louvers with manual interior controls.
    2. Other systems accepted by M-DCPS on a per condition basis.

N. Unacceptable sun control methods for room darkening in instructional spaces:

    1. Curtains.

2. Window tinting.

O. Windows and attachment/support system shall be designed to withstand wind loads based on American Society of Civil Engineers (ASCE) 7-98.

1. Provide calculations, signed and sealed by a Florida registered professional engineer, establishing wind velocity pressure values for the specific project according to ASCE 7-98 using a wind speed of 146 mph.
2. Use ASCE 7-98 Exposure Category "C" for wind design at M-DCPS additions and new construction.
3. According to ASCE 7-98 occupancy types, educational facilities are classified as Category 3 and shall have a wind load importance factor of 1.15.
4. SREF recommendations to use map wind speed plus 40 mph and a wind importance factor of 1.0 are not to be used.

P. Method of attachment to the building structure, including the type, number, and spacing of fasteners and required penetration into the structure shall be shown on construction documents.

Q. Window Sills:

1. Use precast or poured in place concrete sills at masonry construction. The innermost portion shall be level with a dimension of at least 4 inches and have a 3/4" plumb lip going down to the outermost portion with a slope down to the exterior. Bucks shall align with lip. See Appendix window sill detail.
2. Precast tilt-up wall construction shall have a similar sill profile used for masonry construction and the remaining three sides of the window opening shall have a 3/4" lip.

R. Windows shall be flanged at all sides to bed against the 3/4" lip all around the rough opening with sealants, mastic, or glazing tapes.

S. Windows shall be self-weeping to the exterior.

T. Windows shall comply with ANSI/AAMA 101-93.

U. Muntins, if used, shall be integral with the window framing system and not surface applied.

V. Glazing shall comply with the requirements of SREF and be designed to minimize accidental passage through the glass.

W. Coordinate louver sizes and locations with typical window modulation wherever possible.

X. Storage rooms, telephone and electric closets, mechanical equipment rooms, new toilet rooms, custodial closets, and other similar spaces shall be windowless.

Y. Screens are not required on windows except at kitchen and food preparation areas, cafeterias, home economics rooms, existing toilet rooms, and other locations according to program requirements.

Z. Means of egress shall comply with SREF without compromising window security or

aesthetics.

1. Emergency access, emergency rescue, and secondary means of egress windows and the paths of egress leading to them shall not be blocked of obstructed by fixtures, furnishings, or equipment.

AA. Indicate fixed and operable window panels on contract document building elevations.
BB. Window Hardware:

1. Window opening lever hardware protrusions shall be limited to 2-1/2" and shall not be a safety hazard as determined by M-DCPS.
2. Louver operating devices and locks shall be a rotary crank or a lever handle with a cam-type latch.
3. Window hardware, other than the above mentioned lever hardware, shall not protrude more than 1/2".
4. Hardware shall be non-removable or secured by concealed or tamperproof fasteners.
5. Provide concealed hinges. Use of exposed hinges may be accepted on a per condition basis if tamperproof and for windows over 90 pounds when guaranteed in writing by the manufacturer.
6. Exposed fasteners, when the window is in a closed or opened position, shall be tamperproof.
7. Aluminum window exposed fasteners and hardware shall match finish of adjoining metal.

CC. Window finishes shall be anodized, ESP, baked enamel, Kynar, or other accepted finish. Kynar 500 (70 percent resin) shall be the preferred base vehicle and required in high corrosive air areas.
DD. For special security systems at windows, see Division 16.

IV. FINISH HARDWARE (08710-08711)

A. Consult with M-DCPS Facilities Operations - Central Lock Shop before Phase 3 submittal for specific hardware requirements to include lock manufacturer, series, design, and finish.
B. Submit plans, specifications, and tentative hardware schedule to Central Lock Shop at least 4 weeks before Phase Three - 100 percent.
C. The Contractor's hardware schedule and related shop drawings shall also be submitted to Central Lock Shop for review during the shop drawing evaluation process.
D. Consult with M-DCPS School Police and Central Lock Shop for the locations of card access control systems, motion detectors, and other security measures. Identify doors requiring security switch preparation in door and finish hardware schedules.

E. It is the responsibility of the A/E to standardize locks and related door hardware

between new and existing work.

F. Verify lock hardware manufacturer and series with Central Lock Shop at renovation or remodeling projects.

G. Verify with Central Lock Shop the following:

1. Use of cylinders and keyways of a different manufacturer than lock set manufacturers.
2. Special restricted keyways required by written authorization by M-DCPS before ordering.
3. Lock hardware manufacturer and series.

H. Construction Master Keying (CMK) and Master Keying (MK) apply to new facilities only.

I. Contact Central Lock Shop for information, keying requirements, and acceptance.

J. Hardware shall comply with the following and have precedence over M-DCPS requirements:

1. Americans with Disabilities Act and Accessibility Guidelines (ADA).
2. Florida Department of Community Affairs - Florida Accessibility Code for Building Construction (DCA).
3. SREF.
4. Life Safety requirements.

K. See General Considerations for accessibility requirements for children.

L. Hardware sets shall list the appropriate door and building numbers. The door schedule shall list the appropriate hardware set numbers. Hardware sets and the door schedule shall comply with the following:

1. Each door or pair of doors shall receive a different numerical designation with hand of each door noted and space allocated for M-DCPS use for keying information.
2. Door numbering should be progressive and according to walk paths.
3. Gates, roll-up grilles, or doors and any other openings requiring finish hardware shall be assigned different individual numbers.
4. Specified hardware schedule shall note M-DCPS project number and A/E commission date.
5. Include the fire resistance label.

M. Provide door schedules for new or existing doors affected by scope of work. Locate door schedules on the drawings and include the following.

1. Door number.
2. Room number or space to be secured.
3. Width, height, and thickness of door.

4. Pair of doors noted.
5. Type of center hardware mullion.
6. Reference door type to door elevations.
7. Door material.
8. Frame type.
9. Frame material.
10. Reference to jamb, head, and threshold details.
11. Fire resistance label.
12. Hardware set number as appears in hardware schedule.
13. Security switch preparation.
14. Card access control.
15. Remarks column.

N. Door hardware locations shall be as follows:

1. Pushplates: 1 inch above pushpad and 1 inch from exit device head.
2. Pushplates with a Vision Panel: 1 inch above exit device between vision panel and edge of door.
3. Exit Device: 40-5/16" from door bottom or 34 inches as required for children's accessibility.
4. Lever Lockset: 38 inches from door bottom or 34 inches as required for children's accessibility.
5. Deadbolt: 48 inches from door bottom.
6. Kickplate: 1 inch from door bottom or 1/2" from top of surface mounted automatic door bottom.
7. Viewport: 60 inches from door bottom.

O. Note doors requiring security switch preparation or card access control in hardware sets, door schedules, and floor plans.

P. Latching Hardware.

1. Deadbolt locks shall not be used at any student occupied areas except at non-labeled exterior group toilets, custodial rooms, mechanical rooms, and other locations accepted by M-DCPS Safety, Environment and Hazards Management.
2. Cylindrical locksets shall have lever trim and be through bolted at wood and hollow metal doors.
3. Provide knurled lever trim or knurled door pulls at doors of custodial, electrical, mechanical rooms, and other hazardous areas according to accessibility requirements.
4. Provide surface mounted exit devices or classroom function locks at student occupied areas according to SREF and program requirements. Provide mounting heights on the project door schedule.
5. Provide surface mounted exit devices, for egress at the following, but not limited to, locations:

a. Cafeterias, auditoriums, media centers, gymnasium areas, and other student occupied spaces with 100 or more persons.
b. Exterior doors at building perimeter, egress doors to courtyards, and doors at covered walkways.
c. Computer and business labs, music suites, administration areas, vocational shops, vaults, equipment and flammable storage rooms, physical education areas, and other high security spaces containing high dollar items.
d. Pair of doors with removable center hardware mullions.
e. Doors with card access control systems. Provide with signal switch.

6. Vertical rod exit devices are not allowed.
7. Interior labeled doors with required exit devices shall receive:

   a. Outside lever trim at single doors.
   b. Outside lever trim at RHR door of a pair and LHR door, less trim, shall be exit only.

8. Interior non-labeled doors with required exit devices shall receive the following:

   a. Outside door pull and cylinder at single doors.
   b. Outside door pull and cylinder at RHR door of a pair and LHR door, less trim, shall be exit only.

9. Exterior non-labeled doors or other special exterior labeled doors, with exit devices shall receive the following:

   a. Outside door pull and cylinder at single doors.
   b. Outside door pull and cylinder at RHR door of a pair and LHR door, less trim, shall be exit only.

10. Labeled doors with exit devices at flammable storage rooms for lawn equipment shall receive the following:

    a. Outside door pull and cylinder at RHR door of a pair and LHR door with head and foot bolts, no center mullion.

11. Electrical and interior accessible mechanical, storage, telephone equipment, and custodial rooms shall have storeroom function locksets.

    a. Entrance shall be by key only with inside always unlocked.
    b. Exterior labeled or high hazardous doors, mechanical and electrical rooms shall have NL function exit device. Pair of doors shall use UL rated head and foot bolts.

Q. Controlling Hardware:

1. Head bolts or foot bolts shall not be used on any pair of doors at student occupied spaces.
2. Doorstops and Holds:

    a. Wall mounted doorstop and holds: At custodial, electrical, and mechanical non-labeled spaces and exterior non-labeled access to corridors.
    b. Floor mounted door holders: At non-labeled doors only if doorstop and holds cannot be used and cush-n-stop closers at labeled doors.
    c. Door holds at labeled doors with closers shall be magnetic hold open devices connected to the fire alarm system.

3. Doorstops:

    a. Wall mounted doorstops:

        1) At non-labeled wood doors to administrative individual offices, conference rooms, storage rooms, and workrooms and at all labeled doors.
        2) Install on solid concrete or masonry walls or at drywall or plaster applications with backing reinforcement.

    b. Floor mounted doorstops: At labeled doors only if wall mounted stops cannot be used.
    c. Provide doorstops or other door control devices at doors if stop and holds are not specified.

4. Push Plates:

    a. Provide push plates at non-labeled doors with exit devices or deadbolts, and at toilet room doors without locksets.
    b. Omit push plates at doors with lever handle cylindrical locksets.
    c. Provide 2 push plates and 2 kick plates on double acting doors.

5. Kick Plates:

    a. Provide at all doors except to individual offices at administration areas.
    b. Provide a 34 inch high kick plate at the kitchen receiving door.

6. Specify surface mounted door closers and exit devices. Floor mounted or concealed overhead closers are not allowed.
7. Use special delay action closers at doors serving children with disabilities.

8. Select removable center hardware mullion type based upon exit device and fire label requirement.
9. Provide silencers or program required door seals on hollow metal doorframes.

R. Weatherstripping and Seals:

1. Provide marble thresholds at group or single toilet rooms, wet mop rooms adjacent to other spaces, and custodial closets with a sink or mop receptor.
2. Provide aluminum thresholds at interior accessed mechanical rooms for soundproofing and at exterior doors to prevent water intrusion except at gates, kitchen receiving doors, exterior doors connecting exterior spaces, and other programmed required locations.

    a. Do not provide thresholds at interior doors unless required for soundproofing or carpet separation at labeled doors.

3. Provide rigid weatherstripping at frames of exterior doors at air-conditioned spaces. Verify type of weatherstripping and thresholds at exterior doors comply with acoustical requirements.
4. At kitchens provide a 4'0" wide, 7'6" high, and 1-3/4" thick receiving door with:

    a. Brush weatherstrips and surface applied auto door bottoms.
    b. Vermin and pest control.
    c. Viewport and no threshold.

5. Provide soundseals and auto door bottoms at acoustical doors and sound sensitive areas.

    a. Sound seals shall not protrude more than 3/8" from stop surface.
    b. Sound sensitive areas include entrances to media center, band rooms, music suites, practice rooms, interior mechanical rooms, and CCTV rooms.

6. See General Considerations for overhead weather protection at exterior doors.

S. Hardware Sets:

1. Schlage and Marks lock functions and Precision exit devices are used for Hardware Set Descriptions. The actual hardware manufacturer specified for new or existing facilities will be verified by the Central Lock Shop.
2. Hardware sets shall comply with the following, but not limited to, hardware set descriptions and locations:

    #1. Student occupied spaces with less than 100 persons and minimum security - interior or exterior, labeled or non-labeled:

Classroom lock w/ closer. (Interior)
Exit Device w/ closer. (Exterior)

#2. Student occupied spaces with less than 100 persons and minimum security - interior, non-labeled:

Classroom lock w/ closer.

#3. Student occupied spaces with less than 100 persons and minimum security - interior, exit only, secondary means of egress:

Exit lock w/ closer.

#4. Student occupied spaces with 100 or more persons or high security - interior or exterior, non-labeled:

Exit device less outside trim w/ pull, cylinder, and closer.

#5. Student occupied spaces with 100 or more persons or high security - interior or exterior, labeled:

Exit device w/ lever trim, cylinder, and closer.

#6. Student occupied spaces with 100 or more persons or high security - interior or exterior, non-labeled or labeled, exit only, secondary means of egress:

Exit device less outside trim, w/ closer.

#7. Student occupied spaces with 100 or more persons or high security - interior or exterior, non-labeled pair:

Exit device w/ pull, cylinder, w/ closer at RHR door.

Exit device less outside trim w/ closer at LHR door - exit only.
Removable center hardware mullion.

#8. Student occupied spaces with 100 or more persons or high security - interior or exterior, labeled pair:

Exit device w/ lever trim, cylinder, and closer at RHR door.

Exit device less outside trim, w/ closer at LHR door - exit only.

Removable center hardware mullion.

#9. Group toilet room - exterior:

Classroom deadbolt w/ closer, pull.

#10. Individual student toilet room accessed from instructional space or supervised area, not accessed from corridors or exterior:

Privacy lock w/ closer.

#11. Individual student toilet room accessed from corridors or exterior, non-labeled:

Classroom deadbolt w/ closer, pull. (Note: Toilet partition privacy stall required).

#12. Individual student toilet room accessed from instructional space or supervised area, accessed from corridors or exterior, labeled:

Classroom function cylindrical lock w/ closer: (Note: Toilet partition privacy stall required).

#13. Individual staff toilet room accessed from public corridors:

Hotel-motel lock w/ closer.

#14. Individual staff toilet room accessible from office areas or from workrooms:

Privacy lock w/ closer.

#15. Storage, mechanical, electrical, telephone equipment, satellite wiring closet, elevator machine and custodial rooms w/ minimum security, exterior, interior:

Single or RHR of a pair:

Exterior Non-labeled: Bore-in deadbolt w/ knurled outside trim.
Exterior Labeled: NL function exit device w/ closer and knurled outside trim.
Interior Labeled or Non-labeled: Storage function lock, knurled w/ closer.

LHR of a pair:

Non-labeled: Surface mounted slide bolts, no closer.
Labeled: UL rated surface mounted head and foot bolts, no closer.

#16. Toilet or kitchen vestibules - interior:

Classroom lock w/ closer.

#17. Individual and group offices in the administration area or kitchen offices - labeled, interior:

Entrance lock w/ closer.

#18. Individual and group offices in the administration area or kitchen offices - non-labeled, interior:

Entrance lock w/ no closer.

#19. Cafeteria from kitchen - labeled, interior:

Classroom lock w/ closer, magnetic hold open, and not in card access control area.

Entrance lock w/ closer, magnetic hold open, Medeco cylinder, and in card access control area.

Exit only lock w/ closer and magnetic hold open at remaining doors.

#20. Kitchen receiving - exterior:

Exit device less trim, w/ closer, viewport, brush weatherstrip and surface applied auto door bottom, armor plate, pull, and cylinder. (Note: 4'0" x 7'6" x 1-3/4" door required)

#21. Stairs to interior corridor or exterior - labeled:

Exit device w/ lever trim, closer, and magnetic hold open.

#22. Corridor smoke stop separation - labeled, interior:

Pair - w/ closer, magnetic hold open, drop seal, astragal with seal, and no center mullion.

#23. Connecting instructional spaces not required for access:

Communicating lock w/ closer.

#24. Connecting instructional spaces with required egress in both directions:
Passage set w/ closer.

#25. Folding door partition:

2 cylinders compatible with facility's master key system.

#26. Lead lined door:

Pull and closer.

#27. Counter gate:

Secret gate latch, spring hinges, and stop.

#28. Roof scuttle:

Padlock keyable to facility master key system.

#29. Door-in-a-door:

Door: Storage lock w/ closer
Door-in-a-door: Single thumb deadbolt.

#30. Roof access from corridors:

Institution lock-knurled inside.

#31. Key cabinet for new facilities only, unless otherwise noted. Note model and manufacturer in door schedule.

#32. Flammable storage room for lawn equipment storage:

Labeled exit device w/ knurled pull, cylinder, and closer.

#33 Flammable storage room for lawn equipment storage - labeled pair:

Labeled exit device w/ knurled pull, cylinder at RHR door.

LHR door w/ head and foot bolts.
No center mullion.

#34. Teacher planning rooms and individual offices between or within instructional spaces:

Classroom lock w/ closer.

#35. Teacher planning room accessed from corridors:

Storage lock w/ closer.

#36. Roll-up gates and grilles:

Padlock - keyable to master key system.

#37. Sound sensitive rooms - band and music practice rooms, interior accessed CCTV production rooms:

Classroom lock w/ closer, sound seals, and surface applied auto door bottom.

#38. Sound sensitive rooms - exterior or corridor accessed CCTV production rooms:

Exit device less outside trim, w/ closer, sound seals, and surface applied auto door bottom.

#39. Darkrooms within instructional spaces:

Privacy lock w/ closer, light seals, and surface applied auto door bottom.

#40. FPL transformer vault, pair:

Passage latch w/ closer at RHR door.

Surface bolts w/ closer at LHR door.

Padlock hasp, padlock by FPL.

#41. Auditorium stage dressing rooms:

Privacy lock w/ closer and classroom function deadbolt.

#42. Store front door:

Surface mounted exit device, cylinder, closer, and door pull.

3. Remaining, but not limited to, hardware set information below shall be determined by program requirements or individual door criteria requirements:

    a. Hinges.
    b. Exit devices.
    c. Thresholds.
    d. Door top protection.
    e. Viewport.
    f. Closer.
    g. Stop and holds.
    h. Weatherstrip/soundseal/gasket.
    i. Drop seal.
    j. Brush weatherstrip.
    k. Push plate.
    l. Kick plate.
    m. Removable center hardware mullion.
    n. Silencers.
    o. Locksets.
    p. Latch guards.
    q. Cylinders.
    r. Dead bolts.
    s. Head and foot bolts.
    t. Raindrip, overhead.

T. Card Access Control System.

1. Designated exterior doors shall receive card access controls and be reviewed by M-DCPS School Police and Central Lock Shop. Locate intrusion detection system keypads within the protected space next to the card access controlled door.

2. Card access control systems shall be referenced in related construction phases such as masonry and electrical, and noted in architectural plans, door schedule, hardware schedule, hollow metal specifications, and electrical plans.
3. Provide an uninterruptible power source (UPS) system at the head end.
4. Card access control door requirements shall be as follows:

    a. Primary entry doors shall be one of the following:

        1) According to NFPA, doors with card access control and an electromagnetic lock shall:

            a) Receive a motion sensor on the egress side to unlock the door upon

detection of occupant approaching the doors and unlock the doors upon loss of power to the sensor.
b) Unlock upon loss of power to the card access control locking system.
c) Unlock from a signal switch within push pad of exit device.
d) Unlock upon activation of the fire detection system.
e) Unlock upon activation of the building automatic sprinkler system, if provided.

2) Labeled doors with card access controls shall receive an exit device with keyed cylinder, outside trim, and closer. Electromagnetic lock is to be programmable through card access control system enabling access by key during normal working hours.
3) Non-labeled doors with card access controls shall receive a closer, door pull, and an exit device with keyed cylinder, less outside trim.

b. Secondary ingress door to the card access control area shall receive an exit device, closer, door pull, and a Medeco high security cylinder to allow emergency key entry.
c. Remaining doors accessing a card access control area shall have exit only hardware.
d. A pair of labeled doors with card access controls shall receive a labeled removable center hardware mullion.

5. See Division 13 - Facility Management Systems for additional information on card access controls and other intrusion detection systems.
6. Hardware Sets with card access controls shall comply with the following, but not limited to, hardware set descriptions and locations.

#43. Primary main building entry, non-labeled (RHR of a pair)):

Card access control, exit device w/ 24 volt electro-magnetic lock, sensor release device, manual release device, removable center hardware mullion, pull, closer, and cylinder.

#44. Emergency/Backup main building entry:

Exit device w/ closer, Medeco cylinder, door pull.

#45. Remaining doors with direct or indirect or interior access:

Exit device w/ closer, no cylinder.

#46. Primary entry - kitchen receiving door, non-labeled:

Card access control, exit device less trim w/ closer, door pull, 24 volt electro-magnetic lock, sensor release device, manual release device, closer, viewport, armor plate, brush weatherstrip, and cylinder. (Note: 4'0" x 7'6" x 1-3/4" door required)

#47. Emergency backup entry to kitchen - connecting door between the dining room and kitchen serving line:

Entrance or office lock w/ Medeco cylinder, door closer.

#48. Remaining connecting doors between the dining room and kitchen serving lines:

Exit lock w/ closer, magnetic hold-open connected to and released by fire alarm system.

#49. Remaining kitchen entry doors:

Exit device w/ closer.

#50. Primary entry - general office area:

Non-labeled: Card access control, exit device w/ 24 volt magnetic lock, sensor release device, manual release device, closer, pull, and cylinder.

Labeled: Card access control, exit device w/ 24 volt magnetic lock, sensor release device, manual release button, lever trim, cylinder, closer - (single door or RHR door of a pair with removable center hardware mullion).

Exit device less outside trim w/ closer - labeled (LHR of a pair).

#51. Emergency backup general office entry - non-labeled:

Exit device w/ night latch closer, Medeco cylinder.

#52. Emergency backup general office entry - labeled:

Exit device less trim, w/ closer, Medeco cylinder, door pull.

V. GLAZING (08800-08899)

A. Exterior glazing shall be protected by one of the methods described in Division 8 - Windows.

B. Exterior glass shall resist wind velocity pressures according to American Society of Civil Engineers (ASCE) 7-98.

1. Provide calculations, signed and sealed by a Florida registered professional engineer, establishing wind velocity pressure values for the specific project according to ASCE 7-98 using a wind speed of 146 mph.
2. Use ASCE 7-98 Exposure Category "C" for wind design at M-DCPS additions and new construction.
3. According to ASCE 7-98 occupancy types, educational facilities are classified as Category 3 and shall have a wind load importance factor of 1.15.
4. SREF recommendations to use map wind speed plus 40 mph and a wind importance factor of 1.0 are not to be used.

C. Glazing in M-DCPS buildings shall be tempered glass, laminated glass, fire rated glass, wired glass, or M-DCPS accepted glass block.
D. Wire glass shall only be used for window glazing.
E. Polycarbonate Glazing:

1. Polycarbonate glazing shall be used as the exterior pane of a high or low security, double glazed window without metal louvers. Interior glazing shall be 1/4" tempered glass.
2. Polycarbonate glazing shall not be exposed to the interior of the building. Polycarbonate glazing is not allowed in door view panels or display cases.
3. Thickness shall be 1/4" minimum or greater, according to the manufacturer's recommendation for the size of the panel to limit deflection and assure proper structural stability.

4. Provide polycarbonate glazing with tempered glass at historical renovations, additions, or other locations where alternate means of security are not aesthetically acceptable.

F. Plastic film may be used, but is not required, at the interior face of low security glass to reduce tempered glass breakage hazard. It is not an alternate for security or safety glazing requirements.
G. Mirrors:

1. Mirrors in faculty or staff spaces and toilet rooms shall be 1/4" tempered glass, electrolytically copper plated, in stainless steel frames with concealed theftproof mountings.
2. Mirrors in public or non-supervised student accessible spaces and toilet rooms shall be polished stainless steel surfaces with 1/4" minimum reinforced pressed board backing and stainless steel frames or with wraparound edges. Provide concealed theftproof mountings and proper anchoring and wall backing according to manufacturer's requirements.

3. Mirrors in supervised student accessible spaces shall be 1/4" laminated safety glass with electrolytically copper plated backing. Mirrors shall provide distortion-free reflected images and be optically matched for distortion-free reflected images from panel to adjacent panel. Provide proper anchoring and plywood backing and install according to manufacturer's requirements.
4. See Division 10 - Toilet Accessories for additional mirror requirements.

H. 1/4" thick, tempered one-way safety glass shall be used according to program requirements.

END OF DIVISION