DIVISION 8
DOORS AND WINDOWS

SECTIONS:

8.1 WOOD DOORS AND METAL-CLAD DOORS
8.2 SPECIAL DOORS
8.3 STEEL DOORS AND FRAMES
8.4 DOOR REPAIR
8.5 FINISH HARDWARE
8.6 STORM DOORS AND WINDOWS
8.7 SECURITY SCREENS
8.8 AAMA/NWWDA AND NFRC-LABELED WINDOWS
8.9 SINGLE-GLAZED WINDOWS FOR SPECIAL SITUATIONS
8.10 CUSTOM HISTORICAL WINDOWS
8.11 WINDOW REPAIR

SECTION 8.1 WOOD DOORS AND METAL-CLAD DOORS

8.1 A Related Sections:

15.8 Ductwork: *Return air egress*

8.1 B Standards:

All doors shall be fabricated according to National Woodwork Manufacturer's Association (NWMA) Standards I.S. 1-69.

8.1 C Products:

1. Exterior Door and Frame –

   Pre-fit, pre-hung 1-3/4 inch, 23 ga. galvanized embossed steel door with completely filled core of polyurethane foam mounted on 4-1/2 inch ponderosa pine frame. Frame shall be keyed for integral vinyl weatherstripping. Aluminum adjustable threshold shall be integral part of door package. Door shall be factory-primed and shall be prepared for mail slot, viewer and lockset specified. Hinges shall be 4" x 4", 1-1/2 pair per door, corrosion resistant finish, NRP, mounted to door and frame.

   Approved product: "Benchmark 3068 EDE" as manufactured by General Products Co., Inc., Fredericksburg, Va.

2. Exterior Door Only –

   In special situations the Historical Commission may require that the existing frame be repaired (see 8.4 A) and that a new exterior door of appropriate design be hung in the existing frame.

3. Interior Door and Frame –

   a. Frame: 1 inch nominal milled clear pine frame with applied stop.

   b. Door:

      1) For general application: 1-3/8 inch flush hollow core interior grade door conforming to Commercial Standard CS 171-58, CS sound grade, AWI economy grade, pressed board (Masonite) or mahogany or lauan veneer with 1/8" thick face veneer. Pressed board shall be suitable for enamel paint; veneer shall be suitable for clear finish.

      2) Recommended for severe-duty locations: 1-3/8 inch flush solid core interior grade.

8.1 D Execution:

1. Cut, plane, and fit doors with 1/8 inch clearance at head and jamb. Install doors and jambs plumb, straight, and true.

2. Undercut *all* doors to allow for carpeting, ventilation, and, where applicable, return air egress.

3. Install hardware using templates provided by manufacturer and employing drills and routers in appropriate jigs and frames. Hand chiseling of mortises shall be limited to minor accessory hardware only. Provide wedged shimming behind frame at hinges.

4. Mount door so as to fit tightly and swing freely. Warped and defective or damaged doors will be rejected. Hinge bound doors shall be rehung.

5. Pre-fit, pre-hung doors shall fit frame squarely with 1/8 inch even clearance at head and jambs. Anchor frame according to manufacturer's instructions.

6. Adjust hardware and provide keys to owner at project closeout.

7. Shim and grout thresholds to prevent movement.

SECTION 8.2 SPECIAL DOORS

8.2 A General:

Provide catalog cuts of all special doors for approval.

8.2 B Products:

1. Wood Bifold Closet Doors – 1 3/8 inch flush hollow core lauan or mahogany veneer with Stanley or Grant 2600 hardware kit.

2. Metal Bifold Closet Door – 24 gauge formed steel with top and bottom track, three stiffeners per panel, three self aligning hinges per pair of panels, zinc plated guide and pivot pine, nylon bushings, aluminum track, baked enamel finish equal to "Benchmark" 4068VP with "Pearl White" color finish and stack track adapter for floor track.

3. Sliding Closet Doors – 1 3/8 inch flush hollow core lauan or mahogany veneer with Stanley or Grant 7000 hardware kit.

4. Garage doors – sectional wood panel upward acting garage door by Windsor, Frantz or approved equal. Stiles and rails to be 1 3/8 inch thick, panels to be premium grade 1/4 inch hardboard. Track shall be 2 inch galvanized, rollers shall be steel ball bearing, counter-balance shall be oil tempered, helically would torsion spring. Provide all necessary mounting brackets, key locking hardware and latch mechanism.

5. Cellar Door – 12 ga. steel prime, coated Bilco door, size as required, with interior slide bolt.

8.2 C Execution:

1. Install special doors in strict accordance with manufacturer's instructions.

2. Undercut all closet doors where necessary to allow min. 1-inch clearance for carpeting.

SECTION 8.3 STEEL DOORS AND FRAMES

8.3 A General:

1. Steel doors and frames shall conform to the Steel Door Institute Standard SDI – 100.

2. Submit manufacturers specifications for each type of door and frame.

8.3 B Products:

1. Doors shall be flush and nominal 1 3/4 inch thick, have 1-1/2 pairs of 4 1/2 inch x 4 1/2 inch hinges, and have internal reinforcement for hardware.

2. Frames shall be formed from 16 gauge steel, with corners welded and ground smooth.

3. Finish – Steel doors and frames shall be thoroughly cleaned and shop-painted with one coat of baked-on rust-inhibiting primer. Top finish shall be two coats of oil-base enamel.

8.3 C Execution:

1. Frames shall be rigidly attached to masonry, wood, or steel construction with anchors supplied by manufacturer and designed for the conditions at each opening. A minimum of 6 anchors per opening shall be installed. All frames shall have an integral or welded sill anchor.

2. All necessary modifications shall be made to install door frames in existing masonry openings.

3. At new masonry openings, anchors shall be built into wall as masonry is installed.

SECTION 8.4 DOOR REPAIR

8.4 A Repair of Existing Doors:

1. Repair or replace stops, Jambs and trim. Cut out and mortise-in new wood at jamb at hinge locations as necessary to restore sound mounting of hinges.

2. Repair or replace missing or damaged strike plates, hinges, latchsets and knobs, and other hardware items with materials matching the design, finish and size of existing doors, in accordance with manufacturer's instructions and in accordance with the provisions of Division 8, Section 8.5 of the Technical Specifications.

3. Remove existing deteriorated paint and other finishes, sand surfaces, and fill holes and dents to provide a smooth surface ready for new paint finish.

4. Repair or replace existing worn, damaged or missing thresholds. Provide new weatherstripping at exterior doors.

SECTION 8.5 FINISH HARDWARE

8.5 A General:

All hardware shall be good residential grade, suited to the intended use and in conformance with Federal Specifications FF-H-106/c.

8.5 B Exterior Door Hardware:

1. 1-1/2 pair 4" x 4" brass butts – Stanley or approved equal.

2. Exterior doors shall be equipped with a latching doorknob and an integral jimmy-proof deadbolt lock, Kwikset Horizon Trim Rosette #262 or approved equal.

3. Letter Slot Front Door Only – Brass or aluminum equal to Ives 621 B3 or 621 PA28 or Baldwin 0017 – US3 or US28.

4. Viewer – Nutone or approved equal – standard design, brass plated finish.

SECTION 8.6 STORM DOORS AND WINDOWS

8.6 A Products:

1. Storm Door – Aluminum combination storm door, equal to S.D. Davis Co., best residential baked enamel finish, color white (in some instances the Historical Commission may require brown).. Insect screening shall be coated aluminum, storm panel shall be plexiglass. Door shall be equipped with adjustable frame, continuous hinge, insulated panel, "Storm King" closers, Ideal latch, black color, push button type with thumb latch inside, and with chain stop hardware at top of door.

2. Storm Window, Exterior (for use with single-pane sash) – Aluminum storm windows shall conform to ANSI/AAMA 1002.9 – 1977 Voluntary Specifications for Aluminum Combination Storm Windows for External Applications. Aluminum storm windows equal to Cal Aluminum Co. "Mark V", triple track, baked white (or brown) enamel finish. Insert screening shall be coated aluminum. Glazing shall be glass in vinyl gasket. Frame shall have integral weep and condensation drain.

3. Storm Window, Interior (for special situations where required by Historical Commission) – The Historical Commission may require either (1) vertically operating interior storm windows or (2) removable, rigid interior fixed storm panels. See Park Service publication "Window Directory for Historic Buildings" cited below in 8.10 B 2(a). When such windows are required, product literature shall be submitted to the Historical Commission for approval.

8.6 B Execution:

1. Install storm doors and windows in strict accordance with manufacturer's instructions.

2. Provide sealant backing at all frames.

3. Windows and doors shall be sized to meet frame and opening requirements and shall be installed square and without twist or racking. Following installation, all parts shall operate smoothly without binding.

4. Insure that weep holes are installed and open before completing installation.

5. When interior storm windows are used, weep holes shall be provided for primary window. An acceptable method is to attach a neoprene strip, with several small gaps, under the bottom rail of the lower outside sash.

SECTION 8.7 SECURITY SCREENS

8.7 A General:

1. Install extruded aluminum security screens on exterior of windows on ground floor level.

8.7 B Products:

1. Each extruded aluminum screen unit shall consist of a sub-frame, hinged main frame, wire cloth, special lock, lock bolts, concealed hinges, screws, anchors and all other fittings necessary to make a complete installation.

2. Main frames shall be open channel type, extruded aluminum alloy, with wall thickness of 1/8 inch. The corners of the main frame shall be electric flash welded and ground smooth.

3. Sub-frames shall be of extruded aluminum alloy. All four sides shall be reinforced channel shapes having wall thickness of 5/32 inch and 1/8 inch. All four corners of the subframe shall be uniformly welded and ground smooth.

4. Wire cloth shall be high tensile stainless steel, woven 12 mesh to the inch from .028 inch diameter wire and double crimped.

5. Hardware shall consist of concealed hinges of electro-plated steel with 1/4 inch diameter loose brass pins and integral compression guards, and a locking system consisting of case-hardened steel bolts operating simultaneously. All locking hardware shall remain completely concealed when the screen is in either the open or closed position. Emergency release from the interior shall operate by quick release handle, without key.

6. Finish of all aluminum extrusions shall be anodized bronze.

7. Approved product –

   Kane, Van-Guard Screens

8.7 C Installation:

1. Screens shall be custom manufactured to fit each window opening.
2. All anchoring devices shall be concealed when screen is in locked position.
3. Securely anchor each screen to masonry on exterior of window.

SECTION 8.8 AAMA/NWWDA AND NFRC-LABELED WINDOWS

8.8 A General:

This section applies universally except where precluded by special requirements of PHDC/RDA or of the Historical Commission. Provide new windows and frames to fit new and existing openings. Take field measurements in all cases of existing openings.

8.8 B Products:

1. Windows shall be aluminum, vinyl (PVC) or clad wood, shall conform to the ? - R 15 or higher voluntary specification in AAMA/NWWDA 101/I.S.2-97 (where ? may be AP, BW, C, H et al. corresponding to the type shown on the drawings), and shall be labeled with the "AAMA" or "NWWDA Hallmark" label.

2. Windows shall be NFRC-labeled with the following performance ratings:
   a. U-factor (thermal transmittance due to conduction) – 0.40 or less.
   b. SHGC (solar heat gain coefficient) – 0.55 or less.
   c. VT_{glass} (coefficient of visible light transmittance of the glass) – 0.70 or lower.
   d. AL (air leakage) – 0.30 cfm/ft^2 or less.

3. Window style shall be double-hung, one over one, unless indicated otherwise.

4. Screen – outside-mounted, aluminum-framed, fiberglass or coated-aluminum screen removable from inside.

8.8 C Execution:

1. Install windows in accordance with manufacturer's instructions.

2. Construct rough frames of milled stock 2 X lumber, primed. Air sealing of frame openings shall conform to Sect. 6.1, D 7.

3. In living space locations, provide drywall returns to interior finishes.

4. Replace all glass damaged during the course of the work.

5. Provide and install all necessary exterior moldings and trims at mullions and casings to provide a completed assembly.

SECTION 8.9 SINGLE-GLAZED WINDOWS FOR SPECIAL SITUATIONS

8.9 A General:

This section applies to owner-occupancy units where, for ease of repair, PHDC/RDA has mandated single glazing. Provide new windows and frames to fit new and existing openings. Take field measurements in all cases of existing openings.

8.9 B Products:

1. Double Hung Metal Windows –

   a. Windows shall conform to the H-R15 or higher voluntary specification in AAMA/ NWWDA 101.I.S.2-97 and shall be single-glazed double-hung prime windows with exterior-mounted triple-track storm window; prime sash and storm window separated by a thermal barrier of high density cellular foam; glazing easily replaceable on site.

   b. Style shall be one over one unless indicated otherwise.

   c. Lower sash of windows in bathrooms shall have frosted or white translucent glass.

   d. Glazing shall be set in preformed PVC gasket. All plastic gasketing shall have ultra-violet inhibitors.

   e. Windows shall meet or exceed the following performance characteristics, demonstrated either by NFRC label or by results from an AAMA-accredited laboratory following the NFRC test procedure. Structural test and thermal test shall be performed on the same sample window. Acceptable tests shall be no older than four years.

      1) U-factor (thermal transmittance due to conduction) – 0.55 or less.

      2) AL (air leakage) – 0.30 cfm/ft^2 or less.

   g. Acceptable models: "Super Seal II," Northeast Building Products

2. Basement Windows – Basement window shall be an aluminum sliding window.

8.9 C Execution:

Same as 8.8 C.

SECTION 8.10 CUSTOM HISTORICAL WINDOWS

8.10 A General:

This section applies where the Historical Commission requires custom wood windows to comply with historical guidelines. Reference: "Window Directory for Historic Buildings," U.S. Department of the Interior, National Park Service, Preservation Assistance Division, Washington, DC 1992. Install new wood windows to fit new and existing openings. Take field measurements in all cases of existing openings.

8.10 B Products:

1. Windows shall be double glazed, or single glazed with storm windows.

2. Windows shall have plastic or aluminum sash tracks and spring balances appropriately sized for weight of sash.

3. Wood basement windows, when required by the Historical Commission, shall be multi-paned fixed or awning units.

8.10 C Execution:

1. Windows shall be installed plumb and level, and securely fastened in rough opening.

2. Installation shall also conform to the provisions in Div. 8.8, C 2-5.

SECTION 8.11 WINDOW REPAIR

8.11 A General:

Repair existing windows to make them operable and weathertight. In special situations the Historical Commission may require installation of new sash and spring balance jamb liners into existing frames. Frames and decorative brick moldings shall then be repaired.

8.11 B Products:

1. New sash shall be custom made to match existing in size and details.

2. New trim shall match existing.

8.11 C Execution:

1. Replace all deteriorated or missing stops, stools, aprons and trim.

2. Repair all damaged sash as required to restore soundness and integrity to the unit. Replace all sash having rotten corners and missing muntins with matching sash.

3. Replace all cracked, broken and missing lights with clear sheet glazing-quality glass, thickness as recommended by manufacturer for size of light. Install glass using glazier points and glazing compound in accordance with the standards of the Flat Glass Marketing Association.

4. If both sash are replaced, remove weights and chains, insulate sash weight cavity with non-expanding foam, and install new spring balances, appropriately sized for weight of sash. Remove parting bead and install new vinyl or aluminum sash track.

5. Clean and prepare all surfaces for painting. Fill holes and dents, scrape off excess and loose paint, and sand to smooth condition.

6. Install new sash locks.

7. Install new storm windows on all windows to be repaired.