

SECTION 08 14 33

STILE AND RAIL WOOD DOORS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing the following types of stile and rail wood door:
 - 1. Interior stile and rail wood doors with wood panels.
 - 2. Interior stile and rail wood doors with glass panels.
 - 3. Interior stile and rail wood doors with louver panels.
 - 4. Interior fire-rated stile and rail wood doors.
- B. Related Sections:
 - 1. Interior architectural woodwork is specified in Section 06 40 23.
 - 2. Hollow metal doors and frames are specified in Section 08 11 13.
 - 3. Flush wood doors are specified in Section 08 14 13.
 - 4. Finish hardware is specified in Section 08 71 00.
 - 5. Glass for vision panels is specified in Section 08 80 00.
 - 6. Field finishing of doors and accessories is specified in Section 09 91 00.

1.02 SUBMITTALS

- A. Product Data: Door manufacturer's technical data for each type of door, including details of construction, materials, dimensions of individual components, profiles, and finishes.
- B. Shop Drawings: Indicate location and size of each door; elevation of each door; construction details not covered in product data including stiles, rails, panels, and moldings; location and extent of hardware cutouts; and factory finishing requirements.
- C. Samples: Corner section, 1'-0" square, showing edges, faces, joinery and material qualities of typical stile, rail, molding and panel for each exposed material, door type and finish required.
 - 1. Doors for Transparent Finish: Door faces representing typical range of color and grain for each veneer and lumber species.
 - 2. Factory-Finished Doors: Finished door faces representing typical factory finish.
- D. Certificate of Compliance: Manufacturer's certificate showing compliance with specified requirements.
- E. Warranty.

F. LEED Submittals:

1. Credit IEQ 4.4: Product data for products containing composite wood or agrifiber products or wood glues indicating that they do not contain urea-formaldehyde resin or binder.
 - a. Furnish the LEED Online Credit Template listing all the composite wood and agrifiber products used in the building, stating that they contain no added urea-formaldehyde resins.
 - b. Required Audit Documentation:
 - 1) Product data that wood and agrifiber products used on the interior of the building contain no added urea-formaldehyde resins.
 - 2) Product data that laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies do not contain added urea-formaldehyde resins.

1.03 QUALITY ASSURANCE

- A. Fire-Rated Wood Doors: Provide wood doors that comply with NFPA 80; are identical in materials and construction to units tested in door and frame assemblies in accordance with ASTM E152; and are labeled and listed by UL, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Fire-rated stile-and-rail wood doors and steel frames specified in Section 08 11 13 shall comply with positive pressure test requirements of NFPA 252 / UL 10C and shall be labeled accordingly by the door manufacturer in a manner approved by authorities having jurisdiction. Door label shall include hourly rating followed by the letter "S" indicating conformance with air leakage resistance testing, serial number, and the listing agency's certification mark.
- C. Temperature-Rise Rating: At exit enclosures and exitways, provide doors that have a temperature-rise rating of 450 deg F maximum in 30 minutes of fire exposure. In addition to the requirements specified for positive pressure test requirements in Paragraph D. above, the door label shall include temperature rise rating.
- D. Safety Glass: Provide products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for Category II materials.
- E. Product Certification: Require door manufacturer to certify that doors comply with specified requirements including those of referenced door standard. Mark, label or otherwise identify stile and rail wood doors as complying with NWWDA I.S. 6.
- F. Allowable Tolerances:
 1. Warp Tolerance: As specified in Section WDMA T-2. In addition, warp tolerance shall apply to pairs of doors and to doors in relation to the frame or jamb in which hung.
 2. Squareness: WDMA T-3.
 3. Gap Tolerance: As specified in Architectural Woodwork Standards Section 9, Section 4.3.8 and Section 6.1.20.
 4. Flushness of Joinery: As specified in Architectural Woodwork Standards Section 9, Section 6.1.21.

- G. WI Certified Compliance Program (CCP):
1. Before delivery to the Project site, if the fabricator/supplier is:
 - a. A WI licensee, issue WI "Certificates of Compliance" certifying that items comply with WI requirements for specified grade.
 - b. A non-WI licensee, furnish a WI "Certified Compliance Tracking Acknowledgement" with the original submittal, evidencing that they have arranged for and will pay inspections required by the WI to comply with the specified requirements. Certified Compliance labels shall be affixed by the WI Inspector.
 2. Upon completion of installation, furnish a WI Certified Compliance Certificate for the installation.
 3. In the event of question as to compliance with the referenced standard of any item of work, the County's Representative may require independent inspection service of questioned items as specified in "Independent Inspection Service" of WI "Services and Quality Control Options" published by the WI.

1.04 ENVIRONMENTAL QUALITY ASSURANCE

- A. Credit IEQ 4.4:
1. Composite wood and agrifiber products used on the interior of the building shall contain no added urea-formaldehyde resin.
 2. Laminate adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies shall not contain added urea-formaldehyde resins.
 3. Composite wood and agrifiber products are defined as particleboard, medium density fiberboard (MDF), plywood, wheatboard, strawboard, panel substrates and door cores. Materials considered fixtures, furniture and equipment are not considered base building elements and are not included.
- B. Applicable LEED Credits:
1. Credit IEQ 4.4 – Low-Emitting Materials - Composite Wood and Agrifiber Products.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect doors during transit, storage and handling to prevent damage, soiling, and deterioration.
1. Comply with Architectural Woodwork Standards (AWS) Section 2 for delivery, storage, and handling of doors.
- B. Identify each door with opening numbers corresponding with shop drawing designations for doors, frames and hardware, using temporary, removable, or concealed markings.

1.06 PROJECT CONDITIONS

- A. Conditioning: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with the following requirements applicable to Project's geographical location:
1. Architectural Woodwork Standards (AWS) - Section 2.

1.07 WARRANTY

- A. Warrant interior stile and rail wood doors against defects in materials and workmanship for a period of 5-years, including cost of removing and re-hanging. This warranty shall be in addition to and not a limitation of other rights the County may have against the Developer Design/Builder under the Contract Documents.

PART 2 - PRODUCTS

2.01 STILE AND RAIL WOOD DOORS

A. Interior Doors:

1. Grade of Doors for Transparent Finish: Architectural Woodwork Standards (AWS) Premium Grade, species and cut to be selected.
 - a. Doors in same room or area shall be matched for color and grain.
2. Grade of Doors for Opaque Finish: Architectural Woodwork Standards (AWS) Premium Grade, Idaho White, Lodgepole, Ponderosa or Sugar Pine, plain sawn/sliced.
3. Stile, Rail and Mullion Dimensions:
 - a. Widths: As approved.
 - b. Thickness: 1-3/4-inch.
4. Stile, Rail and Mullion Construction:
 - a. Transparent Finish Doors: Veneered core.
 - b. Opaque Finish Doors: Two piece balanced lamination with opposing grain.
5. Raised Wood Panels:
 - a. Panel Construction: Raised, 2-ply solid lumber or 3-ply solid lumber.
 - b. Molding Profile: As approved
 - c. Panel Design: As approved.
 - d. Panel Thickness: Minimum 1-1/8-inch.
6. Flat Wood or Glass Panels:
 - a. Molding Profile: As approved.
 - b. Glass: 1/4-inch clear tempered float glass as specified in Section 08 80 00.
 - c. Louvers: 3/16-inch thick slats at a 45-deg. angle.
 - d. Flat Wood Panels: 1/2-inch thick, any of the following:
 - 1) Particleboard made from wood particles, with binder containing no urea-formaldehyde resin, complying with ANSI A208.1, Grade M-2.
 - 2) Particleboard made from straw, complying with ANSI A208.1, Grade M-2.
 - 3) Medium-density fiberboard made from wood fiber, with binder containing no urea-formaldehyde resin, complying with ANSI A208.2, Grade 130.
 - 4) Veneer core plywood, made with adhesive containing no urea-formaldehyde resin

7. Doors shall be glued-up with Type I or Type II adhesive, at manufacturer's option.

B. Factory Finishing:

1. Transparent Finish Doors: Prefinish to match County's Representative approved samples as follows:
 - a. Architectural Woodwork Standards (AWS) Section 5, Premium Grade.
 - b. Finish: Manufacturer's standard finish with performance requirements comparable to Architectural Woodwork Standards (AWS) System 12 – Polyurethane, Water Based, complying with VOC requirements.
 - c. Staining: Match County's Representative approved sample.
 - d. Effect: Filled finish.
 - e. Sheen: Satin, 31- to 45-degrees.

2.02 FIRE-RATED STILE AND RAIL WOOD DOORS

- A. General: Provide fire-rated raised panel wood doors where required.
- B. Doors shall match the appearance of non-rated doors where possible.
- C. Stile face, bottom rail face, lock rail face, and cross rail face, if applicable, shall be the minimum required by Warnock Hersey, UL or other label approved by governing authority.

2.03 FABRICATION

- A. Fabricate stile and rail wood doors for either job-site fitting or factory fit doors to suite frame-opening sizes, at Developer Design/Builder's option. Factory-fit doors shall comply with the following uniform clearances and bevels:
 1. Fitting Clearances for Non-Fire-Rated Doors: Provide 1/8-inch at jambs and heads, 1/16-inch per leaf at meeting stiles for pairs of doors, and 1/2-inch from bottom of door to top of floor finish. Where thresholds are used, provide 3/8-inch clearance from bottom of door to top of threshold.
 2. Fitting Clearances for Fire-Rated Doors: Comply with CBC Section 715 and NFPA 80.
 3. Bevel non-fire-rated doors 1/8-inch in 2-inches (3-1/2 degrees) at lock and hinge edges.
 4. Bevel fire-rated doors 1/8-inch in 2-inches (3-1/2 degrees) on lock edge; trim stiles and rails only to extent permitted by labeling authority.
- B. Factory-premachine stile and rail wood doors for hardware; comply with final hardware schedule, door frame shop drawings and hardware templates.
- C. Glazed Openings: Factory-preglaze doors for glass panels. Comply with requirements of Section 08 80 00. Trim glazed openings with solid wood moldings, removable one side.
- D. Transom and Side Panels: Fabricate panels to match adjoining doors in materials, finish and quality of construction.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine installed door frames prior to hanging doors. Verify that frames comply with specified requirements and have been installed with plumb jambs and level heads.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install stile and rail wood doors in compliance with manufacturer's instructions, applicable requirements of referenced quality standard and as specified.
- B. Job-Fit Doors: Align and fit doors in frames with uniform clearances and bevels as specified; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.
 - 1. Fitting Clearances for Non-Rated Doors: Provide 1/8-inch at jambs and heads, 1/16-inch per leaf at meeting stiles for pairs of doors, and 1/8-inch from bottom of door to top of finish floor covering. Where thresholds occur, provide 1/4-inch clearance from bottom of door to top of threshold.
 - 2. Bevel doors 1/8-inch in 2-inches at lock and hinge edges.
 - 3. Hang doors within 1/16-inch of the height and width of the door assembly.
 - 4. Pairs of doors, when closed, shall be within 1/16-inch of flush at the meeting edge.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- D. Fire-Rated Doors: Install in fire-rated door frames in accordance with NFPA Standard No. 80.

3.03 ADJUSTING AND PROTECTION

- A. Operation: Re-hang or replace doors which do not swing or operate freely.
- B. Protect doors as recommended by door manufacturer to ensure that doors are without damage at time of Substantial Completion.

END OF SECTION