

**SECTION 08 14 00
INTERIOR WOOD DOORS**

SPEC WRITER NOTE:

1. Delete text between // _____ // not applicable to project. Edit remaining text to suit project.
2. See VA Standard Details for door types and designations.
3. See VA Physical Security Design Manual for security requirements.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior flush wood doors // transparent // painted // finish.

SPEC WRITER NOTE: Retain special application flush wood doors required for project.

- a. Fire rated doors.
- b. Smoke rated doors.
- c. Acoustical doors.
- d. Dutch doors.
2. Interior stile and rail wood doors // transparent // painted // finish.

1.2 RELATED REQUIREMENTS

SPEC WRITER NOTE: Update and retain references only when specified elsewhere in this section.

- A. Paints and Coatings and Composite Wood and Agrifiber VOC Limits: Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- B. Door Hardware including hardware location (height): Section 08 71 00, DOOR HARDWARE.
- C. Installation of Doors and Hardware: // Section 08 11 13, HOLLOW METAL DOORS AND FRAMES // Section 08 71 00, DOOR HARDWARE //.
- D. Door Finish: Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 APPLICABLE PUBLICATIONS

- A. Comply with references to extent specified in this section.
- B. American National Standards Institute/Window and Door Manufacturers Association (ANSI/WDMA):

1. I.S. 1A-13 - Architectural Wood Flush Doors.
 2. I.S. 6A-13 - Interior Architectural Stile and Rails Doors.
- C. ASTM International (ASTM):
1. E90-09 - Laboratory Measurements of Airborne Sound Transmission Loss of Building Partitions and Elements.
- D. National Fire Protection Association (NFPA):
1. 80-16 - Fire Doors and Other Opening Protectives.
 2. 252-12 - Fire Tests of Door Assemblies.
- E. UL LLC (UL):
1. 10C-09 - Positive Pressure Fire Tests of Door Assemblies.
- F. Window and Door Manufacturers Association (WDMA):
1. TM 7-14 - Cycle-Slam Test.
 2. TM 8-14 - Hinge Loading Test.
 3. TM 10-14 - Screw Holding Capacity.

1.4 SUBMITTALS

- A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Submittal Drawings:
1. Show size, configuration, and fabrication and installation details.
 2. Include details of // glazing // louvers //.
 3. Indicate project specific requirements not included in Manufacturer's Literature and Data submittal.
- C. Manufacturer's Literature and Data:
1. Description of each product.
 2. // Fire rated doors showing conformance with NFPA 80 //.

SPEC WRITER NOTE: Paragraph D., delete subparagraph No. 1 on projects not involving large numbers of wood doors. Delete subparagraph No. 2 on projects where no transparent door finishes are required. Samples are not required for projects involving 10 wood doors or less.

- D. Samples:
1. Corner section of flush veneered door 300 mm (12 inches) square, showing details of construction, labeled to show grade and type number and conformance to specified standard.
 2. Veneer sample 200 mm by 275 mm (8 inch by 11 inch) showing specified wood species sanded to receive a transparent finish. Factory finish veneer sample where the prefinished option is accepted.

E. Sustainable Construction Submittals:

SPEC WRITER NOTE: Retain sustainable construction submittals appropriate to product.

1. Low Pollutant-Emitting Materials:

- a. Show volatile organic compound types and quantities.

F. Test Reports: Indicate // each product complies // products comply // with specifications.

- 1. Screw Holding Capacity Test.
- 2. Cycle-Slam Test.
- 3. Hinge-Loading Test.

G. Operation and Maintenance Data:

- 1. Care instructions for each exposed finish product.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

- 1. Regularly and presently manufactures specified products.
- 2. Manufactures specified products with satisfactory service on five similar installations for minimum five years.

1.6 DELIVERY

SPEC WRITER NOTE: Packaging is required to be reinstalled on doors after installation. See Part 3 Article PROTECTION.

A. Deliver products in manufacturer's original sealed packaging.

- 1. Minimum 0.15 mm (6 mil) polyethylene bags or cardboard packaging to remain unbroken during delivery and storage.

B. Mark packaging, legibly. Indicate manufacturer's name or brand, type, // color, // and manufacture date.

- 1. Identify door opening corresponding to Door Schedule.

C. Before installation, return or dispose of products within distorted, damaged, or opened packaging.

1.7 STORAGE AND HANDLING

A. Store products indoors in dry, weathertight // conditioned // facility.

- 1. Store doors according to ANSI/WDMA I.S. 1A.

B. Protect products from damage during handling and construction operations.

1.8 FIELD CONDITIONS

A. Environment:

1. Product Temperature: Minimum 21 degrees C (70 degrees F) for minimum 48 hours before installation.
2. Work Area Ambient Temperature Range: 21 to 27 degrees C (70 to 80 degrees F) continuously, beginning 48 hours before installation.
3. Install products when building is permanently enclosed and when wet construction is completed, dried, and cured.
 - a. Comply with door manufacturer's instructions for relative humidity.

1.9 WARRANTY

SPEC WRITER NOTE: Always retain construction warranty. FAR includes Contractor's one year labor and material warranty.

- A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."

SPEC WRITER NOTE: Specify extended manufacturer's warranties for materials only.

- B. Manufacturer's Warranty: Warrant interior factory finished // flush // stile and rail // wood doors against material and manufacturing defects.

SPEC WRITER NOTE: Specify customarily available warranty period for specified products.

1. Warranty Period: Lifetime of original installation.

SPEC WRITER NOTES:

1. Use 44 mm (1-3/4 inch) thick doors for medical facilities, nursing homes and domiciliary buildings.
2. Use 35 mm (1-3/8 inch) thick doors for office buildings, unless facility requests 44 mm (1-3/4 inch) thick doors or doors are fire rated.
3. If 35 mm (1-3/8 inch) doors are specified, ensure that they are coordinated with frame details on the Drawings.

PART 2 - PRODUCTS**2.1 PRODUCTS - GENERAL**

- A. Basis of Design: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Provide each product from one manufacturer.
- C. Sustainable Construction Requirements:

SPEC WRITER NOTE:

1. Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS includes comprehensive product list setting VOC limits for low-emitting materials.
2. Retain subparagraphs applicable to products specified in this section.

1. Low Pollutant-Emitting Materials: Comply with VOC limits specified in Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS for the following products:
 - a. Paints and coatings.
 - b. Composite wood and agrifiber.

2.2 FLUSH WOOD DOORS

- A. General:
 1. ANSI/WDMA I.S. 1A, Extra Heavy Duty.
 2. Adhesive: Type II.
 3. Core: Structural composite lumber, except when mineral core is required for fire rating.
 4. Thickness: // 35 mm (1-3/8 inch) // 44 mm (1-3/4 inches) // unless otherwise shown or specified.

SPEC WRITER NOTE: For face veneer other than those specified below see ANSI/WDMA I.S. 1A, Section A-8, Flush Door Face Veneer Characteristics, regarding AA and A grade door faces. See

Section A-3, Appearance of Individual Veneer Leaves; Section A-4, Matching Between Individual Veneer Leaves; Section A-5, Assembly of Spliced Veneer Leaves on Door Face; and Section A-6, Appearance of Doors in Pairs or Sets. For highest quality paint finish, specify only medium density overlay faces.

B. Faces:

1. ANSI/WDMA I.S. 1A.
2. One species throughout project unless scheduled or otherwise shown.
3. Transparent Finished Faces: // Premium Grade. rotary cut, // white maple // white birch // red oak // white oak // _____ // .
 - a. // A Grade // AA Grade // face veneer.

SPEC WRITER NOTE: Specify lay up of veneer leaves. For rotary cut veneers, no matching within each door face is possible. Premium grade requires center balance book matching. Consider specifying slip matched veneers and running matched faces if a cut other than rotary is selected.

- b. Match face veneers for doors for uniform effect of color and grain at joints.
 - c. Door Edges: Same species as door face veneer, except maple is acceptable for stile face veneer on birch doors.
 - d. In existing buildings, where doors are required to have transparent finish, use wood species, grade, and assembly of face veneers to match adjacent existing doors.
 4. Painted Finishes: Custom Grade, mill option close grained hardwood, premium or medium density overlay.
 5. Factory sand doors for finishing.
- C. Wood For Stops, Louvers, Muntins and Moldings For Flush Doors Required to Have Transparent Finish:
1. Solid wood of same species as face veneer, except maple is acceptable on birch doors.
 2. Glazing:
 - a. On non-fire-rated doors, use applied wood stops nailed tightly on room side and attached on opposite side with flathead, countersunk wood screws, spaced approximately 125 mm (5 inches) on center.

3. Wood Louvers:

- a. Door manufacturer's standard product, fabricated of solid wood sections.
- b. Wood Slats: minimum 5 mm (3/16 inch) thick.
- c. Stiles routed out to receive slats.
- d. Secure louvers in prepared cutouts with wood stops.

D. Stiles and Rails:

1. Composite material having screw withdrawal force greater than minimum performance level value when tested according to WDMA TM 10.
2. Provide adequate blocking for bottom of doors having mechanically operated door bottom seal meeting or exceeding performance duty level per WDMA TM 10 for horizontal door edge screw holding.
3. Rabbeted transom meeting rail edges match face veneers of doors.
// Bottom rail of transom panel match face veneer on non-rabbeted meeting rail edge. //

SPEC WRITER NOTE: Do not use 60 minute doors and 20 minute doors. Solid core door, 44 mm (1-3/4 inches) gives 20 minute performance. Coordinate fire door rating with wall or barrier assembly rating.

E. Fire-Rated Wood Doors:

1. Fire Resistance Rating:
 - a. B Label: 1-1/2 hours.
 - b. C Label: 3/4 hour.
2. Labels:
 - a. Comply with NFPA 252, UL 10C, and labeled by qualified testing and inspection agency showing fire resistance rating.
 - b. Metal labels with raised or incised markings.
3. Performance Criteria for Stiles of Doors Utilizing Standard Mortise Leaf Hinges:
 - a. Hinge Loading: WDMA TM 8. Average of 10 test samples for Extra Heavy Duty doors.
 - b. Direct Screw Withdrawal: WDMA TM 10 for Extra Heavy Duty doors. Average of 10 test samples using a steel, fully threaded #12 wood screw.
 - c. Cycle-Slam: 1,000,000 cycles with no loose hinge screws or other visible signs of failure when tested according to WDMA TM 7.
4. Hardware Reinforcement:

- a. Provide // fire // smoke // rated doors with hardware reinforcement blocking.
 - b. Size of lock blocks as required to secure hardware specified.
 - c. Top, Bottom and Intermediate Rail Blocks: Minimum 125 mm (5 inches) by full core width.
 - d. Reinforcement blocking in compliance with labeling requirements.
 - e. Mineral material similar to core is not acceptable.
5. Other Core Components: Manufacturer's standard as allowed by labeling requirements.
 6. Glazed Vision Panel Frame: Steel approved for use in labeled doors.

SPEC WRITER NOTE: Astragals are not always required for fire rated doors. With an astragal, there will be an active and an inactive leaf. If both have exit devices, the inactive leaf will not open.

7. Astragal: Steel type for pairs of doors.

F. Smoke Barrier Doors:

1. Glazed Vision Panel Frame: Steel approved for use in labeled doors.

SPEC WRITER NOTE: Astragals are not required for smoke rated doors.

2. Astragal: Steel type for pairs of doors, including double egress doors.

SPEC WRITER NOTE: Standard flush doors with applied seals can achieve STC 35. If greater STC is required, a tested door, frame, and hardware assembly must be specified.

G. Sound Rated Doors:

1. Fabricated as specified for flush wood doors with additional construction requirements to comply with specified sound transmission class (STC).
2. STC Rating of door assembly in place when tested according to ASTM E90 by independent acoustical testing laboratory minimum // 35 // _____ //.
3. Accessories:
 - a. Frame Gaskets and Automatic Door Bottom Seal: As specified in Section 08 71 00, DOOR HARDWARE.

H. Dutch Doors:

1. Consist of two sections, each fabricated as specified for flush doors.
2. Construct shelf as detailed, from clear hardwood stock of same species as face veneer of door.
3. Place shelf on top of lower section of door and support as shown with a pair of wood or wrought steel brackets.
4. Prime steel brackets for finish painting.

2.3 STILE AND RAIL WOOD DOORS

- A. Doors: ANSI/WDMA I.S. 6A; Grade // Premium, // Custom, // size and design shown on drawings.
- B. Species: Ponderosa pine.
- C. Door Panels:
 1. Grain of face of panels parallel with longest dimensions of panel.
 2. Flat panels: Veneered composite core, minimum 16 mm (5/8 inch) thick.
 3. Raised panels: Unless otherwise shown, thickness of raised panels minimum the following:

SPEC WRITER NOTE: Fire-rated stile and rail doors are only available 44 mm (1-3/4 inch) thick.

- a. For 35 mm (1-3/8 inch) and 44 mm (1-3/4 inch) thick doors: 28 mm (1-1/8 inch) thick.
4. Where armor plate is required for paneled doors, provide panels with plywood fillers, glued in place, and finished.
- D. Stops and Molds:
 1. Solid sticking both sides, same material as stiles and rails, coped joints.
 2. Glazed Vision Panel Frame: Applied wood stops nailed on interior side of door.
- E. Louvers: Size as shown.

2.4 FABRICATION

- A. Factory machine interior wood doors to receive hardware, bevels, undercuts, cutouts, accessories and fitting for frame.
 1. Factory fit fire rated doors according to NFPA 80.
- B. Rout doors for hardware using templates and location heights specified in Section 08 71 00, DOOR HARDWARE.

- C. Factory fit doors to frame, bevel lock edge of doors 3 mm (1/8 inch) for each 50 mm (2 inches) of door thickness // undercut where shown //.
- D. Clearances between Doors and Frames and Floors:
 - 1. Fire Rated Doors: Comply with NFPA 80.
 - a. Doors with Automatic Bottom Seal: Maximum clearance 10 mm (3/8 inch) at threshold.
 - b. Other Door Bottoms: Maximum 3 mm (1/8 inch) clearance at the jambs, heads, and meeting stiles, and a 19 mm (3/4 inch) clearance at bottom, except as otherwise specified.
 - 2. Door Jambs, Heads, and Meeting Stiles: Maximum 3 mm (1/8 inch).
- E. Provide cutouts for // glazed // and louver // openings.
- F. Finish surfaces, including both faces, top and bottom and edges of the doors smooth to touch.
- G. Identify each door on top edge.
 - 1. Mark with stamp, brand or other indelible mark, giving manufacturer's name, door's trade name, construction of door, date of manufacture and quality.
 - 2. Mark door or provide separate certification including name of inspection organization.
 - 3. Identify door manufacturing standard, including glue type.
 - 4. Identify veneer and quality certification.
 - 5. Identification of preservative treatment for stile and rail doors.

SPEC WRITER NOTE: If there are more than
10 doors at any project, factory apply
transparent finish.

2.5 FINISHES

- A. Field Finished Doors: Seal top and bottom edges of doors with two coats of catalyzed polyurethane or water resistant sealer.
- B. Factory Transparent Finish:
 - 1. Factory finish // flush // stile and rail // wood doors.
 - a. ANSI/WDMA I.S. 1A Section F-3 Finish System Descriptions for System 5, Conversion Varnish or System 7, Catalyzed Vinyl.
 - b. Use stain when required to produce finish specified in Section 09 06 00, SCHEDULE FOR FINISHES.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine and verify substrate suitability for product installation.
 - 1. Verify door frames are properly anchored.
 - 2. Verify door frames are plumb, square, in plane, and within tolerances for door installation.
- B. Protect existing construction and completed work from damage.
- C. Install astragal on active leaf of pair of smoke doors and one leaf of double egress smoke doors.

3.2 INSTALLATION

- A. Install products according to manufacturer's instructions // and approved submittal drawings //.
 - 1. Install fire rated doors according to NFPA 80.
 - 2. When manufacturer's instructions deviate from specifications, submit proposed resolution for Contracting Officer's Representative consideration.

3.3 PROTECTION

- A. After installation, place shipping container over door and tape in place.
 - 1. Do not apply tape to door faces and edges.
- B. Provide protective covering over exposed hardware in addition to covering door.
- C. Maintain covering in good condition until removal is directed by Contracting Officer's Representative.

- - E N D - -