Oregon Door

GUIDE SPECIFICATIONS

FLUSH VENEER WOOD DOORS
SECTION 08212 (08 14 16)

Product specifications are written according to the CSI 3-Part format and also include Master Format, Section Format, and Page Format. (Section numbers are from the most current Master Format edition.)

PART 1—GENERAL

1.1 Scope

A. Interior Flush Wood Veneer Doors:

1. 5-ply & 7-ply flush bonded particle-core doors.
2. Flush fire-rated wood doors.

1.2 Related work in other section

A. Section 06460 (06 48 00)—Wood Frames

B. Section 08100 (08 12 00)—Metal Frames

C. Section 08710 (08 71 00)—Door Hardware

D. Section 08800 (08 80 00)—Glazing

E. Section 10225 (08 91 26)—Door Louvers

1.3 Standards

Doors provided meet or exceed the minimum standards as set forth by the following organizations unless standards are modified or exceeded by this specification.

1. ANSI A208.1—Particleboard
2. AWI Quality Standard Version 1.0 2004 8th Edition—Architectural Flush Doors
3. WI—Woodwork Institute Section 12
4. UBC 7-2-1997/UL 10C—Positive Pressure Fire Tests of Door Assemblies
5. WDMA Finish System TR-6, Transparent—Catalyzed Polyurethane
6. WDMA I.S.1-A —Architectural Wood Flush Doors
7. NEMA—National Electrical Manufacturers Association
8. NFPA—National Fire Protection Association
9. FSC—Forest Stewardship Council
10. SCS—Scientific Certification Systems

A. Fire doors shall bear labels approved by the following Testing Agencies:

1. Underwriters Laboratories, Inc (UL)
2. Intertek Testing Services—Warnock Hersey (ITS-WH)

   Any discrepancies between the architectural drawings and the procedures and limitations as set forth by the testing agencies shall be brought to the architect's attention.

B. Provide each fire rated door with a label permanently attached to either the hinge stile or to the top rail, showing testing agency approval for classification scheduled.

C. The top of each door shall bear a label from the manufacturer indicating the door construction and face veneer.

D. The Door Manufacturer shall provide a letter, signed by an authorized company representative, to the architect stating that the doors have been manufactured in compliance with this specification.

1.4 Submittals

A. Shop Drawings: Submit schedules and elevations indicating door sizes, construction, swing, label, undercut, and applicable hardware locations. Dimensions and detail openings for glass lites, louvers, and grilles.

B. Samples: If doors are to be factory finished, manufacturer shall submit veneer samples of specified veneer with their standard finish colors at architect's request, or a color sample from the architect will be sent to the manufacturer for duplication. Samples are to be submitted representing the color selected on veneer typical of grain patterns and coloration for the specified specie and cut. Sample is made from a natural material therefore grain pattern and color will vary from tree to tree.

C. Product Information: Submit manufacturer's product description showing compliance with specifications, along with finishing instructions, installation instructions, and any general recommendations manufacturer may have for the care and maintenance of each door type.

D. Comply with Section 01330 (01 33 00)—Submittal Procedures

LEED SUBMITTAL DOCUMENTATION

E. Environmental Documentation: Submit manufacturer's environmental documentation.

1. Forest Stewardship Council (FSC) Chain of custody certificate. MR 7
2. Rapidly Renewable Materials—Agrifiber Core Construction: Product data. MR 4.1, 4.2
3. Indoor EQ: EQ 4.4 No added urea-formaldehyde. Describe available LEED points based on the core type specified. This includes particleboard core, composite and mineral core types.
4. Manufacturer's Information: Describe available LEED points.

F. Cleaning Instructions: Submit manufacturer's cleaning instructions for doors.

G. Warranty: Submit manufacturer's standard warranty.

1.5 Quality Assurance

A. Tolerances for Warp, Telegraphing, Square-ness and Pre-fitting Dimensions: WDMA I.S.1-A.

B. Identifying Label: Each door shall bear identifying label indicating; manufacturer, door number and order number.

C. Fire-Rated Doors: Labeled by Intertek/Warnock Hersey.

D. Positive Pressure Opening Assemblies: UBC 7-2-1997/UL 10C.

1.6 Coordination

Distributor shall be responsible for coordination and acquiring of all necessary information from hardware and metal frame manufacturers. Door manufacturer shall be responsible for coordinating all necessary information received by the Distributor from hardware and metal frame manufacturers, in order that doors shall be properly prepared to receive hinges and hardware.

1.7 Delivery, Storage and Handling

A. No doors shall be delivered to the building until weatherproof storage space is available. Store doors in a space having controlled temperature ranging from 50-90 degrees F and relative humidity range between 30 and 50 percent. Store doors flat on a level surface in a dry, well ventilated building. Doors should be kept at least 3-1/2" off the floor to allow for air circulation under and around the stack.

Avoid partial exposure to natural and artificial light. Certain species (e.g., Cherry, Walnut, Teak, and Mahogany) are more susceptible to photo-degradation.

B. Factory finished doors shall be individually wrapped in polybags to protect the finish from damage by contact with other doors.

C. Do not walk or place other material on top of stacked doors. Lift or carry doors, do not drag across other doors or surfaces.

D. Contractor shall use all means necessary to protect doors from damage prior to, during, and after installation. Handle doors with clean hands or gloves. All damaged doors shall be repaired or replaced by the contractor at no cost to the owner.

E. Doors shall be palletized at factory in stacks of no more than 20 doors per pallet. Door edges shall be protected with heavy corner guards.

1.8 Warranty

A. All work in this Section shall be warranted by a FULL DOOR WARRANTY (from the date of installation) against defect in materials and workmanship, including the following:

1. Delamination in any degree.
2. Warp or twist of ¼" or more in any 3'6" x 7'0" section of a door.
3. Telegraphing of any part of core assembly through face to cause surface variation of 1/100" or more in a 3" span.
4. Any defect which may, in any way, impair or affect performance of the door for the purpose which it is intended. Replacement under this warranty shall be in the form of a refund, replacement or repair at the manufacturer's option. A refund or replacement will be offered in the amount of the original purchase price in the raw, pre-finished or machined condition that the door was purchased in.

B. Periods of warranty after date or installation: Interior solid core and mineral core life of original installation.

C. Doors must be stored, finished, hung and maintained per manufacturer's recommendations set forth in their full door warranty.

PART 2—PRODUCTS

2.1 Manufacturers

Listed manufacturers are believed to conform to the criteria stated for material quality standards, function and appearance.

1. Oregon Door
2. Marshfield Door Systems
3. Algoma
4. Vancouver Door

Note to Specifier: Section 2.2 Material and Components must be reviewed and selections made for door type and door facing which is applicable to your project. Bullets denote areas selections are to be made.

2.2 Material and Components

All stile and rail dimensions given are minimum sizes allowed prior to trimming to book size or factory prefitting.

A. Cores, Stiles and Rails

- Particleboard Core—Shall conform to ANSI A208.1 LD-2 32lb. density core, extra heavy duty. Stiles shall be l 3/8" double-banded laminated hardwood. No finger joints allowed in outer band and outer band to be at least 3/8" wide same species lumber as face veneer or a compatible hardwood of similar color and grain. Rails will be 2-5/8" minimum mill option solid wood or structural composite lumber (SCLC). Stiles and rails shall be securely bonded to the core then abrasively planed as an assembly before veneering.
- Mineral Core—Shall be asbestos free, noncombustible mineral composite with a minimum of 28 pounds per cubic foot density when testing in accordance with ASTM C303-82, with 10% maximum absorption by weight with core in equilibrium at 90% relative humidity and 70 degrees Fahrenheit. Stiles and rails shall be manufacturers standard for specified label. Stile shall be reinforced to receive full mortise hinges. No salt treated components shall be used.

- Structural Composite Lumber (SCL) Core—Stave Lumber Core replacement as described by AWI section 1300. SCL core as manufactured under the product name of TimberstrandTMLSL. Stiles shall be l 3/8" double- banded laminated hardwood. No finger joints allowed in outer band and outer band to be at least 3/8" wide same species lumber as face veneer or a compatible hardwood of similar color and grain. Stiles and rails shall be securely bonded to the core then abrasively planed as an assembly before veneering.
- Lead Lined—Lead Thickness:
  - l/32"
  - l/16"
  - l/8"
  - l/4"
  - 3/l6"

Minimum ½" hardwood stile (no finger joints allowed) to be same species lumber as face veneer or a compatible hardwood of similar color and grain.

B. Faces and Crossbands

When veneer for transparent or opaque finish is specified, each face of the door shall consist of 1 face veneer and 1 crossband, securely bonded to the core utilizing Type I waterproof adhesive, resulting in 5 plies or 7 plies depending on architect specification. Face veneers shall have minimum thickness of 1/50 and the individual pieces of veneer forming the face must be edge glued (spliced) together. Total thickness of the veneer is 1/8". When pairs of premium or custom grade doors are scheduled for transparent finish, doors shall be pair matched with a book-matched pattern. When doors are scheduled with transom panels and transparent finish, door and transom shall be matched and produced from a continuous sheet of veneer. Bottom rail of transom panel shall be laminated full width and be same specie as face veneer or a compatible hardwood of similar color and grain.

When plastic laminate is used as a face, door shall be a 3-ply or 5-ply construction using a full crossband. Laminate shall be .050 standard grades to be selected from manufacturer's available sources. Laminate shall be bonded to the core with Type I waterproof adhesive.

1. Face veneers shall be of specie, cut and grade specified. Quality shall be governed by WDMA I.S.1 Series and AWI standards.

   Door faces for: Transparent finish

   a) Veneer "A" Grade:

   - Red Oak
   - White Oak
   - Natural Birch
   - Select White Birch
   - African Mahogany
   - Sapele
   - Cherry
   - Teak
   - Walnut
   - Other
   - Maple

   b) Veneer Cut:

   - Rotary *(typically Birch)*
   - Plain Sliced *(most common)*
   - Rift *(Red or White Oak only)*
   - Comb Grain *(Red or White Oak only)*
   - Quartered *(available in most species)*
   - Quartered Ribbon Stripe *(African Mahogany only)*

c) Veneer Match:

- Book matched *(most common, provides uniform pattern)*
- Slip matched *(should be used with Rift, Quartered and Comb grain to provide a uniform color)*
- Random matched *(gives unusual appearance)*

d) Assembly of Veneer on door face

- Running Match *(Non-symmetrical appearance, veneer pieces of unequal widths.)*
- Balance Match *(Symmetrical appearance has uniform width pieces, increases cost over Running Match.)*
- Center Match *(Symmetrical appearance uses an even number of uniform size veneer pieces, increases cost over Balance Match)*

- Opaque Finish—Doors shall have medium density overlay faces meeting Government standards PSI74. Overlay shall be readily sanded, weatherproof, and carry a Class “B” Fire Rating. Paint grade Birch or Hardboard shall be considered as a substitute when valued engineering is specified.
- High Pressure Plastic Laminate

a) Vertical stile edges

- Laminate same as face and shall be applied after faces only.
- Painted mill option hardwood
- Matching hardwood stained
- Contrasting hardwood stained (specify species)

2. Cross banding shall be thoroughly dried l/l6 thick hardwood or engineered wood product extending full width and height of door with grain at right angles to face.
3. Face veneer and crossband shall be pressed to the core in a cold-press with Type I waterproof glue. Hot press available upon request.

C. View windows non-labeled doors:

- Furnish manufacturer’s standard flush or lip-over wood glass stops to be same species as face veneer for transparent doors with the exception of Birch doors which will have hard maple and cherry doors that may be substituted with red alder. Mill option hardwood for opaque doors. On plastic laminate doors, stops will be hardwood painted or stained to correspond with specified face and stile material.
- Furnish metal vision frames primed for field painting.
- Furnish metal vision frames wrapped with veneer to match door faces.

2.3 Labeled Flush Doors 45, 60 and 90 minute rated

A. Doors shall be manufactured by the previously specified manufacturers and subject to the requirements of the specifications hereinafter.

B. Mineral core flush veneered doors; 5-ply, 7-ply shall be made up of face veneers, crossbanding and a core unit all securely bonded together utilizing Type I waterproof adhesive. Manufacture doors where temperature and humidity controls will ensure a state of equilibrium between all component parts of doors at all times.

C. Face Veneer: Same as 2.2-B-1

D. Crossbanding: Same as 2.2-B-2 and no salt treating allowed.

E. Core Unit: Manufacturer’s noncombustible mineral, monolithic, or in sections tightly fitted and glued. The density shall be minimum 28 lbs. per cubic foot (nominal).

F. Rails: Minimum 2" top and bottom, or as required for the appropriate fire rating and hardware requirements and manufactured of flame resistant and salt free material. Securely glue all rails to core.

G. Stiles: Manufacturer's standard for rating listed.

Stiles shall be bonded to the core and be salt free. Drill 5/32 pilot holes for all hinge screws at the factory prior to shipment for "B" and "C" label fire doors. Stiles must meet the following performance criteria:

1. Split Resistance: Average of ten test samples shall be not less than 800 load pounds when tested in accordance with "Test Method to Determine Split Resistance of Hinge Edges of Composite Type Fire Doors".
2. Direct Screw Withdrawal: Average of ten test samples shall be not less than 650 load pounds when tested for direct screw withdrawal in accordance with ASTM D-1037; using a No. 12 x 1 ¼" steel thread-to-the-head wood screw of the cadmium plated or rust-resistant type.
3. Cycle/Slam: 1,000,000 cycles with no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of ANSI A151.1, Section 2.5 (Note: Specific data regarding WHI listing features and mechanical test results shall be made available by the manufacturer upon request.)

H. Blocking: Upon request all 45, 60, and 90 min. fire doors shall be supplied with salt free non-combustible internal solid blocking. Blocking shall be arranged in the door so that surface mounted hardware such as but not limited to closers, exit device, etc. may be secured to the door without a need for through bolts. A lock block, minimum size 5 x 10 shall be supplied for each bored, mortised or unit-lock when specified.

I. Metal vision frames for door lites. Frames shall equal AWI standard, UL or Intertek approved.

- Primed for field painting. Upon request.
- Wrapped with veneer to match door face. Upon request.

J. Door manufacturer shall furnish metal edges, upon request only, for doors that are machined for concealed vertical rod devices and require 5" metal edge channels for fire rating requirements.

- Metal edges and astragals primed for field painting. Upon request.
- Metal edges and astragals wrapped with veneer to match door face. Upon request.

K. Labeled doors shall be manufactured to the required size so as to provide proper clearances without field trimming. This procedure shall be followed so as to assure the full thickness of the edge bands.

L. Doors shall be suitable for hanging on full mortised butt hinges using No. 12 x 1 ¼" steel threaded-to-the head wood screws of the cadmium plated or rust resistant type. Coordinate with Hardware Section 08700 and 06200 for proper screws and installation. Half-surface hinges are not acceptable.

2.4 Positive Pressure: When Positive Pressure requirements are indicated by one or more of the following:

- UBC7-2-1997-UBC Fire Test
- IBC 2000—Code
- UL 10-C—Fire Test
- ASTM 2074-00—Fire Test
- Warnock Hersey International (WHI)—labeling agency

A. Category A Specification: Where requirements for positive pressure must be met, doors shall include all requirements as part of the door construction per Category A guidelines as published by ITS/Warnock Hersey. No intumescents are allowed on the frame, only smoke gasketing applied around the perimeter of the frame to meet "*S*" Ratings are permissible in instances where *S*moke control is required.

B. Category B Specification: All door openings must incorporate field applied intumescent material applied by a licensed installer according to manufacturer's instructions. These instructions will be kept on file. Additional gasketing should be incorporated as necessary to comply with "S" ratings where applicable.

PART 3—EXECUTION

3.1 Fabrication

A. Fabricate all wood doors in strict accordance with the referenced standards specified herein.

3.2 Machining and Fitting

All wood doors shall be machined by the manufacturer for cutouts, hinges, locks and all hardware requiring routing and mortising. Any required rabbeting to properly hang doors will be performed by the manufacturer prior to finishing. Doors shall be sized to allow 1/8" clearance at top and each side, and ¾" at bottom (unless specified otherwise.) Factory drilling of pilot holes is not required except for "B" & "C" label fire doors at mortise hinge locations.

3.3 Installation of Hardware

A. Contractor shall install hardware according to approved hardware schedule for proper locations.

B. Install with full-threaded wood screws furnished by hardware manufacturer.

C. Drill proper size pilot hole for all screws. (Full mortise hinges require 5/32" pilot holes.)

D. Securely anchor hardware in correct position and alignment.

E. Adjust hardware and door for proper function and smooth operation, proper latching, without force or excessive clearance.

3.4 Installation of Fire Doors

Fire rated doors shall be installed in accordance with the requirements of the labeling agency and NFPA #80 and #101.

Note to Specifier: Select factory finish or field finish.

3.5 Factory Finishing

- Transparent Finish—AWI system TR6 or equivalent for open grain finishes per section l500. The sheen shall be satin or semi-gloss. Stain, if required, to be selected from manufacturers' standard colors or custom matched to architect's sample. Doors to be individually enclosed in a polybag.
  - Doors to have a clear finish (no stain)
  - Doors to have a stained finish
  - Doors to be sealed top and bottom upon request
- Opaque Finish—Doors to be factory primed for paint at faces and vertical edges. Sanding of prime coat will be done in the field just prior to the application of the field applied paint. Refer to painting section 09900.

3.6 Field Finishing

The appearance of field finishing shall be the responsibility of the painting contractor. Immediately before staining or finishing, the entire surface of the door must be sanded completely with the appropriate grit sandpaper while door is in a horizontal position. This should be followed by the steps necessary to achieve the desired AWI wood finish system as set forth in Section 09900 of this specification.

END OF SECTION 08212