

GUIDE SPECIFICATIONS

WOOD DOORS

SECTION 08200

1.0 General

1.1 Scope

A. Standards for manufacturing, machining, finishing, and installation of wood doors unless more specifically described under another section.

1.2 Related work in other section

- A. Section 06200: Carpentry
- B. Section 06420: Architectural Paneling
- C. Section 08100: Hollow Metal Frames
- D. Section 08700: Finish Hardware
- E. Section 08800: Glass & Glazing
- F. Section 09900: Painting

1.3 Quality Assurances

- A. Provide doors meeting or exceeding the minimum standards as set forth by the following organizations unless standards are modified or exceeded by this specification.
 - 1. WDMA IS 1A-Window and Door Manufacturers Association.
 - 2. National Electrical Manufacturers Association (NEMA).
 - 3. National Fire Protection Association (NFPA).
- B. All doors shall be the product of the same manufacturer to insure uniformity of quality and appearance throughout the project.
- C. Fire doors shall bear labels approved by Underwriters Laboratories, Inc or Intertek Testing (WHI). 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.
- D. 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.
- E. The top of each door shall bear a label from the manufacturer indicating the door construction, face veneer species, cut and grade. If the doors are factory finished the label shall also have the finishing information.
- F. 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.
- 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.

1.5 Coordination

Contractor 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 Contractor from hardware and metal frame manufacturers, in order that doors shall be properly prepared to receive hinges and hardware. Contractor shall provide his supplier with two copies of approved frame schedule, two copies of hardware schedule, and all necessary hardware templates. All the above information shall be in the possession of door supplier 120 days prior to desired delivery date of doors.

1.6 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 and humidity range between 30 and 60 percent. Stack doors flat and off the floor, supported to prevent warpage. Protect doors from damage and direct exposure to sunlight.
- 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. Do not drag doors across one another.
- D. Contractor shall use all means necessary to protect doors from damage prior to, during, and after installation. 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 30 doors per pallet. Door edges shall be protected with heavy corner guards.

1.7 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 1/4" 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 include hanging, installation of hardware, and finishing.

B. Periods of warranty after date of installation:

1. Interior solid core and mineral core Life of original installation.

C. Doors must be stored, finished, hung and maintained per manufacturers recommendations set forth in their Full Door Warranty.

2.0 Product

2.1 Manufacturers

Listed manufacturers are believed to conform to the criteria stated for material quality standards, function and appearance. Manufacturers are still subject to meeting the requirements for 5-ply hot-pressed (cold-pressed will not be accepted) door construction procedures and warranties set forth in this specification. **Substitutions will not be accepted.**

1. Algoma Hardwoods, Inc.
2. Eggers Hardwood Products Corporation
3. Oshkosh Architectural Door Company

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. Blue text denotes areas selections are to be made.

2.2 Material and Components

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

A. Cores

Particleboard Core -

Shall conform to ANSI A208.1 LD-2 32lb. density core. Stiles shall be 1" minimum laminated hardwood or structural composite lumber (SCL) veneered over with veneer matching face veneer. Rails will be 1 1/8" minimum mill option hardwood or structural composite lumber (SCL). 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 Timberstrand™ LSL. Stiles shall be 1" minimum laminated hardwood or structural composite lumber (SCL) veneered over with veneer matching face veneer. Rails will be 1 1/8" minimum mill option hardwood or structural composite lumber (SCL). Stiles and rails shall be securely bonded to the core then abrasively planed as an assembly before veneering.

Lead Lined - Lead Thickness:

1/32"
1/16"
1/8"
1/4"
3/16"

Minimum 1/2" hardwood stile (no finger joints allowed) to be same species lumber as face veneer with the exception of birch doors, which will have hard maple or beech stiles.

Acoustical Door -

Doors are to be 1 3/4" thick and tested as an operable unit in accordance with ASTM E90 and ASTM E 413. Stiles shall be same specie lumber as face veneer and rails mill option hardwood or SCL.

Sound Transmission Class:

STC 31
STC 41
STC 44

B. Faces and Crossbands

When veneer for transparent or opaque finish is specified, doors shall be 5 ply, made up of 2 face veneers and crossbands, all securely bonded to the core by the hot-press method in one operation, utilizing Type I water proof adhesive. The cold pressing of 2 or 3ply door skins to the core will not be accepted. Face veneers shall have minimum thickness of 1/50 after factory sanding and the individual pieces of veneer forming the face must be edge glued together. Crossbands shall extend the full width of the core assembly. When pairs of doors are scheduled for transparent finish doors shall be pair matched with a continuous grain 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 extend full width and be same specie as face except for birch, which may have a maple or beech rail.

When plastic laminate is used as a face laminate shall be .050 standard grade to be selected from manufacturers available sources. Laminate shall be bonded to the core with type I water-proof glue.

1. Face veneers shall be of specie, cut and grade specified. Quality shall be governed by industry standards as set forth by ANSI/WDMA IS.1A Series.

Door faces for: Transparent finish-

a) Veneer Grade:

“A” Grade (industry standard for most architectural projects)

“AA” Grade (Used only for monumental projects where aesthetics is of extreme importance)

a) Veneer Species:

Red Oak	White Oak
Natural Birch	Select White Birch
Honduras Mahogany	African Mahogany
Cherry	Sapelle
Walnut	Teak
Maple	Other

- b) Veneer Cut:
 - Rotary (typically Birch and Oak only)
 - Plain Sliced (most common)
 - Rift (Red or White Oak only)
 - Comb Grain (Red or White Oak only)
 - Quartered (typically Oaks and Mahogany's)
 - 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 Balanced Match)

Doors with Opaque Finish -

Doors shall have medium density overlay faces meeting Government standards PSI74. Overlay shall be readily sandable, weatherproof, and carry a Class "B" Fire Rating. Paint grade Birch or hardboard shall not be considered as meeting this specification.

High Pressure Plastic Laminate -

- a.) Laminate manufacturer and color _____ (list)
 - b.) Construction
 - 5 ply
 - c.) Vertical stile edges
 - laminate same as face
 - Painted mill option hardwood
 - matching hardwood stained
 - contrasting hardwood stained (specify species)
2. Cross banding shall be thoroughly dried 1/16 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 hot-press with Type I water-proof glue.

C. View windows non-labeled doors:

Furnish manufactures standard flush wood glass stops to be same species as face veneer for transparent doors with the exception of Birch doors which will have hard maple or beech. Mill option hardwood for opaque doors. On plastic laminate doors, stops will be hardwood painted or stained to correspond with specified 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 shall be made up of face veneers, crossbanding and a core unit all securely bonded together utilizing Type I water-proof adhesive. Manufacture doors where temperature and humidity controls will insure 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: Top 15/16", bottom 1-7/8" rail (one of two piece) of flame resistant material salt free. Securely glue all rails to core.
- G. Stiles: Manufacturers 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 1/4" steel thread-to-the-head wood screw of the cadmium plated or rust-resistant type.
 - 3. Cycle/Slam: 200,000 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: 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 scheduled.

- I. Metal vision frames for door lites. Frames shall equal AWI standard, UL or Intertek approved.
 - Primed for field painting
 - Wrapped with veneer to match door face.
- J. Door manufacturer shall furnish metal edges only on pairs of fire doors with two surface mounted vertical rod exit devices. All other pairs will be furnished with metal edges and overlapping astragal.
 - Metal edges and astragals primed for field painting.
 - Metal edges and astragals wrapped with veneer to match door face.
- 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.

3.0 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 3/4” 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 catalyzed polyurethane finish for open grain finish per section 1500. The sheen shall be satin or semi-gloss. Stain, if required, to be selected from manufacturers standard colors or custom matched to Architects sample. Doors to be individually enclosed in a polybag.

(Select stain or clear finish)

Doors to have a clear finish (no stain)

Doors to have a stained finish

Opaque Finish -

* Doors to be factory primed for paint all six sides. 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 08200

06/01/08