

SECTION 08150 - WOOD DOORS

City of San Diego, CWP Guidelines

PART 1 -- GENERAL

1.1 WORK OF THIS SECTION

- A. The WORK of this Section includes providing solid core flush wood doors with [vener faces for transparent finish] [plastic laminate faces] [medium density overlay faces for opaque finish] and all related work, complete.

1.2 RELATED SECTIONS

- A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.
 - 1. Section 08110 Steel Doors and Frames
 - 2. Section 08710 Finish Hardware
 - 3. Section 08800 Glazing
 - 4. Section 09900 Architectural Paint Finishes

1.3 CODES

- A. The WORK of this Section shall comply with the current editions of the following codes as adopted by the City of San Diego Municipal Code:
 - 1. Uniform Building Code

1.4 SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section:

- 1. Commercial Standards:

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| ANSI/NWWDA | National Wood Window and Door Association Industry Standard I.S. 1-A, "Industry Standard for Architectural Wood Flush Doors" |
| ASTM E 152 | Methods for Fire Tests of Door Assemblies |
| NEMA LD-3 | High Pressure Decorative Laminates |
| NFPA 80 | Fire Doors and Windows |

2. Trade Standards:

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| NWWDA | National Wood Window and Door Association pamphlet, "How to Store, Handle, Finish, Install, and Maintain Wood Doors" |
| WIC | Woodwork Institute of California "Manual of Millwork," Section 20 - Wood Doors "Manual of Millwork," Section 25 - Factory Finishing of Architectural Millwork Technical Bulletin No. 416-R, "Handling and Finishing Instructions for Fire Doors" Technical Bulletin No. 417-R, "Transparent Finish for Architectural Millwork Technical Bulletin No. 419-R, "Recommended Care and Storage of Architectural Millwork" Technical Bulletin No. 420-R, "Storage, Handling, Job Finishing and Installation" |

1.5 SHOP DRAWINGS AND SAMPLES

A. The following shall be submitted in compliance with Section 01300:

1. Manufacturer's detailed technical product data and installation instructions for each type of wood door, including details of core and edge construction, trim for openings, lights, and louvers, and finishing specifications for doors to receive factory finish.
2. Shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for factory finishing and other pertinent data.

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NTS: Edit the following to suit project requirements.

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3. Samples shall be submitted of the following for the CONSTRUCTION MANAGER'S selection and approval:
 - a. Transparent Finished Doors: Finished samples of door faces representing the typical range of color and grain to be expected in the completed installation. CONTRACTOR shall also submit finished strips of solid wood, 3 inches by 12

inches, of the species to be used for exposed edges, trim and other solid wood components.

- b. Opaque Finished Doors: Finished samples of door faces with opaque finish of color and sheen as selected. CONTRACTOR shall also submit finished strips of solid wood with opaque finish, 3 inches by 12 inches, of the species to be used for exposed edges, trim and other solid wood components.
- c. Plastic Laminate Faced Doors: Samples for each color, finish and pattern required. CONTRACTOR shall also submit strips of solid wood, 3 inches by 12 inches, of the species to be used for exposed edges, trim and other solid wood components, finished with opaque finish specified for such surfaces of plastic laminate faced doors.
- d. Factory-Finished Doors: 12-inch square samples, for each type of factory-finish required.
- e. Louvers: Sections, 6 inches long, of louver blade and frame, for each configuration, material, and finish required.
- f. Light Openings: Sections, 6 inches long, of light frame and section 6 inches square, of each light material, for each configuration, material, and finish required.

1.6 OWNER'S MANUAL

- A. The following shall be included in the OWNER'S MANUAL in compliance with Section 01300:
 - 1. Cleaning, maintenance and repair instructions for each type of door finish specified.
 - 2. Copies of product warranties from the door manufacturers.
 - 3. Copies of the WIC Certified Compliance Certificate, certifying that doors fully meet all the requirements of the WIC Grade or Grades indicated.

1.7 EXTENDED WARRANTY

- A. CONTRACTOR shall repair or replace any defective doors which warp, including bowing, cupping, or twisting, or which evidence telegraphing of core construction in the face veneers, or do not conform to tolerance limitations of NWWDA and WIC during the extended warranty period. The warranty period shall be 2 years from the date of final acceptance.

1.8 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Wood doors shall be protected during transit, storage and handling to prevent damage, soiling and deterioration. CONTRACTOR shall comply with requirements of referenced

ANSI standard and recommendations of the NWWDA pamphlet, "How to Store, Handle, Finish, Install, and Maintain Wood Doors," as well as with manufacturer's instructions.

1. Doors shall be packaged at the factory prior to shipping, using manufacturer's standard method.
 2. Doors shall be clearly identified with individual opening numbers which correlates with designation system used on shop drawings for door, frames, and hardware, using temporary, removable or concealed markings.
- B. **Delivery of Materials:** Wood doors shall be delivered in original, unbroken packages or containers bearing the manufacturer's label. Packages or containers shall be delivered to the site with seals unbroken.
- C. **Storage:** All components and assemblies shall be carefully stored in an area that is protected from deleterious elements, in a manner recommended by the product manufacturer. Storage shall be in a manner that will prevent damage to components and assemblies or marring of finish surfaces.
1. Storage area shall have maintained conditions of relative humidity between 45 percent and 60 percent, at 60 degrees to 90 degrees F., and equilibrium moisture content conditions between 8 percent and 12 percent.
 2. The building air conditioning or heating system shall be turned on and permanently functioning.
- D. Wood doors shall be acclimated to the above environmental conditions for a minimum of 72 hours prior to installation.

PART 2 -- PRODUCTS

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NTS: Edit the following to suit project requirements for door types.

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2.1 GENERAL

- A. **ANSI/NWWDA Quality Marking:** Mark each wood door with NWWDA Wood Flush Door Certification Hallmark certifying compliance with applicable requirements of industry standard I.S. 1-A Series.
- B. **Fire-Rated Wood Doors:** The CONTRACTOR shall provide wood doors which are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152 and which are labeled and listed for ratings indicated by UL, Warnock Hersey, or other testing and inspection agency acceptable to authorities having jurisdiction.

- C. **Single Manufacturer:** Doors shall be obtained from a single manufacturer to ensure uniform appearance and construction, unless indicated otherwise.

2.2 EXTERIOR FLUSH WOOD DOORS

- A. Solid core doors for opaque finish shall comply with the following requirements:
 - 1. Faces shall consist of medium density overlay, over standard thickness hardwood face veneers.
 - 2. Grade shall be Premium.
 - 3. Construction shall be PC-5 or PC-7 (Particleboard core, 5 or 7 ply).
- B. Solid core doors for transparent finish shall comply with the following requirements:
 - 1. Faces shall consist of [white oak veneer, plain sliced].
 - 2. Grade shall be Premium.
 - 3. Construction shall be PC-5 or PC-7 (Particleboard core, 5 or 7 ply).

2.3 INTERIOR FLUSH WOOD DOORS

- A. Solid core doors for opaque finish shall comply with the following requirements:
 - 1. Faces shall consist of medium density overlay, over standard thickness hardwood face veneers.
 - 2. Grade shall be Premium.
 - 3. Construction shall be PC-5 or PC-7 (Particleboard core, 5 or 7 ply).
- B. Solid core doors for transparent finish shall comply with the following requirements:
 - 1. Faces shall consist of [white oak veneer, plain sliced].
 - 2. Grade shall be Premium.
 - 3. Construction shall be PC-5 or PC-7 (Particleboard core, 5 or 7 ply).
- C. Solid core doors with plastic laminate faces shall comply with the following requirements:
 - 1. Laminate Faces: Faces shall consist of high pressure decorative laminates complying with NEMA LD-3 and as follows:

- a. Colors, patterns, and finishes shall be as indicated or, if not indicated, as selected by the CONSTRUCTION MANAGER from laminate manufacturers' standard products.
 - b. Faces shall be GP-50 (0.050-inch nominal thickness).
2. Grade shall be Premium.
 3. Construction shall be PC-HPDL (Particleboard core).
- D. Fire-rated solid core doors shall comply with the following requirements:
1. Faces and Grade: Provide faces and grade to match non-rated doors in the same area of the building, unless otherwise indicated.
 2. Construction: Manufacturer's standard core construction shall be provided as required to provide the fire-resistance rating indicated.
 3. Edge Construction: Manufacturer's standard laminated edge construction shall be provided for improved screw-holding capability and split resistance as compared to edges composed of a single layer of treated lumber.
 4. Pairs: Pairs of fire-rated doors shall be furnished complete with formed steel edges and astragals, unless otherwise indicated.

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NTS: Edit the following to suit project requirements for door louvers and glass lights.

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2.4 LOUVERS AND LIGHT FRAMES

- A. **Wood Louvers:** Door manufacturer's standard solid wood louvers shall be provided in the sizes and configurations shown, at transparent finished doors unless indicated otherwise.
1. Wood louvers shall be factory installed in the profiles and configurations shown.
 2. Wood louvers shall be of matching specie and finish as the doors in which they occur.
- B. **Metal Louvers:** Metal louvers shall be provided in the size[s], type[s], and profile[s] indicated, fabricated from the following:
1. Steel: Louvers shall be fabricated of 20 gauge, galvanized steel, factory primed for paint finish.
 2. Aluminum: Louvers shall be fabricated of extruded aluminum shapes with clear anodized finish complying with AA-C22A31, Class II.

3. Color Anodized Aluminum: Louvers shall be fabricated of extruded aluminum shapes with color anodized finish complying with AA-C22A32, Class II. Color shall be as selected by the CONSTRUCTION MANAGER from manufacturer's standards.

C. **Frames for Light Openings:** Metal framed glass lights shall be provided in the size[s], type[s], and profile[s] indicated, fabricated from the following:

1. Steel: Light frames shall be fabricated of 20 gauge, galvanized steel, factory primed for paint finish.
2. Aluminum: Light frames shall be fabricated of extruded aluminum shapes with clear anodized finish complying with AA-C22A31, Class II.
3. Color Anodized Aluminum: Light frames shall be fabricated of extruded aluminum shapes with color anodized finish complying with AA-C22A32, Class II. Color shall be as selected by the CONSTRUCTION MANAGER from manufacturer's standards.
4. Wood: Light frames shall be fabricated of solid wood moldings of the specie and profile indicated. Light frames shall match the specie and finish of the door in which they occur.

D. **Frames for Light Openings in Fire Doors:** Metal framed glass lights in rated fire door assemblies shall be constructed of manufacturer's standard frame formed of 18 gauge, cold-rolled steel, factory-primed, and furnished in the size[s], type[s], and profile[s] approved for use in assemblies of the fire-rating indicated.

2.5 GENERAL FABRICATION REQUIREMENTS

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NTS: Edit the following to suit project requirements for transoms, side panels, door louvers, and glass lights.

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A. **Exterior Doors:** Exterior doors shall be factory treated with water repellent after manufacturing has been completed.

1. Manufacturer's standard metal flashing shall be provided at the tops of outswinging door units.

B. **Transoms and Side Panels:** Wherever transom panels or side panels of wood are indicated in the same framing systems as wood doors, panels shall be provided which match the quality and appearance of the associated wood doors, unless otherwise indicated. Matching panels shall be fabricated with the same construction, exposed surfaces and finish as indicated for their associated doors.

- C. **Openings:** Openings shall be cut and trimmed through doors as required. CONTRACTOR shall comply with applicable requirements of referenced standards for the kind[s] of doors involved.
1. Glass Light Openings: Openings shall be factory cut. Openings for non-fire rated doors shall be trimmed with solid wood moldings of the profiles and configurations indicated.
 2. Metal Louvers: Metal louvers shall be factory installed in the profiles and configurations indicated.

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NTS: Select from the following two versions of paragraph 2.6.

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[2.6 FACTORY PRIMING

- A. Doors shall be primed as follows before delivery to the project site:
1. Doors Scheduled for Opaque Paint Finish: Wood doors shall be primed with one coat of wood primer indicated in Section 09900.
 2. Doors Scheduled for Transparent Finish: Wood doors shall be primed with stain (if required) and other required pretreatments and first coat of finish as indicated in Section 09900.]

2.7 FACTORY FINISHING

- A. **General:** Comply with applicable requirements of Section 20, "Wood Doors," and Section 25, "Factory Finishing of Architectural Millwork," of referenced WIC "Manual of Millwork," and related bulletins and pamphlets referenced therein.
- B. Where doors are indicated as "prefinished," CONTRACTOR shall have wood doors prefinished at factory.
- C. **Transparent Finish:** Doors shall comply with requirements indicated for grade, finish system, staining effect and sheen.
1. Grade: premium
 2. Finish: WIC System #3, Catalyzed Polyurethane
 - [3. Staining: None required]
 - [4. Staining: To match approved sample for color]
 - [5. Effect: Open grain finish]
 - [6. Effect: Filled finish]
 - [7. Sheen: Satin-medium rubbed effect]
 - [8. Sheen: Semi-gloss]

- D. **Opaque Finish:** Doors shall comply with requirements indicated for grade, finish system, color and sheen.
1. Grade: premium
 2. Finish: WIC System #1, Catalyzed Lacquers
 3. Color: Color shall match approved sample for color as selected by CONSTRUCTION MANAGER.
 - [4. Sheen: Semi-gloss]
 - [5. Sheen: Gloss]
 - [6. Sheen: Full gloss]

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NTS: Delete the following article if not required. Plastic laminate edged doors, fire rated doors and prefinished doors should be factory prefit and prepared. Factory prefitting of other doors is advised but optional.

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2.8 PREFITTING AND PREPARATION FOR HARDWARE

- A. Prefit and premachine wood doors at factory.
- B. CONTRACTOR shall comply with tolerance requirements of WIC for prefitting. Doors shall be machined for hardware requiring cutting of doors. CONTRACTOR shall comply with final hardware schedules and door frame shop drawings and with hardware templates and other essential information required to ensure proper fit of doors and hardware.
- C. Accurate field measurements shall be taken of hardware mortises in metal frames to verify dimensions and alignment before proceeding with machining in factory.
- D. **Metal Astragals:** Astragals and formed steel edges shall be premachined for hardware where required for pairs of fire-rated doors.

2.9 MANUFACTURERS

- A. Products of the type indicated shall be manufactured by the following (or equal):
 1. Algoma Hardwoods, Inc.
 2. Cal-Wood Door Division, Timberland Industries, Inc.
 3. Weyerhaeuser Company

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. Prior to hanging, doors shall be properly acclimated to the environmental conditions in the area of installation, as required in paragraph 1.8 of this Section.

- B. **Hardware:** Hardware shall comply with Section 08710.
- C. Wood doors shall be installed in strict compliance with manufacturer's instructions and with the referenced WIC standards.
 - 1. Fire-rated doors shall be installed in corresponding fire-rated frames in accordance with requirements of NFPA pamphlet No. 80.

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NTS: Delete the following subparagraph if all doors are factory prefitted.

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- D. **Job-Fit Doors:** Doors shall be aligned and fitted in frames with uniform clearances and bevels as indicated below. Stiles and rails shall not be trimmed in excess of limits set by the manufacturer. Doors shall be machined for hardware. Cut surfaces shall be sealed after fitting and machining.

- 1. Fitting Clearances:

- a. 1/8-inch at jambs and heads
- b. 1/16-inch per leaf at meeting stiles for pairs of doors
- c. 1/8-inch from bottom of door to top of decorative floor finish or covering
- d. 1/4-inch from bottom of door to top of threshold where threshold is indicated

- 2. Bevel 1/8 inch in 2 inches at strike and hinge edges.

- E. **Prefit Doors:** Doors shall be prefitted to frames and machined for hardware to whatever extent not previously prepared at the factory and as may be required for proper fit and uniform clearance at each edge.

- F. **Factory-Finished Doors:** Finish shall be restored as required on edges and other surfaces of shop-finished doors before installation, if fitting or machining is performed at the job site.

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NTS: Delete "F" above if doors are finished at site. Delete "G" below if doors are finished at factory.

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- G. **Job-Site-Finished Doors:** Refer to Section 09900 for finishing requirements.

3.2 FIELD TESTING

- A. **Operation:** CONTRACTOR shall rehang, adjust, or replace doors which do not swing or operate correctly, as directed by the CONSTRUCTION MANAGER.

3.3 PROTECTION

- A. As the WORK of wood door installation progresses, CONTRACTOR shall provide suitable protective coverings, barriers, devices, or such other methods or procedures as may be necessary, to protect wood doors from damage or deterioration. Such protective measures shall be maintained in place throughout the remainder of the construction period. CONTRACTOR shall refinish or replace doors damaged during installation or from other construction activities, as directed by the CONSTRUCTION MANAGER.

- B. **Protection Removal:** Immediately prior to final inspection, all protective coverings shall be removed.

** END OF SECTION **