# SECTION 081416 - FLUSH WOOD DOORS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes:

1. Solid-core five-ply flush wood veneer-faced doors for transparent finish.

B. Related Requirements:

1. Section 087100 "Door Hardware" for door hardware for flush wood doors.

2. Section 088000 "Glazing" for glass view panels in flush wood doors.

3. Section 081113 "Hollow Metal Doors and Frames" for metal door frames.

### 1.2 COORDINATION

A. Coordinate requirements for installing door hardware, including electrified door hardware, and access control and security systems.

### 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of specified product. Include information indicating compliance with performance requirements indicated.

1. Door core materials and construction.
2. Door edge construction.
3. Door face type and characteristics.

4. Factory-machining criteria.
5. Factory- finishing  specifications and sample finish options.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in product data; and the following:

1. Door schedule indicating door and frame location, type, size, fire protection rating, and swing.
2. Door elevations, dimension and locations of hardware, lite cutouts, and glazing



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thicknesses.
3. Details of frame for each metal frame type, including dimensions and profile.
4. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
5. Dimensions and locations of blocking for hardware attachment.
6. Dimensions and locations of mortises and holes for hardware.
7. Clearances and undercuts.
8. Requirements for veneer matching.
9. Doors to be factory finished and application requirements.

C. Samples for Initial Selection: For factory-finished doors.

D. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately **8 by 10 inches**, for each material and finish.

## 1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of referenced standard and manufacturer's written instructions.

B. Package doors individually in cardboard cartons, and wrap bundles of doors in plastic sheeting.

C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

## 1.6 FIELD CONDITIONS

A. Environmental Limitations:

1. Do not deliver or install doors until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and HVAC system is operating and maintaining temperature and relative humidity at levels designed for building occupants for the remainder of construction period.

## 1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Delamination of veneer.
b. Warping (bow, cup, or twist) more than **1/4 inch** in a **42-by-84-inch** section.
c. Telegraphing of core construction in face veneers exceeding **0.01 inch in a**



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**3-inch** span.

2. Warranty also includes installation and finishing that may be required due to repair or replacement of defective doors.

3. Warranty Period for Solid-Core Interior Doors: Life of installation.

## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

A. Obtain flush wood doors from single manufacturer.

### 2.2 FLUSH WOOD DOORS AND FRAMES, GENERAL

A. Quality Standard: In addition to requirements specified, comply with ANSI/WDMA I.S. 1A.

### 2.3 SOLID-CORE FIVE-PLY FLUSH WOOD VENEER-FACED DOORS AND TRANSOM PANELS FOR TRANSPARENT FINISH

A. Interior Doors, Solid-Core Five-Ply Veneer-Faced (Wood Doors):

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Oregon Door: www.oregondoor.com
    b. Vancouver Architectural Doors

2. Performance Grade by Location:

    a. ANSI/WDMA I.S. 1A Extra Heavy Duty: Classrooms Clinic Rooms Toilet Rooms, Doors with Full Lites, and where indicated on Door & Lite Schedule.
    b. ANSI/WDMA I.S. 1A Heavy Duty: Offices, Labs, Conference Rooms, Break Room and where indicated on Door & Lite Schedule.

3. ANSI/WDMA I.S. 1A Quality Grade: Custom.
4. Architectural Woodwork Standards Quality Grade: Custom.
5. Faces: Single-ply wood veneer not less than **1/50 inch** thick.

    a. Species: White oak.
    b. Cut: Plain sliced (flat sliced).
    c. Match between Veneer Leaves: Book match.
    d. Assembly of Veneer Leaves on Door Faces: Center-balance match.



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6. Core for Non-Fire-Rated Doors:

    a. Particleboard: ANSI A208.1, Grade LD-1 made with binder containing no urea-formaldehyde.

        1) Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.

            a) **5-inch** top-rail blocking, in doors indicated to have closers.
            b) **5-inch** bottom-rail blocking, in exterior doors and doors indicated to have kick, mop, or armor plates.

    b. Structural Composite Lumber:

        1) Screw Withdrawal, Door Face: 550 lbf (at extra heavy duty) 475 lbf (at heavy duty) in accordance with WDMA T.M. 10.
        2) Screw Withdrawal, Vertical Door Edge: 550 lbf (at extra heavy duty) 475 lbf (at heavy duty) in accordance with WDMA T.M. 10.

7. Construction: Five plies, hot-pressed bonded (vertical and horizontal edging is bonded to core), with entire unit abrasive planed before veneering.

## 2.4 LIGHT FRAMES AND LOUVERS

A. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of **min. 20-gauge** thick, cold-rolled steel sheet; with baked-enamel- or powder-coated finish; and approved for use in doors of fire-protection rating indicated on Drawings.

1. Product & Manufacturer for Sound Rated Door Lites: NGP (National Guard products)

    a. Model: L-FRA100-SP-STC, Sound Rated Vision Lite, Low Profile Frame (SP - Special for thicker glazing)
    b. Finish: Color to be selected from Mfr. full line of factory finishes.
    c. Sound Features: Silicone Acoustical Seal at perimeter, factory applied.
    d. Welded, mitered corners with countersunk fastener holes.

2. For lite sizes indicated on drawings.
3. Door Thickness: 1-3/4" Wood Doors.
4. Glazing: Frame shall accommodate 3/8" to 1/2" laminated glazing specified in Section 088000 Glazing.
5. Color: Bronze or Black finish.

## 2.5 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated.



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1. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
2. Comply with NFPA 80 requirements for fire-rated doors.

B. Factory machine doors for hardware that is not surface applied.

1. Locate hardware to comply with DHI-TDH-007.
2. Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
3. Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
4. For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.
5. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

C. Openings: Factory cut and trim openings through doors.

1. Light Openings: Trim openings with moldings of material and profile indicated.
2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."

## 2.6 FACTORY FINISHING

A. Comply with referenced quality standard for factory finishing.

1. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
2. Finish faces, all four edges, edges of cutouts, and mortises.
3. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

B. Factory finish doors where indicated in schedules or on Drawings as factory finished.

C. Transparent Finish:

1. ANSI/WDMA I.S. 1A Grade: Custom.

a. TR-6 Catalyzed Polyurethane.

2. Sheen: Satin.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Examine doors and installed door frames, with Installer present, before hanging doors.



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1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
2. Reject doors with defects.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 INSTALLATION OF FLUSH WOOD DOORS AND TRANSOM PANELS

A. Hardware: For installation, see Section 087100 "Door Hardware."

B. Install doors and frames to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

C. Install metal frames level, plumb, true, and straight.

1. Install level and plumb to a tolerance of **1/8 inch in 96 inches**.
2. Insulate hollow metal frames with acoustical batt insulation as shown on drawings, for sound.
3. Anchor frames to anchors or blocking built in or directly attached to substrates.

    a. Secure metal frames per frame mfr.

D. Job-Fitted Doors:

1. Clearances:

    a. Provide **1/8 inch** at heads, jambs of doors.

    b. Coordinate clearances to allow for installation of perimeter sound gasketing on door frames.

E. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

F. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

## 3.3 FIELD QUALITY CONTROL

A. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

B. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

C. Inspection Report: Prepared and submitted in writing to Architect and Contractor within 24 hours after testing.



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3.4 ADJUSTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Factory Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416



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