

## SECTION 08210

### FLUSH WOOD DOORS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. **This Section includes** shop-primed, solid core flush wood doors with Medium density overlay faces; fire-rated and non-fire-rated.
  - 1. Factory fitting flush wood doors to frames and factory machining for hardware.
  - 2. Where scheduled, provide sound-control flush wood doors in conjunction with sound-control seals and related accessories, based on indicated partition STC ratings.
- B. **Related Sections include:**
  - 1. Division 6 Section "Rough Carpentry."
  - 2. Section 08122 - Aluminum Door Frames: Frames for flush wood doors.
  - 3. Section 08800 - Glazing: Door light glazing.
  - 4. Division 6 Section "Finish Carpentry" for wood door frames.
  - 5. Division 6 Section "Architectural Woodwork" for stile and rail wood doors and for inclusion of flush wood doors in mockups.
  - 6. Division 8 Section "Steel Doors and Frames" for steel frames for flush wood doors.
  - 7. Division 8 Section "Door Hardware" for door hardware for wood doors.
  - 8. Division 9 Section "Painting" for finish for interior and exterior steel frames.

##### 1.2 REFERENCES

- A. **Industry Standards:** The industry standards listed below refer to the latest date of issue or edition, unless otherwise indicated in this Section.
  - 1. ASTM E 152 - Methods of Fire Tests of Door Assemblies.
  - 2. ASTM E 413 - Classification for Determination of Sound Transmission Class.
  - 3. AWI's "Architectural Woodwork Quality Standards Illustrated."
  - 4. NFPA 80 - Fire Doors and Windows.
  - 5. NFPA 252 - Standard Method of Fire Tests for Door Assemblies.
  - 6. UL 10B - Fire Tests of Door Assemblies.
  - 7. Warnock-Hersey - Certification Listings for fire doors.

##### 1.3 SOUND-CONTROL DOOR PERFORMANCE REQUIREMENTS

- A. **Sound Rating:** Provide sound control doors that have been included in the fabrication and testing of sound-control door unit assemblies and that are identical to those in assemblies tested according to ASTM E 90 by an independent testing agency for the STC ratings indicated on the Drawings for the doors' applicable partitions.

##### 1.4 SUBMITTALS

- A. **Product Data:** For each type of door; include details of core and edge construction and trim for openings.
  - 1. For factory pre-machined doors, indicate dimensions and locations of cutouts for locksets and other cutouts.

2. For sound-control doors, include sound ratings and core descriptions.

- B. **Shop Drawings:** Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data. Provide the following for doors with transparent finish:
1. Indicate dimensions and locations of mortises and holes for hardware.
  2. Indicate dimensions and locations of cutouts.
  3. Indicate finish requirements.
  4. Show veneer leaves with dimensions and grain direction.
- C. **Samples for Initial Selection:** Color charts consisting of actual materials in small sections for faces of transparent factory-finished doors; show full range of colors available.
- D. **Samples for Verification:** Provide the following for doors specified for transparent finish.
1. Factory finishes applied to actual door face materials on corner sections of doors, 12 inches square, for each material and finish and for each color and grain of veneer species. Provide set of three samples showing typical range of color and grain to be expected in the finished work.

## 1.5 COORDINATION

- A. **Coordinate Submittals and installation** of hardware and sound-control accessories on sound-control doors in partitions with STC ratings.

## 1.6 QUALITY ASSURANCE

- A. **AWI Quality Standard:** Comply with AWI's "Architectural Woodwork Quality Standards Illustrated."
1. Provide AWI Quality Certification Labels or an AWI letter of licensing for Project indicating that doors comply with requirements of grades specified.
  2. The Project has been registered as AWI QCP Number 03.816.
- B. **Fire-Rated Wood Doors:** Doors complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
- C. **Source Limitations:** Obtain flush wood doors through one source from a single manufacturer.
- D. **Random Testing:** Architect shall have the right to randomly cut apart any door to verify construction.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. **Package, deliver, and store doors** in accordance with AWI Section 1300.
- B. **Identify each door** with individual opening numbers which correlate with designation system used on Shop Drawings for door, frames, and hardware, using temporary, removable, or concealed markings.

## 1.8 PROJECT CONDITIONS

- A. **Environmental Limitations:** Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 43 and 70 percent during the remainder of the construction period.

## 1.9 WARRANTY

- A. **Special Warranty:** Manufacturer's standard form, signed by manufacturer, Installer, and Contractor, in which manufacturer agrees to replace doors that are defective in materials or workmanship, have warped (bow, cup, or twist), show telegraphing of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards. Architect shall determine if doors are defective or do not conform to referenced quality standards.
1. Warranty shall also include installation and finishing that may be required due to replacement of defective doors.
  2. Warranty shall be in effect for the life of the installation, commencing on the date of Substantial Completion.
- B. **General Contractor's Responsibilities:** Replace doors where Contractor's Work contributed to rejection or to voiding of manufacturer's warranty.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. **Manufacturer:** Subject to compliance with requirements, provide products of one of the following:
1. Chappell Architectural Doors.
  2. Graham Manufacturing.
  3. Ipik Door Co., Inc.
  4. VT Industries.
  5. Weyerhaeuser Company.

### 2.2 DOOR CONSTRUCTION, GENERAL

- A. **Non-Fire-Rated and 20-Minute, Fire-Rated- (if permitted by UL of Warnock-Hersey) Solid Core Doors for Opaque Finish:**
1. Size: 1-¾ inches thick by size indicated on Drawings.
  2. Faces: Medium density overlay, Grade A.
  3. AWI Grade: Custom.
  4. Construction: PC-5 CE (particleboard core, 5-ply).
    - a. Sound Control Doors: Manufacturer's sound-retardant core as required to provide STC rating indicated.
  5. Bonding: Stiles and rails bonded to core, then entire unit abrasive planed before veneering.
  6. Blocking, as required: Provide composite blocking designed to maintain fire resistance of door but with improved screw-holding capability of same thickness as core and with minimum dimensions as follows:
    - a. 5-inch top rail blocking, in doors indicated to have closers.
    - b. 5-inch mid rail blocking, in doors indicated to have exit devices.

7. Cross-bands: Minimum 1/16-inch-thick cross-bands, without voids or show-through (telegraphing).

**B. Fire-Rated Solid Core Doors for Opaque Finish of 20-, 45-, 60- and 90-minute:**

1. Size: 1-¾ inches thick by size indicated on Drawings.
2. Faces: Medium density overlay, Grade A.
3. AWI Grade: Custom.
4. Construction: Manufacturer's standard core construction, as required to provide fire-resistance rating indicated.
  - a. Sound Control Door Core: Manufacturer's sound-retardant core as required to provide STC rating indicated, unless conflicts with core construction for fire-resistance rating.
5. Blocking: Provide composite blocking designed to maintain fire resistance of door but with improved screw-holding capability of same thickness as core and with minimum dimensions as follows:
  - a. 5-inch top rail blocking, in doors indicated to have closers.
  - b. 5-inch mid rail blocking, in doors indicated to have exit devices.
6. Edge Construction: Provide manufacturer's standard laminated edge construction for improved screw-holding capability and split resistance as compared to edges composed of a single layer of treated lumber.
7. Cross-bands: Minimum 1/16-inch-thick cross-bands, without voids or show-through (telegraphing).
8. Meeting Edges at Pairs of Doors: Prefit pairs for 1/8-inch clearance between leaves.

## 2.3 LIGHT FRAMES

- A. Wood Frames for Light Openings in Doors:** Manufacturer's standard frame. Wood species and finish to match door veneer.

## 2.4 FABRICATION

**A. Fabricate doors** in sizes indicated:

1. Fitting Clearances for Non-Fire-Rated Doors: Comply with clearance requirements of specified AWI quality standard for fitting.
2. Fitting Clearances for Fire-Rated Doors: Comply with NFPA 80.

**B. Hardware:** Hardware shall be prefitted at factory. Factory machine doors for hardware that is not surface-applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware Schedules, door frames, Shop Drawings, DHI-A115-W series standards, and hardware templates.

1. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory pre-machining.

**C. Openings:** Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.

1. Light Openings: Trim openings with moldings of material and profile indicated.

## 2.5 SHOP PRIMING

- A. Doors for Opaque Finish:** Shop prime faces and edges of doors, including cutouts, with one coat of wood primer specified in Division 9 Section "Painting."

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. **Examine doors and installed door frames** prior to hanging doors.
  - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
  - 2. Reject doors with defects.
- B. **Proceed with installation** only after unsatisfactory conditions have been corrected.

### **3.2 INSTALLATION**

- A. **Hardware:** For installation, see Division 8 Section "Door Hardware".
- B. **Manufacturer's Written Instructions:** Install wood doors to comply with manufacturer's written instructions, referenced AWI standard, and as indicated.
  - 1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.
- C. **Job-Fitted Doors:** Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Re-seal cut surfaces after fitting.
  - 1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/2 inch from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 3/8 inch from bottom of door to top of threshold.
  - 2. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.
  - 3. Bevel fire-rated doors 1/8 inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.
- D. **Factory-Finished Doors:** Restore finish before installation if fitting or machining is required at Project site.

### **3.3 INSTALLATION TOLERANCES**

- A. **Conform to AWI requirements** for fit and clearance tolerances.
- B. **Conform to AWI Section 1300** requirements for maximum diagonal distortion.

### **3.4 ADJUSTING**

- A. **Adjust doors** for smooth and balanced door movement. Rehang or replace doors that do not swing or operate freely.
- B. **Clean hardware** and adjacent surfaces upon completion. Do *not* use abrasives or liquid cleaners that will harm finishes.
- C. **Replace doors** that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.
- D. **Touch-Up:** After installation, touch-up scratched and damaged surfaces to match shop finish.

END OF SECTION