

---

---

**PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes:
1. Solid-core doors with wood-veneer faces.
  2. Factory finishing flush wood doors.
  3. Factory fitting flush wood doors to frames and factory machining for hardware.
- B. Related Requirements:
1. Division 1 Section "Sustainable Design Requirements".
  2. Division 6 Section "Flush Wood Paneling" for requirements for veneers from the same flitches for both flush wood doors and flush wood paneling.

**1.3 QUALITY ASSURANCE**

- A. The work of this section shall be performed by a company which specializes in the type of flush wood doors work required for this Project, with a minimum of 5 years of documented successful experience and shall be performed by skilled workmen thoroughly experienced in the necessary crafts.
1. Work shall be performed in compliance with Owner's insurance underwriters' requirements and UL approvals and testing for materials, assemblies and procedures.
- B. Manufacturer shall specialize in manufacturing the type of flush wood doors specified in this section, with a minimum of 5 years of documented successful experience, and have the facilities capable of meeting all requirements of Contract Documents as a single-source responsibility and warranty.
- C. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body and is a certified participant in AWI's Quality Certification Program.
- D. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.
- E. Manufacturer's identification tags or marks are not acceptable on surfaces which will remain exposed to view after installation.
1. Evidence of "patching" after removal of tags or marks is not acceptable.

**1.4 SUBMITTALS**

- A. Submit the following according to Conditions of the Construction Contract and Division 1 Specification Sections.
- B. Product Data: For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.
- C. LEED Submittals:
1. Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regional materials, certificates indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating distance to Project, cost for each regional material, and fraction by weight that is considered regional.
  2. Certificates for Credit MR 6: Chain-of-custody certificates indicating that flush wood doors comply with forest certification requirements. Include documentation that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.
  3. Product Data for Credit IEQ 4.4: For adhesives and composite wood products, documentation indicating that product contains no urea formaldehyde.
- D. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
1. Dimensions and locations of mortises and holes for hardware.
  2. Dimensions and locations of cutouts.

3. Requirements for veneer matching.
  4. Doors to be factory finished and finish requirements.
  5. Fire-protection ratings for fire-rated doors.
- E. Samples for Verification:
1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches (200 by 250 mm), for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.
  2. Corner sections of doors, approximately 8 by 10 inches (200 by 250 mm), with door faces and edges representing actual materials to be used.
    - a. Provide Samples for each species of veneer and solid lumber required.
    - b. Finish veneer-faced door Samples with same materials proposed for factory-finished doors.
- F. Hazardous Materials Notification: In the event no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by the Owner, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.
- G. Asbestos and PCB Certification: After completion of installation, but prior to Substantial Completion, Contractor shall certify in writing that products and materials installed, and processes used, do not contain asbestos or polychlorinated biphenyls (PCB), using format in Article 3 of General Conditions.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.
- B. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with General Conditions and Division 1 Section "Product Requirements".
- B. Comply with requirements of referenced standard and manufacturer's written instructions.
- C. Package doors individually in cardboard cartons and wrap bundles of doors in plastic sheeting.
- D. Mark each door on top and bottom rail with opening number used on Shop Drawings.
- E. Store doors flat, on a level surface, off the floor and in a dry, well-ventilated building.
  1. If doors are stored at the Project site for more than one week, all edges must be sealed using type of sealer recommended by manufacturer.
  2. Do not store doors on edge.
- F. Cover doors to keep clean and avoid discoloration with an opaque covering which does not permit light to penetrate.
  1. Covering must allow air circulation.
- G. Do not subject doors to extremes of heat and/or humidity conditions.
  1. Relative humidity shall not be less than 30% or more than 60%.
- H. Handle doors in accordance with Section G-20 "Care and Installation at Jobsite" of NWWDA I.S. 1-A using clean gloves.
  1. Do not walk on or place other material on top of stacked doors.
  2. Do not drag doors across one another or across other surfaces.

### 1.7 FIELD CONDITIONS

- A. Environmental Limitations: 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 between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 25 and 55 percent during remainder of construction period.

**1.8 WARRANTY**

- A. Comply with General Conditions and Division 1 Section "Product Requirements".
- B. 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. Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067-by-2134-mm) section.
    - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2 mm) span.
  - 2. Warranty shall also include 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.

**1.9 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.

**1.10 EXTRA MATERIAL**

- A. Provide five, 1-1/2 hour fire-rated stair doors and five, 20-minute fire-rated doors.

**PART 2 PRODUCTS****2.1 UNAUTHORIZED MATERIALS**

- A. Materials and products required for work of this section shall not contain asbestos, polychlorinated biphenyls (PCB) or other hazardous materials identified by the Owner.

**2.2 ACCEPTABLE MANUFACTURERS**

- A. Products of the manufacturers specified in this section establish the minimum functional, aesthetic and quality standards required for work of this section.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Algoma Hardwoods, Inc.
  - 2. Eggers Industries.
  - 3. Graham Wood Doors; an Assa Abloy Group company.
  - 4. VT Industries, Inc.
- C. Source Limitations: Obtain flush wood doors and wood paneling from single manufacturer.
- D. Substitutions: Comply with General Conditions using form in Division 1 Section "Substitution Request Form".

**2.3 DOOR TYPES**

- A. Non-Rated Particle Board Doors:
  - 1. Type: Eggers FSC "PARTICLEBOARD" non-rated flush door with solid particle board core fabricated as 5-ply construction to meet requirements of NWWDA I.S. 1-A, AWI 1300 PC-5 and Contract Documents.
  - 2. Face Veneers/Finish: As specified in this section.
  - 3. Door Thickness: 1-3/4".
  - 4. Core/Edge Interface: Bonded.
  - 5. Blocking: Provide solid hard wood blocking as needed to eliminate through-bolting hardware.
    - a. Top Rail: Minimum 5" blocking for securing closers without exposed bolts on opposite side or whatever is required to accommodate specified hardware in top of door.
    - b. Bottom Rail: Minimum 5" blocking for field cutting.
      - 1) Paired doors with flushbolts shall not be cut in field.
    - c. Mid Rail: 5" blocking in doors indicated to have exit devices.
  - 6. Stiles: Not less than 1-3/8" thick hardwood before trimming, beveled 1/8" in 2" at lock and hinge edges.
    - a. Same species as visible surfaces with no visible joints permitted.
  - 7. Crossbands: 1/16" minimum crossbands under face veneers.
  - 8. Premachining at Factory: Required; coordinate with approved Door Hardware Schedule.
  - 9. Clearances: As specified in this section.

- B. Fire-Rated Doors:
1. Type: Eggers "FIREGUARD PLUS" fire-rated flush door with solid non-combustible mineral core fabricated as 5-ply construction to meet requirements of NWWDA I.S. 1-A, AWI 1300 PC-5, NFPA 80, and Contract Documents.
  2. Fire Rating: As indicated on drawings.
  3. Face Veneers/Finish: As specified in this section.
  4. Door Thickness: 1-3/4".
  5. Core/Edge Interface: Bonded.
  6. Blocking: Provide special blocking as needed to eliminate through-bolting hardware.
    - a. Top-Rail: Standard top rail plus 5" special laminated material (SLM) blocking for securing closers without exposed bolts on opposite side or whatever is required to accommodate specified hardware in top of door.
    - b. Bottom-Rail: Standard bottom rail plus 5" special laminated material (SLM) blocking, if hardware requires it.
      - 1) Paired doors shall not be cut in the field.
    - c. Mid-Rail: 5" blocking in doors indicated to have exit device.
  7. Stiles: Reinforced hinge edge for maximum screw holding power, beveled 1/8" in 2" at lock and hinge edges.
    - a. Same species as visible surfaces with no visible joints permitted.
  8. Crossbands: 1/16" minimum crossbands under face veneers.
  9. Lock Blocks: Minimum as required for hardware.
  10. Not Acceptable: Softwood blocking instead of hardwood.
  11. Premachining at Factory: Required; coordinate with approved Door Hardware Schedule.
  12. Clearances: Shall be in compliance with fire-rating requirements.
  13. Label: Bear label of independent testing agency approved by local authorities having jurisdiction.
    - a. Labels of independent testing agency approved by local authorities shall be of a color selected by Architect if labels will be visible if the door will be open in its typical condition.
- C. Acoustical Doors:
1. Type: Eggers "ACOUSTICAL" flush door with solid core construction of absorptive fiber mats and barrier mats fabricated to meet requirements of NWWDA I.S., AWI 1300SR, ASTM E90, ASTM E413 and Contract Documents.
  2. STC Rating: 45 sound transmission coefficient.
  3. Face Veneers/Finish: As specified in this section.
  4. Door Thickness: 1-3/4".
  5. Core/Edge Interface: Bonded.
  6. Blocking: Provide special blocking as needed to eliminate through-bolting.
    - a. Top Rail: Minimum 5" blocking for securing closers without exposed bolts on opposite side.
    - b. Bottom Rail: Minimum as required for hardware.
      - 1) Paired doors with flushbolts shall not be cut in field.
  7. Stiles: Not less than 1-3/8" thick hardwood before trimming, beveled 1/8" in 2" at lock and hinge edges.
    - a. Same species as visible surfaces with no visible joints permitted.
  8. Crossbands: 1/16" minimum crossbands under face veneers.
  9. Premachining at Factory: Required; coordinate with approved Door Hardware Schedule.
  10. Clearances: In accordance with manufacturer's testing.

## 2.4 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with AWI's, AWMAC's, and WI's "Architectural Woodwork Standards."
1. Provide AWI Quality Certification Labels indicating that doors comply with requirements of grades specified.
  2. Contract Documents contain selections chosen from options in quality standard and additional requirements beyond those of quality standard. Comply with those selections and requirements in addition to quality standard.
- B. Certified Wood: Non-fire rated flush wood doors shall be certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and to FSC STD-40-004, "FSC Standard for Chain of Custody Certification".
- C. Regional Content: For material that is extracted, harvested or recovered as well as manufactured within 500 miles of the project site – 101 First Street, San Francisco, CA, contractor shall document the cost and percentage (by weight) of each material that is regional.

- D. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.
- E. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
  - 1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
  - 2. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
  - 3. Labels of independent testing agency approved by local authorities shall be of a color selected by Architect if labels will be visible if the door will be open in its typical condition.
  - 4. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
  - 5. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
  - 6. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
- F. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.
- G. Particleboard-Core Doors:
  - 1. Particleboard: ANSI A208.1, Grade LD-1 or Grade LD-2, made with binder containing no urea-formaldehyde.
  - 2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
- H. Mineral-Core Doors:
  - 1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
  - 2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.
  - 3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

## 2.5 VENEER-FACED DOORS FOR TRANSPARENT FINISH

- A. Interior Solid-Core Doors.
  - 1. Grade: Premium, with Grade AA faces.
  - 2. Species: To be selected.
  - 3. Cut: Plain sliced (flat sliced).
  - 4. Match between Veneer Leaves: Book match.
  - 5. Assembly of Veneer Leaves on Door Faces: Center-balance match.
  - 6. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
  - 7. Transom Match: Continuous match.
  - 8. Exposed Vertical and Top Edges: Same species as faces.
  - 9. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering. Faces are bonded to core using a hot press.
  - 10. WDMA I.S.1-A Performance Grade: Heavy Duty.

## 2.6 FABRICATION

- A. Fabricate doors in sizes indicated for Project-site fitting.
  - 1. Fabricate doors 2" longer than frame opening height to allow cutting of bottom rail in field except manufacture doors 3/4" longer than frame opening height at rated doors.
- B. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
  - 1. Comply with NFPA 80 requirements for fire-rated doors.
    - a. Labels of independent testing agency approved by local authorities shall be of a color selected by Architect if labels will be visible if the door will be open in its typical condition.

- C. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.
  - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
  - 2. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
- D. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door styles.
  - 1. Fabricate door and transom panels with full-width, solid-lumber meeting rails. Provide factory-installed spring bolts for concealed attachment into jambs of metal door frames.

## 2.7 FACTORY FINISHING

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
  - 1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.
- B. Factory finish doors.
- C. Transparent Finish:
  - 1. Grade: Premium.
  - 2. Finish: WDMA TR-6 catalyzed polyurethane.
  - 3. Staining: Match Architect's sample.
  - 4. Effect: Semifilled finish, produced by applying an additional finish coat to partially fill the wood pores. Apply filler if necessary to match Architect's sample.
  - 5. Sheen: Semigloss, 40 – 60 gloss units measured on 60 degree cross meter per ASTM D523.
- D. Side Edges: Finish to match face veneer finish.
- E. Top and Bottom Edges: 1 coat clear sealer.

## PART 3 EXECUTION

### 3.1 EXAMINATION

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

- A. Hardware: For installation, see Division 8 Section "Door Hardware".
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
  - 1. Install fire-rated doors according to NFPA 80.
  - 2. Install smoke- and draft-control doors according to NFPA 105.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
  - 1. Provide 1/4" from bottom of door to top of decorative floor finish or covering; or 1/2" from bottom of door to top of concrete floor slab as a minimum.
  - 2. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.
  - 3. Comply with NFPA 80 for fire-rated doors.
- D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

**3.3 ADJUSTING**

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. 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.
- C. Clean-up hardware and adjacent surfaces upon completion.
  - 1. Do not use abrasives or liquid cleaners which will harm permanent finishes.
  - 2. Protect door surfaces at all times.
- D. Protection: Protect doors as recommended by door manufacturer to ensure that flush wood doors will be without damage or deterioration at time of Substantial Completion.

**END OF SECTION**