

SECTION 0821416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 M.S.U. ISSUES

- A. Transparent finished wood doors and steel frames are the standard interior doors at M.S.U.
- B. All public and personnel doors shall be a minimum of 36" wide to provide barrier-free access for mobility aid users.
- C. It the intent of MSU that all flush wood doors used on its projects will comply with LEED™ NC 3 Credit Requirements MR Credit 4: Recycled Content, 10% (post-consumer + ½ pre-consumer), MR Credit 4: Recycled Content 20% (post-consumer + ½ pre-consumer), and EQ Credit 4.2 Low-Emitting Materials: Paints and Coatings. EQ Credit 4.2 will apply only in the instance of field finished doors.

1.2 SUMMARY

- A. This Section includes the following:
 - 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.
 - 4. Louvers for flush wood doors.
- B. Related Sections include the following:
 - 1. Division 08 Section GLAZING for glass view panels in flush wood doors.
 - 2. Division 08 Section DOOR HARDWARE for hardware for flush wood doors.
 - 3. Division 08 Section HOLLOW METAL DOORS AND FRAMES for steel frames for flush wood doors.

1.3 SUBMITTALS

- A. Product Data: For each type of door, include details of core and edge construction, louvers, and trim for openings. Include factory-finishing specifications.
- B. Samples for Initial Selection: Color charts consisting of actual materials in small sections for the following:
 - 1. Faces of Factory-Finished Doors: Show the full range of colors available for stained finishes.
- C. Samples for Verification:
 - 1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, 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 the finished work.
2. Corner sections of doors, approximately 8 by 10 inches, with door faces and edgings representing typical range of color and grain for each species of veneer and solid lumber required. Finish sample with same materials proposed for factory-finished doors.
 3. Louver blade and frame sections, 6 inches long, for each material and finish specified.
 4. Frames for light openings, 6 inches long, for each material, type, and finish required.
- D. Submit printed statement and product data for field applied finishes in accordance with the General Administrative Requirements of the MSU Construction Standards 01300.1.2. Maximum VOC content when calculated according to South Coast Air Quality Management District (SCAQMD) Rule #1113, Architectural Coatings:
1. Clear Wood Finishes: Varnish Maximum 350 g/l, Lacquer Maximum 550 g/l
 2. Stains: Maximum 250 g/l
 3. Sealers: Waterproofing 250 g/l
 4. Sanding Sealers 275 g/l
 5. All Other Sealers 200 g/l

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer.
- B. 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.
- C. 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 or UBC Standard 7-2, whichever is most stringent.
1. Oversize, Fire-Rated Wood Doors: For door assemblies exceeding sizes of tested assemblies, provide oversize fire door label or certificate of inspection, from a testing and inspecting agency acceptable to authorities having jurisdiction, stating that doors comply with requirements of design, materials, and construction.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons.
- C. Mark each door on top and bottom rail with Project Number and opening number used on Shop Drawings.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until building is enclosed, wet work is complete, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Flush Wood Doors:
 - a. Algoma Hardwoods Inc.
 - b. Eggers Industries; Architectural Door Division.
 - c. GRAHAM Manufacturing Corp.
 - d. Marshfield DoorSystems.
 - e. Mohawk Flush Doors, Inc.
 - f. Oshkosh Architectural Door Co.
 - g. VT Industries Inc.
 - 2. Metal Louvers for Doors:
 - a. Air Louvers, Inc.
 - b. Anemostat Door Products.

2.2 DOOR CONSTRUCTION, GENERAL

- A. Doors for Transparent Finish:
 - 1. Grade: Premium, with Grade AA faces.

2.3 SOLID-CORE DOORS

- A. Interior Veneer-Faced Doors:
 - 1. Core: Glued block or structural composite lumber.
 - 2. Construction: Five or seven plies with stiles and rails bonded to core, then entire unit abrasive planed before veneering.
- B. Fire-Rated Doors:
 - 1. Construction: Construction and core specified above for type of face indicated or manufacturer's standard mineral-core construction as needed to provide fire rating indicated.

2. Blocking: For mineral-core doors, provide composite blocking with improved screw-holding capability approved for use in doors of fire ratings indicated as follows:
 - a. 5-inch top-rail blocking.
 - b. 5-inch bottom-rail blocking.
 - c. 5-inch midrail blocking, in doors indicated to have exit devices.
 - d. Blocking including stile of 4 ½ inch minimum net thickness on the latch side of the door.
 - e. Stile of 1 ¼ inch minimum net thickness after trimming on the hinge side of the door.
3. Pairs: Furnish formed-steel edges and astragals for pairs of fire-rated doors, unless otherwise indicated.
 - a. Finish steel edges and astragals to match door hardware locksets or exit devices.

2.4 LOUVERS AND LIGHT FRAMES

- A. Wood Louvers: Door manufacturer's standard solid-wood louvers, unless otherwise indicated.
- B. Metal Louvers:
 1. Blade Type: Vision-proof, inverted V.
 2. Metal and Finish: Extruded aluminum with Class II, clear anodic finish complying with AA-C22A31.
- C. Wood Beads for Light Openings in Wood Doors:
 1. Wood Species: Species compatible with door faces.
 2. Profile: Flush rectangular beads.
 3. At 20-minute, fire-rated, wood-core doors, provide wood beads and metal glazing clips approved for such use.

2.5 FABRICATION

- A. Fabricate doors in sizes indicated for Project-site fitting.
- B. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels, unless otherwise indicated:
 1. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements in NFPA 80 for fire-rated doors.
- C. Factory machine doors for hardware that is not surface applied.
 1. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 2. Metal Astragals: Premachine 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 stiles.
 - 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 doorframes.
- E. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required.
 - 1. Light Openings: Trim openings with moldings of material and profile indicated.
 - 2. Louvers: Factory install louvers in prepared openings.

2.6 FACTORY FINISHING

- A. General: Comply with AWI's "Architectural Woodwork Quality Standards Illustrated" for factory finishing.
- B. Transparent Finish:
 - 1. Grade: Premium.
 - 2. Finish: AWI System TR-4 Conversion Varnish.
 - 3. Sheen: Satin.

EXECUTION

2.7 EXAMINATION

- A. Examine doors and installed door frames before hanging doors.
 - 1. Verify that 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.

2.8 INSTALLATION

- A. Hardware: For installation, see Division 8 Section "Door Hardware."
- B. Manufacturer's Written Instructions: Install doors to comply with manufacturer's written instructions, referenced quality 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. Machine doors for hardware. Seal cut surfaces after fitting and machining.

1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold.
 - a. Comply with NFPA 80 for fire-rated doors.
 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-Fitted Doors: Align in frames for uniform clearance at each edge.
- E. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.
- F. Field-Finished Doors: Refer to the following for finishing requirements:
1. Division 09 Sections EXTERIOR PAINTING and INTERIOR PAINTING
- 2.9 ADJUSTING
- A. Operation: Rehang or replace doors that do not swing or operate freely.
 - B. Finished Doors: 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.

END OF SECTION 081416