SECTION 08 14 33

STILE AND RAIL DOORS (Opaque/Painted Finish)

PART 1 – GENERAL

1.01 SUMMARY

A. Related Documents—
Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to the work specified in this section.

B. Section Includes:
1. Stile and Rail Doors
2. Factory Prefitting and Machining
3. Factory Finishing

C. Related Sections (Delete sections that are not applicable)
1. Section 00 00 00 – Environmental Sustainability Requirements
2. Section 00 00 00 – Environmental and Contracting Requirements
3. Section 01 00 00 – General Requirements
4. Section 06 00 00 – Wood, Plastics and Composites
5. Section 08 30 00 – Specialty Doors and Frames
6. Section 08 11 00 – Metal Doors and Frames
7. Section 08 06 71 – Door Hardware Schedule
8. Section 08 06 80 – Glazing Schedule
9. Section 09 00 00 – Finishes

1.02 REFERENCES

A. It is the intent of the specification that all wood doors shall comply with the standards as listed. The latest published edition of each standard applies.

B. WDMA Interior Architectural Wood Stile & Rail Doors Standard
1. ANSI/WDMA I.S.6-A

C. Architectural Woodwork Institute
1. Architectural Woodwork Standards (AWS)

D. Building Code References
1. NFPA 80 – Standard for Fire Doors and Other Opening Protectives
2. NFPA 252 – Standard Methods of Fire Tests of Door Assemblies

3. NFPA 101 – Life Safety Code
4. IBC – International Building Code
5. (Insert Local Building codes enforced by the authority having jurisdiction)
    a. UL 10B-Standard for Fire Tests of Door Assemblies (neutral pressure)
    b. UL 10C-Standard for Positive Pressure Fire Tests of Doors
6. Intertek Warnock Hersey-Listed Product and Code Compliance Directory
7. QAI Laboratories-Listing Directory for Building Products
8. ADA Standards for Accessible Design (Current Edition)
9. California Air Resource Board (CARB) –formaldehyde emissions standard
10. Consumer Products Safety Commission (CPSC) 16 CFR 1201 – Standard for Architectural Glazing

1.03 SUBMITTALS

A. Shop Drawings: Comply with Division 1-Section 01 00 00. Data submitted shall be specific and shall include product data and printed information in sufficient detail and scope to verify compliance with requirements of the contract documents.

B. Indicate:
    1. Plans & Elevations
    2. Materials
    3. Surface Grain Directions
    4. Product Data: Submit door manufacturer's product construction data including: core construction, stile and rail details, panel and sticking details and any trim or glazing details as appropriate for doors specified.
    5. Assembly methods
    6. Joint details
    7. Fastening methods
    8. Accessories
    9. Hardware compliance for fire-rated applications
    10. Door Sizes
    11. Fire rating
        a. Neutral Pressure – UL 10B
        b. Positive Pressure – UL 10C

C. Product Performance: Provide documents showing compliance to the following WDMA attributes, validating the specified WDMA Performance Duty Level:
    1. Adhesive Bonding Durability: WDMA TM-6

2. Cycle Slam: WDMA TM-7
3. Hinge Loading: WDMA TM-8
4. Screw Holding: WDMA TM-10
    a. Door Face
    b. Vertical Door Edge
    c. Horizontal Door Edge (applies when hardware is attached)

D. Samples:
1. Submit (1) 12” X 12” construction sample as required by the architect showing door construction, panel and sticking details as specified.
2. For factory finished doors-Submit (3) 5” X 5” veneer samples as required by the architect illustrating finish color and sheen.

E. Sustainability Project Submittals

**Note to Specifier: This section is intended to be used for projects that are requiring specific environmental attributes. Delete the entire section or any items that are not applicable for this particular project.*

Submit documentation as required to demonstrate compliance with sustainability requirements for project.

1. Recycled Content: Indicate percentage of pre and/or post-consumer content, by weight.
2. Regional Materials: Indicate percentage by weight of components regionally extracted, harvested, and manufactured local to the project with distance identified.
3. Certified Wood: Indicate the FSC Claim percentage of wood based materials certified in accordance with the Forest Stewardship Council’s (FSC) principles and criteria for wood building components.
4. Low-Emitting Materials: All composite wood and agrifiber products are to be manufactured with No Added Urea Formaldehyde, including all laminating adhesives.

    **Note to specifier: Add the below section as desired.*

    For composite wood products, provide documentation indicating that products comply with the testing and product requirements of the current California Department of Health Services’ “Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers.” All composite wood and agrifiber products shall meet this requirement. Provide products that are third party certified through the SCS Indoor Advantage Gold or Greenguard.

5. CARB Formaldehyde Emissions: Provide documentation that all doors furnished will meet Phase II of Title 17, California Code of Regulations, California Air Resources Board Airborne Toxic Control Measure (ATCM) CA 93120.

F. Quality Assurance:
   1. Manufacturer Qualifications: Shall be a company specializing in the manufacture of stile and rail doors with a minimum of 10 years' experience.
   2. Fire Ratings: Fire rated doors shall comply with local building codes as enforced by the AHJ. Doors shall be installed in accordance with NFPA 80. All doors shall bear the appropriate certification labels. Manufacture fire rated doors under the UL or ITS/WH factory inspection program providing the degree of fire protection capability indicated by the door schedule drawings. Provide metal labels permanently fastened on each fire door at an authorized and licensed facility as evidence of compliance with procedures of the labeling agency. Labels are not to be removed, defaced or made illegible while the door is in service per NFPA 80. Fire labels are not to be painted or pre-finished.
   3. Storage and Handling: Doors shall be stored and handled in accordance with the manufacturer's recommendations and the WDMA—Appendix Section—"Care and Installation at Job Site."
   4. Warranty: Provide Manufacturer's standard warranty form, signed by manufacturer, in which manufacturer agrees to repair or replace doors that are defective in materials or workmanship for the life of the original installation of the door.
      a. Provide lifetime warranty for all interior doors.
      b. Provide three year warranty for all exterior doors.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers, subject to compliance with specifications:
   1. Harring
   2. Eggers Industries
   3. Approved equal-as approved by owner and architect

2.02 DOOR CONSTRUCTION

A. Description: Interior Non-Rated Doors

1. Type: Harring veneered Stile & Rail panel doors. Profiles and dimensions shall be Harring standards unless otherwise noted in the drawings and elevations.
2. Door Thickness-Per plans or as indicated. Select from below.
   a. Non fire-rated applications: 1-3/8”, 1-3/4”, 2-1/4”
   b. Fire-rated applications: 1-3/4” and 2-1/4”
3. Construction Type:
   a. Cope & Stick; joinery using ½” X 4” dowels.
   b. Joints to have minimum 1 dowel.
4. Construction Materials:
   a. Stiles and Rails shall be constructed of Structural Composite Lumber (SCL), Particleboard or other similar core, edge banded with a minimum ¾” hardwood, laminated with minimum 1/8” HDF.
   b. Muntin bars shall have ¼” X 2-1/2” dowels at every joint.
   c. Pressure fit joints using a Type II Adhesive.
   d. Raised panels shall be minimum thickness of 1-1/8” with raise of panel of solid lumber material matching face species, rim banded with mitered corners.
5. Face Stile and Rail Surface Material: 1/8” HDF-Factory Primed
6. Door Panel Top Design: (Select as needed, delete others)
   a. Square Top
   b. Arch
   c. Eyebrow
   d. Provence
   e. Custom
7. Panel Types: (Select as needed, delete others)
   a. Raised Panel: Specify thickness of 1-1/8” or 1-5/8”
   b. Flat Panel: 5/8”
   c. V-Groove Flat Panel
      Select Thickness: 5/8” or 1-1/8” (Select 1)
   d. V-Groove Raised Panel
      Select Thickness: 1-1/8” or 1-5/8” (Select 1)
8. Panel Construction
   a. Panels shall be manufactured with MDF or HDF material-Factory Primed. No wood veneers shall be utilized.
   b. Raised panels shall be minimum thickness of 1-1/8”
   c. Flat panels shall be minimum thickness of 5/8”
9. Panel Material
   a. Raised Panel: MDF
   b. Flat Panel: MDF

10. Sticking Types: (Select as needed, delete others)
    a. Ogee
    b. Ovolo
    c. Square
    d. Quarter Round
    e. No profile
    f. Custom
11. Louver Types: (Select as needed, delete others)
    a. Standard
    b. False
    c. Chevron
12. Louver Construction:
    a. Louvers shall be 3/8” X 2-1/4” and of MDF material.
    b. Louver slats shall be mortised into stiles and assembled individually.

B. **Description: Interior Fire-Rated Doors**
1. Specify ratings of 20, 45, 60, or 90 minute.
2. Labeled doors shall confirm to one of the following applicable local codes. (Choose one.)
    a. Neutral Pressure—Tested to UL 10B
    b. Positive Pressure—Tested to UL 10C (if selecting Positive Pressure, choose one of the below.)
        i. Positive Pressure doors are to be of Category A construction. (Recommended) Category A includes doors evaluated without an edge-sealing system on the door and frame and doors evaluated with a sealing system incorporated (concealed or visible) into the edge of the door.
        ii. Positive Pressure Category B construction. Category B construction includes doors evaluated with an edge-sealing system field applied to the labeled frame or door.

C. **Description: Exterior Doors**
1. Type: Harring veneered Stile & Rail panel doors. Profiles and dimensions shall be Harring standards unless otherwise noted in the drawings and elevations.
2. Door Thickness-Select from the below
    a. 1-3/4”
    b. 2-1/4”
3. Construction Type
    a. Cope & Stick; joinery using ½” x 4” dowels.

   b. Joints to have minimum 1 dowel.
4. Construction Materials:
   a. Stiles shall be construction of Structural Composite Lumber (SCL), edge banded with a minimum ¾” hardwood and laminated with 1/8” Paint Grade veneer concealing SCL material.
   b. Rails shall be solid lumber construction.
   c. Muntin bars shall have ¼” x 2-1/2” dowels at every joint.
   d. Pressure fit joints using a Type I Adhesive and silicone caulk to prevent moisture penetration.
   e. Flat panels shall be constructed of an exterior grade core with a minimum overall thickness of 5/8”.
   f. Raised panels shall be constructed of an exterior grade core with a minimum overall thickness of 1-5/8”.
5. Door Panel Top Design: (Select as needed, delete others)
   a. Square Top
   b. Arch
   c. Eyebrow
   d. Provence
   e. Custom
6. Panel Types: (Select as needed, delete others)
   a. Raised Panel: 1-5/8”
   b. Flat Panel: 5/8”
   c. V-Groove Flat Panel 1-5/8”
   d. V-Groove Raised Panel 1-5/8”
7. Panel Construction:
   a. Panels shall be manufactured with Exterior MDF-No wood veneers shall be utilized.
8. Panel Material
   a. Raised Panel: Exterior MDF
   b. Flat Panel: Exterior MDF
9. Sticking Types: (Select as needed, delete others)
   a. Ogee
   b. Ovolo
   c. Square
   d. Quarter Round
   e. No profile
   f. Custom

2.03 DOOR FABRICATION

A. Fabricate doors in accordance with one of the following Quality Assurance Standards. (Select 1 from below)
   1. WDMA I.S.6A-Premium Grade Construction
   2. WDMA I.S.6A-Custom Grade
B. Prefit and bevel doors 1/8” in 2”, ensuring proper gaps are maintained on fire doors to comply with NFPA 80 requirements.
C. All doors shall be machined for specified hardware that is not surface applied.
D. Doors shall be factory glazed with glass as specified unless otherwise indicated.
   1. Indicate glass type_____
   2. Indicate glass thickness_____

2.04 FINISHING

A. Finish coating to be: (Select 1 of the below)
   1. Factory Primed (Water Based for Interior Doors, Lacquer for Exterior Doors)
   2. Factory Paint all Interior Doors with Lacquer finish to match Architect’s sample. All Exterior Doors to be field painted.

PART 3 EXECUTION

1.1 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. Any deficiencies must be corrected prior to door installation.

   2. Reject doors with defects.

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

1.2 INSTALLATION

A. Hardware: For installation, see **[Section 087100 “Door Hardware.”] [Section 087111 “Door Hardware (Descriptive Specification).”]**

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. 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 edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide ¼ inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.

   a. Comply with NFPA 80 for fire-rated doors.

2. Bevel non-fire-rated doors 1/8 inch in 2 at lock and hinge edges.

3. Trim bottom rail only to extent permitted by labeling agency.

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

E. Factory-Finished Doors: Do not trim factory finished doors for width.

1.3 ADJUSTING

A. Operation: Correct any deficiency that prohibits the door from swinging or operating freely. Do not remove hinge screws after initial insertion. Shims used for alignment purposes must be inserted between hinge and frame. Do not insert shims between hinge and door.

B. To prevent stile failure, insure that door closers are properly adjusted and do not limit the door opening swing. Limit door opening swing only with a properly located stop.

C. 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