SECTION 08 14 00

WOOD DOORS
08/16

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM E2226	(2015a; R 2019b) Standard Practice for Application of Hose Stream

FOREST STEWARDSHIP COUNCIL (FSC)

FSC STD 01 001	(2015) Principles and Criteria for Forest Stewardship

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 8272	(1985) Doorsets - Air Permeability Test
ISO 10140	(2016) Acoustics - Laboratory Measurement of Sound Insulation of Building Elements

JAPANESE STANDARDS ASSOCIATION (JSA)

JIS A 1460	(2015) Determination of the Emission of Formaldehyde from Building Boards - Desiccator Method
JIS A 1416	(2000) Acoustics - Measuring Method of Air Sound Insulation Performance of Building Materials in Laboratory
JIS A 1516	(1998) Windows and Doorsets - Air Permeability Test
JIS A 1530	(2014) Windows and Doors - Resistance to Repeated Opening and Closing - Test Method
JIS K 6903	(2008) Laminated Thermosetting High-Pressure Decorative Sheets

MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM (MLIT)

MLIT-SS Ch 16, Sec 7	(2019) Public Building Construction Standard Specification: Chapter 16, Section 7 Wood Door

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 105	(2016; TIA 16-1) Standard for Smoke Door Assemblies and Other Opening Protectives
NFPA 252	(2022) Standard Methods of Fire Tests of Door Assemblies
NFPA 80	(2022) Standard for Fire Doors and Other Opening Protectives

PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

PEFC ST 2002:2013	(2015) PEFC International Standard Chain of Custody of Forest Based Products Requirements

GREEN CIRCULATION CERTIFICATION COUNCIL (SGEC/PEFC JAPAN)

SGEC Certification Japan	Sustainable Green Ecosystem Council - Documents 1 - 4

UNDERWRITERS LABORATORIES (UL)

UL 10B	(2008; Reprint May 2020) Fire Tests of Door Assemblies

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance with Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Doors; G[, [_____]]

Submit drawings or catalog data showing each type of door unit [; include descriptive data of head and jamb weatherstripping with installation instructions]. Indicate within drawings and data the door types and construction, sizes, thickness, [methods of assembly,] [door louvers,] and [glazing,].

SD-04 Samples

Doors

Prior to the delivery of wood doors, submit a sample section of each type of door which shows the stile, rail, veneer, finish, and core construction.

Door Finish Colors

Submit a minimum of three color selection samples [, minimum 76 by

127 mm in size representing wood stain] [for selection by the Contracting Officer].

SD-11 Closeout Submittals

Warranty

1.3 CERTIFICATIONS

1.3.1 Certified Wood Grades

Provide certificates of grade from the grading agency on [acoustical doors], and [fire doors].

[1.3.2 Certified Sustainably Harvested Wood

Provide wood certified as sustainably harvested by FSC STD 01 001, SGEC Certification Japan[, or other third party program certified by PEFC ST 2002:2013]. Provide a letter of Certification of Sustainably Harvested Wood signed by the wood supplier. Identify certifying organization and their third-party program name and indicate compliance with chain-of-custody program requirements. Submit sustainable wood certification data; identify each certified product on a line item basis. Submit copies of invoices bearing certification numbers.

][1.3.3 Indoor Air Quality Certification

[1.3.3.1 Composite Wood, Wood Structural Panel and Agrifiber Products

For purposes of this specification, composite wood and agrifiber products include particleboard, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, and door cores. Provide products certified to meet F 4-star and contents of ethylbenzene <1% 20 ppm, and xylene <5% ppm, and methanol <1% 200 ppm.

]]1.4 DELIVERY, STORAGE, AND HANDLING

Deliver doors to the site in an undamaged condition and protect against damage and dampness. Stack doors flat under cover. Support on blocking, a minimum of 100 mm thick, located at each end and at the midpoint of the door. Store doors in a well-ventilated building so that they will not be exposed to excessive moisture, heat, dryness, direct sunlight, or extreme changes of temperature and humidity.[Do not store in a building under construction until concrete, masonry work, and plaster are dry.] Replace defective or damaged doors with new ones.

1.5 WARRANTY

Warrant doors free of defects as set forth in the door manufacturer's standard door warranty.

PART 2 PRODUCTS

2.1 DOORS

Provide doors of the types, sizes, and designs [indicated] [specified] free of urea-formaldehyde resins. Provide products certified to meet F 4-star requirements of JIS A 1460.

2.1.1 Stile and Rail Doors

Stile and rail doors conforming to MLIT-SS Ch 16, Sec 7. Furnish laminate panels in not less than three ply thickness. Provide flat panels with a minimum finished panel thickness of [_____] mm and [_____] thickness for raised panels.[Provide certified sustainably harvested stile and rail wood doors.]

2.1.2 Flush Doors

Conform to MLIT-SS Ch 16, Sec 7 for flush doors. Provide hollow core doors with lock blocks and 25 mm minimum thickness hinge stile. Hardwood stile edge bands of doors receives a natural finish, compatible with face veneer. Provide mill option for stile edge of doors scheduled to be painted. No visible finger joints will be accepted in stile edge bands. When used, locate finger-joints under hardware.[Provide certified sustainably harvested flush wood doors.]

2.1.2.1 Interior Flush Doors

Provide [staved lumber] [particleboard] [agrifiber] [hollow] core, Type II flush doors conforming to MLIT-SS Ch 16, Sec 7 with faces of [sound grade hardwood or hardboard for painted finish] [premium] [good] grade [natural birch] [select [premium white] [red] birch] [[premium] [good] grade [red] [white] oak] [[premium] [good] grade walnut] [plastic laminate]. [Hardwood veneers must be [[rotary cut] [plain sliced] [quarter sliced]] [[random] [slip] [book] matched]]. [Finish plastic laminate faced doors on both vertical edges with [wood] [laminated plastic] of color matching faces.] [Products must contain no added urea-formaldehyde resins.]

2.1.3 Bi-Fold Closet Doors

Provide [hardboard grade flush doors conforming to MLIT-SS Ch 16, Sec 7.] [paneled] [louvered] doors [premium or select] [standard] grade, conforming to MLIT-SS Ch 16, Sec 7 with [_____] [_____] mm thickness. Equip doors with the manufacturer's standard hardware, including tracks, hinges, guides, and pulls.

2.1.4 Sliding Closet Doors

Provide flush wood doors to conform to MLIT-SS Ch 16, Sec 7. Provide [paneled] [and] [louvered] doors to conform to MLIT-SS Ch 16, Sec 7 [premium or select] [standard] grade with [_____] mm thickness. Equip doors with the manufacturer's standard hardware.

2.1.5 Acoustical Doors

MLIT-SS Ch 16, Sec 7, solid core, constructed to provide Weighted Sound Reduction Index (Rw) rating of [35] [_____] when tested in accordance with JIS A 1416 or ISO 10140.

2.1.6 [Composite-Type] Fire Doors

Provide doors specified or indicated to have a fire resistance rating conforming to the requirements of UL 10B, ASTM E2226, or NFPA 252 for the class of door indicated. Affix a permanent metal label with raised or incised markings indicating testing agency's name and approved hourly fire rating to hinge edge of each door.

2.1.7 Prehung Doors

Frames for prehung interior doors to be for [painted] [clear] finish, with [3 piece adjustable jamb units] [3 piece adjustable jamb units with pins]. Provide doors complete with frame, hinges, and prepared to receive finish hardware.

2.2 ACCESSORIES

2.2.1 Door Louvers

Fabricate from wood and of sizes indicated. Provide louvers with a minimum of 35 percent free air. Equip louvers with [slat] [sightproof inverted vee slat] type. [Block hollow core doors to provide solid anchorage for the louvers.] Mount louvers in the door with [flush wood moldings.] [wood lip moldings.]

2.2.2 Door Light Openings

Provide glazed openings with the manufacturer's standard wood moldings. [Provide moldings for doors to receive natural finish of the same wood species and color as the wood face veneers.] Provide moldings on the exterior doors with sloped surfaces. [Lip type moldings for flush doors.]

2.2.3 Weatherstripping

Provide weatherstripping that is a standard cataloged product of a manufacturer regularly engaged in the manufacture of this specialized item. Provide weatherstripping [tempered spring bronze] [or] [looped neoprene or vinyl held in an extruded non-ferrous metal housing]. Install [bronze weatherstripping with a minimum thickness of 0.23 mm for sills, and a minimum thickness of 0.16 mm elsewhere.] Air leakage of weatherstripped doors not to exceed [0.0025] [0.0031] cubic meter per second of air per square meter of door area when tested in accordance with JIS A 1516 or ISO 8272.

2.2.4 Additional Hardware Reinforcement

Provide the minimum lock blocks to secure the specified hardware. The measurement of top, bottom, and intermediate rail blocks is a minimum 125 mm by full core width. Comply with the manufacturer's labeling requirements for reinforcement blocking, but not mineral material similar to the core.

2.3 FABRICATION

2.3.1 Marking

Stamp each door with a brand, stamp, or other identifying mark indicating quality and construction of the door.

2.3.2 Quality and Construction

Identify the standard on which the construction of the door was based [, identify the standard under which preservative treatment was made,] and identify doors having a glue bond.

2.3.3 Preservative Treatment

Treat doors scheduled for restrooms, janitor closets and other possible wet locations including exterior doors with a water-repellent preservative treatment and so marketed at the manufacturer's plant.

2.3.4 Adhesives and Bonds

MLIT-SS Ch 16, Sec 7. Use bond as recommended by manufacturer for interior and exterior doors. Provide a nonstaining adhesive on doors with a natural finish.

2.3.5 Prefitting

Provide factory [prefinished] [finished] [and] factory prefitted doors for the specified hardware, door frame and door-swing indicated. Machine and size doors at the factory by the door manufacturer in accordance with the standards under which the doors are produced and manufactured. The work includes sizing, beveling edges, mortising, and drilling for hardware and providing necessary beaded openings for glass and louvers. Provide the door manufacturer with the necessary hardware samples, and frame and hardware schedules to coordinate the work.

2.3.6 Finishes

2.3.6.1 Field Painting

Factory prime or seal doors, and field paint.

2.3.6.2 Factory Finish

Provide doors finished at the factory by the door manufacturer. Use stain when required to produce the finish specified for color. Seal edges, cutouts, trim, and wood accessories, and apply two coats of finish compatible with the door face finish. Touch-up finishes that are scratched or marred, or where exposed fastener holes are filled, in accordance with the door manufacturer's instructions. Match color and sheen of factory finish using materials compatible for field application.

2.3.6.3 Plastic Laminate Finish

Factory applied, JIS K 6903, General or Specific purpose type, 1.25 mm minimum thickness. Glue laminated plastic for hollow core doors to wood veneer, plywood, or hardboard backing to form door panel. Provide a combined thickness of laminate sheet and backing of 2.5 mm minimum.

2.3.6.4 Color

Provide door finish colors in accordance with Section 09 06 00 SCHEDULES FOR FINISHES.

2.3.7 Water-Resistant Sealer

Provide manufacturer's standard water-resistant sealer compatible with the specified finish[es].

2.4 SOURCE QUALITY CONTROL

Meet or exceed the following minimum performance criteria of stiles fire

doors utilizing standard mortise leaf hinges:

a. Cycle-slam: [Standard Duty Doors: no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of JIS A 1530] [Heavy Duty Doors: no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of JIS A 1530] [Extra Heavy Duty Doors: no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of JIS A 1530].

b. Hinge loading resistance: Averages of ten test samples not less than [Standard Duty doors: 1780 Newton force] [Heavy Duty doors: 2110 Newton force] [Extra Heavy Duty doors: 2440 Newton force] when tested for direct screw withdrawal in accordance with JIS A 1530. Do not use a steel plate to reinforce screw area.

PART 3 EXECUTION

3.1 INSTALLATION

Do not install building construction materials that show visual evidence of biological growth.

Before installation, seal top and bottom edges of doors with the approved water-resistant sealer. Seal cuts made on the job immediately after cutting using approved water-resistant sealer. Fit, trim, and hang doors with manufacturer required maximum clearance at sides and top, and a clearance over thresholds per manufacturer recommendation. Provide 10 mm minimum, 11 mm maximum clearance at bottom where no threshold occurs. Bevel edges of doors at the rate of 3 mm in 50 mm. Door warp must not exceed 6 mm when measured in accordance with MLIT-SS Ch 16, Sec 7.

3.1.1 Fire[and Smoke] Doors

Install fire doors in accordance with NFPA 80. [Install smoke doors in accordance with NFPA 105.]Do not paint over labels.

3.1.2 Prehung Doors

Install doors in accordance with the manufacturer's instructions and details. Provide fasteners for [stops] [and] [casing trim] within 75 mm of each end and spaced 279 mm on center maximum. Provide side and head jambs joined together with a dado or notch of 5 mm minimum depth.

[3.1.3 Weatherstripping

Install doors in strict accordance with the door manufacturer's printed installation instructions and details. Weatherstrip exterior swing-type doors at sills, heads and jambs to provide weathertight installation. Apply weatherstripping at sills to bottom rails of doors and hold in place with a brass or bronze plate. Apply weatherstripping to door frames at jambs and head. Shape weatherstripping at sills to suit the threshold. [Meeting stiles of exterior double-doors must be made weathertight by means of [a looped vinyl or neoprene strip in an extruded nonferrous metal housing applied to the edge of one door leaf] [a neoprene, vinyl or spring-bronze weatherstripped astragal secured to the inactive door leaf].]

] -- End of Section --