UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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08/16, CHG 1: 08/18

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USACE / NAVFAC / AFCEC / NASA	**UFGS-08 14 00 (August 2016)** **Change 1 - 08/18** **----------**
Preparing Activity: NAVFAC	**Superseding** **UFGS-08 14 00 (August 2016)**

UNIFIED FACILITIES GUIDE SPECIFICATIONS

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SECTION 08 14 00

WOOD DOORS
08/16, CHG 1: 08/18

****
NOTE: This guide specification covers requirements for wood doors.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).
****

****
NOTE: On the drawings, show:

1. Locations

2. Sizes, types, thicknesses, glazing, and louvers

3. Designs

4. Fire rating requirements

5. Color

6. Door swing

7. Sound transmission class.
****

PART 1 GENERAL

1.1 REFERENCES

****
NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.
****

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.

AMERICAN FOREST FOUNDATION (AFF)

ATFS STANDARDS	(2015) American Tree Farm System Standards of Sustainability 2015-2020

ASTM INTERNATIONAL (ASTM)

ASTM E90	(2009; R2016) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
ASTM E283	(2019) Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E2226	(2015; R 2019b) Standard Practice for Application of Hose Stream

CALIFORNIA AIR RESOURCES BOARD (CARB)

CARB 93120	(2007) Airborne Toxic Control Measure (ATCM) to Reduce Formaldehyde Emissions from Composite Wood Products

CSA GROUP (CSA)

CSA Z809-08	(R2013) Sustainable Forest Management

FOREST STEWARDSHIP COUNCIL (FSC)

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

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3	(2005) Standard for High-Pressure Decorative Laminates

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80	(2022) Standard for Fire Doors and Other Opening Protectives
NFPA 105	(2022) Standard for Smoke Door Assemblies and Other Opening Protectives
NFPA 252	(2022) Standard Methods of Fire Tests of Door Assemblies

PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

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

SUSTAINABLE FOREST INITIATIVE (SFI)

SFI 2015-2019	(2015) Standards, Rules for Label Use, Procedures and Guidance

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 770	Formaldehyde Standards for Composite Wood Products

UNDERWRITERS LABORATORIES (UL)

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

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

ANSI/WDMA I.S.1A	(2013) Interior Architectural Wood Flush Doors
ANSI/WDMA I.S.6A	(2013) Interior Architectural Stile and Rail Doors

WOODWORK INSTITUTE (WI)

NAAWS 3.1	(2017; 2018 Errata Edition) North American Architectural Woodwork Standards

1.2 SUBMITTALS

****

NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

Choose the first bracketed item for Navy, Air Force, and NASA projects, or choose the second bracketed item for Army projects.

****

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] 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-03 Product Data

Doors; G[, [_____]]

[Recycled Content for Door Cores; S

] Accessories

Water-resistant Sealer

Sample Warranty

[Sound Transmission Class Rating; G[, [_____]]

][Fire Resistance Rating; G[, [_____]]

] SD-04 Samples

****
NOTE: Require door samples only for relatively larger quantities of doors and only when justified and desired.
****

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; G[, [_____]]

Submit a minimum of three color selection samples [, minimum 76 by 127 mm 3 by 5 inches in size representing wood stain] [for selection by the Contracting Officer].

SD-06 Test Reports

****
NOTE: Require tests and test reports when fire rated wood doors are included in the project. Doors designated to have "C" label have a 3/4 hour rating, doors designated to have "B" label have a one or 1 1/2 hour rating.
****

Cycle-Slam

Hinge Loading Resistance

Submit cycle-slam test report for doors tested in accordance with ANSI/WDMA I.S.1A, and hinge loading resistance test report for doors tested in accordance with ANSI/WDMA I.S.6A.

SD-07 Certificates

Certificates of Grade

[Certified Sustainably Harvested Stile and Rail Wood Doors; S

][Certified Sustainably Harvested Flush Wood Doors; S

][Indoor Air Quality for Particleboard and Agrifiber Door Cores: S

] SD-11 Closeout Submittals

Warranty

1.3 CERTIFICATIONS

1.3.1 Certified Wood Grades

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

****
NOTE: Use certified sustainably harvested wood where suitable for application and cost effective. Sustainably Harvested Wood is a product which comes from a third-party Forestry Certification Program and thus carries certain characteristics: 1) Protection of biodiversity, species at risk and wildlife habitat, sustainable harvest levels, protection of water quality, and prompt regeneration (e.g., replanting and reforestation); 2) Third-party certification audits performed by accredited certification bodies; 3) Publicly available certification audit summaries; 4) Multi-stakeholder involvement in a standards development process; 5) Complaints and appeals process.

Verify suitability, availability within the region, cost effectiveness and adequate competition before specifying these sustainably harvested wood certifications - if these conditions are verified for the project locale, include the following section. For projects pursuing LEED, delete certifications other than FSC; for all other projects pursuing third-party certification allow the entire list of third party certifications.
****

[1.3.2 Certified Sustainably Harvested Wood

Provide wood certified as sustainably harvested by FSC STD 01 001[, ATFS STANDARDS, CSA Z809-08, SFI 2015-2019, 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

****
NOTE: Include the following section where interior doors with particleboard and agrifiber cores are included in the project.
****

[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 requirements of both 40 CFR 770 and CARB 93120. Provide current product certification documentation from certification body.

]]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 4 inch 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

****
NOTE: The warranty clause in this guide specification has been approved by NAVFACENGCOMHQ in accordance with the requirements of Naval Facilities Acquisition Supplement (NFAS).
NFAS can be found at the following link:
https://portal.navfac.navy.mil/portal/page/portal/navfac/navfac_forbusinesse
The paragraph in this guide specification may be used without any other HQ approval or request for waiver.
****

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

PART 2 PRODUCTS

2.1 DOORS

****
NOTE: It is preferred that door sizes, designs and thicknesses be indicated on the drawings; if not indicated, schedule appropriate criteria in specifications. Refer to ANSI/WDMA I.S.1A and ANSI/WDMA I.S.6A for stock sizes and designs; the use of stock doors is recommended.
****

****
NOTE: Include requirements for wood frames, except for prehung interior wood door units, in Section 06 20 00 FINISH CARPENTRY. Include requirements for metal frames for wood doors in Section 08 11 13 STEEL DOORS AND FRAMES. Include requirements for hardware, other than for sliding and bi-fold doors, in Section 08 71 00 DOOR HARDWARE.
****

****
NOTE: Premium or select grade is intended for natural or stain finish, standard grade is intended

for opaque (paint) finish.
****

Provide doors of the types, sizes, and designs [indicated] [specified] free of urea-formaldehyde resins.

2.1.1 Stile and Rail Doors

****
NOTE: Use certified sustainably harvested wood where suitable for application and cost effective. Verify suitability, availability within the region, cost effectiveness, and adequate competition before specifying this certification.
****

[Premium][Standard] grade Ponderosa Pine doors or [premium or select][standard] stile and rail doors conforming to ANSI/WDMA I.S.6A. Furnish laminate panels in not less than three ply thickness. Provide flat panels with a minimum finished panel thickness of 13 mm 1/2 inch and 20 mm 3/4 inch thickness for raised panels.[Provide certified sustainably harvested stile and rail wood doors.]

2.1.2 Flush Doors

****
NOTE: Use certified sustainably harvested wood where suitable for application and cost effective. Verify suitability, availability within the region, cost effectiveness, and adequate competition before specifying this certification.
****

Conform to ANSI/WDMA I.S.1A for flush doors. Provide hollow core doors with lock blocks and 25 mm 1 inch 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 Exterior Flush Doors

****
NOTE: Use of wood doors on exterior of buildings is not recommended for permanent structures unless the doors are well protected from the weather.
****

Solid wood core, Type I conforming to ANSI/WDMA I.S.1A. Provide doors with [tempered hardboard] [medium density overlayed hardwood veneer] faces. Provide wood edge bands. Install in exterior flush doors with [aluminum] [bronze] [copper] flashings at the bottom of the openings.

]2.1.2.2 Interior Flush Doors

****
NOTE: Hollow core doors should be used for light duty residential only. Face veneers of doors for

painted finish should be either hardboard or sound grade rotary cut hardwood. Face veneers of doors for natural finish should be premium or good grade rotary cut hardwood. Premium grade, book matched, wood veneer should only be specified for medical facilities and other high quality installations such as chapels, hospitals, and where the additional cost is justified. Select grade and species desired for hardwood veneer faced doors. Specify other veneers if desired (such as poplar or cherry); refer to ANSI/WDMA I.S.1A. Luan is not acceptable.
****

****
NOTE: Consider the use of agrifiber board in place of particle board with wood fibers. Types of agrifiber include, but are not limited to, wheat, sunflower, grass straw, cereal straw, rice straw, soybean, bagasse (fibrous by-product of crushing sugarcane or sorghum to extract their juice) and stover (leaves and stalks of corn, sorghum or soybean plants left in the field after harvest). Agrifiber board is dimensionally stable and highly resistant to moisture, while also being lighter in weight than rational wood composites.
****

****
NOTE: Use materials with recycled content where appropriate for use. Verify suitability, availability within the region, cost effectiveness and adequate competition before specifying product recycled content requirements.

Research shows the product is available from US national manufacturers above the minimum recycled content percentages stated. Some manufacturers and regions have higher percentages.

NOTE: For doors that include either particleboard or agrifiber cores, include the last bracketed sentences requiring products with indoor air quality certifications as defined in Part 1 of this specification.
****

Provide [staved lumber] [particleboard] [agrifiber] [hollow] core, Type II flush doors conforming to ANSI/WDMA I.S.1A 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.] [Door cores must have a minimum recycled content of 45 percent. Provide data identifying percentage of recycled content for door cores.] [Products must contain no added urea-formaldehyde resins. Provide certification of indoor air quality for particleboard and agrifiber door cores.]

2.1.3 Bi-Fold Closet Doors

Provide [hardboard grade flush doors conforming to ANSI/WDMA I.S.1A.] [paneled] [louvered] doors [premium or select] [standard] grade, conforming to ANSI/WDMA I.S.6A with [28.5] [35] mm [1-1/8] [1-3/8] inch 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 ANSI/WDMA I.S.1A. Provide [paneled] [and] [louvered] doors to conform to ANSI/WDMA I.S.6A [premium or select] [standard] grade with 35 mm 1-3/8 inch thickness. Equip doors with the manufacturer's standard hardware.

2.1.5 X-Ray Resistant Doors

****
NOTE: Specify minimum door thickness as follows: 44.5 mm 1-3/4 inch for lead sheet 5 mm 3/16 inch thick and less; 50 mm 2 inch for lead sheet over 5 to 6 mm 3/16 to 1/4 inch thick; 57 mm 2-1/4 inches for lead sheet over 6 to 10 mm 1/4 to 3/8 inch thick; 64 mm 2-1/2 inch for sheet lead over 10 to 13 mm 3/8 to 1/2 inch thick. Coordinate with Section 13 49 10 X-RAY SHIELDING.
****

ANSI/WDMA I.S.1A solid core flush doors, hardwood veneered, minimum [44.5] [50] [57] [64] mm [13/4] [2] [2 1/4] [2 1/2] inch thick, of sizes and construction indicated. Provide lead sheets with 99.9 percent pure lead, [_____] mm inch thickness, free from dross, oxide, inclusions, laminations, scale, blisters, and cracks. Locate lead sheets in accordance with manufacturer's standard, to extend fully from edge to edge, from top to bottom, and to be an integral part of the door. Provide wood edge strips compatible with face veneers.

2.1.6 Acoustical Doors

****
NOTE: Ensure that STC rating is coordinated with the STC ratings of walls detailed on drawings. Doors should be provided with STC rating equal to the walls and ceilings. Except where walls and ceilings are designed for an STC of 40 or more, specify STC of 35. Doors requiring STC ratings greater than 35 may have to be thicker than otherwise specified. Check manufacturer's literature.
****

ANSI/WDMA I.S.1A, solid core, constructed to provide Sound Transmission Class rating of [35] [_____] when tested in accordance with ASTM E90.

2.1.7 [Composite-Type] Fire Doors

****
NOTE: Composite-Type fire doors are not recommended for use in areas where security is desired or high

abuse is expected. A hollow-metal type fire door will provide a higher degree of security and withstand more abuse.
****

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.

2.1.8 Prehung Doors

****
NOTE: Use of wood frames in new construction is not recommended except for family housing.
****

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

****
NOTE: The use of wood louvers in exterior wood doors is not recommended. Louvers are not permitted in fire-rated doors with glass lights or exit devices. Louvers may be no larger than 600 by 600 mm 24 by 24 inch and must be an approved fusible link type. Delete the sentence referring to blocking if hollow core doors are not included in the project.
****

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

****
NOTE: Include weatherstripping when Section 08 71 00 DOOR HARDWARE is NOT included in project specification; otherwise, add to Section 08 71 00 DOOR HARDWARE Complete weatherstripping should be specified for exterior doors of heated and air-conditioned spaces. Thresholds with extended

lip will require door weatherstripping shaped to engage the extended lip on the threshold. Thresholds with raised stops to receive latch bolts of panic-type hardware will require vinyl or neoprene inserts in face of stop. Specify overlapping astragal only when one leaf of double doors is inactive and is equipped with head and foot bolts. Avoid installations which will require door "coordinators."

****

****

NOTE: Maximum air leakage rates are 0.0025 cubic meter per second per sq. m 0.5 cfm per sq. ft. of door area for residential swinging doors and 0.0031 per cubic meter per second per sq. m 1.25 cfm per sq. ft. of door area for non-residential swinging doors.

****

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 0.0089 inch for sills, and a minimum thickness of 0.16 mm 0.0063 inch elsewhere.] Air leakage of weatherstripped doors not to exceed [0.0025] [0.0031] cubic meter per second of air per square meter [0.5] [1.25] cubic feet per minute of air per square foot of door area when tested in accordance with ASTM E283.

2.2.4 Additional Hardware Reinforcement

****

NOTE: Size and shape of core blocking can add considerably to the price of doors. Check manufacturer's catalogs prior to specifying the larger five inch blocking.

****

Provide the minimum lock blocks to secure the specified hardware. The measurement of top, bottom, and intermediate rail blocks are a minimum 125 mm 5 inch 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

****

NOTE: Marking may not be required for smaller jobs, or for doors not required to be fire-rated. Delete this paragraph and coordinate with paragraph SUBMITTALS when appropriate.

****

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 Type I 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

ANSI/WDMA I.S.1A. Use Type I bond for exterior doors and Type II bond for interior 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

****
NOTE: Finishes for exterior wood surfaces must be specified in Exterior Division 6 Wood paint Table in Section 09 90 00 PAINTS AND COATINGS. When new interior doors are to be provided, select the desired coating system in the Interior Division 6 Wood paint Table in Section 09 90 00 PAINTS AND COATINGS.
****

Factory prime or seal doors, and field paint.

2.3.6.2 Factory Finish

****
NOTE: Factory finish, other than plastic laminate and natural finishes, may not be available nor cost effective for relatively small quantities of doors (less than 200 doors of the same finish). Contact door manufacturers for availability and cost.
****

****
NOTE: Select finish system NAAWS 3.1 System No. 4 or No.5 for traditionally produced finishes OR

select WDMA system TR-8, TR-2 and TR-4 for finishing systems devoted to low VOC requirements for sustainability.
****

****
NOTE: Select open grain effect where the more expensive closed grain effect is not required. Closed grain effect provides a near furniture-like finish and adds considerably to the cost of a door while it may not necessarily add to the durability.
****

Provide doors finished at the factory by the door manufacturer as follows: [NAAWS 3.1 Section 1500, specification for System No. 4 Conversion varnish alkyd urea or System No. 5 Vinyl catalyzed.][WDMA System TR-8 (UV cured acrylated polyester/urethane) or TR-2 (catalyzed lacquer) or TR-4 (conversion varnish) factory finish systems that utilize water-based stains and finishes with ultraviolet UV protection.] The coating is NAAWS 3.1 premium, medium rubbed sheen, [open] [closed] grain effect. 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, ANSI/NEMA LD 3, General or Specific purpose type, 1.25 mm 0.050 inch 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 0.10 inch 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

****
NOTE: Require tests and test reports when fire rated wood doors are included in the project. Doors designated to have "C" label have a 3/4 hour rating, doors designated to have "B" label have a one or 11/2 hour rating.
****

Meet or exceed the following minimum performance criteria of stiles of "B" and "C" label fire doors utilizing standard mortise leaf hinges:

a. Cycle-slam: [Standard Duty Doors: 250,000 cycles with no loose hinge

screws or other visible signs of failure when tested in accordance with the requirements of ANSI/WDMA I.S.1A] [Heavy Duty Doors: 500,000 cycles with no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of ANSI/WDMA I.S.1A] [Extra Heavy Duty Doors: 1,000,000 cycles with no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of ANSI/WDMA I.S.1A].

b. Hinge loading resistance: Averages of ten test samples not less than [Standard Duty doors: 1780 Newton 400 pounds force] [Heavy Duty doors: 2110 Newton 475 pounds force] [Extra Heavy Duty doors: 2440 Newton 550 pounds force] when tested for direct screw withdrawal in accordance with ANSI/WDMA I.S.6A using a No. 12, 30 mm 1-1/4 inch long, steel, fully threaded wood screw. Drill 4 mm 5/32 inch pilot hole, use 40 mm 1-1/2 inch opening around screw for bearing surface, and engage screw full, except for last 3 mm 1/8 inch. Do not use a steel plate to reinforce screw area.

PART 3 EXECUTION

3.1 INSTALLATION

****

NOTE: If area rugs or carpeting is used in spaces which door openings serve, such as residential occupancies, specify adequate clearance at bottom of doors.

****

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 a 2 mm 1/16 inch minimum, 3 mm 1/8 inch maximum clearance at sides and top, and a 5 mm 3/16 inch minimum, 6 mm 1/4 inch maximum clearance over thresholds. Provide 10 mm 3/8 inch minimum, 11 mm 7/16 inch maximum clearance at bottom where no threshold occurs. Bevel edges of doors at the rate of 3 mm in 50 mm 1/8 inch in 2 inch. Door warp must not exceed 6 mm 1/4 inch when measured in accordance with ANSI/WDMA I.S.1A.

3.1.1 Fire[and Smoke] Doors

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NOTE: Fire doors must be installed in fire rated frames and with fire rated hardware. Frames and hardware must be specified in their respective sections of the specifications.

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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 3 inch of each end and spaced 279 mm 11 inch on center maximum. Provide

side and head jambs joined together with a dado or notch of 5 mm 3/16 inch minimum depth.

[3.1.3 Weatherstripping

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NOTE: Use of wood doors on exterior of buildings is not recommended for permanent structures unless they are well protected from the weather.
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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].]

]3.2 SCHEDULE

Some metric measurements in this section are based on mathematical conversion of inch-pound measurements, and not on metric measurement commonly agreed to by the manufacturers or other parties. The inch-pound and metric measurements are as follows:

PRODUCTS	INCH-POUND	METRIC
Closet doors	1-1/8 inch	28.5 mm
	1-3/8 inch	35 mm
X-Ray resistant doors	1-3/4 inch	44.5 mm
	2 inches	50 mm
	2-1/4 inch	57 mm
	2-1/2 inch	64 mm
Weatherstripping	0.0089 inch	0.23 mm
	0.0063 inch	0.16 mm

-- End of Section --