Preparing Activity: NAVFAC Superseding
UFGS-08 11 73 (January 2007)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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08/20

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USACE / NAVFAC / AFCEC / NASA | UFGS-08 11 73 (August 2020)

Preparing Activity: NAVFAC | Superseding
UFGS-08 11 73 (January 2007)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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SECTION 08 11 73

SLIDING FIRE DOORS
08/20

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NOTE: This guide specification covers the requirements for horizontal and vertical sliding steel-covered composite, hollow-metal, corrugated sheet metal, and tin-clad fire 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: Fire rated doors of the swinging hollow metal, wood, coiling, and overhead types are not covered in this guide specification and should be covered in the respective section covering the particular type door.
****

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

1. Rough opening for each door.

2. Required headroom for level or inclined track.

3. Fire rating classification for each door.

4. Type of door operation, i.e. level track, inclined track, single-sliding, center-parting pair.

5. Type of power operators if used, service characteristics and connection points.

6. Location and type of controls if power operators are used.

****

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 within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM A123/A123M	(2017) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A653/A653M	(2023) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM C1036	(2021) Standard Specification for Flat Glass

FM GLOBAL (FM)

FM APP GUIDE	(updated on-line) Approval Guide http://www.approvalguide.com/

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA ICS 1	(2022) Standard for Industrial Control and Systems: General Requirements
NEMA ICS 2	(2000; R 2020) Industrial Control and Systems Controllers, Contactors, and Overload Relays Rated 600 V
NEMA ICS 6	(1993; R 2016) Industrial Control and Systems: Enclosures
NEMA MG 1	(2021) Motors and Generators

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2023) National Electrical Code
NFPA 80	(2022) Standard for Fire Doors and Other Opening Protectives

UNDERWRITERS LABORATORIES (UL)

UL 9	(2009; Reprint Mar 2020) Standard for Fire Tests of Window Assemblies
UL 10A	(2009; Reprint Mar 2022) UL Standard for Safety Tin-Clad Fire Doors
UL 10B	(2008; Reprint May 2020) Fire Tests of Door Assemblies
UL 14B	(2008; Reprint Sep 2021) UL Standard for Safety Sliding Hardware for Standard, Horizontally Mounted Tin-Clad Fire Doors
UL 33	(2010; Reprint Apr 2020) Heat Responsive Links for Fire-Protection Service
UL 228	(2006; Reprint Mar 2022) UL Standard for Safety Door Closers-Holders, With or Without Integral Smoke Detectors
UL 325	(2017; Reprint Feb 2020) UL Standard for Safety Door, Drapery, Gate, Louver, and Window Operators and Systems

1.2 SUBMITTALS

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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

Sliding Fire Doors; G[, [_____]]

SD-03 Product Data

Sliding Fire Doors; G[, [_____]]

Electrical Work; G[, [_____]]

SD-08 Manufacturer's Instructions

Sliding Fire Doors

SD-10 Operation and Maintenance Data

Sliding Fire Doors, Data Package 2; ; G[, [_____]]

1.2.1 Shop Drawing Information

Submit drawings for all sliding fire doors. Show types, sizes, location, metal gages, hardware, installation details, and other details of construction.[For motor-operated doors, include supporting brackets for motors, location, type, ratings of motors, and safety devices. Submit wiring diagrams for motors and controls.]

1.3 DELIVERY AND STORAGE

Deliver fire doors to the job site wrapped in a protective covering bearing manufacturer's name and brand. Store doors in dry locations with adequate ventilation, free from dust or water, and in such a manner to permit access for inspection and handling. Handle doors carefully to prevent damage. Remove damaged items that cannot be restored to like-new condition and provide new items.

PART 2 PRODUCTS

2.1 SLIDING FIRE DOORS

Conform to NFPA 80, UL 10B, and the requirements specified herein, and must be listed (labeled). Provide doors complete with operating devices, hardware, and accessories.

2.2 FABRICATION

****

NOTE: Types of doors should be specified optionally unless appearance is a factor or if certain doors are unobtainable in ratings required. Manufacturer's catalogs should be consulted before a selection is made.

****

Provide one of the following types:

2.2.1 Steel-Covered Composite

Flush panel consisting of a manufactured core material, such as calcium-silicate block insulation, covered on both faces with a bonded steel sheet not lighter than 0.9 mm thick 20 gage and on edges with a steel perimeter channel not lighter than 1.2 mm thick 18 gage. Door panel edges must be encased in a steel channel not lighter than 1.8 mm thick 14 gage. All joints in face sheets must be backed by an interior steel "H" column and covered with a steel, surface-applied faceplate or adequately reinforced panels at connecting joints to provide a solid one piece unit when installed.

2.2.2 Hollow-Metal

Flush panel consisting of a resin-impregnated, kraft honeycomb core covered on both faces with a bonded steel sheet not lighter than [0.9 mm thick 20 gage for door openings up to and including 3000 mm 10 feetin height][and][1.2 mm thick 18 gage for door openings over 3000 mm 10 feet in height] and on edges with a steel perimeter channel not lighter than 1.2 mm thick 18 gage. Door panel edges must be encased in a steel channel not lighter than 1.8 mm thick 14 gage. All joints in face sheets must be backed by an interior steel "H" column and covered with a steel, surface-applied faceplate or adequately reinforced panels at connecting joints to provide a solid one piece unit when installed.

2.2.3 Corrugated Sheet Metal

Approximately 65 mm 2 1/2 inches thick consisting of two galvanized corrugated steel sheets not lighter than 0.8 mm thick 22 gage each sheet.

The corrugations must be approximately 65 mm 2 1/2 incheson centers and must run vertically on one side of the door and horizontally on the other. A 2 mm 1/16 inch thick layer of noncombustible insulation material must be provided between the sheets. Provide steel frame composed of structural steel shapes at all edges of door leafs. Secure frame to corrugated sheets by through bolting or by welding.

2.2.4 Tin-Clad

Conform to UL 10A. Door must have a core made up of layers of boards nailed to each other and encased in terne- or zinc-coated plates that are jointed together at their edges with nails driven through the joints into the core.

2.3 OPERATION

****
NOTE: Modify paragraph to agree with type of operation indicated on drawings. Power operators should be specified for sliding fire doors subject to heavy usage and required to remain closed. Power operated doors should also be used between heated production areas and unheated storage areas where there is frequent traffic between the two areas. Use last sentence to cover doors in hazardous locations such as ammunition loading areas. Refer to NFPA 70, National Electrical Code, for proper classes, groups, and divisions.
****

****
NOTE: If operator controls occur in hazardous locations, utilize the proper portion. Refer to NFPA 70 for requirements. NEMA Type 7 enclosures are suitable for indoor use in Class 1, Groups A, B, C, or D. NEMA Type 8 enclosures are suitable for indoor or outdoor use in Class 1, Groups A, B, C, or D. NEMA Type 9 enclosures are suitable for indoor use in Class II, Groups E, F, or G.
****

[Single-slide][Center-parting]on [level] [inclined] tracks normally [closed] [open with automatic closing system of UL labeled [reel type][or][weight type with weight box of sheet steel not lighter than 1.5 mm thick 16 gage. Provide continuous length weight box for the entire travel of the weights.][Provide fusible links as required by NFPA 80 to activate at 71 degrees C 160 degrees F.][Provide manually operated doors capable of being operated with a force of 20 kilograms 45 pounds.][Provide [pneumatic] [electric] operators conforming to NFPA 80 and the requirements specified herein and a UL or (FM APP GUIDE) listed releasing device to permit automatic closing in case of power failure.] Provide safety edges to reverse direction of doors when an obstruction is encountered and limit switches to stop the doors in the fully open or fully closed position. Operators, holders, and release devices must conform to UL 228 and UL 325 and be listed (labeled).][Operating devices for use on door No. [_____] must conform to Article 500 - of NFPA 70, Class [_____], Group [_____], Division [_____].]

[2.3.1 Pneumatic Operators

****
NOTE: Select the applicable paragraph(s) from the following:
****

****
NOTE: Modify the paragraph to suit the type of controls required. Insert air pressure that will be available for door operation.
****

****
NOTE: If operator controls occur in hazardous locations utilize the proper portion. Refer to NFPA 70 for requirements. NEMA Type 7 enclosures are suitable for indoor use in Class 1, Groups A, B, C, or D. NEMA Type 8 enclosures are suitable for indoor or outdoor use in Class 1, Groups A, B, C, or D. NEMA Type 9 enclosures are suitable for indoor use in Class II, Groups E, F, or G.
****

Heavy-duty type designed to operate door at 0.3 meters one foot per second with air pressure of [_____] kPa psi. Operator must open, close, start, and stop the door smoothly. Control equipment must be [electrical conforming to NEMA ICS 1 and NEMA ICS 2; enclosures must be NEMA ICS 6, Type 12,] [pneumatic] [pushbutton wall switches] [ceiling pull switches] [roll-over floor treadle] [as indicated] [except that for enclosures for use in the hazardous space indicated as [_____] must conform to Article 500 of NFPA 70].[Provide full-guarded type pushbuttons to prevent accidental operation.]

][2.3.2 Electric Operators

****
NOTE: Modify the paragraph to suit the type of controls required. Insert the electrical characteristics that will be available for the door operation. Motors provided for operation on 480-volt circuits should have a voltage rating of 460 volts. Motors provided for operation on 208-volt circuits should have a voltage rating of 200 volts.
****

****
NOTE: If operator controls occur in hazardous locations, utilize the proper portion. Refer to NFPA 70 for requirements. NEMA Type 7 enclosures are suitable for indoor use in Class 1, Groups A, B, C, or D. NEMA Type 8 enclosures are suitable for indoor or outdoor use in Class 1, Groups A, B, C, or D. NEMA Type 9 enclosures are suitable for indoor use in Class II, Groups E, F, or G.
****

Heavy-duty type designed to operate door at not less than 0.2 two-thirds

or more than 0.3 meters one foot per second. Provide electrical control equipment conforming to NEMA ICS 1 and NEMA ICS 2; enclosures must be NEMA ICS 6, Type 12, [pushbutton wall switches] [ceiling pull switches] [roll-over floor treadle] [as indicated] [except that for enclosures for use in the hazardous space indicated as [_____] must conform to Article 500 of NFPA 70].[Provide full-guarded type pushbuttons to prevent accidental operation.] Provide electric power operators of the type recommended by the door manufacturer and provide complete assembly with motor, controls, limit switches, magnetized reversing contactor, and other necessary accessories. Design the operator so that the motor may be removed without disturbing the limit-switch timing and without affecting the emergency operators. Provide the operator with slipping clutch coupling to prevent stalling the motor. Where control voltages differ from motor voltage, provide a control voltage transformer in and as part of the starter. Motors must conform to NEMA MG 1; be high-starting torque, reversible type; be of sufficient kilowatt horsepower and torque output to move the door in either direction from any position; and produce a door travel speed of not less than 0.2 two-thirds or more than 0.3 meters one foot per second without exceeding the rated capacity. Provide motors rated [_____] volts, [_____] hertz, [_____]-phase current and suitable for across-the-line magnetic starting. Design all motors to operate at full capacity with a voltage variation of plus or minus 10 percent of the motor voltage rating. Provide door motors with an enclosed, across-the-line type, magnetic reversing contactor having thermal overload protection.

]2.3.3 Electrical Work

****

NOTE: This paragraph applies to both pneumatic and electric operated doors.

****

Conform to NFPA 70. Provide all control devices and all conduit and wiring from the motor to controls necessary for the proper operation of the doors. Electrical wiring for power from the power source to the operators or controls is specified in Division 26. Provide electrical wiring from controls to operators under this section.

2.4 HARDWARE

Conform to NFPA 80, UL 14B, and the requirements specified herein, and must be listed (labeled). Design tracks, roller assemblies, and installation hardware to support a dead load to 1-1/2 times the door and attached hardware without deformation which would interfere with the operation of the door. Provide tracks formed of sheet steel not lighter than 1.8 mm thick 14 gage. Provide ball or roller bearing wheels or rollers with case-hardened races on all devices incorporating wheels or rollers. Provide recessed steel pulls on both sides of all door leaves [except for corrugated sheet metal doors which may be surface mounted]. Fusible links must conform to UL 33 and must be listed (labeled).

2.5 ACCESSORIES

2.5.1 Track Hood

****

NOTE: Delete paragraph if exterior doors mounted on the exterior of the wall are not used.

****

Form of zinc-coated steel not lighter than 1.2 mm thick 18 gage.

2.5.2 Glass Lights

****
NOTE: Delete paragraph if glass lights are not used.
****

UL 9 listed (labeled) and ASTM C1036, Type II, Class I, Form 1, M1 or M2, 6 mm 1/4 inch thick of size indicated, except that in no case must the size be larger than permitted with the required fire rating.

2.5.3 Weather Stripping

****
NOTE: Modify paragraph to indicate where weather stripping is required. If weather stripping is not required, delete paragraph.
****

Provide on head, jamb, and sills of [exterior doors] [interior doors [_____]].[Form of 1.5 mm 1/16 inch thick fabric-reinforced neoprene. Install using steel continuous retainers.][Provide nylon filament brush type in extruded aluminum retainers.]

2.5.4 Locking Device

****
NOTE: Delete paragraph if locking devices are not required. Do not include locking devices on doors of required exitways unless approval is obtained from the Fire Protection Engineer.
****

[Provide heavy-duty hasp and staple on doors [_____]. Locate on [_____] side.] [Provide heavy-duty mortise sliding door locks with [double] [single] pin-tumbler cylinders.]

2.6 FINISH

2.6.1 Exterior Door[s] [and Interior Door[s]] With Hardware

Steel Surfaces of Exterior Door[s] [and Interior Door[s]] Including Hardware: Provide galvanized finish on all concealed surfaces. Provide a shop-primed galvanized finish on all exposed surfaces. Galvanizing must conform to ASTM A653/A653M, coating designation Z275 G90 for steel sheets and ASTM A123/A123M for assembled steel products. Clean and coat all galvanized surfaces damaged during fabrication with galvanized repair paint. Prior to receiving primer, thoroughly clean all surfaces and phosphate treat to assure maximum paint adherence. Provide a metallic oxide or synthetic resin primer of the manufacturer's standard type and shall be applied by dipping or spraying.

2.6.2 Steel Surfaces of Interior Door[s] Including Hardware

****
NOTE: Delete paragraph if interior doors are to receive same finish as exterior doors.

****

Provide a shop-primed finish or a galvanized finish on all exposed surfaces. Galvanizing must conform to ASTM A653/A653M, coating designation Z275 G90 for steel sheets and ASTM A123/A123M for assembled steel products. Provide a metallic oxide or synthetic resin primer of the manufacturer's standard type applied by dipping or spraying. Prior to receiving primer, thoroughly clean all surfaces and phosphate treat to assure maximum paint adherence.

2.7 LABELS

Provide fire doors bearing labels of the UL or FM APP GUIDE as evidence of the door[s] conforming to the rating[s] indicated. The construction details necessary to obtain the labels must take precedence over details indicated or specified herein. Labels must be a minimum of 20 by 50 mm 3/4 by 2 inch brass plate with 13 mm 1/2 inch high raised letters. Label must be permanently attached to the door and must not be painted.

2.7.1 Contractor's Option

In lieu of UL or FM APP GUIDE labels, the fire doors may bear the label of a nationally recognized testing agency. The testing agency must be adequately equipped and competent to perform services equivalent to the UL inspection and certification program. Copies of the test reports indicating compliance with required ratings must accompany the certificates of compliance.

2.7.2 Oversized Doors

Where fire doors and frames exceed the size for which testing and labeling service is offered, furnish certificates of inspection from the testing laboratory. The certificate must state that the doors, frames, and hardware to be provided are identical in design, materials, and construction to a door that has been tested and rated.

PART 3 EXECUTION

3.1 INSTALLATION

Install fire doors in accordance with NFPA 80 and the manufacturer's approved instructions and shop drawings. Doors must be free from warp, twist, or distortion and must be lubricated and properly adjusted to operate freely.

-- End of Section --