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USACE / NAVFAC / AFCEC / NASA | UFGS-08 32 13 (August 2020)
Change 1 - 02/22

Preparing Activity: NAVFAC | Superseding
UFGS-08 32 13 (November 2008)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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08/20, CHG 1: 02/22

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SECTION 08 32 13

ALUMINUM SLIDING GLASS DOORS
08/20, CHG 1: 02/22

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NOTE: This guide specification covers the requirements for aluminum sliding glass doors for commercial, residential, and monumental type buildings.

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).
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NOTE: Aluminum sliding glass doors are intended for use as an entrance to a patio, terraced area, or balcony, where only primary conventional door exits are available for use from the same interior area. Sliding glass doors shall not be the only exit from public use areas.
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NOTE: On the drawings show opening sizes and schedule, arrangement of fixed and sliding panels, and methods of anchoring frames.
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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.

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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.

ALUMINUM ASSOCIATION (AA)

AA DAF45	(2003; Reaffirmed 2009) Designation System for Aluminum Finishes

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 800	(2016) Voluntary Specifications and Test Methods for Sealants
AAMA 1503	(2009) Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections
AAMA/WDMA/CSA 101/I.S.2/A440	(2017) North American Fenestration Standard/Specification for Windows, Doors, and Skylights

ASTM INTERNATIONAL (ASTM)

ASTM C1048	(2018) Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass
ASTM D3656/D3656M	(2013) Standard Specification for Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns
ASTM E2016	(2022) Standard Specification for Industrial Woven Wire Cloth

ASTM F842	(2017; R 2023) Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact

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

16 CFR 1201	Safety Standard for Architectural Glazing Materials

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.

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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

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NOTE: Select this paragraph or the paragraph MANUFACTURER'S CATALOG DATA based on which is appropriate for the project. Both paragraphs may be used if necessary.
****

Aluminum Sliding Glass Doors

SD-03 Product Data

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NOTE: Select this paragraph or the paragraph DRAWINGS based on which is appropriate for the project. Both may be used if necessary.
****

Aluminum Sliding Glass Doors

Hardware

Glazing

Weatherstripping

Screens

Finish

SD-04 Samples

Finish

SD-10 Operation and Maintenance Data

Aluminum Sliding Glass Doors, Data Package 1; ; G[, [_____]]

1.2.1 Shop Drawing Information

Submit drawings for aluminum sliding glass doors[, screens,] and accessories that indicate elevations of each door type, full size sections, thickness, nominal gages of metal, fastenings, proposed method of installation and anchoring, the size and spacing and method of glazing, details of operating hardware, method and material for weatherstripping, type of finish, and screen details.

1.2.2 Samples Information

Submit color chart of factory color coatings when factory-finished color coating is to be provided.

1.3 TEMPORARY PROTECTIVE COVERING

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NOTE: The protection specified in this paragraph is a temporary protection for doors to be installed during construction of new buildings. The paragraph may be deleted when specifying doors for existing building construction.

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Prior to shipment from the factory, finished surfaces of aluminum sliding glass doors must receive a protective covering of waterproof tape, strippable plastic, or cardboard to protect against discoloration and surface damage that may occur during transportation, storage, and construction activities. Also, do not apply coatings or lacquers to surfaces to which caulking and glazing compounds must adhere. Covering must be readily removable after installation.

1.4 DELIVERY AND STORAGE

Inspect aluminum sliding glass doors,[including screens,] hardware and accessories, for damage and unload and store doors upright on platforms in accessible spaces with a minimum of handling. The storage spaces must be dry, adequately ventilated, free from heavy dust and not subject to combustion products, sources of water or other conditions that could damage the door. Storage spaces must have easy access for inspection and handling of doors.

[1.5 EXTRA STOCK

Deliver an extra stock of markings for glass panels to the Government for use in future replacement of original markings. The extra stock shall be of the same designs, colors, and materials as the markings installed on this project. Furnish markings in original containers or packages in a quantity not less than [_____] percent of the amount of markings to be installed.

]PART 2 PRODUCTS

2.1 ALUMINUM SLIDING GLASS DOORS

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NOTE: Aluminum sliding glass doors (SDG) designation and type in AAMA/WDMA/CSA 101/I.S.2/A440 establishes a minimum Performance Class for each door Grade: 15 for residential (R) 20 for commercial (C); and 40 for heavy commercial (HC). Units installed in high wind zones should be specified in accordance with the recommendation in AAMA/WDMA/CSA 101/I.S.2/A440.

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NOTE: For minimum cost, use stock designs in standard sizes where possible. Require only minimum changes to standard design, and use minimum number of different sizes. Vinyl safety markings should be used where appropriate to make personnel aware of glass. If specific designs and colors are required for markings, indicate on the drawings; in monumental installation, a horizontal muntin may be specified or indicated.

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Provide aluminum sliding glass doors with sliding panels and fixed panels in the sizes and arrangements indicated and conforming to AAMA/WDMA/CSA 101/I.S.2/A440 for Type [SGD-R15] [SGD-C20] [SGD-HC40],

[SGD-_____] except frame must be equipped with thermal barrier.[Mark panels identically and permanently to visibly interrupt the span of glass. Use markings [of the design and color indicated] [approximately 2500 square millimeters 4 square inches] of opaque, pressure-sensitive vinyl film with precoated adhesive.] Sliding door glazing must be set in aluminum frames and roller assemblies of sufficient strength to withstand lateral live stresses and static load or weight requirements.

2.1.1 Hardware

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NOTE: Key-operated cylinders may be incorporated into a master keying system provided they are: (1) manufactured by the same manufacturer as the manufacturer of the locks for the other doors, and (2) the number of pin tumblers in the cylinder for the sliding glass door locks is the same as the number of pin tumblers provided in the cylinders of the locks for the other doors.

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Sliding door panel must have a manually operated adjustable latch [operable by latch handle or slide bar from inside only] [operable by a five-pin tumbler cylinder lock on outside and thumb-turn on the inside] [operable by a five-pin tumbler cylinder lock from either side]. Fit sliding screen door panel with a self-latching hook or rotary-type latch operable from [inside only] [both sides].[Provide pulls for both inside and outside of sliding panel and the sliding screen panel].[Provide a pull on the inside of the sliding door panel and the sliding screen panel only].[Provide auxiliary pin lock [bottom] [top and bottom] on inner side of sliding glass door panel opposite manually operated adjustable latch.] Exposed hardware is to be aluminum or stainless steel, color finished to match door color finish.

2.1.2 Glazing

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NOTE: Select the thickness of glass using the Glass Table provided in AAMA/WDMA/CSA 101/I.S.2/A440. Glass thickness must be not less than 6 mm 1/4 inch. The Condensation Resistance Factor should be specified in accordance with the recommendation in AAMA 1503.

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Factory glazed sliding glass doors, including fixed panel, with double-glazed glass conforming to ASTM C1048, Kind FT, Condition A, Type [I] [II], Class 1, not less than [6] [_____] mm [1/4] [_____] inch thick.[Double glazing must have a minimum condensation resistance factor of [_____] in accordance with AAMA 1503.] Glazing material must be certified as meeting CPSC 16 CFR 1201, Category II. Set glazing unit in polyvinyl-chloride or synthetic rubber glazing channels. Channels must be reusable when replacing glass and have mitered or continuous corners. Channels exposed to view must blend in color with the aluminum frame finish.

2.1.3 Weatherstripping

Provide four sides of each sliding panel and interlocking stiles and jambs

with weatherstripping. Weatherstripping must conform to AAMA/WDMA/CSA 101/I.S.2/A440 and must provide maximum protection against the elements and be designed for ease of replacement.

2.1.4 Screens

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NOTE: Delete paragraph and other references to screens in this specification, if screens are not indicated on the project drawings.

****

Provide horizontal sliding aluminum screens in combination with aluminum sliding glass doors. Provide screen frames consisting of aluminum shapes of size and design standard with the door manufacturer. Frames must have removable splines of aluminum or vinyl and must permit screening fabric replacement. Screening shall be [18 by 16 mesh aluminum conforming to ASTM E2016,] [plastic-coated fibrous glass conforming to ASTM D3656/D3656M, Class 2, 18 by 14 mesh, [_____ color] [selected color to match doors]]. Install screening with weave parallel with frames and sufficiently tight to present a smooth appearance. Conceal edges of screening in the spline channel. Screens must be complete with rollers, hardware, and accessories and must slide on or within tracks provided in the door frame members. Design and assemble doors so that aluminum-to-aluminum contact of moving members will not occur. Provide insect-proofing, formed of wool pile or other suitable material, at interlocking stiles and jambs. Finish on screen frames must be as specified for doors.

2.1.5 Finish

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NOTE: Specify AA-M-10-C22-A31 clear (natural) anodized finish or AA-M-10-C22-A32 color anodized finish, when doors will not be subjected to excessive wear or abrasion and will be regularly cleaned and maintained. Also, specify these finishes in project locations with Environmental Severity Classifications (ESC) of C1 or C2. See UFC 1-200-01 for determination of ESC for project locations.

Specify AA-M-10-C22-A41 clear (natural) anodized finish or AA-M-10-C22-A42 color anodized finish, when doors will be subject to excessive wear and will not be regularly cleaned and maintained, or in highly corrosive industrial atmospheres with dust, gases, salts, or other disruptive elements that attack metal. Also, specify these finishes in project locations with Environmental Severity Classifications (ESC) of C3 thru C5. See UFC 1-200-01 for determination of ESC for project locations.

Color anodized finishes available include medium bronze, dark bronze, and black. Insert color desired in blank space provided. Of the choices indicated, black is generally most expensive.

In project locations with Environmental Severity

Classifications (ESC) of C4 or C5, specify the anodized finish as 0.0175 mm 0.7 mil thickness or greater. See UFC 1-200-01 for determination of ESC for project locations.
****

Before fabrication, clean sliding glass door units and give a [AA-M-10-C22-A31 clear (natural) anodized finish] [AA-M-10-C22-A41 clear (natural) anodized finish] [AA-M-10-C22-A32 [_____] (color) anodized finish] [AA-M-10-C22-A42 [_____] (color) anodized finish] in accordance with the requirements of the AA DAF45. The finish thickness must be [A41, 0.01 mm 0.4 mil or greater] [A42, 0.0175 mm 0.7 mil or greater].

2.2 CAULKING AND SEALING

As specified under Section 07 92 00 JOINT SEALANTS.

2.3 FORCED ENTRY RESISTANT DOORS

In addition to meeting AAMA/WDMA/CSA 101/I.S.2/A440, doors designated forced entry resistant must conform to ASTM F842.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Doors, Frames, and Accessories

Install doors, frames, framing members, hardware, and accessories in accordance with approved shop drawings and the requirements specified herein. Set frames securely anchored in place to straight, plumb, square, level condition without distortion and in alignment. Install door panels to retain proper weathering contact with frames. Caulk metal-to-metal joints between frame members and remove excess material. Caulking around perimeter of door frame and wall openings to provide weathertight installation must be accomplished in accordance with AAMA 800 and manufacturer's recommendations. Finished work must be rigid, neat in appearance, and free from defects. Upon completion, adjust sliding doors to operate properly. Thoroughly clean aluminum frames and glass in accordance with manufacturer's recommendation. Doors damaged prior to completion and acceptance must be restored to original manufactured condition or replaced with new doors as directed.

3.1.2 Protection of Aluminum from Dissimilar Materials

3.1.2.1 Aluminum to Dissimilar Metals

Prevent aluminum surfaces from contacting dissimilar metals other than stainless steel, zinc, or white bronze by one or a combination of the following:

a. Paint dissimilar metal with one coat of heavy-bodied bituminous paint.

b. Apply caulking between aluminum and dissimilar metal.

c. Paint dissimilar metal with primer, followed by one coat of aluminum paint or other suitable lead-free coating.

d. Use nonabsorptive tape or gasket in permanently dry locations.

3.1.2.2 Drainage from Dissimilar Metals

Paint dissimilar metals located in areas where their drainage washes over aluminum to prevent the staining of aluminum.

3.1.2.3 Aluminum to Masonry and Concrete

Prevent aluminum surfaces from coming into contact with mortar, concrete, or other masonry materials by applying one coat of heavy-bodied bituminous paint to the aluminum surfaces.

3.1.2.4 Aluminum to Wood

Prevent aluminum surfaces from coming into contact with wood, treated wood, or similarly absorptive materials by one or a combination of the following methods:

a. Paint aluminum surfaces with two coats of aluminum paint or one coat of heavy-bodied bituminous paint.

b. Paint the wood, treated wood, or other absorptive surfaces with two coats of aluminum paint and seal contiguous joints with caulking compound.

-- End of Section --