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USACE / NAVFAC / AFCEA UFGS-08161 (Augsut 2001)  
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Preparing Activity: NAVFAC Superseding  
UFGS-08161 (September 1999)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 23 June 2005

Latest change indicated by CHG tags

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### SECTION 08161

#### ALUMINUM SLIDING GLASS DOORS 08/01

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

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

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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

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NOTE: Issue (date) of references included in  
project specifications need not be more current than  
provided by the latest guide specification. Use of  
SpecsIntact automated reference checking is  
recommended for projects based on older guide  
specifications.  
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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 DAF-45 (2003) Designation System for Aluminum  
Finishes

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 101 (2002) Voluntary Specifications for  
Aluminum, Vinyl (PVC) and Wood Windows and  
Glass Doors

AAMA 1503 (1998) Voluntary Test Method for Thermal  
Transmittance and Condensation Resistance  
of Windows, Doors and Glazed Wall Sections

AAMA 800 (1992) Voluntary Specifications and Test  
Methods for Sealants

ASTM INTERNATIONAL (ASTM)

ASTM C 1048 (2004) Heat-Treated Flat Glass - Kind HS,  
Kind FT Coated and Uncoated Glass

ASTM D 3656 (2004) Insect Screening and Louver Cloth  
Woven from Vinyl-Coated Glass Yarns

ASTM E 437 (1992; R 1997) Industrial Wire Cloth and  
Screens (Square Opening Series)

ASTM F 842 (2004) 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: Submittals must be limited to those necessary  
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for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation 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 projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

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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.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

#### SD-02 Shop Drawings

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NOTE: Select this paragraph or the paragraph entitled "Manufacturer's Catalog Data" based on which is appropriate for the project. Both paragraphs may be used if necessary.

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#### Aluminum sliding glass doors

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.

#### SD-03 Product Data

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**NOTE: Select this paragraph or paragraph entitled  
"Drawings" based on which is appropriate for the  
project. Both may be used if necessary.**  
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Aluminum sliding glass doors

Hardware

Glazing

Weatherstripping

Screens

Finish

Describe each type of aluminum sliding glass door, hardware, fastener, accessory, screen, and finish. Include descriptive literature, detailed specifications, and performance test data.

#### SD-04 Samples

Finish

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

#### SD-10 Operation and Maintenance Data

Aluminum sliding glass doors, Data Package 1; G, [\_\_\_\_\_]

Submit in accordance with Section 01781 OPERATION AND MAINTENANCE DATA.

### 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 shall 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, no coatings or lacquers shall be applied to surfaces to which calking and glazing compounds must adhere. Covering shall 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 shall 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 shall 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 101 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 101.

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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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Design and construct with sliding panels and fixed panels in the sizes and arrangements indicated and conforming to AAMA 101 for Type [SGD-R15] [SGD-C20] [SGD-HC40], [SGD-\_\_\_\_\_] [except frame shall 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 (mm) 4 square inches] of opaque, pressure-sensitive vinyl film with precoated adhesive.] Sliding door glazing shall 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 shall 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 101. Glass thickness shall  
be not less than 6 mm 1/4 inch. Double glazing  
shall be used in cold climates to minimize heat loss  
and conserve fuel. The Condensation Resistant  
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 [single  
glazed] [double-glazed] glass conforming to ASTM C 1048, Kind FT, Condition  
A, Type [I] [II], Class 1, not less than [6] [\_\_\_\_\_] mm [1/4] [\_\_\_\_\_] inch  
thick. [Double glazing shall 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 shall be  
reusable when replacing glass and have mitered or continuous corners.  
Channels exposed to view shall 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 shall conform to AAMA 101 and  
shall 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.

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Provide horizontal sliding aluminum screens in combination with aluminum

sliding glass doors. Screen frames shall consist of aluminum shapes of size and design standard with the door manufacturer. Frames shall have removable splines of aluminum or vinyl and shall permit screening fabric replacement. Screening shall be [18 by 16 mesh aluminum conforming to ASTM E 437,] [plastic-coated fibrous glass conforming to ASTM D 3656, 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 shall be complete with rollers, hardware, and accessories and shall 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 shall 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.

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.

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 a tropical environment or in areas where corrosion is severe, the anodized finish should be specified as 0.0175 mm 0.7 mil thickness or greater.

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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 DAF-45. The finish thickness shall be [A41, 0.01 mm 0.4 mil or greater.] [A42, 0.0175 mm 0.7 mil or greater.]

#### 2.2 CALKING AND SEALING

As specified under Section 07920 JOINT SEALANTS.

#### 2.3 FORCED ENTRY RESISTANT DOORS

In addition to meeting AAMA 101, doors designated forced entry resistant shall conform to ASTM F 842.



## 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. Calk metal-to-metal joints between frame members and remove excess material. Calking around perimeter of door frame and wall openings to provide weathertight installation shall be accomplished in accordance with AAMA 800 and manufacturer's recommendations. Finished work shall 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 shall 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 calking 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 calking compound.
- End of Section --