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USACE / NAVFAC / AFCEC / NASA UFGS-12 48 13 (February 2014)  
Change 2 - 11/15  
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Preparing Activity: NASA Superseding  
UFGS-12 48 13.13 (February 2011)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2016

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02/14

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### SECTION 12 48 13

#### ENTRANCE FLOOR MATS AND FRAMES 02/14

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NOTE: This guide specification covers the requirements for entrance floor mats and frames.

Indicate on drawings the location, size, and shape of mats.

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 items(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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## PART 1 GENERAL

### 1.1 REFERENCES

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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.

ASTM INTERNATIONAL (ASTM)

ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B221M	(2013) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM D2047	(2011) Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine
ASTM E648	(2014c) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED NC	(2009) Leadership in Energy and Environmental Design(tm) New Construction Rating System
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U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines
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1.2 SUSTAINABILITY REPORTING

Materials in this technical specification may contribute towards contract  
compliance with sustainability requirements.

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**NOTE: The bracketed items are representative of  
LEED material documentation and requirements that  
may apply to this project. These items should be  
edited to reflect the project requirements.**

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1.2.1 LEED Requirements

See Section 01 33 29 SUSTAINABILITY REQUIREMENTS LEED (TM) Documentation  
for project LEED NC [local/regional materials,] [ recycled content,] [low

emitting materials,] [\_\_\_\_\_,][ and][ rapidly renewable materials]  
requirements.

#### 1.2.2 EPA Comprehensive Procurement Guidelines

See Section 01 33 29 SUSTAINABILITY REPORTING for requirements associated with EPA designated products.

#### 1.2.3 USDA Biobased

See Section 01 33 29 SUSTAINABILITY REPORTING for requirements associated with USDA Biobased designated products.

### 1.3 SUBMITTALS

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NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project.

The Guide Specification technical editors have designated 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 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, Air Force, and NASA projects.

Use the "S" Classification only in SD-11 Closeout Submittals. An "S" following a submittal item indicates that the submittal is required for the Sustainability Notebook to fulfill federally mandated sustainable requirements in accordance with Section 01 33 29 SUSTAINABILITY REPORTING.

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" 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 Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation Drawings[; G[, [\_\_\_\_]]]

Detail Drawings[; G[, [\_\_\_\_]]]

Custom Graphics Drawings[; G[, [\_\_\_\_]]]

SD-03 Product Data

Entrance Floor Mats and Frames[; G[, [\_\_\_\_]]]

Adhesives and Concrete Primers[; G[, [\_\_\_\_]]]

SD-04 Samples

Entrance Floor Mats and Frames[; G[, [\_\_\_\_]]]

Custom Graphics[; G[, [\_\_\_\_]]]

SD-08 Manufacturer's Instructions

Manufacturer's Instructions[; G[, [\_\_\_\_]]]

SD-10 Operation and Maintenance Data

Protection, Maintenance, and Repair Information[; G[, [\_\_\_\_]]]

SD-11 Closeout Submittals

LEED (TM) Documentation[; G[, [\_\_\_\_]]]

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**NOTE: Entryways in heavy use facilities may require entrance mat and frame systems with a higher structural loading requirement. Coordinate floor requirements such as recessed systems with appropriate building designers.**

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1.4 QUALITY ASSURANCE

Comply with 36 CFR 1191 Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines for installed entrance floor mats and frames. Ensure entrance floor mats and frames are slip resistant in accordance with ASTM D2047, Coefficient of Friction, minimum 0.60 for accessible routes and be structurally capable of withstanding a [Uniform floor load of 14 kPa 300 lbf/sq. ft.][wheel load of 160 kg/wheel 350 lb./wheel]. Ensure flammability is in accordance with ASTM E648, Class 1, Critical Radiant Flux, minimum 0.45 watts/m2.

## 1.5 DELIVERY OF MATERIALS

Deliver materials to the project site in their original packages or containers bearing labels clearly identifying the manufacturer, brand name, and quality or grade.

Store materials in their original unbroken packages or containers in the area in which they will be installed. Unwrap, inspect, and place mats at indicated location. Remove all excess packing materials.

## PART 2 PRODUCTS

### 2.1 Entrance Floor Mats and Frames

Submit manufacturer's catalog data. Submit sample of assembled sections of floor mat showing corners, intersections, and other details of construction. Submit samples of exposed floor mat, frame finish and accessories, and custom graphics.

#### 2.1.1 Resilient Link Mats

[Rubber][Vinyl][Rubber-Tire] reversible link mats, [9.5][11] mm [3/8][7/16] inch thick with [galvanized-spring][stainless] steel wire link rods. Ensure nosing is vulcanized and [beveled for surface installation extending out approximately 50 mm 2-inch around perimeter][square for recess or mats butted one to another]. Provide mats with steel-reinforced end trim and be [close weave with link openings of 1.6 mm by 12 mm 1/16 inch by 1/2 inch][open weave with link openings of 38 mm by 12 mm 1-1/2 inch by 1/2 inch].

#### 2.1.2 [Rubber][Vinyl] Mats

Mats [6][9.5][1.6][\_\_\_\_\_] [1/4][3/8][1/16][\_\_\_\_\_] inches thick with [square edges for recessed installations][beveled edges for surface applications]. Provide mats with [solid sheet (no perforations) style] [perforated style, 6 mm 1/4 inch diameter on standard spacing] [perforated style, 5 mm by 19 mm 3/16 inch by 3/4 inch on standard spacing][standard pyramid design with knob back][standard wide-wale corrugated][hi-rib, narrow-wale corrugated] top profile and [low-rib, narrow-wale corrugated][standard knob-base][flat-base] bottom surface. Ensure mats are a prime quality compound free of calendaring and curing defects, and resistant to weather aging and ozone in normal concentrations and non-slip.

#### 2.1.3 Coco Mats

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**NOTE: Coco (also spelled cocoa) matting makes  
ideal scraper mats, which effectively remove dirt,  
debris and moisture from shoes.**  
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Coco brush mats made of quality coir yarn from coconut husk fibers secured in heavy-duty vinyl backing and woven tightly together and securely bound around the perimeter with matching coir yarn rope. Overall thickness is [16][19][25][32] mm [5/8][3/4][1][1.25] inch.

#### 2.1.4 Recycled Rubber Tire [Tiles][Mats]

Recycled rubber tire [tiles][mats] are made from recycled truck, bus and aircraft tires with sidewall cords and buffed to a chenille finish.

Product is bonded to a woven flexible backing to form 9.5 to 11.1 mm 3/8 to 7/16 inch thick [ 300 mm 12 inch square tile] [ 300 mm 12 inch wide rolls up to 7.5 m 25 feet long].

#### 2.1.1.5 Carpet-Type Mats

[Nylon][Polypropylene][Olefin][Polyester][\_\_\_\_] carpet bonded to 3 mm to 6 mm 1/8 inch to 1/4 inch thick, flexible vinyl backing to form mats [9.5][11] mm [3/8][7/16] inch thick with non-raveling edges.

#### 2.1.1.6 Loop Filament Mats

Loop filament vinyl material [9.5][13] mm [3/8][1/2] inch thick, with [solid vinyl sheet] [foam sheet] backing. Backing contains built-in chemical agents to reduce fungus and mildew.

#### 2.1.1.7 Roll-Up Mats

Roll-up mats with [mill finish] [[clear][bronze]] [black] [anodized] [\_\_\_\_] aluminum tread rails spaced a maximum 51 mm 2 inch on center and running counter to the traffic flow. Mats must allow debris to fall to sub-floor. Tread rails are connected by [aluminum] [vinyl] hinges and complete with [an aluminum] [a vinyl] edge around the perimeter and a continuous vinyl cushion.

Roll-up mats [recessed] [surface] mounted and provided with [carpet consisting of nylon or polypropylene carpet fibers fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths. Carpet has anti-static and anti-stain treatments] [carpet/bristle filament mix] [vinyl] [abrasive tape] [poured abrasive] [recycled rubber] [serrated aluminum] [\_\_\_\_] inserts.

#### 2.1.1.8 Floor Grids

Floor grid consists of a series of [aluminum][bronze] tread rails spaced [38] [\_\_\_\_] mm [1.5] [\_\_\_\_] inch on center and running counter to the traffic flow. Ensure floor grids allow debris to fall to sub-floor. [Drain pan [\_\_\_\_] deep][trench drain] is required. Rest grid assemblies on continuous vinyl cushion mounted to each continuous foot at [\_\_\_\_] on center. [Deep pits are [\_\_\_\_] deep and rest on a continuous vinyl cushion with additional support members [\_\_\_\_] on center, including adjustable support legs.] [Provide a drain pan to include drain and stainless steel strainer.] [Stainless steel grid has satin finished stainless steel rails [\_\_\_\_] apart, electronically welded joints, and a stainless steel frame [\_\_\_\_] deep.] Provide all anchors, fasteners, accessories and other necessary parts required for a complete installation.

#### 2.1.1.9 Frames

[Surface mounted frames have a tapered flexible vinyl edge not less than [50][38] mm [2][1 1/2] inches wide with welded corners and attached to the mat at all four edges.][Surface mounted frames are tapered [mill finish] [clear] [black] [[light] [medium] [dark] aluminum] [\_\_\_\_] not less than [50][38] mm [2][1 1/2] inches wide, screwed to the floor to create an opening for the mat to set in]. [Recessed frames in extruded aluminum Alloy 6061-T6 ASTM B221M ASTM B221 or Alloy 6063-T5 ASTM B221M ASTM B221. Ensure frame depth accommodates mat and/or system specified.] Color is [mill finish] [clear] [black] [[light][medium] [dark] bronze] [\_\_\_\_]. Edge-frame members are fabricated in single lengths or minimum pieces

possible, with hairline joints equally spaced and pieces spliced together by straight connecting pins. Ensure concealed surfaces of aluminum frames that contact cementous material are coated with manufacturer's standard protective coating. Frames include accessories and devices necessary for a complete installation.

#### 2.1.10 Tread Insert Options

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**NOTE: Tread inserts are to be specified with floor grid systems or frames provided in two previous paragraphs.**  
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Tread inserts consist of [carpet composed of solution dyed nylon or polypropylene carpet fibers fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths; carpet has anti-static and anti-stain treatments. Pile weight is a minimum 30 ounces per square yard] [carpet/bristle filament mix] [vinyl] [abrasive tape] [poured abrasive] [recycled rubber] [serrated aluminum] [\_\_\_\_\_].

#### 2.2 ADHESIVES AND CONCRETE PRIMERS

Provide adhesives and concrete primers, where required, according to manufacturer's recommendations.

#### 2.3 GRAPHICS

Clearly illustrate details in drawing of custom graphic [emblem] [logo][design].

#### 2.4 COLOR AND SIZE

Ensure color is in accordance with [Section 09 06 90 SCHEDULES FOR PAINTING AND COATING][the drawings][\_\_\_\_\_]. Size of mat is [\_\_\_\_\_][as indicated].

### PART 3 EXECUTION

#### 3.1 EXAMINATION

Comply with manufacturer's requirements of substrates and floor conditions affecting installation of floor mats and frames. Installation cannot occur until unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

Install floor mats and frames according to manufacturer's instructions. Set mat tops at height recommended by manufacturer for most effective cleaning action. Coordinate top of mat surfaces with bottom of doors that swing across mats to provide clearance between door and mat. [Coordinate recess frame installation with concrete construction to ensure frame anchorage is correct and that the base is level and flat. Install grout and fill around frames and, if required to set mat tops at proper elevations, in recesses under mats. Finish grout and fill smooth and level.]

Submit detail drawings, and custom graphics drawings as required. Provide installation drawings. Provide manufacturer's protection, maintenance, and repair information.



-- End of Section --