Preparing Activity: NASA Superseding
UFGS-12 48 13 (August 2017)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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08/23

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USACE / NAVFAC / AFCEC / NASA **UFGS-12 48 13 (August 2023)**

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SECTION 12 48 13

ENTRANCE FLOOR MATS AND FRAMES
08/23

****
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 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).
****

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.

ASTM INTERNATIONAL (ASTM)

ASTM B221	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B221M	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM D2047	(2017) Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine
ASTM E648	(2019a) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

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

1.2 SUSTAINABILITY REPORTING

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

****

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.

****

1.2.1 EPA Comprehensive Procurement Guidelines

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

1.2.2 USDA Biobased

See Section 01 33 29 SUSTAINABILITY REPORTING for requirements associated with USDA Biobased 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, 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

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

SD-10 Operation and Maintenance Data

Protection, Maintenance, and Repair Information

****
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.
****

1.4 QUALITY CONTROL

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 that entrance floor mats and frames are slip-resistant in accordance with ASTM D2047, with a minimum 0.60 coefficient of friction, for accessible routes and are structurally capable of withstanding a [uniform floor load of 14 kPa 300 lb/sq ft][wheel load of 160 kg/wheel 350 lb/wheel]. Ensure that flammability is in accordance with ASTM E648, Class 1, Critical Radiant Flux, minimum 0.45 watts/square centimeter.

1.5 DELIVERY, STORAGE, AND HANDLING

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 locations. Remove all excess packing materials.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

2.1.1 Entrance Floor Mats and Frames

Submit the manufacturer's catalog data. Submit samples of assembled sections of floor mats showing corners, intersections, and other details

of construction. Submit samples of custom graphics, exposed floor mats, frame finishes and accessories.

2.1.1.1 Resilient-Link Mats

Provide [rubber][vinyl][rubber-tire] resilient-link mats, [9.5][11] mm [3/8][7/16] inch thick with [galvanized-spring][stainless] steel wire link rods. Ensure that nosing is vulcanized and [beveled for surface installation extending approximately 50 mm 2 inches around the perimeter][square for recess or mats butted one to another]. Provide mats with steel-reinforced end trim that is [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 inches by 1/2 inch].

2.1.1.2 [Rubber][Vinyl] Mats

Provide mats [6.4][9.6][1.6][_____] mm [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 that mats are made of a nonslip prime-quality compound free of calendaring and curing defects, and resistant to weather aging and ozone in normal concentrations.

2.1.1.3 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.
****

Provide coco brush mats made of high-quality coir yarn from coconut husk fibers. Secure mats with a heavy-duty vinyl backing, woven tightly together and securely bound around the perimeter with matching coir yarn rope. Overall thickness is [16][19][25][32] mm [5/8 inch][3/4 inch][1 inch][1 1/4 inches].

2.1.1.4 Recycled Rubber Tire [Tiles][Mats]

Provide recycled rubber tire [tiles] [mats] that are made from recycled truck, bus and aircraft tires, with sidewall cords and are buffed to a chenille finish. Ensure that the [tiles] [mats] are 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 -wide tiles][300 mm 12-inch-wide rolls up to 7.5 m 25 feet long].

2.1.1.5 Carpet-Type Mats

Provide a [nylon][polypropylene][olefin][polyester][____] carpet bonded to a 3 mm to 6 mm 1/8-inch to 1/4-inch-thick, flexible vinyl backing to form mats that are [9.5][11] mm [3/8][7/16] inch thick with nonraveling edges.

2.1.1.6 Loop Filament Mats

Provide loop filament vinyl material [9.5][13] mm [3/8][1/2] inch thick,

with [solid vinyl sheet] [foam sheet] backing. Ensure that chemical agents are built into the backing to reduce fungus and mildew.

2.1.1.7 Roll-Up Mats

Provide roll-up mats with [mill finish] [[clear][bronze]] [black] [anodized] [_____] aluminum tread rails spaced a maximum 51 mm 2 inches on center and running counter to the traffic flow. Ensure that the mats must allow debris to fall to subfloor. Ensure that tread rails are connected by [aluminum] [vinyl] hinges and include [an aluminum] [a vinyl] edge around the perimeter and a continuous vinyl cushion.

Provide [recessed] [surface] mats mounted 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 antistatic and antistain treatments] [carpet/bristle filament mix] [vinyl] [abrasive tape] [poured abrasive] [recycled rubber] [serrated aluminum] [_____] inserts.

2.1.1.8 Floor Grids

Provide a floor grid consisting of a series of [aluminum][bronze] tread rails spaced [38] [_____] mm [1 1/2] [_____] inches on center and running counter to the traffic flow. Ensure that floor grids allow debris to fall to the subfloor. Provide a [drain pan] [trench drain] [_____] deep. Rest grid assemblies on a continuous vinyl cushion mounted to each continuous foot at [_____] on center. [Ensure that 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 a drain and a stainless-steel strainer.] For a [stainless-steel grid, provide satin-finished stainless-steel rails [_____] apart, electronically welded joints, and a stainless-steel frame [_____] deep.] Provide all anchors, fasteners, accessories, and other parts required for a complete installation.

2.1.1.9 Frames

[Provide surface-mounted frames that have a tapered flexible vinyl edge at least [50][38] mm [2][1 1/2] inches wide, with welded corners and attached to the mat at all four edges.] [Ensure that surface-mounted frames are tapered, at least [2][1 1/2] inches wide, screwed into an opening in the floor to create an opening for the mat to sit in.] [Provide recessed frames in extruded aluminum Alloy 6061-T6 or Alloy 6063-T5 ASTM B221M ASTM B221. Ensure that the frame depth accommodates the mat and system specified.] Frame color is [mill finish] [clear] [black] [[light] [medium] [dark] bronze] [_____]. Ensure that edge-frame members are fabricated in single lengths or with the fewest pieces possible, with hairline joints equally spaced and pieces spliced together by straight connecting pins. Ensure that any concealed surfaces of aluminum frames that contact cementous material are coated with the manufacturer's standard protective coating. Ensure that frames include accessories and devices required for a complete installation.

2.1.1.10 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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Provide tread inserts consisting 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 antistatic and antistain treatments. Ensure that pile weight is a minimum 30 ounces per square yard] [carpet/bristle filament mix] [vinyl] [abrasive tape] [poured abrasive] [recycled rubber] [serrated aluminum] [_____].

2.1.2 Adhesives and Concrete Primers

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

2.1.3 Graphics

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

2.1.4 Color and Size

Ensure that color is in accordance with [Section 09 06 00 SCHEDULES FOR FINISHES][the drawings][_____]. Ensure that the size of mat is [_____][as indicated].

PART 3 EXECUTION

3.1 EXAMINATION

Comply with the manufacturer's requirements for substrates and floor conditions affecting installation of floor mats and frames. Ensure that all unsatisfactory conditions have been corrected before installation.

3.2 INSTALLATION

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

Install floor mats and frames according to manufacturer's instructions. Set mat tops at the height recommended by the manufacturer for the most effective cleaning action. Provide clearance between bottoms of doors and tops of mats. [Coordinate recess frame installation with concrete construction to ensure that 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.]

-- End of Section --