

## SECTION 12 48 13

### ENTRANCE FLOOR GRIDS ALUMINUM ENTRANCE GRIDS

#### PART 1. GENERAL

**1.01 SUMMARY:** This section includes Entrance Floor Grids and frames. The grids combine rigid interlocked aluminum extrusions and vinyl, or carpet inserts closely spaced and drainage slots to keep dirt and water away from the walking surface. Aluminum Entrance Grid systems are designed for use in level bed or drainage pit applications.

#### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM B221 – Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Shapes and Tubes.
  - 2. ASTM E 648 Flooring Radiant Panel Test
  - 3. ASTM B209 Standard Specification for Aluminum and Aluminum- Alloy Sheet and Plate
- B. National Association of Architectural Metals Manufacturers (NAAMM) NAAMM - Metals Finishes Manual for Architectural and Metal Products
- C. U.S. Architectural & Transportation Barriers Compliance Board's, Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)
- D. American Concrete Institute (ACI) ACI 302 Guide for Concrete Floor and Slab Construction
- E. U.S. Green Building Council (USGBC) LEED 2009 for New Construction and Major Renovations
- F. California Department of Health Services California Specification 01350
- G. Ceilings and Interior Systems Construction Association (CISCA) Recommended Test Procedures for Access Flooring

#### 1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate size and location of recess in concrete to receive Entrance Floor Grids and frames.
- B. Defer frame installation until building enclosure is complete and related interior work is in progress.

#### 1.04 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for Entrance Floor Grids and frames.
- B. Shop Drawings: Show the following:
  - 1. Items penetrating Entrance Floor Grids and frames.
  - 2. Divisions between grid sections.
  - 3. Perimeter frames

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4. Show layout and types of Entrance Floor Grids and frames, details of patterns, anchors and accessories, and field measurements of slab recess to receive Entrance Floor Grids and frames (if applicable)
- C. Samples: For each type of product indicated, not less than 6-inch square sections of entrance mat and 6-inch length of frame material
- D. Sustainable Design Submittals:
  1. Provide product documentation certifying the percentage by weight of pre-consumer and postconsumer recycled content of materials based on the cost of the total materials value. (LEED MR Credit 4)
  2. All flooring elements installed in the building interior must meet the testing and product requirements of the California Department of Health and Services, California Specification 01350, "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers". (LEED IEQ Credit 4.3)
  3. Provide Entrance Floor Grids at least 10 feet long in the primary direction of travel. Provide documentation certifying that the Entrance Floor Grids and frames provide a permanent entryway system that allows cleaning underneath (LEED IEQ Credit 5).

#### 1.05 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Submit Manufacturer's maintenance instructions for Entrance Floor Grids and frames to be included in maintenance manuals.
- B. Warranty Documentation: Submit Manufacturer's limited warranty that products are free from defects in materials and workmanship and shall perform as specified for a period of not less than 1 year when installed and maintained in accordance with the Manufacturer's instructions.

#### 1.06 QUALITY ASSURANCE: Obtain Entrance Floor Grids and frames from a single Manufacturer.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver Materials to the project site ready for use and fabricated in as large of sections and assemblies as practical, in unopened original factory packaging clearly labeled to identify the Manufacturer.
- B. Store Materials in original factory packaging, under cover in dry, well-ventilated spaces.

#### 1.08 SITE CONDITIONS

- A. Field Measurements *[as required]*: Check actual openings for Entrance Floor Grids and frames by accurate field measurements prior to fabrication. Record field measurements on final shop drawings.
- B. Coordinate frame installation with concrete construction to ensure recess and frame anchorage are accurate and that the base is level and flat.
- C. Defer installation of Entrance Floor Grids until the time of substantial completion of the project.

#### 1.09 WARRANTY: Entrance Floor Grids and frames shall be fabricated free of defects in material and workmanship, and the Manufacturer shall offer a 1-year warranty against defects in material and workmanship.

### PART 2. PRODUCTS

#### 2.01 MANUFACTURED UNITS

- A. Manufacturer: Provide products by Kadee Industries, LLC., Twinsburg, OH 44087 Phone: 800-321-3827 Fax: 440-439-6889; email: [floormats@kadeeindustries.com](mailto:floormats@kadeeindustries.com)
- B. Basis of Design: Kadee Industries Arc Clean Tread Model KDCP [KDVP]

## 2.02 DESCRIPTION

- A. Accessibility requirements: Provide and install Entrance Floor Grids and frames compliant with Section 4.5 in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)
- B. Flame Resistance: Provide Entrance Grids and frames in accordance with ASTM E 648 Flooring Radiant Panel Test, Critical Radiant Flux. Class 1, minimum 0.45 watts per square meter.
- C. Sustainability Characteristics: Provide Entrance Grids and frames manufactured from extruded aluminum comprised of no less than 32% post-consumer recycled content and 32% pre-consumer recycled content.

## 2.03 PERFORMANCE REQUIREMENTS:

- A. Provide Entrance Floor Grids capable of withstanding a uniform floor load of 300 lbf/sq. ft.
- B. Provide Entrance Floor Grilles capable of withstanding a rolling load of 400 lbs. per wheel for 1,000 passes with no visible damage or permanent deflection.

## 2.04 MATERIALS

- A. Provide colors, patterns, and profiles of materials, including metals and metal finishes indicated or specified.
- B. Furnish and install Arc Clean Tread Model KDCP [KDVP] Aluminum Entrance Grids and Frames as manufactured by Kadee Industries, Twinsburg, OH. Grid thickness shall be 1-9/16".
  - 1. Tread Rails shall be manufactured from extruded aluminum alloy 6063-T6 with treads spaced 1-1/2" on center with 2" drainage slots spaced 6" on center. Tread Rail sections sit on vinyl cushions.
  - 2. Tread Inserts [*select from options as listed*]
    - a. Nylon Carpet Inserts manufactured from 100% Nylon 6 carpet fiber fusion bonded to a polypropylene backing as selected by the architect from a full range of the manufacture's available colors. Nylon Carpet Inserts shall be anti-static, stain resistant and contain an antimicrobial additive. Carpet pile weight shall be 33.8 ounces per square yard with a .35" pile height.
    - b. Polypropylene Heavy Duty Carpet Inserts manufactured from Polypropylene carpet fiber fusion bonded to a polypropylene backing as selected by the architect from a full range of the manufacture's available colors. Polypropylene Heavy Duty Carpet Inserts shall contain UV stabilizers and colorfast pigment. Carpet pile weight shall be 32.0 ounces per square yard with a .35" pile height.
    - c. Vinyl Inserts manufactured from Polyvinyl Chloride as selected by the architect from a full range of the manufacture's available colors. Vinyl Inserts shall have a serrated, non-slip surface and convex shape.
  - 3. Frames [*select from options as listed*]
    - a. Level Bed Application: Provide 2" deep embedded frames for permanent recessed installation manufactured from extruded aluminum alloy 6063-T6, complete with corner connectors, splice plates and anchorage devices. Entrance Grid must rest directly on the recessed floor.

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- b. Drainage Pit Application: Provide 2" deep perimeter embedded frames for permanent recessed installation manufactured from extruded aluminum alloy 6063-T6, complete with welded corner connections, splice plates and anchorage devices. Provide welded intermediate framing supports manufactured from 1-1/2" x 1-1/2" x 3/16" aluminum spaced no greater than 2'-0" on center.
4. Drain Pans *[optional]*: Manufacturer will provide .050" thick [16 gage] aluminum sheet pit liners or drain pan assemblies as shown on the approved shop drawings. *[2" drain, pipe, stainless steel strainer, and drain trap shall be furnished under the plumbing contract.]*

## 2.05 ASSEMBLY

- A. Shop Fabrication:
  1. Shop Fabricate Entrance Grids and frames to the greatest extent possible in the sizes as indicated. Unless otherwise indicated, provide each grid as a single unit. Do not exceed the Manufacturer's recommended size for units that are removed for maintenance and cleaning.
  2. Fabricate frame members in single lengths or, where frame dimensions exceed maximum available lengths, provide pieces with hairline joints spliced together.
- B. Fabricate Entrance Grids and frames in accordance with the final shop drawings. Manufacturing tolerance shall not exceed +0" /-1/8" as indicated on the final shop drawings.

## 2.06 FINISHES

- A. Comply with NAAMM'S "Metals Finishes Manual for Architectural and Metal Products".
- B. Tread Rails and Frames *[select from options as listed]*
  1. Mill Finish
  2. Anodized Finish
    - a. Class 1 Anodized AA-M12C22A41. Color Clear
    - b. Class 1 Anodized AA-M12C22A42. Color Bronze
- C. Drain Pans and Pit Liners : Aluminum Mill Finish M10

## PART 3. EXECUTION

### 3.01 EXAMINATION

- A. Products must be installed on a flat and level substrate, not more than 1/8 inch in 10 feet out of plumb per ACI 302.
- B. Examine substrates and floor conditions for compliance with requirements for location, size, recess depth and other conditions affecting installation of the Entrance Grids and frames.
- C. Proceed with installation only after all unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

- A. Install frames to comply with the Manufacturer's written instructions. Install frames level and tightly fitted together to prevent units from bowing, warping, moving, or slipping.
- B. Install Entrance Floor Grids to comply with the Manufacturer's written instructions. Install Entrance Floor Grids level and coplanar with the adjacent floor. Coordinate top of Entrance Floor Grids surface with doors that swing across the Entrance Floor Grids to provide clearances under the door.

### 3.03 PROTECTION

- A. After completing frame installations, provide temporary filler of plywood or fiberboard in entrance mat recesses and cover frames with protective flooring. Maintain protection until construction traffic has ended and project is near substantial completion.

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- B. Install Entrance Floor Grids when no further wheeled construction traffic will occur and all wet type operations, including painting are complete.

**3.04 MAINTENANCE**

- A. After installation, inspect the Entrances Floor Grilles regularly to ensure that the Entrance Floor Grilles are level, coplanar with the adjacent floor and obstruction free.
- B. Maintain Entrance Floor Grilles and frames to comply with the Manufacturer's written instructions.