

ENTRANCE MATS & GRIDS

PART I - GENERAL

1.01 Summary

A. This section includes the following types of entrance flooring systems:

1. Floor Mats & Frame Assemblies

B. Related Sections: The following sections contain requirements related to this section:

1. Grouting frames into recess; refer to sections 03300 “Cast-In-Place Concrete” and section 03600 “Grout”

2. Special requirements of various flooring types; refer to section 09400 “Terrazzo”

1.02 References

A. American Society for Testing and Materials (ASTM)

B. The Aluminum Association

C. The Carpet and Rug Institute (CRI)

D. The National Floor Safety Institute (NFSI)

1.03 Submittals

A. General: Submit the following in accordance with conditions of contract and Division 1 specification section 01300.

B. Product data for each type of floor mat and frame specified including manufacturer's specifications and installation instructions.

C. Shop drawings in sufficient detail showing layout of mat and frame specified including details indicating construction relative to materials, direction of traffic, spline locations, profiles, anchors and accessories.

D. Samples for verification purposes: Submit an assembled section of floor mat and frame members with selected tread insert showing each type of color for exposed floor mat, frame and accessories required.

E. Maintenance data in the form of manufacturer's printed instructions for cleaning and maintaining floor mats.

1.04 Quality Assurance

Specifier note: To maximize the life cycle of the entrance flooring and its appearance, the following items are critical

- i) Most of our mats are designed for traffic crossing perpendicular to the rail.*
- ii) When designing an entranceway it is preferable to minimize the need for turning on the mat.*
- iii) We recommend that splices in wider units (above 12') not be positioned in the middle of a door opening wherever possible.*

A. Flammability in accordance with ASTM E648, Class 1, Critical Radiant Flux, minimum 0.45 watts/m².

B. Slip resistance in accordance with ASTM D-2047-96, Coefficient of Friction, minimum 0.60 for accessible routes.

Specifier note: Slip and fall accidents are a major concern in commercial entranceways. We recommend that approved systems be certified by the manufacturer as meeting a minimum coefficient of friction of 0.60, when tested in wet conditions.

C. Standard rolling load performance is 400 lb/wheel with larger loading requirements as specified (load applied to a solid 5" x 2" wide polyurethane wheel, 1000 passes without damage).

Specifier note: For entranceways in businesses such as retail outlets, airports, banks, and casinos, rolling load performance is a critical factor. We recommend that units with the highest practical loading capability be specified for such entrances.

D. Single Source Responsibility: Obtain floor mats and frames from one source of a single manufacturer.

E. Utilize superior structural aluminum alloy 6105-T5 and 6016-T6 for rail connectors.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site ready for use and fabricated in as large sections and assemblies as practical, in unopened original factory packaging clearly labeled to identify manufacturer.

1.06 Project Conditions

A. Field measurements: Check actual openings for mats by accurate field measurements before fabrication. Record actual measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

B. For recess application, coordinate frame installation with concrete construction to ensure recess and frame anchorage are accurate and that the base is level and flat. Defer frame installation until building enclosure is complete and related interior finish work is in progress.

PART II - PRODUCTS

2.01 Manufacturers

A. Drawings and specifications are based on manufacturer's literature unless otherwise indicated. Other manufacturers must comply with the minimum levels of material and detailing indicated on the drawings and specified herein.

2.02 Materials

A. Aluminum - ASTM B 221, alloys 6105-T5 for rail extrusions and 6061-T6 for key lock bars.

B. Tread insert options - refer to section 2.05.

2.03 Floor Mats

A. **Model and Description** – Grille mat shall be extruded 6105-T5 aluminum alloy tread rails joined mechanically by extruded 6106-T6 aluminum alloy key lock bars (welding or bolting shall not be permitted.) Rail finish to be mill (standard) or one of 7 optional colors. (Call factory from custom colors.) Choose from anodized or heavy-duty powder coat finish.

2.04 Mat Frames

Specifier to select one below and delete others:

Specifier note: Although most entrance flooring systems can accommodate some variation in the flatness of mat well bases, it is recommended that the surface beneath the mat be finished with a leveling screed to ensure optimum performance of the system.

Specified note: Draining the well of entrance grids is often beneficial especially in areas of higher than average rainfall. Adding a deep drain pan adds cost and complexity to both the fabrication and performance of the unit. We recommend the use of a trench drain set in a level base frame wherever practical.

A. **LB - Level Base Frame** shall be 6063-T5 aluminum alloy with 1/2" (12.7mm) exposed surface and a depth of 1-13/16" (46.0mm). These assemblies receive 1/4" (6.4mm) thick heavy gauge support cushions 1" (25.4mm) long mounted to each continuous foot at 20" (0.51m) on center. Frame color shall be supplied in mill (standard) or one of 7 optional colors. (Call factory for custom colors.) Choose from anodized or heavy duty powder coat finish. **Note:** Mill finish frames in contact with concrete to be primer coated.

B. **NP - Drain Pan Series NP Frame** shall be 4-3/16" (106.4mm) deep with 1/2" (12.7mm) exposed surfaces in 6063-T5 aluminum alloy. These assemblies shall rest upon a continuous vinyl cushion with additional support members 32" (0.81m) on center maximum. At every 24" (0.61m) along the support member, staggered side to side, is a 6063-T5 aluminum alloy adjustable support leg. The base of the framed enclosure shall be formed through the blocking out of the concrete at the time the frames are set. The drains, traps and drain connections shall be furnished under the plumbing contract. Frame color shall be supplied in mill (standard) or one of 7 optional colors. (Call factory for custom colors.) Choose from anodized or heavy-duty powder coat finish. **Note:** Mill finish frames in contact with concrete to be primer coated.

C. DP - Drain Pan Series DP Frame shall be 4-3/16" (106.4mm) deep with 1/2" (12.7mm) exposed surfaces in 6063-T5 aluminum alloy. These assemblies shall rest upon a continuous vinyl cushion with additional support members 32" (0.81m) on center maximum. At every 24" (0.61m) along the support member, staggered side to side, is a 6063-T5 aluminum alloy adjustable support leg. A 16 gauge aluminum pan complete with a 2" (50.8mm) I.P.S. drain and stainless steel strainer to be provided by manufacturer. A 2" (50.8mm) pipe and drain trap shall be furnished under the plumbing contract. Frame color shall be supplied in mill (standard) or one of 7 optional colors. (Call factory for custom colors.) Choose from anodized or heavy-duty powder coat finish. **Note:** Mill finish frames in contact with concrete to be primer coated.

D. LBDP - Level Base Frame with Optional Drain Pan shall be 6063-T5 aluminum alloy with 1/2" (12.7mm) exposed surface and a depth of 1-13/16" (46.0mm). These assemblies receive 1/4" (6.4mm) thick heavy gauge support cushions 1" (25.4mm) long mounted to each continuous foot at 24"(0.61m) on center. These assemblies shall also include a 2" (50.8mm) I.P.S. PVC drain, stainless steel strainer and a 16-gauge aluminum pan provided by manufacturer. Frame color shall be supplied in mill (standard) or one of 7 optional colors. (Call factory for custom colors.) Choose from anodized or heavy-duty powder coat finish. **Note:** Mill finish frames in contact with concrete to be primer coated.

2.05 Tread Insert Options

Specifier to select one below and delete others.

- A. HD - Heavy-Duty Carpet** shall meet the Carpet and Rug Institute's standard for indoor air quality. Fibers shall include a minimum of 100, 12 mil monofilament fibers per square inch and colorfast, solution-dyed nylon. Available in one of 25 standard colors as offered by manufacturer. Each carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths. Anti-static carpet fiber shall contain antimicrobial additive and be treated with Scotchgard® to reduce soiling. Carpet weight shall be 33-oz./yd².
- B. EC - Exterior Carpet** shall be solution dyed polypropylene fibers with 50/50 blend of 600/12-denier multi filament and 595/D1 monofilament, available in one of 4 standard colors as offered by manufacturer. The texturized fibers have ultraviolet blockers and color as an integral part of the filament. Each carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths. (Waterproof fibers do not get soggy, rot, fade or stain.) Carpet weight shall be 32-oz./yd².
- C. V - Vinyl** shall include a flexible dual durometer vinyl insert in any one of six standard colors as selected.
- D. VA - Abrasive Insert** shall include a flexible abrasive grit tape, bonded to a rigid aluminum tread insert. Choose from standard mill or optional clear, bronze or black anodized finish complete with one of six abrasive colors as offered by manufacturer.
- E. PA - Poured Abrasive** shall include a factory-bonded two-part epoxy containing aluminum oxide grit. Color shall be selected from one of three standard colors, with custom colors available.
- F. SAI - Serrated Aluminum Insert** shall be extruded 6105-T5 alloy. Choose from standard mill or optional clear, bronze or black anodized finish.
- G. SA - Serrated Aluminum** shall be an integral rail extruded from 6105-T5 alloy. Choose from standard mill or optional clear, bronze or black anodized finish.

H. L - Logo Option (Heavy-Duty Carpet insert only) each entrance mat specifically detailed shall include a logo or trademark.

PART III - EXECUTION

3.01 Examination

- A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
 - 1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

- A. Manufacturer shall offer assistance and guidance to provide a template of irregular shaped mat assemblies to ensure a proper installation.

3.03 Installation

- A. Install the work of this section in strict accordance with the manufacturer's recommendations.
- B. Set mat at height recommended by manufacturer for most effective cleaning action.
- C. Coordinate top of mat surface with bottom of doors that swing across to provide ample clearance between door and mat.

3.04 Cleaning

- A. It is important to the life cycle of the entrance mat that a maintenance schedule be developed which includes regular vacuuming and extraction that correctly matches the amount of traffic the mat incurs.

3.05 Protection

- A. After completing required frame installation and concrete work, provide temporary filler of plywood or fiberboard in recess, and cover frames with plywood protective flooring. Maintain protection until construction traffic has ended and project is near time of substantial completion.
- B. Defer installation of floor mats until time of substantial completion of project.