**3-Part CSI MasterFormat Specification**

**SECTION 12 4813**

**ENTRANCE MATS AND FRAMES**

Rev 03/23

1. GENERAL
	* + 1. SUMMARY
				1. Section Includes
				2. Entrance floor mats and frame assemblies.
				3. Related Requirements
				4. Section 124816 "Entrance Floor Grilles" for rigid floor grilles and frames
			2. REFERENCES
				1. ASTM B 221-93 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
				2. ASTM A 276-92 Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
				3. AAMA 606.1 Voluntary Guide Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum
				4. AAMA 607.1 Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.
				5. Accessibility Standard: Comply with applicable provisions in the DOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1.
			3. COORDINATION
				1. If product is to be recessed, coordinate with concrete work so that products are available for placing integrally with floor slabs.
			4. ACTION SUBMITTALS
				1. Product Data: Manufacturers product specifications, installation and maintenance instructions.
				2. Shop Drawings: Show layout and types of grates and frames not less than half-scale sections of typical installations, details of patterns or designs, anchors, and accessories, and field measurements of slab recess to receive frames grates (if applicable).
				3. Samples for Selection Purposes: Actual sections of grate and frame material in a convenient but representative size showing full range of colors, textures, finishes and patterns available for each type of floor grate and frame specified.
				4. Samples for Verification Purposes: Not less than 6 inch square sections of grate material and 6 inch length of frame material in selected colors and finishes for each type of grate and frame specified.
			5. INFORMATIONAL SUBMITTALS
				1. Provide manufacturer's standard warranty
				2. Sustainable Design Submittals:

Building Product Disclosure Requirements: To encourage the use of building products that are working to minimize their environmental and health impacts, provide the following information when available:

Material Ingredients Documentation demonstrating the chemical inventory of the product

EQ Credit: Enhanced Indoor Air Quality Strategies

Strategy 1. Entryway Systems Install permanent entryway systems at least 10 feet (3 meters) long in the primary direction of travel to capture dirt and particulates entering the building at regularly used exterior entrances. Acceptable entryway systems include permanently installed grates, grilles, slotted systems that allow for cleaning underneath, rollout mats, and any other materials manufactured as entryway systems with equivalent or better performance. Maintain all on a weekly basis.

* + - 1. CLOSEOUT SUBMITTALS
				1. Manufacturer's Installation Instructions and Operation & Maintenance: Indicate installation, operation and maintenance requirements and rough-in dimensions.
			2. MAINTENANCE MATERIAL SUBMITTALS
				1. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. PRODUCTS
2. ACCEPTABLE MANUFACTURERS

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1. ROLL-UP RAIL MATS

Retain one or more of six "Roll-up Mat" Paragraphs below to meet Project requirements

* + - * 1. Nystrom QuietFLEX® Roll-up, LDPE-Hinged Mats: Extruded-aluminum tread rails 2 inches (50 mm) on center by 3/8 inch (9.5 mm) thick, sitting on continuous vinyl cushions.

Tread Inserts:

Premium Carpet with 3700 denier, solution-dyed, woven nylon fibers; and shall include a minimum of 100, 10 mil monofilament fibers per square inch. Each Carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous spliced-free lengths. Fibers shall be treated with anti-stain and anti-static additives.

Rugged Scrub crimped solution-dyed 600 denier polypropylene fibers tufted into a woven double backing and mechanically secured to tread rails.

Brush: Brush made with rigid nylon bristles, 9 tufts per inch, each tuft containing 80 bristles.

Serrated Aluminum: Plain serrated aluminum treads.

Recycled Rubber: Ecotread recycled rubber with a SC of 90 manufactured with recycled rubber and EPDM backing.

Ribbed Rubber: TPV, dual durameter rubber insert with convex and continuous serrations.

1. Colors, Textures, and Patterns of Inserts: **[As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from full range of industry colors].**
2. Rail Color: [**Mill finish] [Clear] [Light bronze] [Medium bronze] [Dark bronze] [Black]**
3. Hinges: LDPE.
4. Structural Performance: Wheel load of 300 lb (136 kg) per wheel.
5. Mat Size: **[As indicated] <Insert size>**.
6. Frame:

Recessed Frames:

LBM: Level-bed, mechanically fastened 6063-T5 aluminum frame.

LBC: Level-bed, cast-in-place 6063-T5 aluminum frame.

Color: [**Mill finish**] [**Clear**] [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**Match Architect's sample**] [**As selected by Architect from full range of industry colors and color densities**].

Surface-Mounted Frames:

Tapered Ramp Frames: SAM; Mechanically fastened, tapered 6063-T5 aluminumframe with mitered corners.

Tapered Ramp Frames: SV; Tapered vinyl frame.

* + - * 1. Nystrom MATdesign® Roll-up Mat, Aluminum Hinged Mats: Extruded-aluminum tread rails **2 inches (50 mm)** on centerby 3/8 inch (9.5 mm) thick, sitting on continuous vinyl cushions.
1. Tread Inserts:
2. Premium Carpet with 3700 denier, solution-dyed, woven nylon fibers; and shall include a minimum of 100, 10 mil monofilament fibers per square inch. Each Carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous spliced-free lengths. Fibers shall be treated with anti-stain and anti-static additives.
3. Rugged Scrub crimped solution-dyed 600 denier polypropylene fibers tufted into a woven double backing and mechanically secured to tread rails.
4. Brush: Brush made with rigid nylon bristles, 9 tufts per inch, each tuft containing 80 bristles.
5. Vinyl: Ribbed-design-surface, resilient vinyl.
6. Recycled Rubber: Ecotread recycled rubber with a SC of 90 manufactured with recycled rubber and EPDM backing.
7. Ribbed Rubber: TPV, dual durometer rubber insert with convex and continuous serrations.
8. Vinyl Abrasive Insert: Mineral abrasive particles bonded to vinyl.
9. Colors, Textures, and Patterns of Inserts: **[As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from full range of industry colors].**
10. Rail Color: **[Mill finish] [Clear] [Light bronze] [Medium bronze] [Dark bronze] [Black]**.
11. Hinges: Aluminum.
12. Structural Performance: Wheel load of 350 lb (159 kg) per wheel.
13. Mat Size: **[As indicated] <Insert size>.**
14. Frame:

Recessed Frames:

LBM: Level-bed, mechanically fastened 6063-T5 aluminum frame.

LBC: Level-bed, cast-in-place 6063-T5 aluminum frame.

Color: [**Mill finish**] [**Clear**] [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**Match Architect's sample**] [**As selected by Architect from full range of industry colors and color densities**].

Surface-Mounted Frames:

Tapered Ramp Frames: SAM; Mechanically fastened, tapered 6063-T5 aluminumframe with mitered corners.

* + - * 1. Nystrom MATrac Roll-up Mat, LDPE-Hinged Mats: Vinyl-acrylic tread rails 1-7/8 inches (48 mm) on center by 3/8 inch (9.5 mm) thick, with slotted or perforated hinges.
1. Tread Inserts:
2. Premium Carpet with 3700 denier, solution-dyed, woven nylon fibers; and shall include a minimum of 100, 10 mil monofilament fibers per square inch. Each Carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous spliced-free lengths. Fibers shall be treated with anti-stain and anti-static additives.
3. Rugged Scrub crimped solution-dyed 600 denier polypropylene fibers tufted into a woven double backing and mechanically secured to tread rails.
4. Brush: Brush made with rigid nylon bristles, 9 tufts per inch, each tuft containing 80 bristles.
5. Vinyl: Ribbed-design-surface, resilient vinyl.
6. Recycled Rubber: Ecotread recycled rubber with a SC of 90 manufactured with recycled rubber and EPDM backing.
7. Ribbed Rubber: TPV, dual durameter rubber insert with convex and continuous serrations.
8. Vinyl Abrasive Insert: Mineral abrasive particles bonded to vinyl.
9. Colors, Textures, and Patterns of Inserts: **[As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from full range of industry colors].**
10. Rail Color: Black.
11. Hinges: LDPE.
12. Structural Performance: Wheel load of 350 lb (159 kg) per wheel.
13. Mat Size: **[As indicated] <Insert size>.**
14. Frame:

Recessed Frames:

LBM: Level-bed, mechanically fastened 6063-T5 aluminum frame.

LBC: Level-bed, cast-in-place 6063-T5 aluminum frame.

Color: [**Mill finish**] [**Clear**] [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**Match Architect's sample**] [**As selected by Architect from full range of industry colors and color densities**].

Surface-Mounted Frames:

Tapered Ramp Frames: SAM; Mechanically fastened, tapered 6063-T5 aluminumframe with mitered corners.

Tapered Ramp Frames: SV; Tapered vinyl frame.

* + - * 1. Nystrom MAXTread**™** Roll-Vinyl Mat: a flexible, open weave, vinyl mat with carpet inlays. Sections are 0.25 inches (6.4mm) square ribs with 0.230 inch by 0.312 inch (5.8mm x 7.9mm) openings over 0.25 inch (6.4mm) half rounds 1.25 inch (31.8mm) apart. Carpet inserts are 1.157 inches (29.4mm) wide. The mat is secured with a patented retainer system.

Tread Inserts:

TuffScrub Carpet tread Crimped solution-dyed 2750 denier polypropylene fibers tufted into a woven double backing and glued tread rails. Carpet weight shall be 26 oz. /yd². Available colors include: **[Charcoal][Walnut].**

Construction: Injection molded PVC

Rail Color**: [Black][brown][gray].**

Structural Performance: Wheel load of 1200 lb (544 kg) per wheel.

Mat Size: **[As indicated] <Insert size>.**

Frames:

Aluminum Frame: Extruded 6063-T5 aluminum alloy.

Frame Finish: [**Clear**] [**Color anodized**].

Construction: Frames shall be shipped in 72-inch (1829-mm) sections to each jobsite.

Mounting:

* + - * 1. LTR: Aluminum mechanically attached, Level Bed Transition frame, 0.4 to 0.6 inches (10.6 to 15.2 mm) transition profile; 1 inch (25.4 mm) overall depth.
				2. LTO: Aluminum mechanically attached, Level Bed Transition frame with overhang, 0.4 to 0.6 inches (10.6 to 15.2 mm) transition profile; 1 inch (25.4 mm) overall depth.
				3. LCH: Aluminum mechanically attached, Level Bed Channel frame, 1/2-inch (12.7-mm) channel profile; 3/4-inch (19-mm) overall depth.
				4. SAM: Surface mounted, mechanically attached frame. 2.3 inches (59 mm) profile; 0.625 inch (15.9 mm) overall depth; mill finish.
				5. SV: Surface mounted, vinyl attached frame, shall have an overall depth of 1/2-inch- (12.7-mm-) deep with a 3-inch (76.2-mm) profile; mill finish.
				6. Nystrom MAXgrid Roll-Vinyl Mat: a flexible, open weave, vinyl mat with carpet inlays. Sections are 0.25 inches (6.4mm) square ribs with 0.230 inch x 0.312 inch (5.8mm x 7.9mm) openings over 0.25 inch (6.4mm) half rounds 1.25 inch (31.8mm) apart.
1. Construction: Injection molded PVC
2. Rail Color**:** Black
3. Structural Performance: Wheel load of 1200 lb (544 kg) per wheel.
4. Mat Size: **[As indicated] <Insert size>.**
5. Frames:
6. Aluminum Frame: Extruded 6063-T5 aluminum alloy
7. Frame Finish: **[clear] [color anodized].**
8. Construction: Frames shall be shipped in 72 inch sections to each jobsite.
9. Mounting:
10. LTR, Aluminum mechanically attached, Level Bed Transition frame,.4 inch to .6 inch (10.6 mm to 15.2) transition profile; 1 inch (25.4mm) overall depth.
11. LTO, Aluminum mechanically attached, Level Bed Transition frame with overhang, ,.4 inch to .6 inch (10.6 mm to 15.2) transition profile; 1 inch (25.4mm) overall depth.
12. LCH, Aluminum mechanically attached, Level Bed Channel frame, ½ inch (12.7 mm) channel profile; 3/4 inch (19 mm) overall depth.
13. SAM, Surface mounted, mechanically attached frame. 2.3 inch (59 mm) profile; .625 inch (15.9 mm) overall depth. Mill Finish .
14. SV, Surface mounted, Vinyl attached frame, shall have an overall depth of 1/2 inch (12.7mm) deep with a 3 inch (76.2mm) profile. Mill Finish.
	* + - 1. Nystrom GRATEdesign® Roll-up Grate, LDPE-Hinged Mats: Extruded-aluminum tread rails 1.5 inches (38.1 mm) (31.8mm)on center by 3/4 inch (19 mm) (19 mm) thick, sitting on continuous vinyl cushions. Hollow extrusion (not "U" shape) rails joined by low-density polyethylene (LDPE) hinge and cushion retained in "captive" aluminum tread port, with drainage holes to allow debris and moisture to flow through grate. Tread hinges to be secured with PVC end cap. Fillers shall be serrated black vinyl for use in creating a snug fit for the grate.

Retain "Tread Inserts"; "Colors, Textures, and Patterns of Inserts"; "Rail Color"; "Hinges"; and "Mat Size" subparagraphs below if required. Revise those retained to suit Project.

1. Tread Inserts:

Retain one or more of the following seven subparagraphs if retaining "Tread Inserts" Subparagraph above. Multiple inserts may be selected for alternating treads. Two treads may be selected, for example: Premium Carpet for absorbing and Vinyl for scraping.

1. Premium Carpet with 3700 denier, solution-dyed, woven nylon fibers; and shall include a minimum of 100, 10 mil monofilament fibers per square inch. Each Carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous spliced-free lengths. Fibers shall be treated with anti-stain and anti-static additives.
2. Rugged Scrub crimped solution-dyed 600 denier polypropylene fibers tufted into a woven double backing and mechanically secured to tread rails.
3. Brush: Brush made with rigid nylon bristles, 9 tufts per inch, each tuft containing 80 bristles.
4. Vinyl: Ribbed-design-surface, resilient vinyl.
5. Recycled Rubber: Ecotread recycled rubber with a SC of 90 manufactured with recycled rubber and EPDM backing.
6. Ribbed Rubber: TPV, dual durameter rubber insert with convex and continuous serrations.
7. Colors, Textures, and Patterns of Inserts: **[As indicated by manufacturer's designations] [Match Architect's sample] [As selected by Architect from full range of industry colors].**
8. Rail Color: **[Mill finish] [Clear] [Light bronze] [Medium bronze] [Dark bronze] [Black].**
9. Hinges: LDPE.
10. Structural Performance: Wheel load of 1000 lb (453 kg) per wheel.
11. Mat Size: **[As indicated] <Insert size>.**
12. Frame:

 Recessed Frames:

Retain one of the two " Recessed Frames " Subparagraphs below.

LBM: Level-bed, mechanically fastened 6063-T5 aluminum frame.

LBC: Level-bed, cast-in-place 6063-T5 aluminum frame.

Color: [**Mill finish**] [**Clear**] [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**Match Architect's sample**] [**As selected by Architect from full range of industry colors and color densities**].

PART 3 – EXECUTION

1. EXAMINATION
2. Products must be placed on a flat and level substrate. Substrate shall meet tolerance of 1/8" over 10 feet in accordance with ACI 302.
3. 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.
4. INSTALLATION
5. Install products in accordance with manufacturer’s instructions, at locations shown and with top of products level with adjoining finished flooring where applicable.
6. Coordinate top of product surfaces with swinging doors to provide under-door clearance.

1. Provide necessary shims, spacers, and anchorages for proper location and secure attachment of frames to concrete.

2. For installation in terrazzo flooring, contact manufacturer.

1. ADJUSTING AND CLEANING
	1. Adjust top surface of assembly to be flush with adjacent finishes.
	2. Coordinate top of surfaces with doors that swing across surface to provide adequate under door clearance.
	3. Clean dirt and debris from frame recess before installing floor system.
2. PROTECTION
	1. Upon completion of frame installations, provide temporary filler of plywood or fiberboard in grate recesses, and cover frames with plywood protective flooring. Maintain protection until construction traffic has ended and Project is near time of Substantial Completion
	2. Install product when no further wheeled construction traffic will occur and wet type operations including painting and decorating are complete.

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END OF SECTION