

CONSTRUCTION STANDARD SPECIFICATION

SECTION 10270

ACCESS FLOORING

	<u>Page</u>
<u>PART 1 - GENERAL</u>	
1.01 Summary	2
1.02 References	2
1.03 Definitions	2
1.04 System Description	2
1.05 Submittals	3
1.06 Quality Assurance	4
1.07 Delivery, Storage, And Handling	4
1.08 Project Conditions	4
 <u>PART 2 - PRODUCTS</u>	
2.01 Manufacturers	4
2.02 System Components	4
 <u>PART 3 - EXECUTION</u>	
3.01 Examination	7
3.02 Installation	7
3.03 Cleaning	8
3.04 Protection	8

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ACCESS FLOORING

PART 1 - GENERAL

1.01 SUMMARY

This section includes access flooring and related accessories.

1.02 REFERENCES

- A. American Society of Testing and Materials (ASTM)
 - E84 Test Method for Surface Burning Characteristics of Building Materials
- B. International Building Code (IBC) Chapter 10 (means of Egress) Section 1004 Occupant Level
 - Section 1009 Stairways and handrails
 - Section 1012 Guardrails
- C. National Electrical Manufacturers Association (NEMA)
 - LD3 Static Generation Test
- D. Uniform Federal Accessibility Standards (UFAS)
 - Section 4.8 Ramps

1.03 DEFINITIONS

"Universal Head" - A pedestal head capable of receiving a bolted down and/or snap on stringer system.

1.04 SYSTEM DESCRIPTION

Design Requirements: The floor system shall consist of nominal 24 inch x 24 inch (61 cm x 61 cm) interchangeable, gravity held floor panels supported on all sides by a

combination snap-on/bolted rigid grid system of stringers supported by a "universal" head and an adjustable pedestal assembly. The system shall be complete, including ramps, steps, handrails, fascia, and trimmed floor cut-outs.

1.05 SUBMITTALS

- A. General: Submit the following items in accordance with the Conditions of Contract and Section 01330, "Submittal Procedures."
- B. Product Data: Submit product data for the following items. Include laboratory test reports and other data to show compliance with specifications.
 - 1. Complete access floor system.
 - 2. Access floor system accessories.
 - 3. Pedestal base adhesive.
- C. Shop Drawings: Submit shop drawings showing complete access floor system, including floor panel layout and cut-out locations. Include details for handrails, guardrails, ramps, steps, fascia, cable cut-outs, and receptacles to be installed to bottom or top of raised access floor system.
- D. Samples: Submit manufacturer's standard color charts for available finishes.
- E. Material Safety Data Sheets (MSDS): Submit MSDS for floor panels, pedestal adhesive, pedestals, stringers, and floor finish.
- F. Quality Control: Submit manufacturer's installation instructions for the following items:
 - 1. Access floor system.
 - 2. Access floor system accessories.
 - 3. Pedestal adhesive.
- G. Asbestos Free Certification: Submit manufacturer's written certification that all access flooring materials and accessories to be installed on this project are free of asbestos.
- H. Installer's Certification: Submit installer's certification from manufacturer showing compliance with 1.06B.
- I. Electrical Properties: If floor is designated to be conductive, submit manufacturer's electrical properties data.
- J. LEED Submittals:
 - 1. Credit EQ 4.1: Manufacturers' product data for pedestal installation adhesive, including printed statement of VOC content.
 - 2. Credit EQ 4.3: Manufacturers' product data for carpet and installation adhesive including printed statement of VOC content

3. Credit EQ 4.4: Particleboard manufacturers' product data for particleboard used in steel-covered, wood core panels indicating that particleboard contains no urea formaldehyde.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The manufacturer of the floor system shall be a reputable company with a minimum of ten (10) years experience in the manufacturing of raised floor systems.
- B. Installer Qualifications: The installation of the access floor system and accessories shall be by the manufacturer's certified, trained craftsmen.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping: Access floor system and accessories shall be packed and shipped to the job site in unopened boxes, clearly labeled with the manufacturer's name and item description.
- B. Storage and Protection: Store access flooring in a manner which prevents overloading of the building structure and prevents damage to system components.

1.08 PROJECT CONDITIONS

- A. Environmental Requirements: Do not proceed with installation of access flooring until installation area is enclosed and has an ambient temperature of between 50 and 90 degrees Fahrenheit (10 and 32 degrees Centigrade) and a relative humidity of not more than 60 percent.
- B. Field Measurements: Prior to shop drawing preparation, check actual location of walls and other construction to which access flooring must abut. Show recorded dimensions on shop drawings.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

Manufacturers with capability to meet this specification include, but are not limited to:

Tate Access Floors
Mult-A-Frame Corporation
Maxcess Technologies, Inc.

2.02 SYSTEM COMPONENTS

- A. System Performance: The floor system shall provide an ultimate loading capacity of 4000 pounds (1814 kg) on one square inch (6.45 cm²) without failure. The

system shall withstand without failure an impact load anywhere on the installed floor system of 150 pounds (68 kg) dropped from a height of 36 inches (91 cm) onto one square inch (6.45 cm²). Floor system should also resist a uniform dead load of 100 psf (148.82kg/m²) for partitions supported by floor in addition to all other loads.

- B. Floor Panels: Floor panels shall be 24" x 24" (61 cm x 61 cm) modular, gravity held panels and shall consist of a steel top sheet welded to a formed steel bottom pan and painted inside and outside with an epoxy paint. The overall dimension of the panel shall be controlled to a tolerance of plus or minus 0.003 inch (0.076 mm).
1. Panel Performance: Floor panels shall meet or exceed the following performance criteria:
 - a. Panels shall be capable of supporting a concentrated load of 1250 pounds (567 kg) placed on a one square inch (6.45 cm²) area at any location on the panel with a maximum top or bottom surface deflection of 1/300th of span. Permanent set under these loading conditions shall not exceed .010 inches (2 mm).
 - b. Panels shall have a class "A" flame spread rating when tested in accordance with ASTM E84, shall be fabricated of non-combustible materials, and have the following ratings:
 - (1) Flame spread: Maximum 25 per ASTM E84.
 - (2) Smoke Developed: Maximum 50 per ASTM E84.
 2. Standard Grade Panel Finish: Unless otherwise specified, floor panels shall have a 0.123 inch (3.12 mm) minimum high pressure laminate finish factory bonded to the panel and specially designed with high durability for use in access floors. Laminate shall be Nevamar grade FL-12 or approved equal with the following characteristics:
 - a. Finish shall meet or exceed requirements of NEMA LD3.
 - b. Color shall be MR-6-5, "Winter Grey," unless otherwise noted on drawings or otherwise chosen at time of submittals from manufacturer's standard colors.
 - c. Edge trim shall be rigid vinyl, mechanically attached and bonded to the panel surface flush with the panel finish.
 3. Conductive Grade Panel Finish: When raised access floor is designated to be conductive, finish shall be manufacturer's conductive grade laminate without carbon on the surface. Laminate shall be factory adhered with conductive adhesive.
 - a. Electrical properties shall meet or exceed the requirements of NEMA LD3 and shall be reviewed by SNL at time of submittals for the proposed application.

- C. Understructure: The understructure system shall consist of all metal pedestal base, "universal" head assemblies and stringers with corrosive resistant finishes. The understructure shall be able to achieve a finished floor height of between 6 to 24 inches (15.25 to 61 cm).
1. Pedestal Assembly: Pedestal assemblies shall support a 5000 pound (2268 kg) axial load without permanent deformation and shall provide a means of leveling and locking the assembly at a selected height.
 2. Pedestal Bases: Pedestal bases shall be fabricated with not less than 16 square inches (103.23 cm²) of bearing area and assembled to a threaded stud which is capable of receiving a "universal" pedestal head assembly. Pedestal bases, when adhered to floor, shall be capable of resisting 800 inch-pounds (49.2 Newton-meters) of overturning moment.
 3. Pedestal Heads: Pedestal heads shall be "universal heads", capable of receiving combination bolted/snapped-on stringers. Heads shall be one piece, galvanized steel construction with steel tubes with I.D. to match O.D. of pedestal stud.
 4. Stringers: The stringers shall be a combination bolted/snap-on type and shall be of length to install in a 24 inches x 24 inches (61cm x 61 cm) grid pattern and shall be constructed of all steel members capable of supporting a 200 pound (90.7 kg) load on one square inch (6.45 cm²) at the center of a 24-inch (61 cm) span with a permanent set of not more than 0.010 inch (.254 mm). Stringers shall have sound deadening gaskets heat cured and permanently bonded to the stringer at the factory. Stringer fasteners, where specified, shall be a minimum #10-24 x 1 3/4 flat head machine screws.
- D. Accessories: Provide the following manufacturer's accessories as specified or as noted on contract drawings:
1. Perforated Access Floor Panels: Provide 24 inch x 24 inch (61 cm x 61 cm) perforated access panels capable of supporting the same loads as the regular floor panels. Panels shall have either a fixed or adjustable slide damper as specified on the contract documents. Finish on perforated floor panels shall match that of regular floor panels.
 2. Ramp Assemblies:
 - a. Ramp understructure shall be of standard access floor panels filled with a lightweight cementitious product and finished with a non-slip bonded rubber covering and shall be in compliance with the UFAS.
 - b. Ramp understructure shall be of a bolted stringer system attached to swivel pedestal head assemblies.
 3. Step Assemblies: Step assemblies shall be manufacturer's standard and shall be in compliance with UBC.
 4. Fascia Assemblies: Fascia assemblies shall be 1/16 inch (1.5875 mm) thick aluminum.

5. Handrails/Guardrails: Handrails and guardrails shall be fabricated of polished aluminum pipe rail in accordance with requirements of the UBC Sections 3306 and 1712, respectively.
 - a. Top rail of handrail/guardrail shall be capable of withstanding the following loads.
 - (1) Concentrated load of 300 pounds (136.08 kg) applied at any point nonconcurrently, vertically downward or horizontally.
 - (2) Uniform load of 100 pounds (45.36 kg) per linear foot vertically downward or horizontally.
6. Pedestal Adhesive: Pedestal adhesive shall be as recommended by manufacturer and shall be compatible with floor finishes.
7. Suction Lifting Device: Provide one manufacturer's standard suction-lifting device for every 1000 square feet (92.9 m²) of access floor (minimum one per each separate access floor area) but not less than two.
8. Extra Panels: Provide 5% of extra panels for storage at job site.
9. Seismic Braces: Provide one manufacturer's standard seismic brace for every 144 square feet (13.38 m²) of floor area for floors over 21 inches (53.34 cm) high, and pedestals below ramps.

PART 3 - EXECUTION

3.01 EXAMINATION

Verification of Existing Conditions: Examine subfloor for unevenness, irregularities and dampness that could affect the quality and execution of the work. If floor sealing is required elsewhere in contract documents, verify that sealer has been installed and allowed to properly dry prior to commencing work. Do not proceed with installation until subfloor surfaces are clean, dry and clear of other trades and ready to receive access flooring.

3.02 INSTALLATION

- A. General: Install the complete access floor system according to manufacturers' recommended installation instructions using a 24 inch x 24 inch (61 cm x 61cm) pattern of stringers and install system grounding if shown on contract documents.
- B. Stringers: Stringers shall be snapped and bolted on except over designated raceway areas indicated on drawings, where they shall be snap-on installed only.
- C. Tolerances: The access floor system shall be level within plus or minus 0.060 inches (1.524 mm) in 10 feet (3.05 m) and plus or minus 0.10 inch (.254 mm) over the entire floor. The complete floor system shall be sturdy, rigid, and free of squeaks.

- D. Cutouts: Floor cutouts shall be made in panels where shown on contract drawings, shop drawings, and as required to install mechanical, electrical and communication items associated with project.
 - 1. Small holes 5 inches (12.7 cm) in diameter and smaller shall be cut to accept manufacturer's standard grommets.
 - 2. Larger cutouts shall be sized as required to accept the pipes, cables, conduits, etc. specified on the contract documents.
- E. Cutout Trim: Trim cutouts with manufacturer's standard grommets for cutouts 5 inches (12.7 cm) in diameter and smaller and with manufacturer's standard extruded vinyl edge trim for larger cutouts.
- F. Accessories: Install manufacturer's accessories in accordance with approved shop drawing details. Panels for ramps shall be bolted in place at all corners.
 - 1. Handrail/guardrail installed system shall be capable of withstanding the following loads:
 - a. Concentrated load of 200 pounds (90.72 kg) applied at any point nonconcurrently, vertically down or horizontally.
 - b. Uniform load of 50 pounds (22.68 kg) vertically or horizontally applied.
- G. Air Seals: Install manufacturer's standard air seals in areas where underfloor space is used as an air plenum.

3.03 CLEANING

- A. Vacuuming: Vacuum under and above newly installed access floor, removing all debris and dirt.
- B. Scuff Mark Removal: At project completion and prior to occupancy, remove all scuff marks from newly installed access flooring using floor manufacturer's approved cleaning solutions.

3.04 PROTECTION

Temporary Floor Covering: Cover and protect newly installed access floor with taped down cardboard and/or plastic until project completion. Damaged access flooring shall be replaced at no cost to Sandia National Laboratories.

END OF SECTION