SECTION 096900 - ACCESS FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES:
A. The work of this section shall include all labor, materials, equipment, services and accessories
   required and necessary to design and install the access floor system as indicated and specified.
B. Access floor system shall be a system of 24” square modular panels supported by adjustable
   pedestals and stringers, providing an underfloor cavity for mechanical and electrical systems,
   and shall be rigid, free of rocking panels, rattles, squeaks and other noises.
C. Contractor shall:
   1. Furnish and install ramps, steps, fascia and handrails where indicated on drawings and
      required in accordance with UBC.
   2. Provide accessories as required to complete installation, including panel lifting device(s)
      service outlets, and cable cutouts with trim as noted on Finish Schedule. Supports at
      cutouts shall comply with Section 1.02-A. Provide grommets at service outlets with
      cover plates colored to match the approved floor finish.
   3. Furnish eight percent of all panels as perforated air supply panels with dampers (25%
      300 cfm minimum air volume at .2” static pressure.
   4. Provide ten percent extra materials not included in quantities stated above or required
      for complete installation.

1.02 SYSTEM DESCRIPTION
A. Static Electricity
   1. The system shall be an electrically continuous unit with a maximum resistance between
      panels and understructure of 10 ohm.
   2. Surface - 1kV or less at 20 percent R.H. at 70 degrees F.
   3. Ground - Coordinate electrical requirements to assure adequate ground throughout.
B. Fire Protection
   1. Access floor system shall be in accordance with National Fire Protection Association
      (NEPA) Standard No. 75-255 (latest revision).

1.03 SUBMITTALS
A. Submit Product Data sheets, setting drawings, parts list, shop drawings indicating layouts, and
   cleaning and maintenance instructions. Layouts shall indicate floor panel layout, including railing,
   ramp, and step locations.
B. Submit one full size floor panel representative of panel to be furnished to meet this specification.
   Floor panel to be permanently stamped with manufacturer's model name or number
   indicating the floor panel concentrated load rating.
C. Submit one full size sample of each understructure component.
D. Samples submitted to be the standard of acceptance of the final installation.
E. Submit calculations prepared and stamped by a registered civil or structural engineer in the State
   of Arizona indicating compliance with all specified design criteria.
F. Certificates
   1. Furnish test reports certified by an independent testing organization indicating
      compliance with specified panel and understructure strength criteria.
   2. Provide certification that materials and installation were furnished in accordance with
      this specification.

1.04 QUALITY ASSURANCE
A. Design Criteria
   1. The entire system shall be capable of supporting the most critical of the following
      two loading conditions:
a. Dead load and a uniformly distributed design live load of 300 pounds square foot with 0.040 inch maximum deflection.
b. Dead load and a concentrated design load of 1,000 pounds applied through a one square inch area at any point on the panel with a maximum deflection of 0.080 inch.

2. The ultimate load capacity of the entire system shall be two (2) times the design load.

3. The entire system (including pedestals, welds, base plates, concrete anchors and bonding adhesive) shall be designed for Seismic Zone 2 in accordance with UBC, 1985 Edition, Section 2312 (g) and the following:
   a. \( W_p \) (from UBC equation 12-8) shall not be less than the dead load of the access floor system plus 33 percent of the 300 pounds per square foot floor live load.
   b. The Occupancy Importance Factor \( I \) shall equal 1.5.
   c. The effective length factor \( K \) for pedestal tubes or studs shall not be less than 1.7.
   d. The bonding adhesive shall have a minimum factor of safety of 1.7 under design loads.
   e. The lateral force \( F \) shall be applied two inches above the top of the finished floor surface.
   f. Pedestal base plate assemblies shall be designed to assure that the maximum tensile stress in the concrete floor (by others) does not exceed 125 psi.
   g. The base plate thickness shall be designed on the assumption that the overhanging portion of the base plate acts as a cantilever beam with its fixed end inside the outside edge for the tube (or stud).
   h. Shimmed base plate assemblies must meet the requirements of Section 1.02-A.

4. Understructure design shall be done in accordance with the latest edition of the AISICold-Formed Steel Design Manual and this specification.

B. Allowable Tolerances
   1. Floor panel flatness - plus or minus 0.010 inches on diagonal on top of panel or underneath edge.
   2. Floor panel surface dimensions - plus or minus 0.005 inches.
   3. Floor panel squareness - plus or minus 0.005 inches.
   4. Finished access floor - level within plus or minus 0.060 inches in 10 feet and plus or minus 0.10 inches over the entire floor.
   5. Finished floor height - as indicated on drawings.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Panels shall be 24" square welded steel construction assemblies, flat, square, finished inside and out and fully interchangeable after installation.

B. Pedestals
   1. Pedestal assemblies shall be galvanized steel construction, in accordance with ASTM A123 and A500, with a minimum vertical adjustment of 2 inches.
   2. Pedestal assemblies shall be capable of resisting a direct axial compressive load of 5,000 pounds without distress or failure of any part.
   3. Pedestal assemblies shall be secured to the subfloor with an adhesive and/or mechanical anchors approved by the Engineer. Pedestal adhesive, anchors and pedestal assemblies without stringers in place shall be capable of resisting the specified seismically induced overturning moment (Section 1.02-A3) without overstressing of adhesive, anchors or any part of pedestal assembly.
C.  Stringers
1. Each panel shall be supported by not less than 20 gauge galvanized steel stringers spanning from pedestal to pedestal and in accordance with ASTM A123 and A374.
2. Stringers shall be readily removable and be sized to maintain pedestal spacing for the panel module. Stringers shall laterally contain the bottom pan section of the panel.
3. Stringers shall support a minimum 200 pound load applied through a one square inch area at the center with elastic deflection not to exceed 0.01 inches.
4. Interface between panel and stringer shall provide sound deadening and complete plenum sealing.
5. Total depth of panel and stringer is not to exceed 1-1/2 inches.
6. Each end of each stringer shall be positively fastened to pedestal head, using screws or bolts approved by Engineer with a minimum torque of 40 inch pounds. Holes for screws or bolts shall be accurately located to correspond with a panel module within ±0.10 in.

D.  Flooring
1. Nevamar 1/8” thick melamine phenolic high pressure laminate (if included in contract documents) with vinyl edge trim or approved equal. Color as selected and indicated by Purchaser.
2. Carpet (if included in contract documents) must be factory adhered to panels with a moisture resistant bonding adhesive by access floor manufacturer. Carpet shall be installed so as to not void any carpet warranty set forth in specifications. Carpet to be as selected by Purchaser.

2.02  FINISHES
A. Metal - All components shall be painted or corrosion resistant including panel interior.

PART 3 EXECUTION

3.01  INSTALLATION
A. Install per access flooring manufacturer’s recommendations and instruction and as shown on plans.
B. The installer shall avoid interference with mechanical, electrical, plumbing and other construction which will occur beneath system. If interferences cannot be avoided, installer shall provide bridging in accordance with Section 1.02-A.
C. Clean soiled or discolored surfaces after installation.
D. Remove and replace units damaged, improperly installed or soiled beyond cleaning.

3.02  FIELD QUALITY CONTROL
A. Field Testing
1. Prior to installation, the Contractor shall install and cure a minimum of three (3) test pedestals which shall be attached to the concrete floor in an identical manner as the new access floor shall be installed. Test pedestal installation shall be witnessed by the Designated Representative.
2. After the manufacturer's recommended cure period and prior to installation, the D. R. will conduct overturning moment tests on the test pedestals. Each test pedestal will be tested without stringers for positive and negative overturning moment resistance about each major axis.
3. If any test pedestal fails at an overturning moment less than 1.7 times the design moment (as determined in Section 1.02-A3), the Contractor shall anchor three (3) new test pedestals with an improved method approved by the Designated Representative. The new test pedestals shall be tested in the same manner as the failed pedestals.
4. The Access Floor Contractor will not be responsible for concrete floor failures.
5. The Contractor shall provide all cut-outs as noted on the drawings.

END SECTION