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SECTION 09 69 00 – ACCESS FLOORING

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications Sections, apply to this section.
       2. SUMMARY
          1. Section Includes:

Interchangeable access-flooring panels

Understructure

Labor, material, equipment and installation as per specifications and/or shown on the Architect’s drawings.

* + - * 1. Related Requirements:

Section 03 30 00 – Concrete work and concrete floor sealer

Concrete sealer and pedestal adhesive must be chemically compatible with each other.

Section 09 68 00 – Carpet and carpet tile work

Section 23 30 00 – Mechanical air distribution

Section 26 05 00 – Electrical connections and grounding

* + - * 1. Access Floor Air Plenum Requirements (Delete if not using underfloor air)

The access floor contractor is aware that the space beneath the access floor will be used as an air delivery plenum and as such will take the necessary precautions when installing their work so as not to impact the integrity of the plenum space specific to air leakage and cleanliness.

Panel construction shall have a flat bottom to create a fully sealed plenum.

* + - 1. PERFORMANCE REQUIREMENTS
         1. Provide access flooring system consisting of moveable assemblies composed of modular floor panels supported on pedestals forming accessible under floor cavities to accommodate electrical, mechanical, and HVAC services which comply with performance requirements specified. Raised floor panels must be interchangeable with each other except where cut for special conditions.
         2. Where applicable, load testing shall be performed according to “Recommended Test Procedures for Access Flooring” as established by the Ceiling and Interior Systems Construction Association (CISCA). These procedures shall be used as a guideline when presenting load performance product information.

Concentrated Load: 1,600 lbs.< 0.10” on one square inch (25mm) at any location with a top surface deflection not to exceed 0.10" (2.5mm), and a permanent set not to exceed .010” (.25mm).

Uniform Load: With a top surface deflection not exceeding 0.040” (1mm), floor can hold 700 pounds per square foot evenly distributed over the surface of the panel with a permanent set not exceeding 0.010” (0.25mm).

Ultimate Load: Panel shall be designed to withstand a load of 1900 pounds per square foot applied over one inch at the weakest point on a pedestal.

Rolling Load: Panels shall withstand a rolling load of 800 lbs. applied through a 3" (76mm) dia. x 1-13/16" (46mm) wide caster for 10 cycles over the same path with a maximum of .040” (1mm) top surface permanent set. Panels shall withstand a rolling load of 600 lb. applied through a hard rubber-surfaced wheel 6” (152mm) dia. x 2” (51mm) wide for 10,000 cycles over the same path with a maximum of .040” (1mm) top surface permanent set.

Flammability: Bare panel system shall meet Class A1 requirements for Fire Response when tested in accordance with EN 13501-1.

Recycled Content: Panel and understructure system shall be required to have a minimum recycled content of 10%.

Pedestal Axial Load Test: Provide pedestal assemblies without panels or other supports in place, capable of withstanding a 6000 lb. (22 240 N) Axial load per pedestal, according to CISCA A/F, Section 5 “pedestal Axial Load Test.”

Verify requirements for pedestal overturning moment in seismic zones with authorities having jurisdiction. Coordinate with pedestals selected in Part 2 and method of attachment specified.

Pedestal Overturning Moment Test: Provide pedestal assemblies, without panels or other supports in place, capable of withstanding an overturning moment per pedestal of 1000 in\*lbf (113 N\*m) when bonded to clean concrete slab according to CISCA A/F, Section 6, “Pedestal Overturning Moment Test.”

Stringer Concentrated Load: Stringer shall withstand a concentrated load of 450 lbs placed at mid-span on a one square inch area using a square or round indentor without exceeding a permanent set of 0.010” when tested in accordance with CISCA A/F, Section 4 “Stinger Load Testing”.

* + - * 1. Product test shall be witnessed and certified by an accredited independent engineering and testing laboratory based in the U.S.A. with a minimum of five (5) years’ experience testing access floor components in accordance with CISCA test methods.
      1. SUBMITTALS
         1. Samples:

Submit a sample of the floor panel and each understructure component.

* + - * 1. Shop Drawings:

Submit drawings showing raised floor panel layout including starting point of installation.

Include details of component panels and pedestals. If required show edge details of ramps, steps, handrails and anchoring of pedestal bases to subfloor.

* + - * 1. Product Certificates:

Submit independent testing organization certificates indicating compliance with specified design criteria when tested and reported according to CISCA “Recommended Test Procedures for Access Floor.”

Submit seismic calculations in accordance with building codes as specified and cite the specific criteria. Calculations shall be performed using a current seismic program and submitted to a local structural engineer licensed in the state where the project is located. The structural engineer shall sign and seal these calculations confirming that these calculations meet all local and state codes for seismic pedestal assemblies. A signed copy of these calculations must be given to the architect and local building department as required.

* + - 1. QUALITY ASSURANCE
         1. Manufacturer Qualifications:

All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years’ experience and is ISO 9001:2000 certified, demonstrating a well-documented quality management system.

* + - * 1. Installer Qualifications: Engage an experienced installer with minimum of 5 years’ experience in the installation of access floor systems of comparable size and complexity.
        2. Access Floor Tolerances:

Manufacturing Tolerance:

Floor panel flatness measured on a diagonal : ± 0.035"

Panel flatness measured along the edges: ± 0.025"

Panel squareness: ± 0.020"

Panel interchangeability: All panels, except those modified to meet special conditions, shall be interchangeable.

Installation Tolerance:

Finished installation shall be level within ± 0.060" (2mm) in 10 feet (3m) and ± 0.100" (3mm) for the entire floor.

* + - 1. DELIVERY STORAGE AND HANDLING
         1. Deliver flooring components clearly labeled with manufacturer’s name and item description.
         2. Handle and store packages containing flooring in a manner which avoids overloading building structure.
         3. The General Contractor and or owner shall provide a dry accessible area to receive and unload material with a free path to elevators, hoists and/or the area receiving the floor.
         4. The subfloor shall be free of moisture, dust, dirt and other debris. Once installed, the tile floor must be maintained in the same manner.
      2. PROJECT CONDITIONS
         1. The General Contractor and/or Owner shall provide a clean, level, dry subfloor, temperature controlled, and protected from the weather.
         2. Access flooring storage and installation areas shall be maintained at a temperature between 40° F to 120° F and be less than 70% relative humidity for 24 hours a day before, during and after installation.
         3. Overhead construction work must be completed before installing access floor to avoid damage to panels and finishes. Any damage to panels or finishes resulting from construction work done after floor is installed shall be the responsibility of the general contractor.

1. PRODUCTS
   * + 1. MANUFACTURERS
          1. Basis-of-Design Product: Subject to compliance with requirements, provide Global IFS, Inc.; **[Global IFS Access Flooring],** located in Grand Rapids, MI 49512.

Substitutions will be considered, providing the alternative products meet or exceed the feature requirements as indicated herein and the performance requirements including the rolling load as outlined in section 1.03 and receive prior written approval by the Architect. The manufacturer shall certify that all panels meet or exceed the stated design criteria.

* + - 1. MATERIALS
         1. Floor Panels: Elevate 1600 lb. Panels shall be a porcelain calcium sulfate construction with ABS protective edge.

Panels shall be nominal 23.62” (600mm) square x 1.56” (40mm) high.

Panels shall be supported along the edge by stringers. Each stringer shall be securely fastened to the pedestal head & base.

Panel Finish: Top surface of floor tile is .35” (9mm) thick technical porcelain to be applied to a porcelain tile.. Edge of porcelain tile will be coordinating color protective edge banding.

* + - * 1. Air Supply Panels:

Provide and/or install passive floor diffusers with factory cutouts as indicated on drawings.

Factory cut-outs shall be (centered) (quadrant) as shown. Panels with cutouts that are located in traffic areas as shown on the drawings shall have extra pedestal assemblies under the panel to support the cutout.

* + - * 1. Understructure:

Pedestal assemblies shall be of hot-dip galvanized steel.

The base shall be a minimum of 16 square inches and shall be stamped and/or embossed on its underside and shall be adhered to the sub floor with an adhesive recommended by the access flooring manufacturer.

Where mechanical anchors are required for seismic zones, provide same as required by project specific seismic calculations.

The threaded stud shall be 3/4" (19mm) diameter steel.

The head assembly shall be designed so that the panels will be held in place with or without corner-lock fasteners.

Pedestal assembly shall provide an adjustment range of +/- 1” (25mm) when finished floor height is 6” (152mm) or more, adjustable at 1/64" (.4mm) increments.

The assembly shall provide a mechanical means to lock the floor in a level plane and adjustments shall be capable of being made without special tools.

For stringer supported system, the head of the all-steel pedestal assembly shall be rigidly fastened to the stringer with one machine screw for each foot of stringer length.

Pedestal assembly shall support not less than 6,000 lb. axial load and shall resist an average 1,000 inch-pound overturning moment when bonded to a clean concrete slab.

Porcelain panel must meet all porcelain tile requirements as defined by ISO 13006 for dry pressed ceramic tiles with low water absorption less than or equal to 0.5%.

Critical Radiant Flux: Panel shall meet Fire performance testing in accordance with EN13501-1 testing greater than or equal to Class A1.

Recycled Content: Tile shall be required to have a minimum recycled content of 10% and must be reusable in another facility.

Coefficient of friction per greater than or equal to 0.42 as tested using the BOT 3000 automated portable testing device designed by the TCNA’s Product Performance Testing Laboratory.

* + - * 1. Accessories

Furnish bare ramps and steps, lateral bracing, fascia, handrails, cutouts and miscellaneous items where indicated.

1. EXECUTION
   * + 1. INSPECTION
          1. Examine the subfloor which is to receive access flooring for dryness, cleanliness, unevenness, or any irregularities that will affect the quality of the access flooring.

Verify that material storage and installation areas are at recommended temperature and relative humidity before, during, and after installation.

Verify that access floor is level to within 1/8” (3mm) in 10 feet (3m).

* + - 1. INSTALLATION
         1. Pedestal locations shall be established from approved shop drawings so that mechanical and electrical work can be installed without interfering with pedestal locations.
         2. Installer is to coordinate with other trades to maintain the integrity of the installed access flooring. All traffic on access floor shall be controlled by the installer only. No traffic other than the access floor installation crew shall be permitted on any floor area for 48 hours to allow the pedestal adhesive to set. Access floor panels shall not be removed by other trades for 72 hours after installation.
         3. Floor system and accessories shall be installed by an authorized factory trained installation company with a minimum of five (5) years’ experience.
         4. No dust or debris producing operations by other trades shall be allowed in areas where access floor is being installed to ensure proper bonding of pedestals to subfloor.
         5. Installer shall keep the subfloor broom clean as installation progresses.
         6. Install floor diffusers if required as indicated on Mechanical Plans.
         7. Access Floor Finished installation shall be level within +/- 0.060” (2mm) in 10 feet (3m) and +/- 0.100” (3mm) for the entire floor area.
         8. Replace damaged materials prior to the application of field applied surfaces.
         9. The General Contractor or Subcontractor shall assure compatibility between the concrete sealer and the pedestal adhesive provided by the access floor manufacturer.
         10. After installation, the porcelain floor surface must be protected with RAM board when applying heavy loads to protect the top surface from marking or cracking
      2. ACCEPTANCE
         1. General Contractor or Owner shall accept completed access floor in whole or in part, prior to allowing other trades to perform work which affects the installed access floor and surface finish.
         2. General Contractor shall suitably protect the accepted access floor, surface finish and accessories from damage, contamination or overloading.
         3. The General Contractor shall be responsible for the final underfloor and tile cleaning.

END OF SECTION 09 69 00