SECTION 09 69 00 - ACCESS FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Access flooring panels and understructure.
2. Floor panel coverings.

1.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: CISCA A/F, "Recommended Test Procedures for Access Floors":

1. Concentrated Loads: , with a top-surface deflection under load and a permanent set not to exceed, respectively, 0.10 and 0.010 inch according to CISCA A/F, Section I, "Concentrated Loads."
2. Ultimate Loads: 2500 lbf, without failing, according to CISCA A/F, Section II, "Ultimate Loading."
3. Rolling Loads: Of the following magnitude, with a combination of local and overall deformation not to exceed 0.040 inch according to CISCA A/F, Section III, "Rolling Loads."

   a. CISCA A/F Wheel 1 Rolling Load: 800 lbf.
   b. CISCA A/F Wheel 2 Rolling Load: 600 lbf.

4. Stringer Load Testing: 225 lbf at center of span with a permanent set not to exceed 0.010 inch, as determined per CISCA A/F, Section IV, "Stringer Load Testing."
5. Pedestal Axial Load Test: 5000 lbf axial load per pedestal, according to CISCA A/F, Section V, "Pedestal Axial Load Test."
6. Pedestal Overturning Moment Test: 1000 lbf x inches, according to CISCA A/F, Section VI, "Pedestal Overturning Moment Test."

B. Floor Panel Impact-Load Performance: 100 lb when dropped from 36 inches onto a 1-sq. in. area located anywhere on panel, without failing.

C. Seismic Performance: Provide access flooring system capable of withstanding the effects of seismic motions determined according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads."

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include layout, details, sections, and relationship to adjoining Work.

C. Samples: For each material and exposed finish indicated.

D. 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 manufacturer's product data for particleboard used in steel-encapsulated, wood core panels indicating that particleboard contains no urea formaldehyde.

E. Product test reports.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with NFPA 75 requirements for raised flooring.

B. Mockups: Build mockups to verify selections, demonstrate aesthetic effects, and set quality standards for materials and execution.

1. Size to be an area no less than five floor panels in length by five floor panels in width.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

C. Preinstallation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.1 FLOOR PANELS AND UNDERSTRUCTURE

A. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or a comparable product by one of the following:

1. Formed-Steel Panel Systems:

a. AMICO-Genesis; Alabama Metal Industries Corporation.
b. ASM Modular Floors Inc.
c. Computer Environments Inc.
d. InterfaceAR.
e. Maxcess Technologies, Inc.
f. Tate Access Floors, Inc.
g. Or approved equal

2. Cementitious-Filled, Formed-Steel Panel Systems:

a. ASM Modular Floors Inc.

b. Computer Environments Inc.
c. InterfaceAR.
d. Maxcess Technologies, Inc.
e. Tate Access Floors, Inc.
f. Or approved equal

B. Floor Panels, General: Provide modular panels complying with the following requirements that one person, using a portable lifting device, can interchange with other field panels without disturbing adjacent panels or understructure:

1. Nominal Panel Size: 24 by 24 inches.
2. Fabrication Tolerances: Fabricate panels to the following tolerances:

a. Size and Squareness: Plus or minus 0.015 inch of required size, with a squareness tolerance of plus or minus 0.015 inch.
b. Flatness: Plus or minus 0.020 inch, measured on a diagonal on top of panel.

3. Panel Attachment to Understructure: By bolting to pedestal head.

C. Formed-Steel Panels: Fabricated with die-cut flat top sheet and die-formed and stiffened steel bottom pan formed from cold-rolled steel sheet and joined together by resistance welding, with metal surfaces protected against corrosion by manufacturer's standard factory-applied finish to produce units of the following type:

1. Solid Panels: Flat, solid top surface.
2. Perforated Panels: Perforated top surface with slots of number, spacing, and size standard with manufacturer to produce a nominal open area of 25 percent.

a. Quantity: [**As shown on Drawings**].
b. Finish: To match solid panels.

D. Cementitious-Filled, Formed-Steel Panels: Fabricated with die-cut flat top sheet and die-formed and stiffened bottom pan formed from cold-rolled steel sheet joined together by resistance welding to form an enclosed assembly, with metal surfaces protected against corrosion by manufacturer's standard factory-applied finish. Fully grout internal spaces of completed units with manufacturer's standard cementitious fill.

E. Pedestals: Assembly consisting of base, column with provisions for height adjustment, and head (cap); made of steel.

1. Provide pedestals designed for use in seismic applications.
2. Base: Square or circular base with not less than 16 sq. in. of bearing area.
3. Column: Of height required to bring finished floor to elevations indicated. Weld to base plate.
4. Provide vibration-proof leveling mechanism for making and holding fine adjustments in height over a range of not less than 2 inches.
5. Head: Designed to support understructure system indicated.

a. Provide sound-deadening pads or gaskets at contact points between heads and panels.

F. Stringer Systems: Modular steel stringer systems

1. Stringers: Bolted.

2.2 FLOOR PANEL COVERINGS

A. Provide bare panels without factory-applied floor coverings on traffic surfaces.

B. General: Provide factory-applied floor coverings of type indicated that are laminated by access flooring manufacturer to tops of floor panels including perforated panels.

C. Colors, Textures, and Patterns: As selected by Owner from manufacturer's full range.

D. Standard Plastic Laminate: NEMA LD 3, High-Wear type, Grade HWH; fabricated in one piece to cover each panel face with integral trim serving as edging.

a. Formica Corporation.
b. Nevamar Company, LLC.

E. Static-Conductive Plastic Laminate: NEMA LD 3, High-Wear type, Grade CHWH, fabricated in one piece to cover each panel face within perimeter plastic edging or with integral trim serving as edging.

a. Nevamar Company, LLC.

F. Solid Vinyl Tile: Static- Dissipative, ASTM F 1700, Class I (Monolithic Vinyl Tile), Type A (Smooth Surface), fabricated in one piece to cover panel face within plastic edging.

a. Flexco, Inc.
b. VPI, LLC; Floor Products Division.

G. Resilient Wall Base: ASTM F 1861, Type TS (rubber, vulcanized thermoset), Group 1 (solid), Style B (cove), 0.125 inch thick and 6 inches high.

2.3 ACCESSORIES

A. Adhesives: Manufacturer's standard adhesive for bonding pedestal bases to subfloor.

1. Provide adhesive with a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Post-Installed Anchors: For anchoring pedestal bases to subfloor, provide 2 post-installed expansion anchors made from carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (5 microns) for Class SC 1 service condition (mild), with the capability to sustain, without failure, a load equal to 1.5 times the loads imposed by pedestal overturning moment on fasteners, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

C. Cutouts: Provide cutouts for cable penetrations and service outlets with additional support, if needed.

1. Number, Size, Shape, and Location: As indicated.
2. Trim edge of cutouts with manufacturer's standard plastic molding.
3. Fit cutouts with manufacturer's standard grommets in sizes indicated or, if size of cutouts exceeds maximum grommet size available, trim edge of cutouts with manufacturer's standard plastic molding having tapered top flange. Furnish removable covers for grommets.
4. Provide foam-rubber pads for sealing annular space formed in cutouts by cables.

D. Service Outlets: Standard UL-listed and -labeled assemblies.

1. Structural Performance: Cover capable of supporting a 1000-lbf concentrated load.
2. Cover and Box Type: Hinged polycarbonate cover with opening for passage of cables when cover is closed and including frame and steel box or formed-steel plate for mounting electrical receptacles.
3. Location: In center of panel quadrant, unless otherwise indicated.
4. Receptacles and Wiring: Electrical receptacles and wiring for service outlets are specified in Division 26 Sections..

    a. Type of Receptacle: Heavy-duty duplex, 2-pole, 3-wire grounding, 20 A, 125 V, NEMA WD 6, Configuration 5-20R, unless otherwise indicated.
    b. Number of Receptacles for Outlet: Four.
    c. Wiring Method: Factory wired for hard wiring in field with armored cable,

E. Vertical Closures (Fasciae): Metal-closure plates with manufacturer's standard finish.

F. Ramps: Not steeper than 1:12, with raised-disc or textured rubber or vinyl floor coverings, and of same materials, performance, and construction requirements as access flooring.

G. Steps: Size and arrangement indicated with floor coverings to match access flooring. Apply nonslip aluminum nosings to treads.

H. Railings: At ramps and open-sided perimeter of access flooring where indicated. Include handrail, intermediate rails, posts, brackets, end caps, wall returns, wall and floor flanges, plates, and anchorages where required.

1. Provide railings that comply with structural performance requirements specified in Division 05 Section "Pipe and Tube Railings."

I. Panel Lifting Device: Manufacturer's standard portable lifting device of type required for specified panels. Provide one lifting devices per room of each type required.

J. Perimeter Support: Manufacturer's standard method for supporting panel edge and forming transitions.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine substrates for installation tolerances and other conditions affecting performance of work.

B. Lay out floor panel installation to keep the number of cut panels at floor perimeter to a minimum. Avoid using panels cut to less than 6 inches.

C. Locate each pedestal, complete any necessary subfloor preparation, and vacuum clean subfloor to remove dust, dirt, and construction debris before beginning installation.

3.2 INSTALLATION

A. Install access flooring system and accessories under supervision of access flooring manufacturer's authorized representative to produce a rigid, firm installation that complies with performance requirements and is free of instability, rocking, rattles, and squeaks.

B. Set pedestals by post-installed mechanical anchors.

C. Install flooring panels securely in place, properly seated with panel edges flush. Do not force panels into place.

D. Scribe perimeter panels to provide a close fit with adjoining construction with no voids greater than 1/8 inch where panels abut vertical surfaces.

E. Cut and trim access flooring at a remote location to prevent contamination of subfloor under access flooring already installed.

F. Ground flooring system as recommended by manufacturer and as needed to comply with performance requirements for electrical resistance of floor coverings.

G. Clean and vacuum subfloor area as installation of floor panels proceeds.

H. Install access flooring without change in elevation between adjacent panels and within the following tolerances:

1. Plus or minus 1/16 inch in any 10-foot distance.
2. Plus or minus 1/8 inch from a level plane over entire access flooring area.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Prohibit traffic on access flooring for 24 hours and removal of floor panels for 72 hours after installation to allow pedestal adhesive to set.

B. After completing installation, vacuum clean access flooring and cover with continuous sheets of reinforced paper or plastic. Maintain protective covering until time of Substantial Completion.

C. Replace access flooring panels that are stained, scratched, or otherwise damaged or that do not comply with specified requirements.

END OF SECTION 09 69 00