Section 09 69 33 – ACCESS FLOORING

**PART 1 GENERAL**

1.1 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

* + 1. This Section includes the following:
			1. Interchangeable access-flooring panels
			2. Labor, material, equipment and installation as per specifications and/or shown on the Architect’s drawings.
		2. Related Sections include the following:
			1. Section 03 30 00 – Concrete work and concrete floor sealer
			2. Section 09 68 00 – Carpet and carpet tile work
			3. Section 26 05 00 – Electrical connections and grounding

1.3 PERFORMANCE REQUIREMENTS

* + 1. Provide access flooring system consisting of moveable assemblies composed of modular floor panels supported on slab forming accessible electrical spaces to run electrical cabling. 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 with ICC ES AC151 and JIS A-1450. When tested as specified, make all deflection and deformation measurements at the point of load application on the top surface of the panel. Floor panels must be capable of supporting the following loads. These procedures shall be used as a guideline when presenting load performance product information.
		3. Cable Floor Low Profile Raised Access Floor System:
			1. Concentrated Load: 674.4psi. on one square inch (25mm) at any location with a top surface deflection not to exceed 0.20" (5.0mm) and permanent set of .12” (3.0mm).
			2. Uniform Concentrated Live Load: 6200 psf applied with a top surface deflection not to exceed 0.10”.
			3. Uniform Load: 250 psf with a top surface deflection not to exceed .0656” (1.67mm).
			4. Ultimate Uniform Load: Panel shall be designed to withstand a load of 10,000psf.
			5. Rolling Load: Panels shall withstand a rolling load of 337 lbs. for 20,000 cycles over the same path with a permanent set not to exceed 3mm applied by a hard surfaced wheel sized at 6” x 1.5” diameter wheel
			6. Flammability: Bare panel system shall meet Class A requirements for Flame spread with a flame spread index of 10 and a smoke development index of 160 when tested in accordance with ASTM-E84.
			7. Combustibility: All components of the access floor system shall qualify as noncombustible by demonstrating compliance with requirements of ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C. The all plastic materials for access flooring system shall pass and conform to the ASTM D635 and ASTM D1929.

1.4 SUBMITTALS

* + 1. Samples: Submit a sample of four floor panels including Base 40 System, Border 40 System and Feed-in 40 System that complete with specified floor covering for showing the floor finishing adaptation to the fixed height raised access floor system
		2. Shop Drawings:
			1. Submit drawings showing raised floor panel layout including starting point of installation.
			2. Include details of component panels and pedestals. If required show edge details of ramps, steps, handrails and anchoring of pedestal bases to subfloor.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualification: Access flooring manufacturer must have at least 20 years experiences in manufacturing access flooring systems.

B. Installer Qualification: A company with minimum of 5 years’ experience in the installation of access floor systems of comparable size and complexity.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver flooring components clearly labeled with manufacturer's name and brand designations.

B. Handle and store packages containing flooring in a manner which avoids overloading building structure.

C. The subfloor shall be free of moisture, dust, dirt and other debris. Once installed, the tile floor must be maintained in the same manner.

1.7 Project Conditions

1. The General Contractor and/or Owner shall provide a clean, level, dry subfloor, temperature controlled, and protected from the weather.

B. 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.

C. 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 or others.

**PART 2- PRODUCTS**

2.1 MANUFACTURER

A. Basis-of-Design Product: Subject to compliance with requirements, provide Global IFS Cable Flooring, located in Grand Rapids, MI 49512.

1. 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 1.3 and receive prior written approval by the Architect. The manufacturer shall certify that all panels meet or exceed the stated design criteria.

2.2 MATERIALS

A. Floor Panels: Provide ultra high-strength lightweight concrete with recycled molded PVC sheeting to flex and self-adjust to the existing floor surface. The cable feed-in access flooring panel shall be 2.3 mm thick steel sheet coated with lead free cationic paint (epoxy resin coating type) shall be all concrete surfaces, including those resulting from field cuts, must be sealed with the manufacturer's standard sealer before covering the surfaces with other materials.

1. Base 40 System of Global Cable Floor System on a 23.6” x 23.6” (600mm x 600mm) square module providing 1.57” (40mm) finished floor height from structural floor.

2. Base 40 System providing 2.75” x 1.41” (70mm x 36mm wiring trenches every 11.8” (300 mm).

3. Border 40 system of Global Cable Floor System on a 23.6” x 23.6” (600mm x 600mm) square module providing 1.57” (40mm) finished floor height. Border 40 System can be cut in 2” x 2” (50mm x 50 mm) on so accurate, efficient, and quiet on-site job cutting by knife cutter and fitting for perimeters and around columns.

4. Feed-in 40 System of Global Cable Floor System on 23.6” x 23.6” (600mm x 600mm) square module providing 1.57” (40mm) finished floor height.

B. Panel Finish:

1. Finishing materials are necessary for the System. Do not expose metal on finished top surface of panels. Cover floor panels with carpet tile and vinyl tile installed in the field.

Provide cutouts and cutout closures to accommodate utility systems and equipment inter-cabling. Reinforce cutouts to meet design load requirements.

2. Finish the surface of floor panels with floor covering material as indicated on the contract drawings.

C. Accessories:

1. Ramps: Securely fasten aluminum ramps to the access flooring system and to the structural floor. Include in the construction standard floor system components and custom components as required, and all supports, fasteners, and trim necessary for a finished installation. Step nosings, threshold strips, and floor bevel strips must be cast or extruded aluminum with non-slip traffic surfaces. Slope of ramps must comply with applicable codes and Americans with Disabilities Act (ADA). Design ramps to support the same loads as specified for floor panels.

2. Nosing: Provide 1.5 mm aluminum closure plate and extruded aluminum nosing at exposed edge of floor. Back up the closure plates with aluminum or steel framing braced diagonally, or anchor at bottom to continuous angle.

2.3. Detailed Installation Drawings

A. Submit Detailed Installation Drawings that as a minimum indicate the following:

 1. Location of panels

2. Layout of supports, panels, and in-feed cable cutout locations

3. Ramp framing

4. Sizes and details of components

5. Details at floor perimeter and height above structural floor

6. Method of anchorage to structural subfloor

7. Typical cutout details

8. Panels for electrical outlets and flexible conduit wiring.

9. Description of factory coating

10. Floor finishes

**PART 3 EXECUTION**

3.1 INSPECTION

A. 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.

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

2. Making sure the structure floor complies to the quality not less than flatness (FF) of 25 and levelness (FL) of 20.

B. Do not commence installation of access flooring until subfloor is clean and dry, temperature controlled, and protected from the weather.

3.2 INSTALLATION

A. Install Global Cable Floor at the location in the arrangement shown on the approved detailed installation drawings. The floor system must be complete with all supplemental items and be the standard product of a manufacturer specializing in fixed height low profile raised access flooring systems.

B. Install the floor system in accordance with the manufacturer's instructions. Open ends of the floor, where the floor system does not abut wall or other construction, must have positive nosings, ramps and rigid support. Maintain areas to receive access flooring between 60 – 90 degrees F (16 and 32 degrees C) and between 20 and 70 percent humidity for 24 hours prior to and during installation.

C. Clear out all debris in the area in which the floor system is to be installed. Thoroughly clean structural floor surfaces and remove all dust.

D. Keep the space below the completed floor free of all debris. Before any traffic or other work on the completed raised floor is started, clean the completed floor in accordance with the floor covering manufacturer's instructions.

E. Protect traffic areas of raised floor systems with a covering of building paper, fiberboard, or other suitable material to prevent damage to the surface. Cover cutouts with material of sufficient strength to support the loads to be encountered. Place plywood or similar material on the floor to serve as runways for installation of heavy equipment not in excess of design load capacity. Maintain protection until the raised floor system is accepted.

3.3 ACCEPTANCE

A. 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.

B. General Contractor shall suitably protect the accepted access floor and accessories from damage, contamination or overloading.

C. The General Contractor shall be responsible for the final underfloor cleaning.

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