

FS SERIES SPECIFICATION

SECTION 096900 – ACCESS FLOORING

PART 1 - GENERAL

1.1 Section Includes

- A. Work of this section includes, but is not limited to: access floor panels, floor coverings, understructure and various electrical, data and communication accessories.

1.2 Related Sections

- A. Concrete sealer (by division 3) shall be compatible with pedestal adhesive.
- B. Electrical contractor (Division 26) shall provide necessary material and labor to electrically connect the access floor grounding connectors to the building ground. Grounding connectors provided by Division 26.

1.3 Environmental Conditions for Storage and Installation

- A. Area to receive the access floor shall be enclosed and maintained at ambient temperature between 35° to 95° F, and at humidity level between 20% to 80% relative, and shall remain within these environmental limits throughout installation and occupancy. All laminated floor panels shall be stored and maintained within these limits upon delivery to storage sites. All bare floor panels shall be stored in this environment at least 24 hours before installation begins.

1.4 References

- A. CISCA (Ceilings & Interior Systems Construction Association) - “Recommended Test Procedures for Access Floors” shall be used as a guideline when presenting load performance product information.
- B. Access flooring shall comply with NFPA 75 requirements for access flooring.

1.5 Performance Certification

- A. Product tests shall be witnessed and certified by independent engineering and testing laboratory based in the U.S. with a minimum of five years experience testing access floor components in accordance CISCA “Recommended Test Procedures for Access Floors”.

1.6 Performance Requirements

Pedestals:

- A. **Axial Load:** Pedestal assembly shall provide a minimum 5000 lb. axial load without permanent deformation.
- B. **Overturing Moment:** Pedestal assembly shall provide an average overturning moment of 1000 in-lbs. when glued to a clean, sound, uncoated concrete surface. ICBO number for the specific system or

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structural calculations shall be required attesting to the lateral stability of the system under seismic conditions.

Floor Panels:

- A. **Design Load:** Panel supported on system understructure shall be capable of supporting a minimum concentrated load of 5.6 KN (1250 lbs.) at any location on the panel. This rating signifies that the system will withstand the concentrated load without yielding and be capable of withstanding a minimum of 2 X the design load. Design and ultimate loads are applied to 1 square inch of the panel at the weakest point of the system.
- B. **Uniform Load:** Panel shall be capable of supporting a uniform load of 450 lbs. placed on a one square foot area at any location on the panel with a maximum top surface deflection of 0.060 inches. Panel shall not exceed a permanent set of 0.010 inches, after the load is removed.
- C. **Safety Factor:** Panel supported on actual understructure (the system) shall be capable of withstanding a minimum of (2) two times the design load anywhere on the panel without failure. Failure is defined as the point at which the system will no longer accept the load.
- D. **Rolling Load:** Panel and supporting understructure shall be able to withstand the following rolling loads at any location on the panel without developing a local and overall surface deformation greater than 0.040 inches. Note: wheel 1 and wheel 2 tests shall be performed on two separate panels.
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|----------|------------------------------|-------------------------------|
| Wheel 1: | Size: 3” dia x 1 13/16” wide | Load: 1000 lbs. Passes: 10 |
| Wheel 2: | Size: 6” dia x 2” wide | Load: 800 lbs. Passes: 10,000 |
- E. **Impact Load:** Panel and supporting understructure shall be capable of supporting an impact load of 150 lbs. dropped from a height of 36 inches onto a one square inch area (using a round or square indenter) at any location on the panel.
- F. **Panel Drop Test:** Panel shall be capable of being dropped face up onto to a concrete slab from a height of 36”, after which it shall continue to meet all load performance requirements as previously defined.
- G. **Flammability:** System shall meet *Class A* Flame spread requirements for flame spread and smoke development. Tests shall be performed in accordance with U.L.C. Standard Test Method for Surface Burning Characteristics for Building Materials.
- H. **Combustibility:** Access floor panels shall qualify as noncombustible by demonstrating compliance with requirements of noncombustible test procedure ULC S135/S114.

1.7 Design Requirements:

- A. Access floor system, where indicated on the design documents, shall consist of modular and removable cementitious filled welded steel panels fastened onto, and supported by, adjustable height pedestal assemblies. Pedestal head and panel corner design must provide a positive location and lateral engagement of the panel to the understructure support system without the use of fasteners.

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- B. Panel shall be easily removed by one person with a lifting device and shall be interchangeable except where cut for special conditions.
- C. Quantities, finished floor heights (FFH) and location of accessories shall be as specified on the contract drawings.

1.8A Submittals for Review

- A. Detail sheets, for each proposed product type, which provide the necessary information to describe the product and its performance.
- B. Test reports, certified by an independent testing laboratory with a minimum of five years experience testing access floor components in accordance Cisca Recommended Test Procedures, certifying that component parts perform as specified.

1.8B Submittals for Information

- A. Manufacturer's installation instructions and guidelines.
- B. Manufacturer's Owner Manual outlining recommended care and maintenance procedures.

PART 2 - PRODUCTS

2.1 Support Components

2.11 Pedestals:

- A. Pedestal assemblies shall be corrosive resistant, all steel welded construction, and shall provide an adjustment range of +/- 1" for finished floor heights 6" or greater.
- B. Pedestal assemblies shall provide a means of leveling and locking the assembly at a selected height, which requires deliberate action to change height setting and prevents vibration displacement.
- C. Corrosion resistant steel pedestal head shall be welded to a threaded rod which includes a specially designed adjusting nut. The nut shall provide location lugs to engage the pedestal base assembly, such that deliberate action is required to change the height setting.
- D. Threaded rod shall provide a specially designed anti-rotation device, such that when the head assembly is engaged in the base assembly, the head cannot freely rotate (for FFH of 6" or greater).
Note: This prevents the assembly from inadvertently losing its leveling adjustment when panels are removed from the installation during use.
- E. Corrosion resistant pedestal base assembly shall consist of a formed steel plate with no less than 16 inches of bearing area, welded to a 7/8" square steel tube and shall be designed to engage the head assembly.

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2.1.2 Stringers (Data Centre Only):

- A. 2ft. x 2ft. bolted stringer system shall remain mechanically locked or snapped in place to pedestal locating tabs to provide positive lateral retention and positioning with or without fasteners.
- B. Stringers shall support each edge of panel.
- C. Steel stringer shall have sound deadening gasketing coating.

2.2 Panel Components

2.2.1 Floor Panels

- A. Panels shall consist of a top steel sheet **welded** to a formed steel bottom pan filled internally by a lightweight cementitious material.
- B. Cementitious fill material shall be totally encased within the steel welded shell except where cut for special conditions.
- C. Panel shall have an epoxy paint finish.
- D. Fastening of panels to pedestal heads shall be accomplished by the use of 4 machine screws per panel.

2.3 Acceptable Manufacturers:

Global IFS, Tel 416-675-2400

2.4 Accessories

- A. Provide manufacturer's standard steps, ramps, fascia plate, perimeter support, and grommets where indicated on the contract drawings.
- B. Provide _____ spare floor panels and _____ square feet of understructure systems for each type used in the project for maintenance stock. Deliver to project in manufacturer's standard packaging clearly marked with the contents.
- C. Provide _____ panel lifting devices.
- D. Grounding connectors for Data Centre area, shall be provided by Div. 26.
- E. When applicable provide manufacturer's standard underfloor air systems components (including grilles and diffusers) where indicated on the contract drawings.

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2.5 Finishes

- A. Finish the surface of floor panels with floor covering material as indicated on the contract drawings. Where floor coverings are by the access floor manufacturer, the type, color and pattern shall be selected from manufacturer's standard. **All storage and installation areas furnished with laminated floor panels must be maintained at ambient temperature between 35° to 95° F and at humidity level between 20% to 80% relative and shall remain within these ranges through installation and occupancy.**
- B. Finish the surface of floor panels with an anti-static high pressure covering material. The type, color and pattern shall be selected from manufacturer's standard. Nevamar grade HDM or equal.
- C. High-pressure laminate floor coverings shall have a trim condition that is integral to the tile, and mechanically located in place. Glued or pressure fit trim is unacceptable.
- D. Surface to Ground Resistance of Standard High Pressure Laminate Anti-Static Covering: Average test values shall be below 20,000 Mega ohms (2.0×10^7 ohms), as determined by testing in accordance with the test method for conductive flooring specified in ASTM F150-06.

2.6 Fabrication Tolerances

- A. Floor panel flatness measured on a diagonal: +/- 0.040"
- B. Floor panel flatness measured along edges: +/- 0.025"
- C. Floor panel width or length of required size: +/- 0.015"
- D. Floor panel squareness tolerance: +/- 0.015"

PART 3 - EXECUTION

3.1 Preparation

- A. Examine structural subfloor for unevenness, irregularities and dampness that would affect the quality and execution of the work. Do not proceed with installation until structural floor surfaces are level, clean, and dry as completed by others.
- B. Concrete sealers, if used, shall be identified and proven to be compatible with pedestal adhesive. Verify that adhesive achieves bond to slab before commencing work.
- C. Verify dimensions on contract drawings, including level of interfaces including abutting floor, ledges and doorsills.
- D. The General Contractor shall provide clear access, dry subfloor area free of construction debris and other trades throughout installation of access floor system. Area to receive access floor shall be enclosed and be maintained at a temperature range of 35° to 95° F and a humidity range of 20% to 80% relative. All laminated floor panels shall be stored and maintained in this environment upon delivery to storage sites. Bare access floor panels must be stored in this environment at least 24 hours before installation begins.

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3.2 Installation

- A. Pedestal locations shall be established from approved shop drawings so that mechanical and electrical work can be installed without interfering with pedestal installation.
- B. Installation of access floor shall be coordinated with other trades to maintain the integrity of the installed system. All traffic on access floor shall be controlled by access floor installer. No traffic but that of access floor installers shall be permitted on any floor area for 24 hours to allow the pedestal adhesive to set. Access floor panels shall not be removed by other trades for 72 hours after their installation.
- C. Floor system and accessories shall be installed under the supervision of the manufacturer's authorized representative and according to manufacturer's recommendations.
- D. 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.
- E. Access floor installer shall keep the subfloor broom clean as installation progresses.
- F. Partially complete floors shall be braced against shifting to maintain the integrity of the installed system where required.
- G. Additional pedestals as needed shall support panels where floor is disrupted by columns, walls, and cutouts.
- H. Understructure shall be aligned such that all uncut panels are interchangeable and fit snugly but do not bind when placed in alternate positions.
- I. Finished floor shall be level, not varying more than 0.062" in 10 feet or 0.125" overall.
- J. Acceptance: General contractor shall accept floor in whole or in part prior to allowing use by other trades.