

**WC COMPOSITE CORE SPECIFICATION
SECTION 096900 - ACCESS FLOORING
(FORMER SECTION 10270)**

PART 1 - GENERAL

1.1 Section Includes

- A. Work of this section includes, but is not limited to: access floor panels, factory applied floor finishes, understructure, grommets, cut outs and grounding connectors.

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 55° to 85° F, and at humidity level between 20% to 70% relative, and shall remain within these environmental limits throughout installation and occupancy. All floor panels shall be stored and maintained within these limits upon delivery to storage sites.

1.4 References

- A. CISCA (Ceilings & Interior Systems Construction Association) - "Recommended Test Procedures for Access Floors" shall be used when presenting load performance product information.

1.5 Performance Certification

- A. Product tests shall be witnessed and certified by independent engineering and testing laboratory with a minimum of five years experience testing access floor components in accordance with CISCA "Recommended Test Procedures for Access Floors". Panels shall be randomly selected from job site for Concentrated Load testing.

1.6 Quality Assurance

- A. Install access floor system using manufacturer's own forces or an accredited franchiser installer under the control and responsibility of the system manufacturer. Have a senior, qualified field representative on Site to direct the Work at all working times.
- B. Access floor panels core material and understructure shall be stamped and fabricated by a manufacturing facility that has demonstrated a successful 10-year track record of local installations of similar size and complexity.
- C. Mock Up: Before installation of entire access floor system, provide a 2.4 m x 2.4 m (8' x 8') mock up of the floor system determined by Architect/Construction Manager which serves as the minimum standard for the remaining access floor system delivered to, and installed at the Site. Build such mock up where directed by Architect/Construction Manager. The mock up will be installed prior to issuing a contract to enable the owner and consultants to conduct a comparative review of products.

1.7 Performance Requirements

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1.7.1 Pedestals:

- A. **Axial Load:** Pedestal assembly shall provide a minimum 2272 kg (5000 lb.) axial load without permanent deformation.
- B. **Overturning Moment:** Pedestal assembly shall provide an average overturning moment of 112.98 Nm (1000 in-lbs.) when glued to a clean, sound, uncoated concrete surface. Structural calculations shall be required attesting to the lateral stability of the system under seismic conditions. Provide independent seismic certification from a Professional Engineer registered in the State or Province where the project is located.

1.7.2 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 minimum uniform load of 21.5 kPa (450 lbs./sq.ft.) at any location on the panel with a maximum top surface deflection of 1.5 mm (0.060 inches). Panel shall not exceed a permanent set of .25 mm (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.

Wheel 1:	Size: 3" dia x 1 13/16" wide	Load: 568 kg (1250 lbs.)	Passes: 10
Wheel 2:	Size: 6" dia x 2" wide	Load: 398 kg (875 lbs.)	Passes: 10,000

- E. **Ultimate Rolling Load:** Panel and supporting understructure shall be capable of withstanding the following rolling load at any location on the panel without incurring damage. Damage is defined as significant dishing or surface deformation that would require panel warranty replacement in an actual installation.

Wheel 1:	Size: 3" dia x 1 13/16" wide	Load: 727 kg (1600 lbs.)	Passes: 10
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- F. **Impact Load:** Panel and supporting understructure shall be capable of supporting an impact load of 57 kg (125 lbs.) dropped from a height of 1 meter (36 inches) onto a 25mm x 25mm area (1 sq. inch) at any location on the panel.

- G. **Flammability:** System (not including floor covering) shall meet the following flammability requirements when tested in accordance with CAN/ULC S102.2. Provide independent test reports as part of submittal.

Flame Spread: 5 Smoke Development: 15

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- H. **LEED:** The Camino Raised Access Floor System contributes towards credits for LEED-NC certification including:
MRc4 Recycled Content, 1-2 points
EQc2 Increased Ventilation, 1 point
EQc4.1 Low Emitting Materials, 1 point
Only non-toxic "green" adhesives and paints shall be used for fabrication and installation.

1.8 Design Requirements:

- A. Access floor system, where indicated on the design documents, shall consist of modular and removable steel clad panels with wood core supported by adjustable height pedestal assemblies.
- 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.

1.8.1 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.

1.8.2 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

2.1.1 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. Pedestal head shall be designed with locating tabs and integral shape to interface with the panel for positive lateral retention and positioning without fasteners. Pedestal head shall be fabricated with integral sound deadening gasket.
- D. Hot dip galvanized 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.

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- E. 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).
- F. Hot dip galvanized pedestal base assembly shall consist of a formed steel plate with no less than 16 square inches of bearing area, welded to a 7/8" square steel tube and shall be designed to engage the head assembly.

2.1.2 Stringers (Data Centre Only):

- A. 2 ft. x 2 ft. 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 conductive sound deadening gasketed coating.

2.2 Panel Components

2.2.1 Floor Panels – Office Area (Carpet finish by others):

- A. Panels shall be manufactured with a high density composite wood core material encased in steel.
- B. Panel shall have a durable non-corrosive finish treatment to steel surfaces.
- C. Corner of panel shall have a locating tab and integral shape design to interface with the pedestal head for positive lateral retention and positioning with or without fasteners.
- D. Fastening of panels to pedestal heads shall be accomplished by the use of 4 machine screws per panel to a stringerless understructure.

2.2.2 Floor Panels – Data Centre:

- A. Panels shall consist of a top steel sheet and formed steel bottom pan encasing a high density wood based composite core material.
- B. Panel shall have a durable non-corrosive finish treatment to steel surfaces.
- C. Steel Airflow Panels: Perforated steel airflow panels designed for static loads shall be interchangeable with standard field panels and shall be capable of supporting a concentrated load of 1000 lbs. All panels shall have 20% open surface area.
- D. Finish the surface of floor panels with a static dissipative high pressure covering material. The type, color and pattern shall be selected from manufacturer's standard. Nevamar grade HDM or equal.
- E. High-pressure laminate floor coverings shall meet requirements of NEMA LD3, and shall be Grade HDS (1/16"/1.5mm).
- F. 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
- G. Surface to Ground Resistance of Standard High Pressure Laminate Anti-Static Covering: Average test values shall be within the range of 1,000,000 ohms (1.0×10^6) to 20,000 megohms

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(2.0×10^{10} ohms), as determined by testing in accordance with the test method for conductive flooring specified in Chapter 3 of NFPA 99, but modified to place one electrode on the floor surface and to attach one electrode to the understructure. Resistance shall be tested at 500 volts at 50% RH and 72° F

2.3 Acceptable Manufacturers:

Camino Modular Systems Inc., 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 5 spare floor panels, 5 spare pedestals and 20 spare screws of each type used in the project for maintenance stock. Deliver to project in manufacturer's standard packaging clearly marked with the contents.
- C. Provide 2 panel lifting devices.
- D. Grounding connectors for Data Centre area, shall be provided by Div. 26.
- E. Provide manufacturer's standard ramp, step and handrail kits. Refer to drawings for locations.

2.5 Finishes

- A. Finish the surface of floor panels with floor covering material as indicated on the contract drawings. Where floor coverings are factory applied by the access floor manufacturer, the type, color and pattern shall be selected from manufacturer's standard. Provide bolted stringer understructure for any factory applied floor coverings such as vinyls or laminates.

2.6 Fabrication Tolerances

- A. Floor panel flatness measured on a diagonal: +/- 0.030"
- 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: +/- 0.020"

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.

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- D. The General Contractor shall provide clear access, dry clean 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 55° to 85° F and a humidity range of 20% to 70% relative. Access floor panels must be stored in this environment at least 24 hours before installation begins.

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.
- 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. A clean subfloor shall be turned over to the access floor installer prior to commencement of the access floor installation. Access floor installer shall keep the subfloor clean as the 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.
- K. Allow for return visit to perform final inspection and adjustments before turn over to owner/tenant. General Contractor to initiate inspection prior to installation of carpet and furniture.

End