

**Penta Floor**  
ACCESS FLOORING

*Nō1 in*  
**Africa**



**GREEN BUILDING COUNCIL** SA

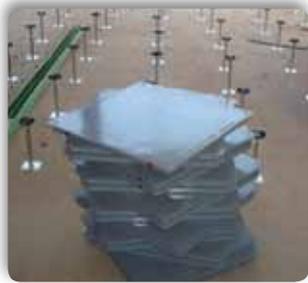
MEMBER ORGANISATION - 2012



# Index

- 1 - Index
- 2 - Introduction & Pentafloor Solution
- 3 - Understructure Systems
- 4 - Why use Pentafloor
- 5 - Cement Filled Access Floor Panels
- 6 - Manufacturing & Quality Control
- 7 - Grating Panels & HPL
- 8 - Accessories & Track Record
- 9 - Penta Green (Green Building)
- 10 - Penta Green (Green Area)





# Introduction

Pentafloor is one of the leading suppliers of high quality Access flooring in South Africa. Our strategic alliances with our manufacturing channel, guarantees that we can deliver a cost effective superior solution to your access flooring requirements.

Experts have applied their individual experience and expertise into the design and manufacture of our unique patented products. Over 500 000 square meters of our Access flooring is produced and installed all over the globe annually, in countries including South Africa, Spain, Dubai, USA, Canada, Australia, Japan, Singapore and Hong Kong.

Our products are produced in an ISO 9001 certified production facility. There are strict quality controls, on all components to ensure our product meets the highest international standards at all times.

## Pentafloor Solution

The FS-Panel system, is constructed of a welded structural steel assembly designed to accommodate ultimate and dynamic loads. Its specially formulated cementitious fill and powder coated epoxy finish gives the FS panel a quiet and very solid feel underfoot. Panel systems are available in 600mm x 600mm.

Our extensive range of panels and under structure systems have been designed to ensure that there is a solution for your particular requirement.

Pentafloor's high strength stringers deliver unprecedented strength because of their unique solid tube design.

# Understructure Systems

Pentafloor offers an extensive range of understructure systems to cater for all your requirements, these include.

## Posi Cap Screw Down System

The Posi Cap Screw Down System is ideally suited for installations in general office applications, and features galvanized pedestals that are fastened at the corners ensuring the structure is both ridged and stable. Ideally suited to loose lay carpet tile or vinyl finishes.

## Bolt on Stringer System (with Bare panel or HPL finish)

The Bolt on Stringer System, is ideally suited for installations where high finished floor heights are required, in office areas for heavy equipment, and pressurised environments. The system uses stringers to add lateral stability and form a solid base that holds the floor and pedestal heads in place when panels are uplifted.

## Free Standing System

The Free Standing System is ideal for a general office application. Our specially designed pedestal heads would be finished off with a gasket that is electrically conductive and is fitted to the top of the pedestal head. The advantage is easy access (no screws), and is suited for loose-lay and permanently bonded finishes.

## Low Lock Screwdown System

The Low Lock Screwdown System has an identical application to the above system and is ideally suited for general office application where height restrictions apply. This system has been specifically designed to facilitate a finished floor height of 80mm -140mm.

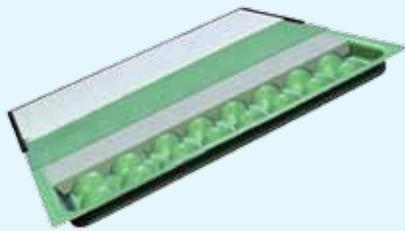
# Why use Pentafloor ?

## Our Solutions To Warped Panels

High strength cement fill, along with special designed high strength steel corners, gives Pentafloor's product the best corner panel loading in the industry.

Most widely used panel design in the world with full strength corners where it is needed most, as well as undergoing rigorous performance testing.

The point of failure or collapse is the single most important indicator of performance. Be sure to look at the ultimate distributed load and concentrated load value when selecting an access floor panel for your application. However, due consideration must be given to ultimate distributed load and concentrated load.



High Strength Corners

## High Strength Corners

Our Panels come with 90 degree drawn steel beam corners, filled with high strength cement. Any load placed on the panel will be transferred to the panel corners before traveling through the pedestals to the sub floor.

Even though our deep drawn beam corner is a difficult manufacturing process, it is done in order to achieve the ultimate loading capacity necessary. This prevents upward bending of corners or dishing of panels. Cement is injected by high pressure pump to ensure complete saturation of the panel.

The Strength of the corner areas of the panel is the ultimate determining factor for an excellent raised floor system.

## Ultimate Load Capacity

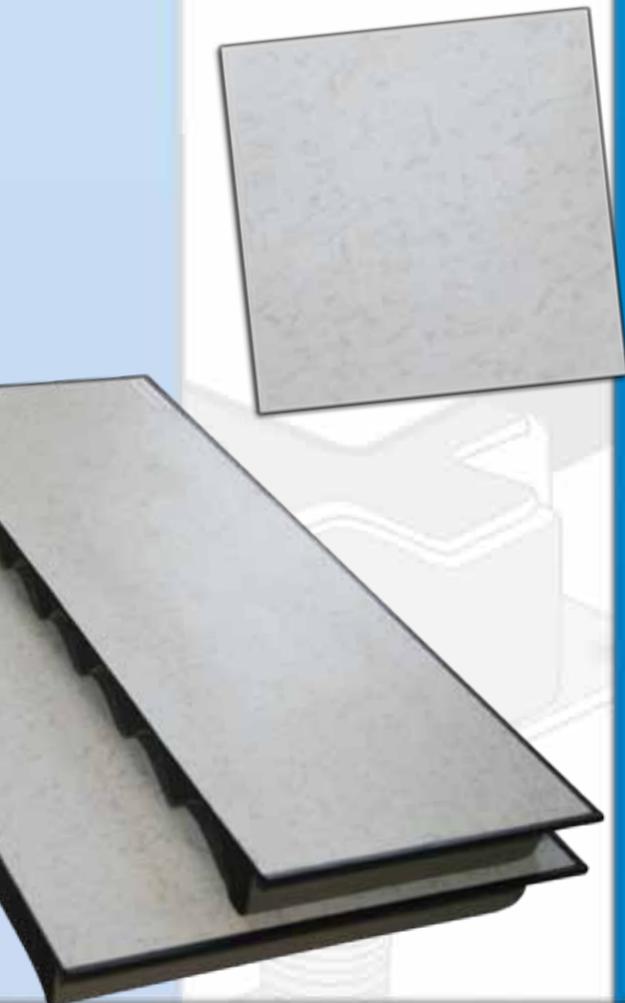
Ultimate load capacity is defined as the point at which panel failure occurs. Our panels are designed and built to a minimum safety factor of 2.5 x design load. This prevents failure that could lead to injury or massive equipment damage.

**Pentafloor**  
ACCESS FLOORING

# Panel Loading Specifications

Panel	System	Weight	(CL)	(UDL)	(UL)	Rolling Loads		Impact
			Concntrated Load	Uniform Distributed Load	Ultimate Load	10 Passes	10,000 Passes	
FS 800	Corner Lock	41kg/m <sup>2</sup>	3.5KN *(350 kg)	9.6KN *(960 kg)	12.5KN	3.6KN	2.7KN	40Kg
	Bolted Stringer	46Kg/m <sup>2</sup>	3.5KN	9.6KN	12.5KN	3.6KN	2.7KN	68Kg
FS 1000	Corner Lock	41kg/m <sup>2</sup>	4.5KN	15KN	17KN	3.6KN	2.7KN	40Kg
	Bolted Stringer	46Kg/m <sup>2</sup>	4.5KN	15KN	17KN	3.6KN	2.7KN	68Kg
FS 1250	Bolted Stringer	51Kg/m <sup>2</sup>	5.7KN	20KN	22KN	4.5KNN	3.6KN	68Kg
	Corner Lock	51Kg/m <sup>2</sup>	5.8KN	23KN	25KN	5.7KNN	4.5KN	68Kg
FS 1500	Bolted Stringer	56Kg/m <sup>2</sup>	6.8KN	23KN	25KN	5.7KNN	4.5KN	68Kg
FS 2000	Bolted Stringer	61Kg/m <sup>2</sup>	9.1KN	26KN	28KN	6.8KNN	5.7KN	68Kg
FS 2500	Bolted Stringer	68Kg/m <sup>2</sup>	11.4KN	29KN	31KN	6.8KNN	5.7KN	68Kg

\*(1 KN = 100KG)



## High Pressure Laminate

Our product is finished with a high pressure laminate that is used in 90% of computer room applications and is by far the most widely used for all applications. The laminate is solid tile 600mm x 600mm and unlike vinyl provides a uniform finish with no joints. HPL has the advantage of not requiring wax or maintenance that could create static. (HPL PROPERTIES ON REQUEST)

## Anti Static Access Floor Features

- Fire proof steel sheet construction
- Light gloss epoxy coated surface
- High load capacity
- Anticorrosive
- Hard wearing



HPL Panel With Printed Edge Trim (Unique Design Exclusive to Pentafloor)

Finished with a decorative anti-static high pressure laminate panel that is easy to clean. It is also very hard wearing with an attractive finish.

Offers accuracy with regards to height, is interchangeable, with simple installation and disassembly and is easy to maintain.



## Manufacturing

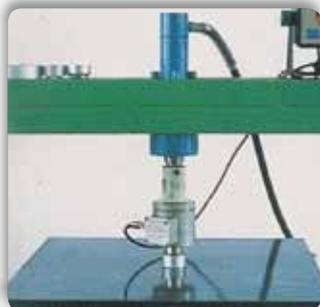
Cold rolled steel sheets are punched and spot welded to produce the panel. It is then phosphorated and coated with EPOXY powder and the interior cavity is injected with a foamed cement.

A fire proof HPL hard wearing or conductive PVC tile is then fixed to the plate. All edges can be finished with conductive PVC edges on request.



## Applications for Use

- Large Computer Rooms
- Telecommunications Centres
- General Offices
- Banks
- Laboratories
- Call Centers
- Server Rooms
- Casinos



## Quality Control

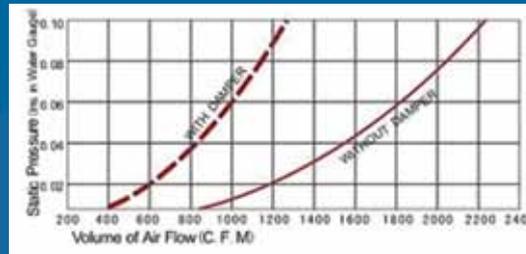
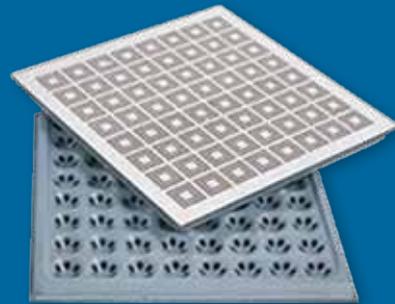
The quality of our products is the foundation for our guarantee and instills confidence in our customers. Our product undergoes a stringent quality control process that includes testing with advanced analytical equipment in a dedicated testing center. This guarantees our products comply or exceed industry standards with a 100% pass rate. All products are manufactured in an ISO 9001 accredited facility.



# Grating Panels



Perforated Panels ▶



Available in Sizes  
600X 600

Grating Panels

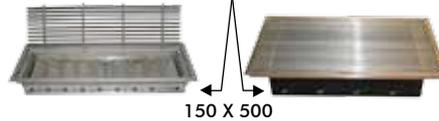


Price on request &  
minimum quantities applies

## Accessories

Grilles with Dampers OBD

Dampers Open ▶ Dampers Closed ◀

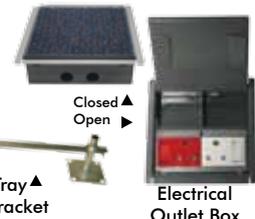
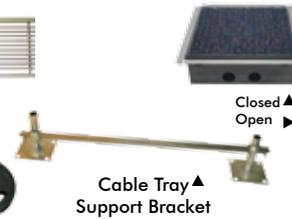


150 X 500

A/C Grilles



600 X 600



UNISA University of South Africa



Mercedes-Benz



MAPONYA MALL



# The Pentafloor Track Record

Pentafloor's Product range has been successfully implemented all over the globe and is used by top blue-chip clients and government institutions to name but a view:

- **Outsurance Call Centre (Phase 2 & 3) 15 000 m2**
- **ABSA**
- **Unisa 7800m2**
- **Wits Univ. Chamber of Mines 4000m2**
- **O.R. Tambo International Airport**
- **Dimension Data**
- **Telkom**
- **Infineon Technologies**
- **Volkswagen**
- **Siemens**
- **Samsung**
- **Mobile Centres**
- **Universities**
- **Police Centres**
- **Nelson Mandela Stadium**
- **Maponya Mall Soweto (SA Gov.) 1500m2**
- **FNB Firstrand logo**
- **Mont Blanc Prop. (Illovo-The Edge) 4000m2 ,**
- **Hemingway Casino - East London 500m2**
- **SASOL**
- **Toyota, BMW**
- **Kellogs**
- **Nestle'**
- **Dept of Tourism**
- **Econet Mobile Network Service Provider - Harare**
- **Waterkloof Airforce Base**
- **Botswana High Court**

Our High tech Installations and high quality product has a superb track record for durability versatility and ease of use.



# Green Building

## “for a sustainable future”

Creating an effective **Green** Environment within a building means responding both to the requirements of nature, whose resources, as we all know, are becoming increasingly limited, and to the unique array of requirements of the employees who utilize the building on a daily basis – buildings in which they spend a significant deal of their time due to the fact that these buildings form the cornerstones of their lives in that their occupations are precisely the factor that provide them with their means with which to live. Thus, the quality of the workplace becomes a major determinant in the quality of an employee’s life.



**Penta Floor’s Access Flooring design cuts costs by means of utilizing underground space by means of an Underfloor Service Distribution network consisting of:**

- Underfloor Modular Wiring and Cabling
- And an underfloor Air system



**Penta Floor’s Underfloor Service Distribution Network provides a cost effective solution to all conventional building design difficulties such as:**

- Running wiring and cabling in walls and furniture is rigid and expensive

**Access Floorings’ modular ‘plug and play’ connectors provide point of use termination so that only terminals that will be used are installed.**

- Rigid, fixed ductwork requires slow, labor-intensive installation

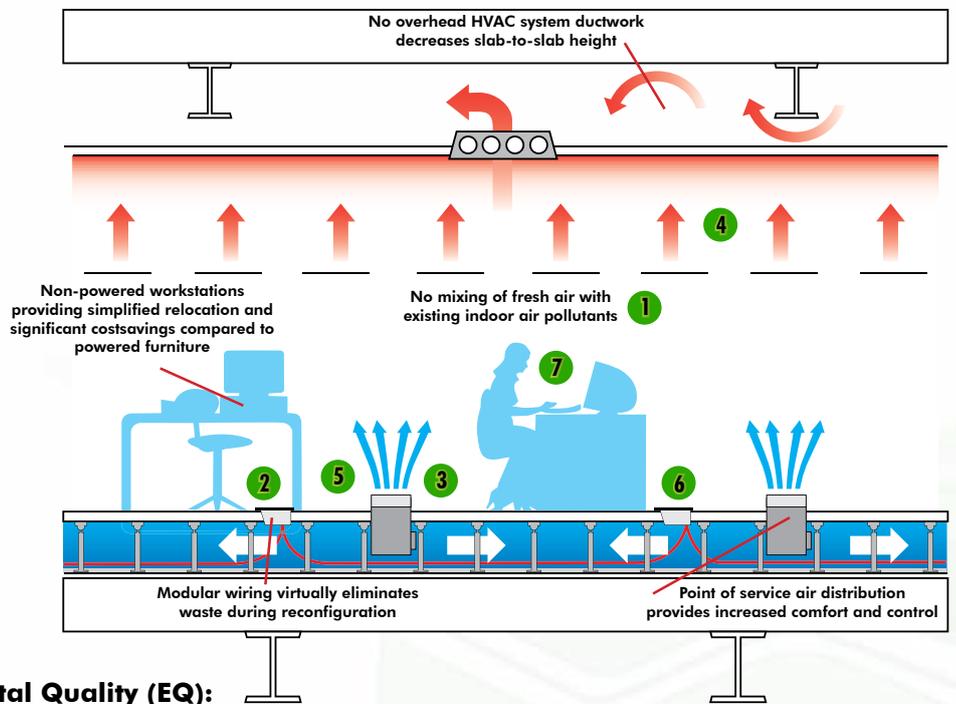


Using the space beneath the floor for air distribution is faster to install and requires minimal ducting since the entire space is used as the service plenum.

Conventional construction requires a large ceiling void of space for fixed service pathways.

Using underfloor service distribution can eliminate wasted space and reduce slab-to-slab height, significantly reducing initial building material costs.

# GREEN Building



## Green Area Indoor Environmental Quality (EQ):

- This area focuses on 4 main interrelated categories, each carrying with them their own unique benefits but ultimately operating as a whole to create the Ideal Indoor Environment. These 4 categories are as follows:

- 1 • EQ Category 1 – Increased Ventilation**

  - A variable Air Volume UFAD system provides higher rates of outdoor air to the breathing level of the occupied space (fresh air from below directly to the occupants' six-foot breathing zone). As fresh air enters the zone it replaces existing contaminated air (rather than diluting it). Pollutants and stale air in the zone are carried to the ceiling by natural convection and removed through return outlets.
- 2 • EQ Category 2 – Controllability of Systems**

  - By locating adjustable floor air diffusers in an access floor, occupants gain control over volume and direction of air flow and occupant control is easily maintained when layouts change because floor panels with diffusers are easily relocated.
- 3 • EQ Category 3 – Thermal Comfort**

  - Thermal comfort is enhanced by several major benefits of an Underfloor Air Delivery system. These include:
    - Efficient heat removal**
      - UFAD supplies air from floor diffusers, which creates an upward flow, efficiently forcing air out of the zone that's been heated by people turn outlets. This system is considerably more efficient than the overhead system which mixes cool air with heated air near the ceiling and forces it down to the occupied zone before it is exhausted.
- 4 Air Velocity and Cold Spot Reduction**

  - UFAD systems discharge cool air at higher temperatures (60-65°F), and at lower velocities than overhead systems. Therefore, the likelihood of occupant discomfort due to high air speed and cold spots is minimized.
- 5 Comfortable proximity**

  - The use of higher temperatures and lower velocities allows diffusers to be located nearer to occupants for optimal personal comfort. Diffuser locations are easily changed to suit personal preferences.
- 6 Occupant control**

  - UFAD allows control over the volume and direction of air flow in the immediate workspace thereby increasing occupant satisfaction with thermal conditions.
- 7 • EQ Category 4 – Daylight and Views**

  - A good strategy to maximize daylight views is to increase window area and height. Integration of access floors with UFAD and underfloor cable distribution facilitates this by reducing the ceiling cavity space allocated for supply ductwork and cables, thereby allowing the ceiling to be raised and window heights to increase without increasing a building's height.

