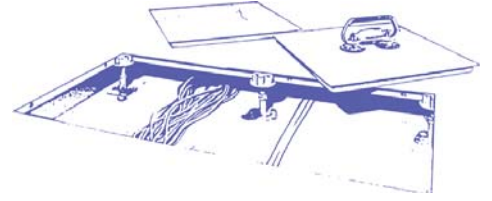


BUILDING SYSTEMS



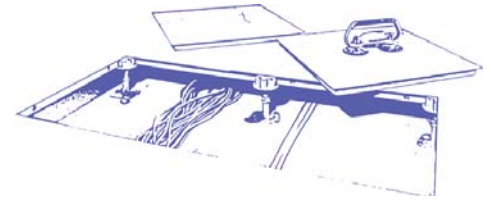
RAISED ACCESS FLOOR EXPERTS

WHY USE OUR RAISED ACCESS FLOOR SYSTEMS?

Building Systems™ offers our clients worldwide the supply and installation of our exclusive range of ASP™ Raised Access Floors. ASP™ products feature industry leading designs advancing the design and functionality of the modern raised access floor system. With continual product review and development you can feel confident that you and your project will always receive economical, functional and technologically advanced raised access floor systems.

ASP™ Raised Access Floors *'when it has to be perfect'*.

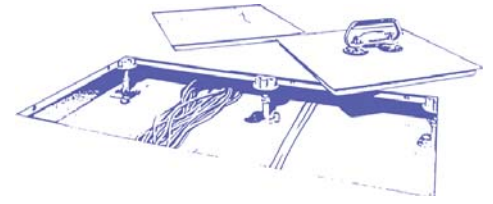
BUILDING SYSTEMS



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Below is a comparison of other manufacturers raised access floor systems and why the ASP system provides you with a more advanced and functional raised access floor system.

PANEL TYPE COMPARISON CHART		
Criteria	Panel Types	
	Woodcore/Calcium Sulphate Panel	ASP™ Steel Cementitious Panel
1) Dynamic Loading	Not designed for both rolling loads and pedestrian foot traffic.	Meets all dynamic loading criteria. Full compliance to AS5154 and MOB PF 2 PS.
2) System Weight	Average 33kgs/m ²	Average 36.5kgs/m ²
3) Structural Integrity with cut-outs	Needs pedestal reinforcement because of the design of the panel.	Retains its structural integrity even when cut for service outlets.
4) Material Composition	Compressed chipboard resin-organic material deteriorates with age.	Inorganic material.
5) Combustibility	Combustible	Non-combustible
6) Safety Factor	Complete failure instantly when overloaded/catastrophic failure	Partial failure shown with deformation of panel when overloaded/ no catastrophic failure.
7) Moisture/ Humidity	Panels expand, deteriorates rapidly in high humid environment.	No effect.
8) Termite	Possibility of attack by termites. May contain formaldehyde.	Not affected.
9) Ease of cutting	Panel can be cut easily but must be properly sealed when exposed.	Can be cut easily with any standard tools. No chipping or breaking occurs during cutting.
10) Loading Impact	Panel will punch through upon heavy impact load.	Can withstand heavy impact loads without catastrophic failure.
11) Dimensional Stability	Not stable	Stable
12) Panel – to – pedestal Integration	Non-engineered system. No self alignment, positive positioning or lateral retention/stability.	Specially engineered system to self aligning and to provide positive positioning and lateral retention/stability.



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ASP STEEL CEMENTITIOUS PANEL DESIGN vs. WOOCORE/CALCIUM SULPHATE PANEL DESIGN

Advantage Summary

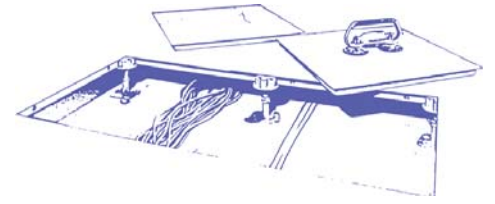
The ASP steel cementitious panel system has specific design features that differentiate it from traditional woodcore and calcium sulphate manufactured products. These features are outlined below:

Steel and lightweight cement material constituents provide complete non-combustibility, zero flame spread, no smoke, even when panel is cut for jobsite conditions. Steel and cement materials need no chemical treatment to resist fungi, molds, insects or other vermin as they are naturally unaffected. Contain no formaldehyde or other toxic materials. Structural integrity and dimensional stability is completely unaffected by natural temperature and humidity swings within an office environment as these materials do not absorb moisture and their coefficient of thermal expansion is much less than woodcore and calcium sulphate materials.

Common Design for Multiple Applications, the same panel design is used for bare panel applications such as office floors, data centers and industrial environments. Data centre applications are accommodated by providing a laminated floor finish such as HPL. In addition, the same panel design is also used as a hollow shell for complete dust and particulate free applications required for certain sensitive electronic equipment.

Multiple Strength Grades of panels are accommodated by simply increasing the steel thickness of the bottom and top sheet materials. Strengths ranging from 9.4kN to 24kN are available with only a 1.9mm change in overall height allowing them to be placed in the same under structure system with minimum transition height difference.

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Welded Construction provides superior dimensional stability and electrical continuity over glued together construction as used in woodcore and calcium sulphate panels. Welded construction provides greater deflection stability as it does not exhibit “sagging” over time.

Unique patented Integral edge trim our built in edge protection treatment for high pressure laminate (HPL) finishes eliminates the possibility for edge trim failure and provides superior edge protection.

Unique patented Positile carpet system providing one to one on grid modular carpet installation with no adhesive is supplied as standard on all ASP steel cementitious panels.

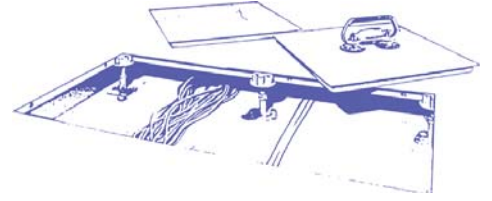
Superior Ultimate Load performance, the ultimate load performance of the ASP steel cementitious panel is approximately 30% greater than traditional woodcore and calcium sulphate products.

Superior surface protection, ASP panels are not susceptible to ‘white rust’ under humid environments. ASP panels do not exhibit zinc whiskers causing possible contamination issues in sensitive data centre environments as do electro galvanised steel coatings.

Precision size, our panel is manufactured to finer size tolerances offering superior fit and minimum gaps thus reducing air leakage over less toleranced woodcore and calcium sulphate products.

Positive positioning with or without cornerlock fastening. ASP’s unique pedestal head design provides superior positioning such that panels can be installed with or without corner lock fasteners allowing superior flexibility for areas within an installation that require frequent access.

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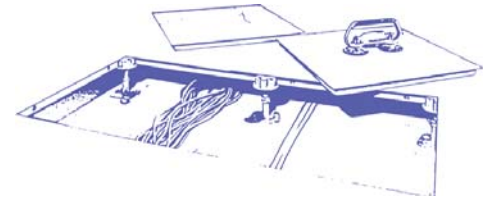


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Universal understructure support system provides for a freestanding, cornerlock, screw and bolted stringer system at any location without affecting the finished floor height.

Seismic resistance of the floor system is improved due to the “nesting” of the floor panels within the pedestal head vs. the woodcore and calcium sulphate panels sitting on top of the pedestal head.

Advanced stability is achieved through our custom engineered pedestal cornerlock system. The ASP steel cementitious panels systems will NEVER produce rocking panels or lipping between adjacent panels which is a commonly exhibited problem with all woodcore and calcium sulphate panels systems.



RAISED ACCESS FLOOR EXPERTS

TECHNICAL DATA REVIEW

ASP STEEL CEMENTITIOUS RAISED ACCESS FLOOR SYSTEM

The ASP UP-SF series steel cementitious raised access floor system features a 600mm x 600mm x 35mm pressure molded and spot welded panel. The panel features a range of surface finishes with an anti corrosion phosphate priming coat and durable epoxy powder coat. The system comes complete with the ASP sound deadening and expansion joint gasket system[®].

The understructure system features an industry leading design with a die cast metal pedestal head.

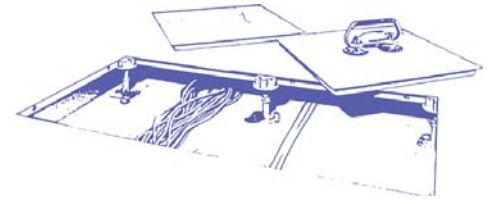
The deflection of an ASP Steel Cementitious Panel under a 450kg concentrated load is less than 2.0mm. Permanent set is very low at 0.0254mm. These deflections and permanent set figures are considered the benchmark for the access floor industry throughout the world. Woodcore and calcium sulphate panels will offer similar deflection figures under load but have much lower ultimate strength and resistance to impact loads.

The ASP panel has a factor of safety of 3.7.

A woodcore and calcium sulphate panel is inherently stiff but has a low ultimate load compared with a steel cementitious panel. A Woodcore and calcium sulphate panel's mode of failure is also different in that it will fail more suddenly under overload conditions than a steel cementitious panel. A steel cementitious panel will only show signs of distress by deforming leading to a safer gradual failure mode.

The failure load of the ASP UP-SF panels range from 16.9 to 31.2kN at the centre of the panel over a 25mm² indenter. This gives a factor of safety of 3.75 on the working load. Many panels from other manufactures are designed with a factor of safety of 2.

BUILDING SYSTEMS



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The electrical resistance of an ASP raised access floor system is less than 1 ohm from any part of the panel to any point on the understructure. This figure is from the bare panel. The addition of any surface finish will change the conductivity from the walking surface of the floor; this is dependent on the type of surface finish used. A huge range of anti-static surface finishes are available which can be factory applied to the panel.

The ASP UP-SF panel system is such that there are never any small unstable pieces of floor panel. The design of the ASP pedestal ensures all small edge cuts are retained either by screws or by the unique interlock between the ASP pedestal head and the panel corner.

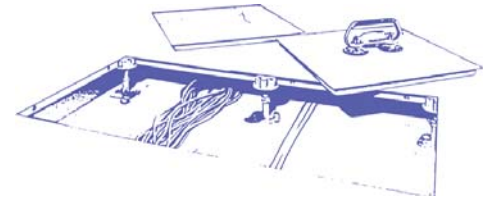
The ASP UP-SF panels are cut on an ordinary bandsaw with a normal metal cutting blade. The cutting operation is as fast and simple. Woodcore and calcium sulphate panels produce much more dust when cut than the ASP UP-SF panel. The cement infill used does not flake and has less dust residue than a woodcore and calcium sulphate panel. The future edges of the cutout woodcore and calcium sulphate panels are much easier to damage and also very easy to chip due to the fact they are not protected by the more substantial steel casing design of the ASP UP-SF panel.

The ASP UP-SF panel is overall a very strong panel because of its waffle profile. The ASP UP-SF has the added benefits of an engineered all steel shell which is welded together at the top of each dome and all along the edges.

The ASP panel CANNOT fail by delaminating, a problem with woodcore and calcium sulphate panels.

All woodcore and calcium sulphate panels have a glued on top and bottom sheet. The edge trim is also glued to the edge of the panels. Further to this, the shape of the ASP UP-SF panel bottom pan ensures that the core of cut panels retains its integrity right to the edge of the panel, even when cut.

BUILDING SYSTEMS



RAISED ACCESS FLOOR EXPERTS

Oversize panels are required with woodcore and calcium sulphate panel systems as the panel is gravity fixed to the pedestal head. The larger panel is required for the edge pieces due to the lack of positive retention of the panel due to the design of the pedestal to panel interface.

ASP steel cementitious panels are the preferred system for general office floors, high traffic areas, and spaces which need a high level of function and future flexibility.

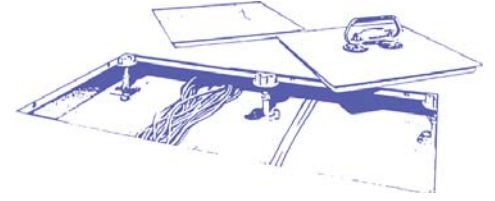
This is due to the specialised design of the system ensuring that the panels are positively located and screw fixed to the pedestal head on each corner. An inherent problem associated with raised access floor systems in which the panels are gravity fixed to the pedestal head is that over time no matter how good the quality of panel and system or installation slight rocking of the panels can and generally does develop in high traffic areas.

This can be attributed to many factors including building movement, general and wear and tear of the panels, or slight unnoticeable movement of the panel on the pedestal head. The installation method of panels which are gravity fixed at times requires the use of thin packing strips and over time these strips can wear, fall out or indent the pedestal gasket if the panels are removed and installed in different positions or rotated rocking will occur.

Installing the ASP UP-SF panels which are screw fixed to the pedestal in each corner eliminates any potential problems associated which rocking or lipping of the panels. The panels will NEVER rock and will remain in there original installed state throughout the entire life of the floor system.

The ASP UP-SF system is completely water proof. All woodcore and calcium sulphate panels will experience some effects when exposed to moisture or water, the ASP UP-SF is not affected when exposed to moisture or water.

BUILDING SYSTEMS



RAISED ACCESS FLOOR EXPERTS

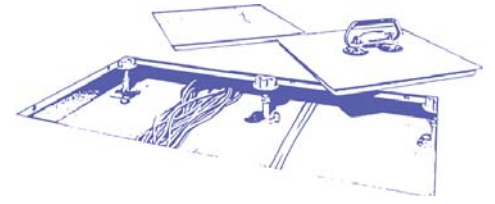
ASP steel cementitious systems are much faster to install and more robust than wood core systems. Our installers typically can install 200 to 300 more UP-SF panels per shift than our woodcore and calcium sulphate panels. We are confident in the advantages to be gained in both the speed of installation, the quality of the installed floor and the usability of the floor for service trades, tenants and the building owner by using our ASP UP-SF series raised access floor systems.

Removal of the panels once installed is easy with the 4 screws fast and simply removed, the special pedestal gasket of this system remembers the position of the panel so that even if another panel is fixed in this place the floor will return to its original installed state every time.

The floor system is ultra quiet with a very solid feel underfoot due to pedestal design incorporating sound deadening gaskets with a series of isolating bushes and a movement isolating insert in the pedestal assembly. A testament to our system is when most people walk on our ASP UP-SF panels there is no indication given that there is a raised access floor underneath.

A problem that needs to be addressed when installing woodcore and calcium sulphate panels that are held in place by gravity, is that the panels may lock or rub together creating a 'squeaking' noise if installed without correct tolerance or expansion joints. Our ASP UP-SF system is designed with unique panel expansion rebates on all 4 corners of the panel which match the isolating spacers on top the pedestal gasket. This allows the floor to be installed without ever requiring expansion joints and ensures the panels will never become locked. Providing a floor system with a much longer life span than any gravity fixed system.

BUILDING SYSTEMS



RAISED ACCESS FLOOR EXPERTS

Our ASP UP-SF panels come standard with our special posi-tile system. The posi-tile system consists of 4 specially constructed plugs installed in the steel panel. Buttons which match the plugs are then glued onto a 600 x 600mm carpet tile. The tile will then lock into position when the buttons are pressed into the plugs. The installation and removal of the carpet tiles is extremely easy.

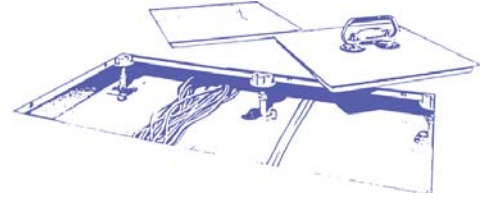
By matching the carpet tile size to the raised access floor panel size panel removal is simple as one carpet tile is removed for every panel. With the standard 500 x 500 tiles or smaller tiles much more carpet has to be removed in order to remove on panel.

An advantage of the posi-tile system is that there is no adhesive ever required to secure the carpet tile to the panel. This eliminates gluing the carpet to the bare panel with messy adhesives, which create extra problems and must be removed from the panel by scraping if any dust comes in contact with the adhesive or when the carpet is replaced.

In an individual tenant fit out project there will be a multitude of different sub-contractors fitting out premises once the raised access floor is installed. Our steel cementitious system provides a very robust and forgiving system which can absorb a higher degree misuse than the woodcore and calcium sulphate systems supporting high rolling loads and creating strong work platform for the other trades.

The ASP UP-SF system is recognised by AS1530, MOB PF2 PS, BS EN12825 and CISCA as being a completely NON COMBUSTIBLE system. The ASP UP-SF system eliminates the need for fire rated cuts in the panel as the strong steel shell and cementitious infill provide no fire hazard.

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RAISED ACCESS FLOOR EXPERTS

We believe that ultimately our ASP UP-SF raised access floor system will deliver a better matched, longer lasting, more functional and higher quality raised access floor system for your project.

To arrange for a samples or a mockup display to be constructed at your site please do not hesitate to contact the team at Australia Gulf Building Systems.

We look forward to sharing future success together on your next project.

Regards,

William Hinds
Managing Director
Australia Gulf Building Systems