

Testing and Frequently Asked Questions



Understanding the Specifications

Before we can design the layout and functionality of an access floor we must first determine the load capacity and tolerance. To do this we must ask:

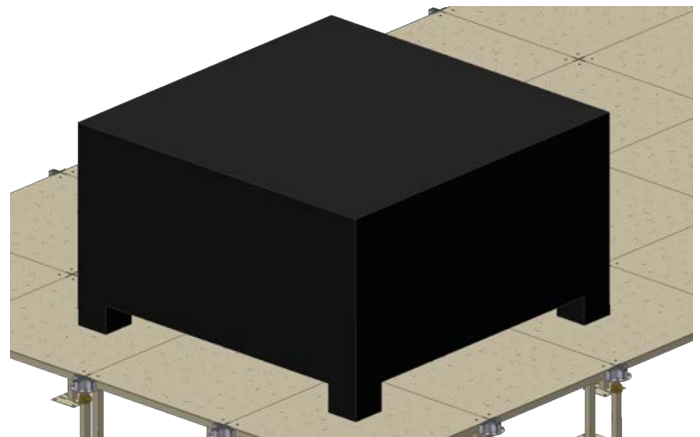
1. What will the floor be used for? i.e. data/power/plenum
2. What is the environment and purpose of the building? i.e. general office area, gaming area, education facility etc
3. What equipment if any will be placed or rolled onto the floor on a routine basis? i.e. racks, safes, cabinets etc
4. Are there any foreseeable changes, that will alter the concept of the original floors? i.e. a small computer room being changed into a heavy duty equipment data room

Once these questions have been resolved, we may then select the loading grade of the panel. But in order to understand the different load tolerances, we must define what loads the access floor and pedestals will incur.

Concentrated Load

The maximum deflection and permanent set of an access floor panel under load. When testing for a panel's concentrated load, a 25 x 25mm load is applied onto the surface of the panel at its weakest point. The panel deflection and permanent set is measured by recording the indenter movement.

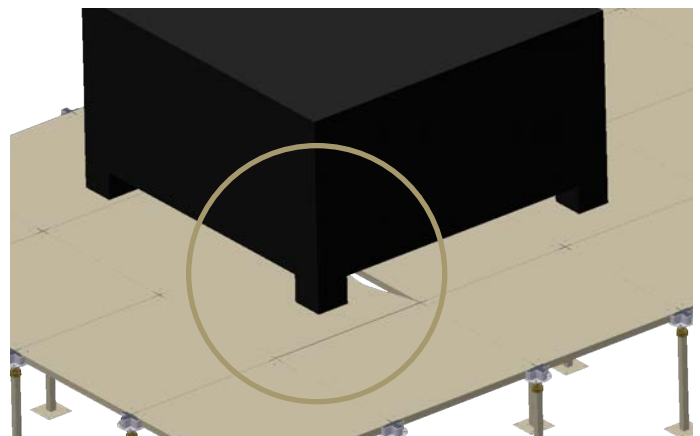
In a typical office building scenario, concentrated loads are typically imposed by stationary furniture and equipment with legs.



Ultimate Load

The Maximum load applied onto the panel without failure. When testing for a panel's ultimate load, a concentrated 25 x 25mm load is applied onto the surface of the access floor panel and this load is increased until the panel fails structurally.

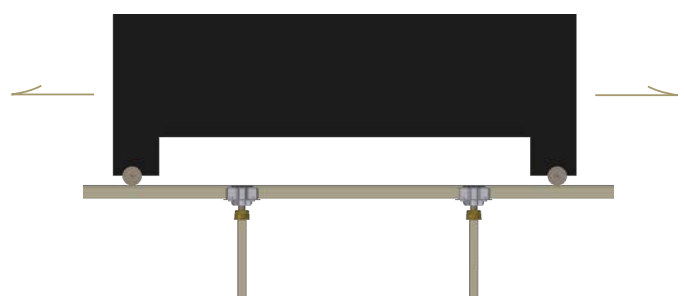
This is sometimes expressed as a multiple of concentrated load and referred to as a safety factor. A minimum safety factor of two is recommended.



Rolling Load

The durability and/or deformation of an access floor system when exposed to commercially anticipated caster traffic using a specific load. Rolling loads are defined by the number of passes, size and hardness of the wheel, and the combined weight of the cart and its contents on each wheel.

These loads are typically imposed by equipment on wheels across the access floor.



Understanding the Specifications (cont...)

Impact Load

The effects and/or deformation of an access floor panel and understructure, when subjected to heavy loads being dropped onto the access floor system. This is to test the maximum load that can be 'accidentally' dropped onto the floor without damage to the system.

Uniform Load

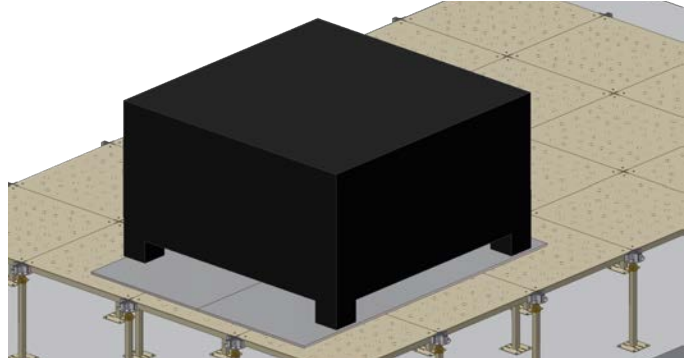
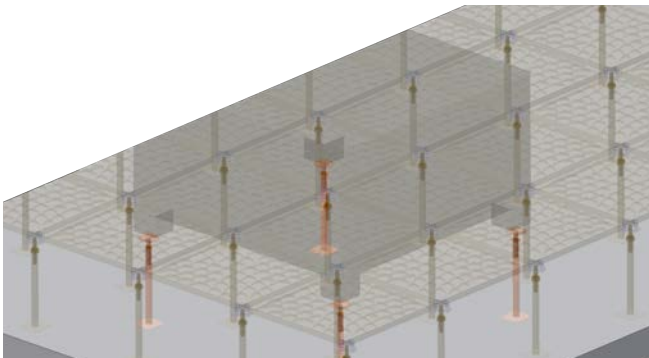
Uniform load is static force equally applied over the entire area of the panel and is typically imposed by stationary furniture and equipment without legs. The uniform load rating is specified in Newton's per square metre.

Supporting Heavy Loads

In situations where heavy loads need to be supported, it is important that all information relating to that equipment is considered before any decision is made, regarding the suitability of a specific raised floor system.

In some circumstances, it will be sufficient to use a panel with a higher load rating to accommodate for the extra load. However, there are alternatives.

1. Additional pedestals can be introduced in high load or high activity areas, as illustrated.
2. Spreader plates can also be used in order to distribute the load evenly across a greater area. Spreader plates are generally constructed using large sheets of 25mm thick plywood.



The understructure of the access floor system is the major supporting element. As a result, careful attention needs to be paid to the type of understructure you specify for your project.

Loads that are to be considered in Understructure Support are:

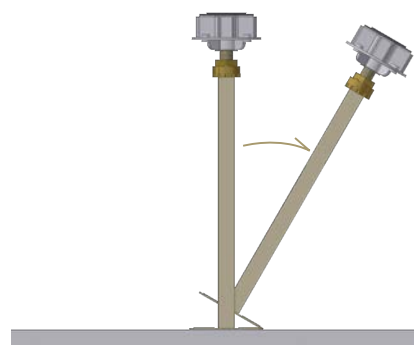
Overturning Movement

Is a lateral load applied to the pedestal due to:

1. Rolling load traffic
2. Underfloor work due to cable installations

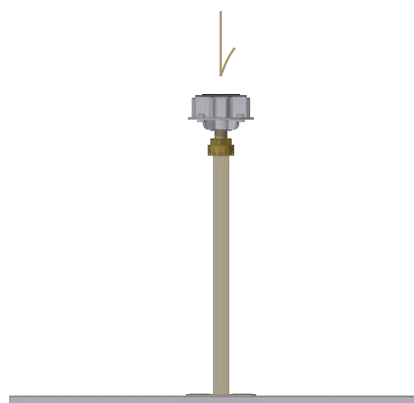
The pedestals ability to resist overturning movement is determined by:

1. Its attachment method to the structural slab
2. Size and thickness of the base plate
3. Pedestal tube size



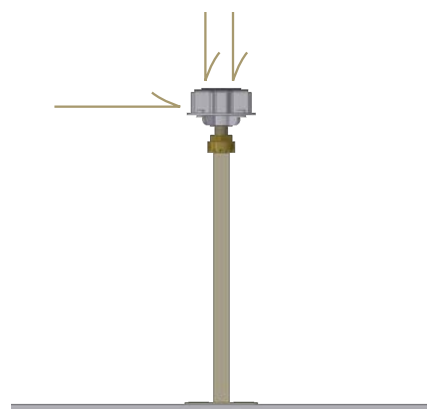
Axial Load

Is a vertical load applied to the centre of the pedestal due to concentrated, rolling, uniform and other loads applied to the surface of the access floor panel.



Seismic Load

Is a combination of vertical and lateral movement, usually in the form of earthquakes. When designing an access floor in a location with high seismic activity, it is critical to have a firm understanding of the seismic requirements of the access floor and understructure from the onset, to avoid replanning or re-installation of an appropriate system to cater for those needs.



AUSTRALIAN AND INTERNATIONAL STANDARD TESTS:

The Australian Standard and International Standard tests that the access floor is manufactured to comply with are as follows:

1. AS4154-1993 - General Access Floors (elevated floors)
2. AS4155.0-1993 - Test Methods for General Access Floors Part 0: Introduction and list of methods
3. AS4155.1-1993 - Test for concavity and convexity
4. AS4155.2-1993 - Test for twist
5. AS4155.3-1993 - Test for panel squareness
6. AS4155.4-1993 - Test for the effect of temperature
7. AS4155.5-1993 - Test for the effect of humidity
8. AS4155.6-1993 - Test for floor resistance and electrostatic control
9. AS4155.7-1993 - Test for 300mmx300mm concentrated load
10. AS4155.8-1993 - Test for 25mmx25mm concentrated load
11. AS4155.9-1993 - Test for ultimate load test (safety factor tests for concentrated load)
12. AS4155.10-1993 - Test for dynamic soft body impact load
13. AS4155.11-1993 - Test for dynamic rolling loads with the tread made from resinous polymer
14. AS4155.12-1993 - Test for pedestal strength by concentrated vertical load
15. AS4155.13-1993 - Test for pedestal free movement by horizontal load
16. AS4155.14-1993 - Test for pedestal strength by horizontal movement
17. AS1170.0-2002 - Structural Design Actions: General Principles
18. AS1170.1-2002 - Structural Design Actions: Permanent, imposed and other actions.
19. AS1170.4-2002 - Structural Design Actions: Earthquake Actions in Australia
20. ISO9239-1-2003 - Reaction to fire tests for flooring: Determination of the burning behaviour using a radiant heat source
21. EN12825-2001 - Reaction to Fire Classification A1
22. DIN 4102-1-1998 - Fire Behaviour of Building Materials and Elements

ASP is also compliant with CISCA, PSA and DIN Standards.



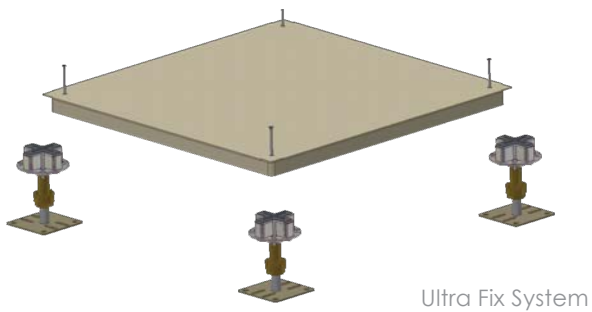
Frequently Asked Questions

How are panels attached to the understructure?

ASP access floor panels are either:

1. Screw Fixed

Screw Fixed Panels are assembled onto an ultrafix or a Rigid Grid system. Panels are screwed into the pedestal heads in all four corners.



2. Gravity Fixed

Gravity Fixed Panels are assembled onto a Rigid Grid system with a HPL, vinyl, rubber or timber finish. Panels are supported on all four sides by a stringer.



How do I determine the right panel for my project?

When designing the access floor component for your project, it is important to answer the following:

1. Where will the access floor be located?
2. What will be placed on the access floor?
3. What are the loads that will be placed on the access floor during construction as well as the loads placed on the floor during occupancy?

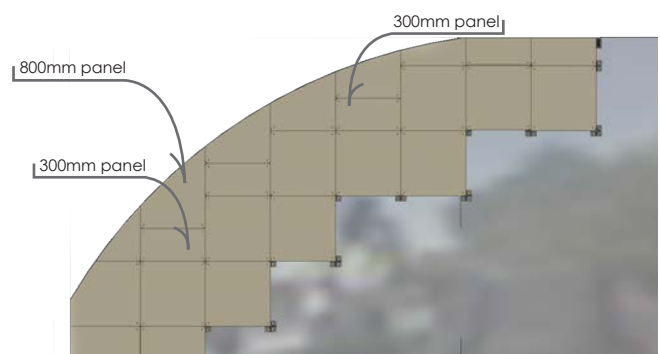
Analysing and determining the required properties of the access floor in terms of their structural performance, resistance, air leakage requirements, acoustic performance, etc in these early stages will help ensure that the correct panel type, load grade and understructure system is applied to your project.

How can we be assured that our floor will be level if the subfloor is uneven?

When an ASP Access Floor is installed, our installers use laser levels to ensure that the surface of the floor is level at the required FFH, regardless of undulations in the sub floor. Using the height adjustable pedestals, our installers can raise and lower the panel in order to obtain a level finish.

How do you support small panel cuts when the floor meets a perimeter or supporting column?

ASP has developed 300mm and 800mm finishing panels to meet the desired lengths at a perimeter, in order to eliminate smaller cuts. When an access floor meets an unusual shape or structure, panels are cut to shape and size with supplementary support pedestals used to improve strength.



What finishes are available for my access floor?

Factory applied finishes:

1. Anti-static high pressure laminate
2. Anti-static Vinyl
3. Vinyl and Marmoleum
4. Timber
5. Stone
6. Ceramic Tiles

Site applied finishes by others:

1. Carpet
2. Sheet Vinyl
3. Stone
4. Tiles
5. Timber

What is the acoustic rating of an access floor?

ASP Access floors have been tested in accordance with AS/NZ ISO 717.1:2004 : Rating of sound insulation in buildings and of building elements - Airborne Sound Insulation; and AS/NZ ISO 717.2:2004 : Rating of sound insulation in buildings and of building elements - Impact Sound Insulation.

AS/NZ ISO 717.1:2004 - Airborne Sound Insulation

Freq (Hz)	Panel dB achieved
100	34.4 dB
5000	56.1 dB
Test Average	51 dB

AS/NZ ISO 717.2:2004 - Impact Sound Insulation

Freq (Hz)	Panel dB achieved
100	-0.3 dB
5000	49.5
Test Average	25 dB

What are the advantages in regards to services if I use an access floor?

Ventilation as well as power/data is capable of being installed under floor, with outlets fitted in the access floor panel. There are many advantages with running these services under floor such as:

1. Ease of service and accessibility.
2. Simple to rearrange services.
3. Air conditioning achieved through displacement as opposed to dilution.
4. More cost effective during installation and servicing.

What are zinc whiskers and will I ever have an issue with them if I have an ASP Access Floor?

Zinc whiskers are tiny conductive filaments of zinc typically less than a few mm long and a thousandth of a millimeter in diameter. They grow from metal surfaces that have been electroplated/galvanised with zinc for corrosion protection. Zinc whiskers are conductive and therefore will cause electrical shorts if they manage to bridge across tightly spaced electrical conductors.

ASP products are coated with a finish which is resistant to the growth of zinc whiskers. For specialised sensitive areas such as clean rooms and data centres, ASP has introduced nickel chrome plated pedestal heads, threaded rod and nuts, which are available upon specification.

What are the earthing capabilities of the access floor?

By connecting a grounding wire to the pedestal head, an access floor can be grounded. However, the frequency of these grounding wires varies depending on understructure and panel type. These calculations should be carried out by an electrical engineer and installed by an electrician.

Frequently Asked Questions (cont...)

What is the fire rating of an access floor?

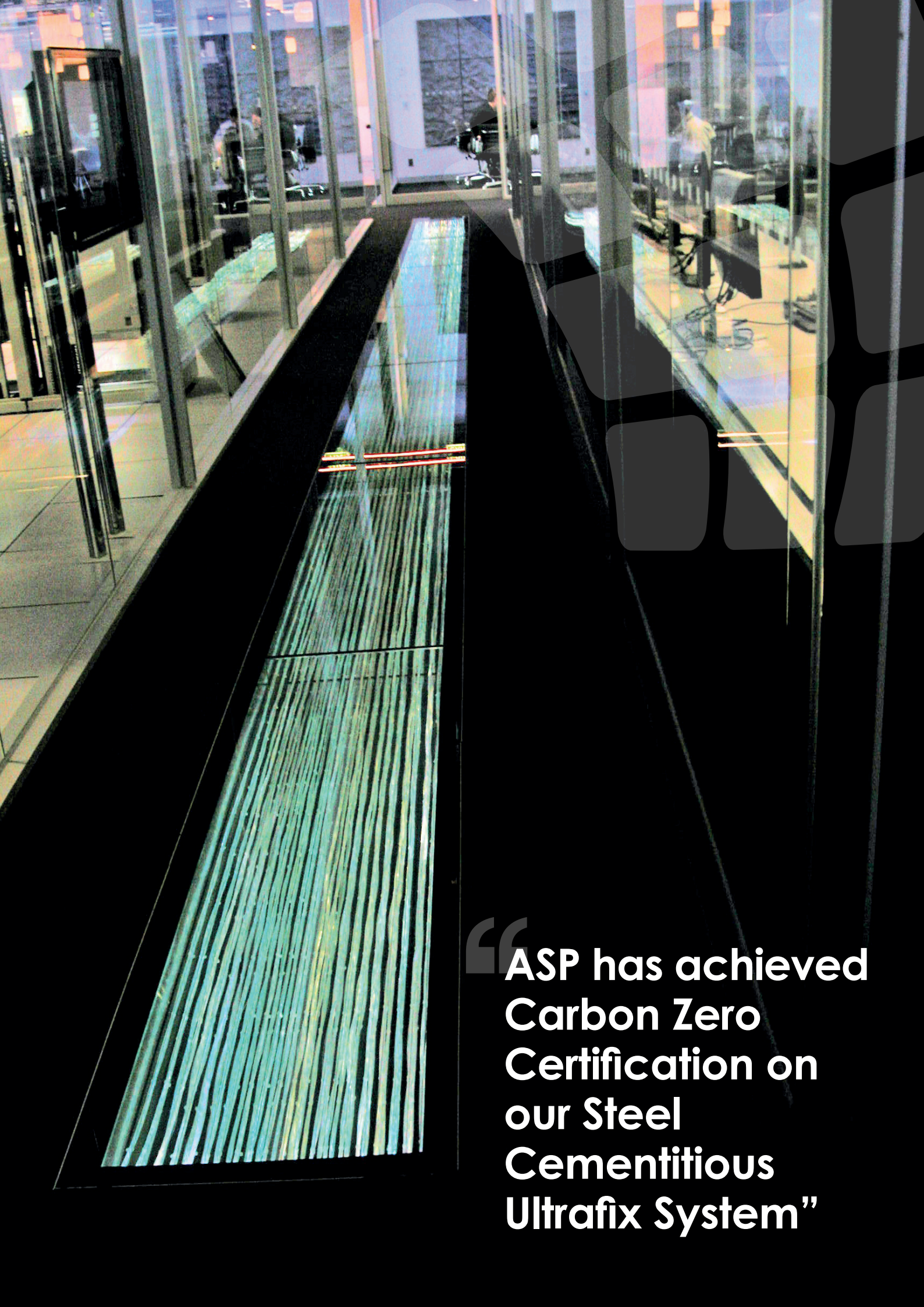
The ASP Accessories Floor System is tested to DIN4102-1-1998. ASP access floors are tested to AS ISO 9239: reaction to fire test for flooring.

What is the process of installation for an access floor?

When installing an access floor much planning and a thorough understanding of the building site is required. Installing an access floor requires the co-operation of the head contractor, access floor installer and other associated trades to make sure that all work runs smoothly and on schedule.

To ensure that the access floor works are installed to your programs requirements the following guide line should be adopted:

1. Planning how the access floor materials will be loaded onto the working zones; i.e. goods lift, crane, builders hoist etc
2. Planning a material path from the truck to the access floor area, it is recommended that there should be a free path from an elevator and/or hoists to the area receiving the access floor material
3. A dry and secure storage area should be made available to store access floor materials. It is desired that the storage area be unaffected by weather
4. Co-ordinate a work schedule with other working trades. All overhead works should be completed prior to the access floor installation. If overhead works are installed after access floor works, the access floor must be adequately protected to prevent damage, a minimum of 25mm thick plywood is recommended to be placed on top of the access floor
5. Working area is to be swept clean, mark the set out points and then sealed with approved ASP floor sealer
6. For high service traffic areas a set out can be incorporated to ensure that the service trades work according to the access floor grid
7. Service trades and access floor installers work in conjunction with each other
8. Floor signed off by head contractor



**“ASP has achieved
Carbon Zero
Certification on
our Steel
Cementitious
Ultrafix System”**

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