INSTALLATION GUIDE

SUREGREEN PP50 PERMEABLE PAVER
- GRASS FINISH

All of our installation guides are written with best practice in mind. It is strongly advised that any questions raised from the guidelines are directed to our technical team.

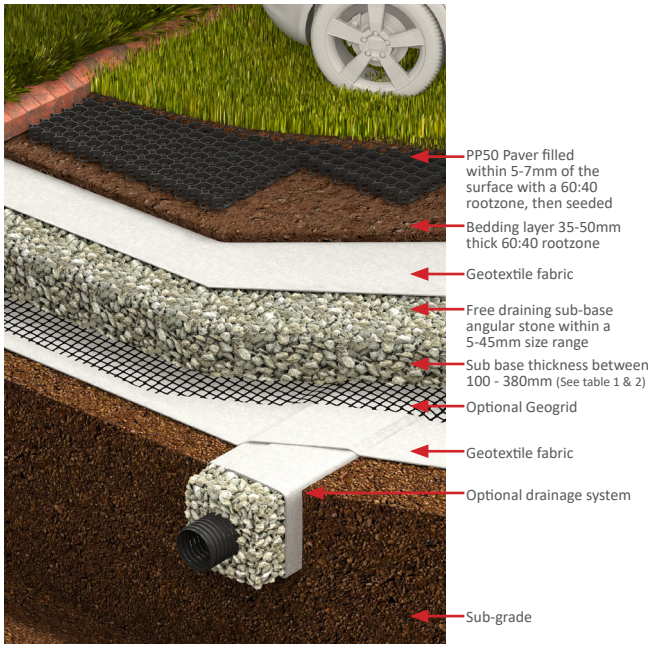
Suregreen PP50 porous plastic pavers provide a solution to a wide range of trafficking needs where a free-draining gravel or angular stone surface is required. These pavers are primarily designed to be used as part of busy, hardworking and everyday-use car parks, and can also be used for traffic by pedestrians, bicycles, cars, vans, trucks and lorries. PP50 porous pavers for gravel retention have been designed, using carefully selected plastics, to meet the demands and loadings imposed across a wide range of end requirements and site conditions.

APPLICATIONS INCLUDE:

- Car parks for offices, hospitals, shopping centres or even village halls
- Disabled access routes
- Emergency access route for fire engines
- Access routes for occasional heavy vehicles such as dust carts or oil tankers.

To ensure PP50 porous pavers operate at their optimum working condition for their full lifecycle - which could be 25 years or more - the plastic pavers need to be installed correctly as per our guidelines described below.

All Suregreen PP50 plastic paver installations will have some basic requirements to the construction profile. Some component parts to the profile will need to be designed (please see separate design guidelines) to meet the needs of the client, but the elementary building blocks are the same.



INSTALLATION STEPS:

Prior to any work on site, it is highly advisable that a site survey – even if only a rudimentary one – is completed. Ask questions such as:

- Will the site drain naturally?
- What slopes - if any - need to be allowed for?
- What type of surface conditions and what type of soils are on site?
- Is the type of soil on the surface the same 200 - 400mm under the surface (will draining water be trapped on a non-porous layer?)

Notes on grass - If there is a slope of more than 5%, where there is a grass finish requirement, we advise that you get in touch with us for technical advice.

You will also need to consider an edge retention system or kerb of some form, as this is required by PP50 permeable grass pavers. This can be substantial as 150mm x 150mm concrete road kerbs through to treated timber or metal stripping.

FOUR BASIC LAYERS TO ANY CONSTRUCTION PROFILE

1). The sub-grade

The sub-grade is at the bottom of the profile. This is the layer after removal of the existing soils. This soil is removed to the required depth which has been calculated based on the type and frequency of traffic and the ability of the existing soils to handle imposed loadings. The sub-grade could be as little as 100mm or as much as 500mm below the existing surface. We advise that the sub-grade is compacted - by roller or another method - to create an even working surface.

2). The sub-base layer

On top of the sub-grade, a sub-base layer needs to be installed. The depth of this layer should be pre-determined (please see our design guidelines). This sub-base layer needs to be stable and porous. The sub-base ideally needs to be composed of a free-draining, sharp angular fill material (angular stone or aggregate), 95% of which the particle size is of a mixed nature between 5mm to 45mm (MOT type3 or similar) with reduced fine content which would produce a stable and porous sub-base/hard-core after compaction. MOT type 1/crushed concrete would be generally unsuitable because of the high fine content, leading to minimal porosity and permeability. The sub-base needs to be compacted to the required depth.

At the bottom and the top of the sub-base, a geotextile separation layer needs to be installed. The geotextile will stabilise the sub-base by separating/filtering, and this will limit fine material migration into the sub-base while still being permeable and allowing water to infiltrate. The fines - if allowed in - would cause eventual deformation/dipping of the top surface and drainage issues. On top of the bottom layer of geotextile, a 20KN geogrid can be applied to reduce the depth of sub-base used and also reduce the amount of spill caused by works (please see our design guidelines for guidance). Not all sites will benefit from using a geogrid, mainly due to economies of scale. Please contact our technical team for further direction.

Note: MOT type 1 or similar can be used as the sub-base (and sometimes already is on site), but drainage would need to be considered.

3). Bedding layer
On top of the of the geotextile covering the angular stone sub-base construction, a layer of approximately 40mm of 60/40 root-zone sandy soil should be placed and compacted. This bedding layer should be no less than 35mm deep to allow good grass root structure to grow, and should be no more than 50mm deep after compaction to avoid possibly compromising the structural integrity of the construction profile. The root-zone layer will need to be levelled off to provide an even working surface for the PP50 permeable pavers to be laid.

4). Laying the Suregreen PP50
Suregreen PP50 should be laid from above onto the prepared root zone bedding layer, working from one corner and laying adjacent paving grids into their connectors. PP50 plastic paving grids can be cut on-site using a handsaw, jig-saw or a type of mechanical saw to match the site or client's requirements, shapes and obstacles.

5). Filling the Pavers
PP50 paving grids should be filled nearly to the top with the root-zone, leaving a gap of approximately 5mm off the top. This layer can be brushed in and not compacted. Overfilling is likely to cause unnecessary compaction of the root-zone when trafficked, leading to bad retention of the grass layer. The PP50 paver's filled surface can then be seeded, fertilized and watered in if necessary. Rolling in turf is not advised.

Notes on root-zone - In our experience, using a soil fill of 60/40 root-zone will enable you to achieve the best long-term results and optimum working conditions for the PP50 pavers. Root-zone is a blend of semi-rounded sands of a selected grain size mix and sandy soils. Root-zone is used on most modern sports pitches, golf courses and for horticultural uses. It has good drainage, encourages rapid grass growth and has a good load-bearing capacity.

Notes on grass - When established, the grass will need to cope with trafficking, wet and dry conditions. We recommend a hard-wearing amenity grass seed mix (mini ryes and fescues, for example) for seeding. You will need to consider timescales and when the PP50 grass paver surface is used for the intended trafficking. The area should only be used for critical movements at first. There are two main reasons for this - firstly, if the area is trafficked too fast, the tender young shoots of grass will be easily damaged and the grass stunted or even killed. Secondly, PP50 plastic pavers have been designed to allow the grass root structure to entangle with the pavers' open structure, providing strength and stability to resist the loadings imposed by the trafficking. Time must be allowed to permit this to happen.

The time of year also needs to be considered when sowing the grass, as well as the prevailing weather conditions. A strong, vibrant grass growth is needed and will generally take approximately 6 to 8 weeks in the growing season to become viable for trafficking. Spring and Autumn are the two best times to seed, away from the extremes of heat and cold.

Although PP50 has been designed to be used in busy car parks, in planning car parks with a grass finish, it's worth considering the likely durability of the grass in areas of high movement. These areas would be the entrance, the exit and any main aisles. Please contact our technical team for further advice on the suitability of grass in demanding circumstances.