

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.

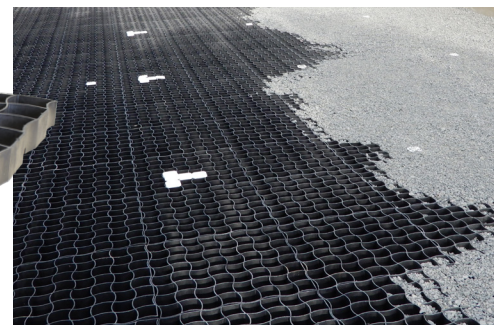
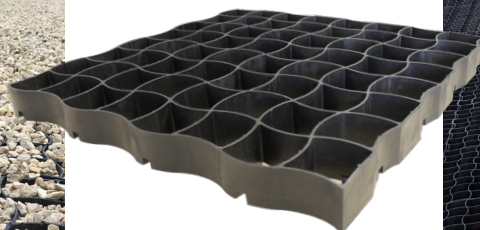
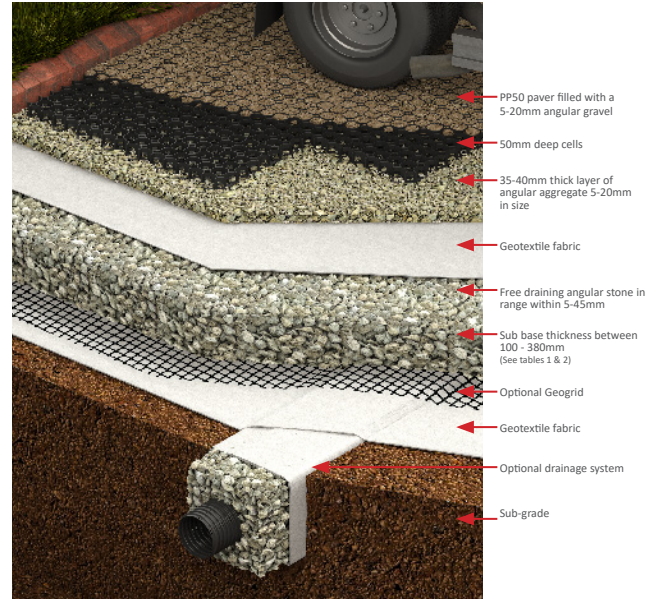
INSTALLATION STEPS:

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?)

You will also need to consider an edge retention system or kerb of some form, as this is required by PP50 permeable pavers. This can be as substantial as 150mm x 150mm concrete road kerbs through to treated timber or metal stripping. Please refer to design guide or get in touch with us for technical advice.

Notes on Gravel - Experience has shown that a 5mm - 20mm sharp angular gravel gives the best results for providing a long-term, very low-maintenance and hard-wearing surface. The gravel interlocks and shears with itself and the specially designed PP50 permeable pavers. The paver's cell structure design allows smaller particles to fill the smaller voids and this gives a secure, locked and sustainable finish. Single-size gravel or, even worse, rounded gravel such as pea shingle will eventually lead to issues and failure. The more rounded the gravel is, and the more single-size it is, the faster problems will occur.



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. It is advisable that the sub-grade is compacted (by roller or any other method) and an even working surface created.

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) The bedding layer

For a gravel finish, the bedding layer needs to be a free-draining, sharp angular gravel with a nominal particle size of 5 to 20mm. This gravel must be laid to a depth of approximately 35mm on top of the top layer of geotextile (which has been installed above the sub-base). This bedding layer may require compaction using a vibrator plate or roller. The bedding layer will be required to be smooth and level to allow an even surface for PP50 permeable pavers to be laid onto. It is important that the bedding layer is gravel and not sand because of the shearing action achieved with the gravel, locking the paver and gravel in place. In cases of heavy rainfall, sand can become mobile and wash out of the paver - especially on slopes.

4) Laying Suregreen PP50 permeable pavers

Suregreen PP50 should be laid from above onto the prepared gravel bedding layer, working from one corner laying adjacent paving grids into their connectors. PP50 grids can be cut on-site using a handsaw, jig-saw or a different mechanical saw to match site and client requirements, shapes and obstacles.

5) Filling the pavers

Suregreen PP50 needs to then to be filled with the same 5 to 20mm sharp angular gravel. With the shearing action of the gravel, PP50 pavers become locked within the gravel and so are able to resist the dynamic loadings imposed by the surface traffic. After filling, a light whacker plate may be applied to help settle the gravel, allowing you to see if a small top-up or refill is necessary. For cosmetic appearance, some clients may wish to overdress slightly with gravel. There is generally no reason to overfill the cells - the extra gravel will simply be displaced to the edges by the traffic movements. For car park projects, we also can supply Suregreen PP50 bay markers which available in white.