

DuPont™ GroundGrid™

A COST-EFFECTIVE POROUS PAVING SURFACE SOLUTION

Installation Guide

DuPont™ GroundGrid™ is an innovative, three-dimensional and flexible geotextile grid used to confine aggregate, stone, gravel or turf to provide a stable surface for both pedestrian and trafficked areas such as driveways, paths, car parks, golf courses and artificial surfaced sports fields.

DuPont™ GroundGrid™ is manufactured from non-woven geotextile strips that are thermo-welded into a cellular system. The high tensile strength of both the weld and geotextile provide an ideal structure that prevents infill from spreading thus preventing subsidence and rutting, on medium to light trafficked surfaces.

The loose infill material, and the porosity value of the geotextile walls, allows water penetration both vertically and horizontally making DuPont™ GroundGrid™ the ideal choice for sustainable drainage (SUDS) applications.

Supplied in a compressed concertina format for ease of storage and transport, DuPont™ GroundGrid™ is simply extended on site. Each grid covers an impressive 10 square metres.

Uses:

- Car parks
- Driveways
- Access Roads
- Farm Tracks
- Caravan sites
- Pathways
- Gravel landscaped areas
- Golf courses
- Sports fields

Benefits:

- Flexible material for terrain conformity
- Each grid covers 10m²
- Easy to transport and install
- Can be cut to size
- Water-permeability of cell walls

Important

DuPont™ GroundGrid™ is intended for use on level ground. It may take a very slight slope but extra care will be required when filling to make sure the grid is in contact with the sub base at all times.

Only CRUSHED, ANGULAR INFILL should be used.

The SUB BASE should be FIRM.

Do NOT lay directly onto tarmac, concrete, loose soil or soft ground.

Why SUDS

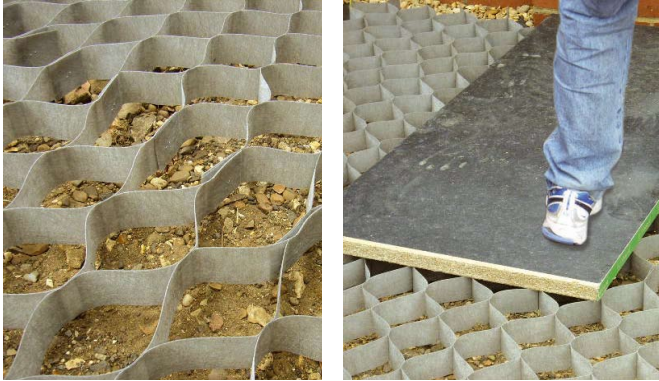
Drainage problems caused by the over use of hard, impermeable materials for roads, driveways and car parks has become a major problem, with an increase in flooding and environmental contamination with water runoff into rivers and groundwater. Sustainable Drainage Systems offer an alternative and long term way to manage surface water runoff. New legislative building regulations and guidance policies such as PPS25, point the way forward to the use of porous systems like DuPont™ GroundGrid™ for rainwater management.



The miracles of science™

Before you begin

DuPont™ GroundGrid™ is easy to lay but care must be taken to follow ALL of our rules to obtain a long lasting and stable surface. We recommend that two people are on hand to install the grid. The grid is intended to give many years' use so please take the time to install the grid correctly.



- Rule 1: Make sure the ground is prepared correctly to take the grid.
- Rule 2: Staple the grids together before filling when more than one grid is used.
- Rule 3: Keep the grid in contact with the ground AT ALL times during the installation, to make sure no infill material migrates under the grid.
This applies to the WHOLE area including joints and edges.

If, when you are filling the grid, material does get under the grid – STOP and remove it and re-contact the empty grid with the ground.

- Rule 4: Use ONLY crushed, angular aggregates/gravels/stones at the correct size as shown in the table 'recommended product per application' at the bottom of this page.
- Rule 5: Add a 20mm – 30mm surcharge of the infill material after filling.
- Rule 6: After care: You will need to apply a further surcharge after a few weeks use to allow for settlement. The top of the grid should always be covered.

If the area is heavily trafficked then monitor it carefully for the first few weeks to make sure it stays covered and do not drive over it aggressively. After the infill has settled you will notice the area will feel a lot firmer.

GG01	cell size 55mm
	Angular aggregate typically graded in the range 10 to 14mm (4/10 SS or 6/14 SS)
GG03	cell size 110mm
	Angular aggregate typically graded in the range 20 to 40mm (10/20 SS or 20/40 SS)

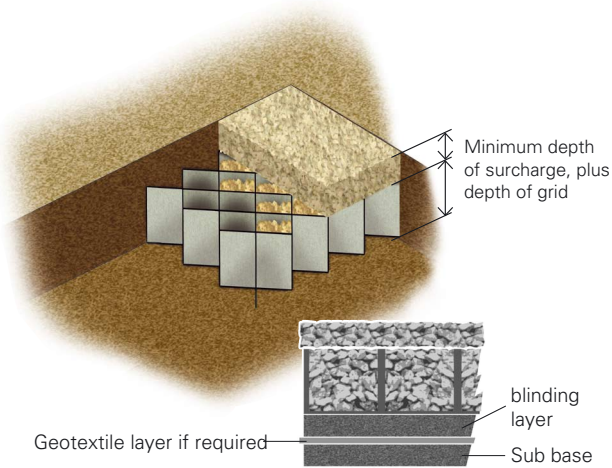
STEP 1 Preparing the ground



- The ground MUST have an adequate sub base to take traffic.
- The grid itself does not have a load bearing capacity. This is created by the sub base.
- The ground must be dug out to a level of 70-80mm. This will allow for the grid height (50mm) plus a 20-30mm aggregate surcharge.
- If the sub base is soft then prior to laying the grid use an MOT type 1 (or equivalent material).
- Use a wacker to stabilise and strengthen the area.
- If the sub base is already stable enough to take traffic, remove all large stones and undulations in the ground.
- Wacker to compact the area and even out.

Recommended product per application

	Recommended Aggregate	Cell size 55mm	Cell size 110mm
Garden path and gravel patio	Angular aggregate typically graded in the range 10 to 14mm (4/10 SS or 6/14 SS)	●	
Walking paths	Angular aggregate typically graded in the range 10 to 14mm (4/10 SS or 6/14 SS)	●	
Cycling paths	Angular aggregate typically graded in the range 10 to 14mm (4/10 SS or 6/14 SS)	●	
Residential parking	Angular aggregate typically graded in the range 20 to 40mm (10/20 SS or 20/40 SS)		●
Driveway	Angular aggregate typically graded in the range 20 to 40mm (10/20 SS or 20/40 SS)		●
Commercial parking	Angular aggregate typically graded in the range 20 to 40mm (10/20 SS or 20/40 SS)		●
Golf cart paths	Angular aggregate typically graded in the range 10 to 14mm (4/10 SS or 6/14 SS)	●	
Farm tracks and access roads	Angular aggregate typically graded in the range 20 to 40mm (10/20 SS or 20/40 SS)		●



Preparing the ground – make sure the sub base has adequate load bearing capacity, as this is not provided by the grid itself.



Typical sub base per application

Application/Load	CBR strength of subgrade in %	Typical sub base thickness in mm
Occasional heavy traffic	0.5 to 1	525
	1 to 2	500
	2 to 4	300
	4 to 6	200
	Over 6	150
Light traffic	0.5 to 1	400
	1 to 2	350
	2 to 4	250
	4 to 6	150
	Over 6	100
Public paths/bridleways	1 to 2	150
	2 to 4	100
	Over 4	50
Domestic garden paths	1 to 2	125
	2 to 4	75
	Over 4	50

The above table data is indicative only and should not be utilised without the sub base design being verified by a qualified engineer taking into account site-specific criteria.

STEP 2 Laying the grid

Take one panel of grid and use temporary pegging to hold one end.

Pull the grid out to its maximum length of 8m, this will pull the width in to measure 1.25m.

DuPont™ GroundGrid™ can be easily cut to shape or size with a knife or scissors if the full panel of 10m² is not required.

Lay the next grid in the same way adjacent to the first, this time staple each of the open cell edges, to create a complete cell from the two grids.

Do not walk on the grid at this stage, walk between the edges, stapling as you work backwards.



STEP 3 Filling the grid

Fill each end of the grid with a handful of aggregate to hold it in place.

The grid has to be in constant contact with the ground when putting aggregate into the cells. Use a timber board on top of the grid to ensure contact is made.

Once the ends have been filled you can remove the temporary pegging.

The Grid can be filled manually or mechanically. If filled mechanically do not drop the aggregate in excess of half a metre from the ground.





Work forward, as you must not stand on the grid until it is filled.

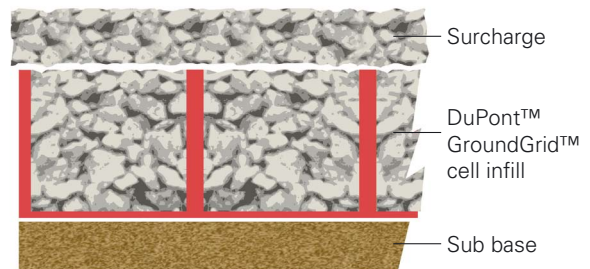
Use the timber board again to maintain the contact between the grid and ground, moving this forward as you go. This prevents aggregate migrating underneath the grid which could cause lifting.

Rake the aggregate into the cells so that they are filled to the top.

Once the area has been completed and the cells full to the top of the grid, a surcharge must be applied before trafficking. This should be approximately 20-30mm in depth so that the grid is completely covered.

When the surcharge has been applied, the area can be trafficked. There will be a certain amount of settlement

initially, so the area must be kept topped up with aggregate during this time, and whenever the grid may become exposed.



ONLY ANGULAR AGGREGATE SHOULD BE USED (NOT ROUNDED STONE).

Using with grass

If turfing or grass seeding 55 x 50mm grid should be used.

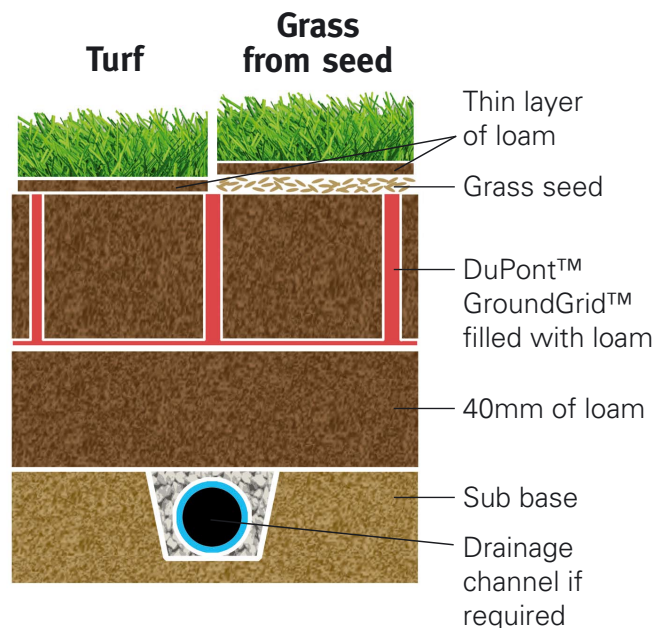
When using DuPont GroundGrid to grow grass through, please use the following guidelines.

It is recommended that a minimum of 90mm of soil is required for healthy turf.

Prepare the sub base, which should allow some drainage. Use a good quality 'loam', (loam is a good quality soil composed of angular sand, silt and clay). For a free draining mix cut in 50% angular sand.

- Put down 40mm free draining loam mix. Do not compact, as this will disrupt the drainage.
- Lay the DuPont GroundGrid on top.
- Fill the DuPont GroundGrid with loam.
- Spread a good quality Perennial Rye Grass seed, this is a 'hard wearing' as opposed to a soft ornamental lawn grass type and will wear better in this application.
- Cover with a further thin layer of loam and water well.
- For turf, spread a thin layer of loam on the grid then lay the turf and water well.
- Ensure good grass growth by watering and feeding.

Please allow the grass to establish before trafficking.



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