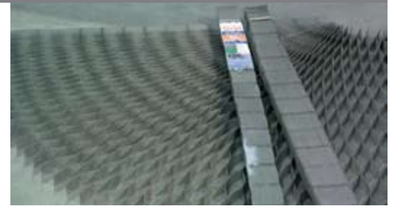
DuPont™ Ground Grid

A COST-EFFECTIVE, SUSTAINABLE SURFACING SOLUTION



Technical Data & Installation Guide

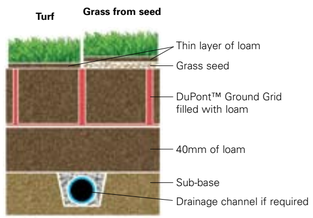
Using with grass

When using DuPont™ Ground Grid to grow grasss through, please use the following guidelines.
It is recommended that a minimum of 90 mm 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 40 mm free draining loam mix. Do not compact, as this will disrupt the drainage.
- Lay the DuPont™ Ground Grid on top.
- Fill the DuPont™ Ground Grid 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.



Technical data

Characteristics:

Product Code	Area	Call Dimensions (Cell size/Height)	Weight (Bloc of 10 m²)
GG01	1,25 m x 8 m (10 m²)	55 mm / 50 mm	4,7 kg
GG03		110 mm / 50 mm	3,5 kg

Properties:

Property	Nonwoven characteristics		
	Standard	190 g/m2	290 g/m2
Thickness	EN ISO 9863-1	0,54 mm	0,75 mm
Tensile Strength	EN ISO10319	13,1 kN/m	21,3 kN/m
Elongation	EN ISO 10319	55 %	55 %
Opening Size O_{90w}	EN ISO 12956	90 µm	70 µm
Flow Rate at 10 cm WH	BS 6906 - 3	65 l/ (m² - sec)	35 l/ (m2 - sec)
Velocity Index VI_{H50}	EN ISO 11058	33 mm/s	16 mm/s

Heavy subsidence **without** ground stabilisation and reinforcement of subsoil.

Light subsidence **with** ground stabilisation and reinforcement of subsoil.

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TDP is the official distributor of DuPont™ Ground Grid in the U.K.

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DuPont™ Ground Grid

DuPont™ Ground Grid is an innovative, three-dimensional and flexible geotextile grid for use in ground stabilisation. When filled with gravel, soil, sand or other mineral infill, the honeycomb structure provides a permeable and solid surface for landscape and construction projects such as driveways, paths, car parks, golf courses and artificial surfaced sports fields.

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

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

Uses:

- Car parks
- Driveways
- 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

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 and guidance policies such as PPS25, point the way forward to the use of porous systems like Ground Grid for rainwater management.

Preparing the sub-base

• Choosing the right DuPont™ Ground Grid

DuPont™ Ground Grid is available in 2 cell sizes: 55mm wide and 110mm wide. Application and the choice of infill material determine which DuPont™ Ground Grid is best suited. See the "Recommended product per application" table for examples of which grid to use. It must be remembered that DuPont™ Ground Grid itself does not have any load bearing capacity. It is the infill material and the structural integrity of the sub-base that creates this. By following the installation guidelines shown in this document you will be able to enjoy the long term benefits of DuPont™ Ground Grid.

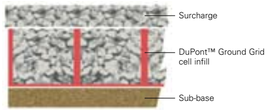
• Preparation of the site for gravel infill

Dig the area down to the depth of the grid (50mm) plus the surcharge. If you are using an existing area where the grid will be higher than the surrounding ground then suitable edging will be required. Although DuPont™ Ground Grid is flexible and will follow minor undulating ground, the use of a blinding layer of sand to improve the levels if the ground is very uneven, is recommended. DuPont™ Ground Grid is not recommended on slopes over 20°. Remove any large stones from the area. If the sub-base is soft, or clay, we recommend the use of a geotextile layer such as TDP115 with a blinding layer on top. If the sub-base is very swampy then you will need to allow enough depth to improve the sub-base with an approved granular layer such as MOT Type 1 material.

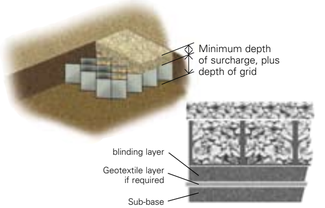
Gravel infill guidelines

We do not recommend the use of rounded stone in the cells.

After filling the cells with an angular gravel of the correct size, as shown in the table above, a surcharge is recommended. Please allow for settlement of the infill material before adding a surcharge. The surcharge can be a decorative rounded stone of any size.



The right 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 critera.



GG01	**cell size 55mm** Angular gravel graded 10-14mm With a surcharge to a depth of 20mm
GG03	**cell size 110mm** Angular gravel graded 20-40mm With a surcharge to a minimum depth of 20mm

Recommended product style per application

DuPont™ Ground Grid	GG01	GG03
Garden path and gravel patio	•	
Walking paths		•
Cycling paths		•
Residential Parking	•	•
Driveway	•	•
Commercial parking	•	•
Golf cart paths	•	
Wine cellars	•	

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

Installing DuPont™ Ground Grid

How many DuPont™ Ground Grid panels will I need?

Each DuPont™ Ground Grid covers 10 square metres when extended, 8m long by 1.25m wide.

You will need:

- 2 to 3 workers
- Metal poles for temporary pegging
- Shovel, rake
- Wheel barrow
- Tape measure (8m length)
- Knife or scissors
- For large areas a machine can be used for filling

DuPont™ Ground Grid is delivered in a compressed pack. Lay the grid at the starting point for the area. Anchor one edge using 2 or 3 metal poles (re-bar poles are ideal).

Once anchored, pull the grid out to a maximum length of 8m. At this point the width should be 1.25m.

Make sure that the cells are a uniform shape. Then anchor the grid with more poles at the extended edge.

DuPont™ Ground Grid is easy to cut with scissors or a sharp knife. This means you can cut around trees or obstacles or to fit an irregular shaped area.

Grids can be laid side by side for larger areas. You will need enough stakes for anchoring (4 or 6 per grid). Overlap the open edge of each grid and we would recommend stapling the grids together every 2 cells.

Remember you cannot walk on the grids until filled so if you are covering a large area and using a barrow to fill the grids make sure you have access to work when filling. One method is to fill each grid as you lay it, leaving the cells nearest the overlap empty until the second grid has been laid.

If you are using a machine such as a backhoe then you are only limited by the 'stretch' of the machine's arm.

Fixing to the ground

There is no need to permanently fix DuPont™ Ground Grid; the infill and surcharge will keep the grid in position.

However it is important that the grid should always be in contact with the ground when filling to stop the grid lifting thus preventing the infill material flowing under the cells. Lay a length of pole or wood over the grid whilst filling and remove as you work.

Infill

Use the correct size infill material for the cell size as described on page 2. Limit the drop height to no more than 1 metre. Whether using a wheel barrow or machine please take your time to make sure the infill material does not "lift" the cells.

Spread the infill material evenly over the surface and ensure that each cell is fully filled using a shovel or rake.

Finishing

A surcharge of material is required on top of the grid especially in trafficked areas like car parks.

If the surcharge is a different material to the cell infill then make sure you have filled the cells to capacity and have allowed for settlement. You may wish to use a hand roller or wacker to achieve final compression of the infill material.

Being manufactured from a geotextile the edges of your DuPont™ Ground Grid are very thin and as such are not very visible. However, it is always advisable to maintain the recommended surcharge on top of the area throughout its life.