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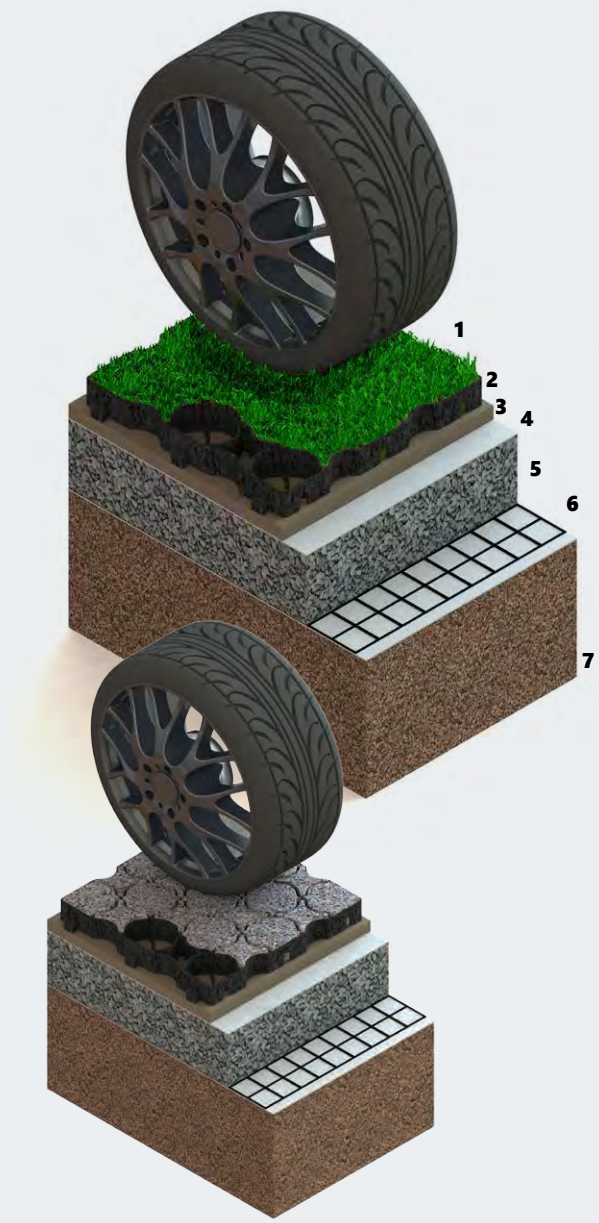
100% RECYCLED PLASTIC

GROUND REINFORCEMENT GRID

THE INTERLOCKING SOLUTION FOR CAR PARKS, LAY-BYS & ACCESS ROUTES

TYPICAL INSTALLATION EXAMPLES



With grass

1 **Seeded or turf finish**

2 **Ground reinforcement units**
Filled with good quality 60:40 root-zone (allow 3.8 m^3 / 6 t of topsoil per 100 m^2).

3 **Sharp sand**
Compacted to 30 mm depth with topsoil (2:1) bedding.

4 **Geotextile filtration layer**
Non-woven needle-punched

5 **Free draining sub-base**
Typically min. 100 mm layer of DoT Type 3 or modified Type 1. NB. Standard Type 1 sub-base is **not** suitable for infiltration SuDS.

6 **Geotextile separation layer**
Non-woven needle-punched c/w optional geogrid.

7 **Sub soil**
Typically min. CBR 5%. For weaker sub-soil use a geogrid at base of sub-base

With gravel

Filled with 10 mm angular gravel – **not** rounded or river washed (allow 3.8 m^3 / 9 t per 100 m^2). Grit can be used as an alternative bedding to compacted sharp sand.

OVERVIEW

Material	**100% recycled polyolefins**
Nominal size	**333 mm x 333 mm x 40 mm**
Unit weight	**0.46 kg** (4.14 kg per 1 m² panel)
Coverage	**9 units/m²**
Compressive strength *max. load/unit	**2,465 kN/m², 250 t/m²** (empty) **3,990 kN/m², 400 t/m²** (topsoil) **5,990 kN/m², 600 t/m²** (gravel)
Connection type	**Integral T connector and slots**
Colour	**Black or green**
Parking markers	**White circular inserts**
Surface finish	**Gravel or grass**
Infiltration rate	**5,000 mm/hr**
Pallet size	**1 m x 1 m x 2.4 m** (56 layers of 1 m²)
Pallet details	**504 units, 256 kg** (26 pallets/load)
Compliant with	**Part M (Building Regs)** **Equality Act (DDA)** **NBS Q23 (gravel) & Q30 (grass)**

TRIED & TESTED

Some porous paving systems only quote maximum load capacities of 200 or 300 tonnes per square metre, but this is only half the story. A paving system needs strength and flexibility to withstand repeated vehicle use. Strength without flexibility leads to cracks, breakages and ultimately product failure.

This ground reinforcement grid has been tested in accordance with DIN EN 124 to maximum capacity and achieves 400–600 tonnes/m² dependent on the filling of either topsoil or gravel (see overview).

It has been tested to rigorous Copro PTV 828 standards that were specially developed for paving grids. Here are some of the things that PTV 828 test for:

Strength and flexibility

This is done in accordance with DIN EN 124 and the strength is measured at 15% deformation. Grids must be strong enough to bear a direct load of at least 1019 kN/m² (104 t/m²) for general use and emergency fire trucks when applied through a 250 mm loading plate. For heavy duty use, this increases to a minimum of 1528 kN/m² (156 t/m²). The flexibility of the system under load requires a minimum deformation of 2% when measured at 815 kN/m² (83 t/m²).

The grid surpassed these values

Strength of the interlocking system

Vehicle movement is not a static force. Cars and trucks put grids under considerable vertical and horizontal pressure, particularly when using power steering. The interlocking system must be tough enough to withstand this pressure and the PTV 828 standard specifies a minimum strength of 3 kN/m length to ensure a secure connection.

The grid surpassed these values

INSTALLATION INSTRUCTIONS

The subgrade and sub-base should be prepared and installed according to Highways England's Specification for Highway Works (MCHW).

Before laying the grid, install an edge restraint that can withstand vehicle overrun and prevent bedding migration.

Install and compact a free-draining DoT Type 3 sub-base (depth according to traffic loading). Cover the sub-base with a non-woven needle-punched geotextile layer (with 150 mm overlaps) to prevent the bedding course migrating into the sub-base. Install, compact and level a 30 mm sharp sand (or grit) bedding layer.

LAYING THE GRID

Starting from a straight edge, lay grids onto the bedding layer with the T-shaped interlocking tabs facing outwards. The paved area can then be extended by simply clicking further grids into place. The grid comes pre-assembled in 1m² sections that can be lifted off the delivery pallet, laid on the bedding layer and clicked together. Large areas can be laid quickly and easily in this way. NB. Always stand on the installed grids when laying the next row.

Laying rates: Units are supplied pre-assembled in 1 m² squares (3 x 3 grids) for fast and easy installation. With a three-person team, up to 300–400 m² can be laid in a day.

Expansion gaps and cuts

Allow a 25 mm gap (filled with gravel or topsoil) between the grid and a kerb or hard edge. The grid can absorb up to 1.5 mm of movement per grid so further expansion joints throughout the paved area are not needed.

The grids can be cut to fit around obstacles. Make cuts before installation and leave full, complete cells along the outer edge. Avoid cutting grids to less than half size.

Installation on slopes

The grid can be installed on slopes of up to 15° without additional staking. For steeper slopes, drive a 300 mm ground stake into the centre of the grid and hook over the base reinforcement at 1 m centres.

Parking markers

Our parking markers can create parking spaces and bays. NB. Insert markers into the grids before filling.

SURFACE FINISH

Gravel

Fill grids to the top with 5–15 mm angular gravel (crushed stone). This allows the gravel to compact within the cells. Rounded or river washed gravel will not compact.

Top up the gravel once the filling has settled. A light vibrating plate can be used to settle the gravel to the top of the cells but be careful not to overfill. After installation, top up the gravel (if required) as part of normal maintenance.

Allow 3.8 m^3 (9 tonnes) of gravel per 100 m^2 of surface.

Grass

The non-woven needle-punched geotextile layer below the bedding layer lets rain water drain through naturally but suppresses weed growth.

For the bedding layer, mix one part good quality root-zone to two parts sharp sand. Fill the grid's cells with a high quality free-draining sandy loam (60:40 root-zone) and scrape off any excess (typically 1 t = 25 m²). Do not use 'as dug' material.

Before seeding, allow a week for the topsoil to settle naturally or use a light vibrating plate. This should create a 6 mm space between the soil and top of the grid cell that protects a newly seeded area from vehicle use.

Allow 3.8 m^3 (6 tonnes) of topsoil per 100 m^2 of surface.

Seeding: Apply a suitable grass seed mix (30–35 g/m²) with a light fertiliser top dressing. Water the area regularly for six weeks before vehicle use. See the next page for seeding mixes.

Turfing: For an 'instant' grass finish, allow the topsoil to settle and top up with additional root-zone and a quality fertiliser. Be sure to choose a wear-resistant turf and install to the supplier's recommendations. Water the area regularly for three weeks before vehicle use.

Note: A 10–15 mph speed limit and/or traffic calming can minimise heavy braking and abuse of the area.

Subgrade strength

Consistency	Indicator			Strength	
	Feel to touch	Visual	Mechanical	CBR%	CU (kN/m²)
Very soft	Hand sample squeezes through fingers	Man standing will sink >75 mm	<2	<1	<25
Soft	Easily moulded by finger pressure	Man walking sinks 50–70 mm	2–4	Around 1	Around 25
Medium	Moulded by moderate finger pressure	Man walking sinks 25 mm	4–8	1–2	25–40
Firm	Moulded by strong finger pressure	Utility truck ruts 10–25 mm	8–15	2–4	40–75
Stiff	Can't be moulded, indented by thumb	25 mm ruts – loaded construction vehicle	15–30	4–6	75–100

Information in this document is a given as a guide only. No responsibility for any loss or damage is accepted resulting from the use of this guide.

Sub-base depths

Typical use	CBR (%) of subgrade	DoT Type 3 depth (mm)		Use of geogrid
		inc. geogrid	exc. geogrid	
• Domestic parking areas • Pedestrian access • Wheelchair access • Bridleways • Cycle routes • Golf buggy paths	Not normally measured	100	100	n/a
• Car parks • Park & rides • Caravan parks • Car showrooms • Stables • Helicopter pads • Airport car parks • Sports centres	>6	100	100	n/a
	4–6	150	225	30/30
	2–4	225	335	30/30
	1–2	260	390	30/30
• Fire paths • Occasional HGVs/trucks • Emergency vehicle access	>6	150	150	n/a
	4–6	175	260	30/30
	2–4	275	412	30/30
	1–2	475	710	30/30
• Verge reinforcement (estate roads) N.B. For verge reinforcement adjacent to a carriageway subject to regular HGVs/trucks – use Heavy Duty Ground Grid system	>6	150	150	n/a
	4–6	200	300	n/a
	2–4	300	450	30/30
	1–2	450	675	30/30

Note: If no Geogrid is utilised the sub base thickness's indicated above should be increased by 50%.

Typical grass seed mixes

General parking
- 50% Perennial ryegrass
- 20% Slender creeping red fescue
- 25% Strong creeping red fescue
- 5% Browntop bentgrass

Accessways
- 30% Hard fescue
- 20% Chewings fescue
- 20% Slender creeping red fescue
- 25% Strong creeping red fescue
- 5% Browntop bentgrass

Verges
- 35% Smooth stalked meadow grass
- 30% Slender creeping red fescue
- 25% Perennial ryegrass
- 10% Browntop bentgrass

Courtesy of www.pavingexpert.com

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