

NETLON

Netpave[®]

Technical Specification & Installation Guide

Netpave is an ideal, durable porous paving system, compliant to the new permeable paving regulations, offering an 85% void for excellent water permeation.

Netpave is a market leading product, which is made from 100% recycled material.

What makes Netpave unique, against its competitors, is the 'spring like' elements within the grid, giving it flexibility both horizontally and vertically.

The Netpave system offers two types of paving solutions, which can be trafficked.

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Netpave[®] 50

Netpave 50 provides an attractive, easy to use, durable solution for the provision of car parks, pathways and access routes.

For a successful installation, the site needs to be excavated and a suitable sub base installed, as described on page two.

Netpave 50 units are simply connected by lugs and slots. The flexibility of Netpave 50 means they can be laid on undulating surfaces and gradients, without fear of fracture or separation.

Netpave 50 can be filled with gravel or loam for grass seeding into.



The Netpave once filled with gravel will confine the infill material within its cells, to prevent rutting and gravel migration.

By filling Netpave with loam and seeding with grass, you can maintain or create a green area, which can safely be used to park on.

Use Netpave 50 as a solution on a Sustainable Urban Drainage Systems (SUDS) project.

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Netpave[®] 25

Netpave 25 offers all of the benefits of Netpave 50, but provides an instant solution to parking on existing grassed areas.

Simply lay Netpave 25 on top of the grassed area, connect together and it can be driven on immediately. Netpave 25 will improve vehicle traction on the grass and prevent rutting.

No excavation is required to apply Netpave 25 in this way.

After two to three months of a grass growing season, Netpave 25 is almost invisible.

It is ideal for paths, parking applications and other trafficked applications where regular wear would soon cause erosion and damage to the grass. Although designed for permanent usage, it can be laid temporarily and removed if only required for short periods of time.



Netpave[®] 50



Benefits

- HGV load bearing capability
- Resists deformation and fracture
- Easy installation with no pegging
- Conforms to irregular surfaces and gradients
- Netpave 50 complies with BS8300:2009
- Provides ideal source control for Sustainable Urban Drainage Systems (SUDS)

Technical data

Paver size: 500 x 500 x 50mm cell height (4 per square metre)

Weight: 8.5 kg per m²

Load bearing: 150 tonnes per m²

Material: 100% recycled polyethylene

Applications

- Permanent and overspill car parks
- Drives, paths and cycle routes
- Fire and service access roads
- Helipads

Netpave 50 installation guidelines for GRAVEL surfaces

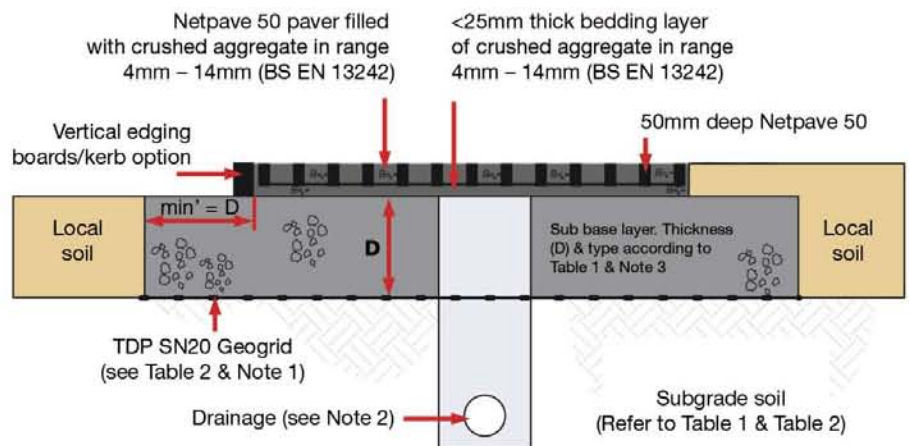
1. Place paver units with dimpled face uppermost (flared base down) onto the prepared sub base and bedding layer (see note 4). The leading edge of the pavers should have the fixing lugs exposed for quick installation. No pegging is required. Edging boards or kerbs are recommended, to aid gravel retention.
2. Connect the pavers using the lugs and slots, progressing over the area in rows. Use protective gloves to avoid abrasions.
3. Pavers can be cut using a hand or power saw to fit around obstructions and contours. Cut pieces which are less than half the original size should be avoided where possible.
4. Fill the pavers to the top of the cells with the specified crushed aggregate. If required, use a light vibrating plate to consolidate the crushed aggregate into the cells. Top up cells with crushed aggregate as necessary. Fully rounded pea gravel is not recommended.
5. If the area is to be used as horse paddock, cover the area with a 50-100mm thick layer of fine sand/ mulch.
6. The surface may be trafficked immediately.

Note 1: If TDP SN20 geogrid is omitted, then the total sub base layer thickness must be increased by a minimum 50%.

Note 2: Typical drainage details; 100mm diameter perforated pipe drain laid at minimum gradient 1:100, bedded on gravel in trench backfilled with 'DoT Type A' drainage stone, covered or wrapped with a geotextile fabric and leading to a suitable outfall or soakaway. Drains placed down centre or one edge of access routes up to 5m wide. Wider areas may require additional drains at 5m - 10m centres. Drainage design by specifier based on specific ground conditions on site.

Note 3: A 'DoT Type 1' sub base may be used, provided that an adequate drainage system is installed, or alternatively a porous/open-graded (reduced fines) sub base layer, e.g. as part of a Sustainable Urban Drainage System (SUDS) application. If a reduced fines sub base layer is specified, this must be covered with either a geotextile filter membrane and/or suitable clean gravel binding layer, to avoid fine particles entering the sub base layer.

Note 4: Maximum advised gradient for traffic applications is 12% (1:8) 7'.



Paver type	Netpave 50	
Specifications	Material	100% recycled polyethylene
	Paver unit size	500mm x 500mm x 50mm (4 per m ² , pre-connected)
	Nominal cell size	63mm x 63mm (internal) Approx 85% open cells/m ²
	Weight	8.5kg/m ²
	Load bearing capacity	150 tonne/m ² (crush resistance)
	Flexure	Individual pavers capable of articulating about central axes.
	Connection type	'T' lugs and slots.
	Colour	Black
	Markers	White mouldings are available to identify areas such as parking bays and routes. These square inserts clip into the top of paver cells. 12 per continuous linear metre.
	Chemical resistance	Excellent
	UV resistance	High
Bedding layer	4 - 14mm crushed aggregate (BS EN 13242)	20 - 25mm thick bedding layer
Paver fill (seed bed)	4 - 14mm crushed aggregate (BS EN 13242)	To top of paver cells
Sub-base type	DoT Type 1 or a porous sub base	'D' thickness in mm (see Table 2 & Note 3)
Sub-base reinforcement	TDP SN20 geogrid (see Note 1 & Table 2)	

Table 1: Field guidance for estimating sub-grade strengths

Consistency	Indicator			Strength	
	Tactile (feel)	Visual (observation)	Mechanical (test)	CBR	CU
			SPT	%	kN/m ²
Very soft	Hand sample squeezes through fingers	Man standing will sink >75mm	<2	<1	<25
Soft	Easily moulded by finger pressure	Man walking sinks 50 - 70mm	2 - 4	Around 1	Around 25
Medium	Moulded by moderate finger pressure	Man walking sinks 25mm	4 - 8	1 - 2	25 - 40
Firm	Moulded by strong finger pressure	Utility truck ruts 10 - 25mm	8 - 15	2 - 4	40 - 75
Stiff	Cannot be moulded but can be indented by thumb	Loaded construction vehicle ruts by 25mm	15 - 30	4 - 6	75 - 150

Netpave 50 installation guidelines for GRASSED surfaces

- Place paver units with dimpled face uppermost (flared base down) onto the prepared, well consolidated bedding layer (see note 5). The leading edge of the pavers should have the fixing lugs exposed for quick and easy installation. No pegging is required. Edging boards or kerbs can be used where required, according to local soil conditions.
- Connect the pavers using the lugs and slots, progressing over the area in rows. Use protective gloves to avoid abrasions. Leave a 10mm gap around the edge to allow for expansion.
- Pavers can be cut using a hand or power saw to fit around obstructions and contours. Cut pieces which are less than half the original size should be avoided where possible.
- Fill the pavers with the specified proprietary rootzone. Finished levels should be 7-10mm below the top of the cells after settlement. Do not overfill the paver cells. A light vibrating plate can be used to consolidate the pavers and to settle the rootzone infill if required.
- Rootzone must be a free-draining structurally sound sand:compost or sand:soil blend. This is a nominal proprietary blend of 60:40 or 70:30 ratio. Self blending is not recommended.
- Carry out a normal seeding, fertilising and watering programme. A very light top dressing may be applied to just cover the seed and to provide adequate germination conditions. DO NOT OVERFILL.
- The surface may be trafficked immediately, but it is preferable to allow the grass to fully establish prior to use, typically 8 weeks.
- Thin-cut or washed turf may be lightly rolled into the surface as an alternative if required.

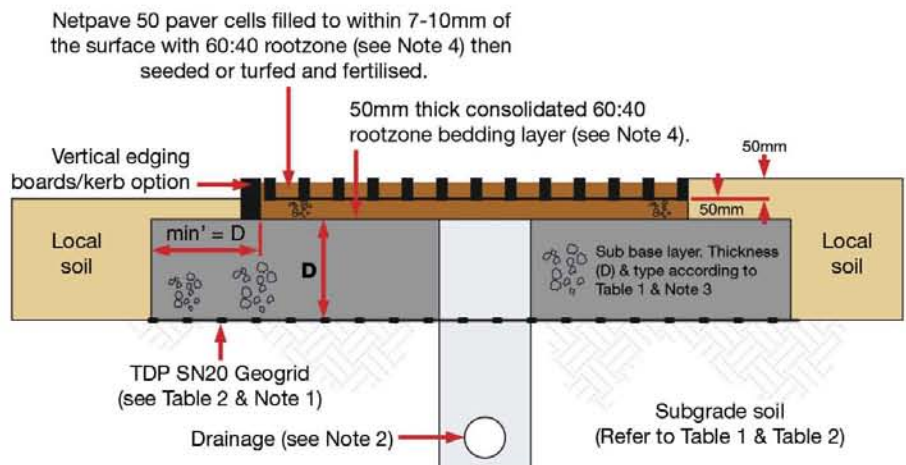
Note 1: If TDP SN20 geogrid is omitted, then the total sub base layer thickness must be increased by a minimum 50%.

Note 2: Typical drainage details; 100mm diameter perforated pipe drain laid at minimum gradient 1:100, bedded on gravel in trench backfilled with 'DoT Type A' drainage stone, covered or wrapped with a geotextile fabric and leading to a suitable outfall or soakaway. Drains placed down centre or one edge of access routes up to 5m wide. Wider areas may require additional drains at 5m - 10m centres. Drainage design by specifier based on specific ground conditions on site.

Note 3: A 'DoT Type 1' sub base may be used, provided that an adequate drainage system is installed, or alternatively a porous/open-graded (reduced fines) sub base layer, e.g. as part of a Sustainable Urban Drainage System (SUDS) application. If a reduced fines sub base layer is specified, this must be covered with either a geotextile filter membrane and/or suitable clean gravel binding layer, to avoid fine particles entering the sub base layer.

Note 4: Rootzone bedding and paver fill must be a free-draining, structurally sound proprietary blend of sand:soil or sand:compost such as that used in sports/golf construction. This is normally identified as a 60:40 or 70:30 ratio blend and in-situ self-blending is NOT recommended.

Note 5: Maximum advised gradient for traffic applications is 12% (1:8) 7'.



Paver type	Netpave 50	
Specifications	Material	100% recycled polyethylene
	Paver unit size	500mm x 500mm x 50mm (4 per m ² , pre-connected)
	Nominal cell size	63mm x 63mm (internal) Approx 85% open cells/m ²
	Weight	9kg/m ²
	Load bearing capacity	150 tonne/m ² (crush resistance)
	Flexure	Individual pavers capable of articulating about central axes.
	Connection type	'T' lugs and slots.
	Colour	Black
	Markers	White mouldings are available to identify areas such as parking bays and routes. These square inserts clip into the top of paver cells. 12 per continuous linear metre.
	Chemical resistance	Excellent
	UV resistance	High
Bedding layer	60:40 rootzone (see Note 4)	50 – 70mm thick bedding layer
Paver fill (seed bed)	60:40 rootzone (see Note 4)	40mm thick layer
Grass seed/Turf	35g/m ² amenity blend low maintenance seed or turf as required.	
Fertiliser	Pre-seeding fertiliser mix followed up with appropriate spring or autumn fertiliser.	
Sub-base type	DoT Type 1 or a porous sub base	'D' thickness in mm (see Table 2 & Note 3)
Sub-base reinforcement	TDP SN20 geogrid (see Note 1 & Table 2)	

Table 2: Typical Sub-base Thickness (D) Requirements

Application/Load	CBR (%) strength of subgrade soil (see Table 1)	(D) DoT sub-base thickness (mm) (see Note 3)	TDP SN20 Geogrid (see Note 1)
Fire truck and occasional HGV access	> 6	125	SN20
	4 - 6	175	SN20
	2 - 4	275	SN20
	1 - 2	475	SN20
Light vehicle access and overspill car parking	> 6	100	SN20
	4 - 6	150	SN20
	2 - 4	225	SN20
	1 - 2	350	SN20

Netpave[®] 25

Benefits

- Applied onto the top of existing grassed surfaces
- Able to support light traffic on firm ground and improve traction
- Resists deformation and fracture
- Quick and easy installation with no excavation or pegging
- Conforms to irregular surfaces and gradients

Technical data

Paver size: 500 x 500 x 25mm cell height (4 per square metre)

Weight: 4.5 kg per m²

Load bearing capability: Light vehicles and pedestrians only (according to soil strength)

Material: 100% recycled polyethylene

Applications

- Overspill car parks
- Drives, paths and cycle routes
- Other occasional use grassed areas

Netpave 25 will help provide protection to grassed surfaces from light traffic. However, it will not compensate for weak ground conditions where more structural solutions are necessary.

To determine whether Netpave 25 might be appropriate for your application, try a simple test, by driving a vehicle onto the area. If no significant rutting occurs after a period of heavy rain, then Netpave 25 should be suitable.



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Netpave 25 installation

Installation of a land drainage system prior to laying Netpave 25 may help to improve accessibility to the site. If pedestrian traffic is expected with high heels etc., then consideration should be given to appropriate warnings of potential tripping hazard.

1. Cut the existing grass as short as possible. Ensure the surface is reasonably level, fill local depressions with a blend of sharp sand and topsoil to firm the surface.
2. Place Netpave 25 with flared base onto the ground. Start with one edge and with the lugs all facing in the direction of laying. Lay down one edge, then work towards the opposite side.
3. Netpave 25 can be cut with a suitable saw to work round trees, edges and other obstacles. Exposed edges may be pegged, or buried below adjacent turf if required.
4. The area can be used immediately after laying, but will improve if the grass is given some time to further establish. After establishment, Netpave 25 can be almost invisible to the user.
5. Mower blades should be set high for the first 2 – 3 cuts. Application of fertilisers and turf maintenance products can be carried out as required.

Geotextile Fabrics & SN20 Geogrid

Are also available from TDP to complete your Netpave installation.