

# TRUCKGRID-MAX

HEAVY DUTY PERMEABLE PAVING FOR GRAVEL



## DESIGN GUIDELINES FOR GRAVEL FILLED TRUCKGRID MAX

All the design guidelines are written with best practice in mind. It is strongly advised that any questions raised from the guidelines are directed to our technical team.

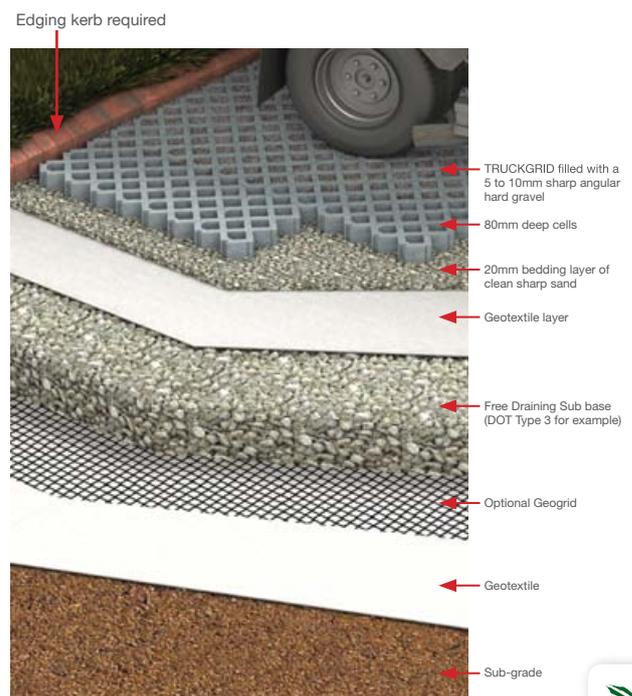
When TRUCKGRID MAX porous pavers are installed correctly to suit site conditions, they should provide source control within a SUDS system (Sustainable Urban Drainage Systems). Drainage must be a consideration when designing a construction profile to ensure that flood alleviation and water run-off is properly considered where natural infiltration may not be capable of withstanding all eventualities. Questions to be considered:

- 1a) Does the proposed installation area drain well already?
- 1b) Is there planned to be a slight fall to be built into the design to perhaps aid drainage if aid is needed?
- 1c) Is the drainage capability of the soils the same at the surface and at 200 to 500mm below the surface?
- 1d) Has there been previous issues with drainage on site?
- 1e) Has disposal of any excess water been considered?
- 1f) Are there SUDS requirements to be considered?

We would advise speaking to our technical team regarding any of these questions for further guidance.

- 2) If a geo-grid is being considered as part of the construction profile please ensure that at least 25% of the particle size of the sub-base is bigger than the mesh size used to ensure good shearing / locking.
- 3) Sub-base particle size should not ideally exceed 60mm and should be less than 5% fine material of content of the whole. Please ask for technical guidance if unsure.
- 4) Please refer to tables 1 & 2 for guidelines to depth of sub-base for specific design profile to suit site needs. Please note if a geo-grid is omitted 50% of the depth of sub-base needs to be added to calculated depth with a geo-grid. For example 100mm with geo-grid would become 150mm without. For detailed guidance please contact our technical team.
- 5) It is always good practice to confine TRUCKGRID MAX plastic pavers on the site edges. This should be as strong as 150 x 150mm concrete kerbs because of the possible lateral loadings of possible Heavyweight vehicles. The type of vehicles, frequency of traffic and circulation routes should all be considered when choosing the confinement method for TRUCKGRID MAX in the design.
- 6) TRUCKGRID MAX has been designed to work within stated guidelines to a slope of 5% or less. The TRUCKGRID can be used on steeper slopes in some cases - please enquire with our technical team for guidance.

- 7) Ideally the sub-base should extend out further than the surface area of TRUCKGRID MAX. This is so lateral pressures caused by the traffic loading does not displace the TRUCKGRID MAX on the edge. The extension of sub-base outwards should be the same as the depth of the sub-base. Please see schematic for detail.
- 8) The aggregate for the filling of the cells should ideally be specified as 5mm to 10mm. This gives the best results for providing a long term, very low maintenance wearing surface. The gravel pieces interlock / shear with each other and, the smaller angular gravel / particles fill the voids providing a secure, stable and



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sustainable finish. Single size gravel or rounded gravel / pea shingle will in due course lead to issues and failure. The more rounded and single size the gravel, the quicker problems are likely to happen.

- 9) TRUCKGRID MAX when filled to aggregate 5mm to 10mm to BS EN13242 conforms to BS8300:2001 for disabled access.

### Note on drainage.

It should be predominantly fine material free and able to compact well without losing integrity, stability and permeability/porosity. DOT type 1 should not be used.

**Table 1 - Typical Sub-Base Thickness (with / without geo-grid)**

Application/Load	CBR (%) Strength of Subgrade Soil	(T) DoT Sub-base Thickness (mm)	Geogrid
Fire truck and occasional HGV access	≥ 6	100	TX160
	= 4 < 6	120	TX160
	= 2 < 4	190	TX160
	= 1 < 2	380	TX160
Light vehicle access and overspill car parking	≥ 6	100	TX160
	= 4 < 6	100	TX160
	= 2 < 4	135	TX160
	= 1 < 2	260	TX160

**Table 2 - Field Guidance for estimating sub-grade strengths**

Consistency	Indicator			Product	
	Tactile (feel)	Visual (observation)	Mechanical (test)	CBR	CU
			SPT	%	kN/sqm
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	Loading construction vehicle ruts by 25mm	15-30	4-6	75-100