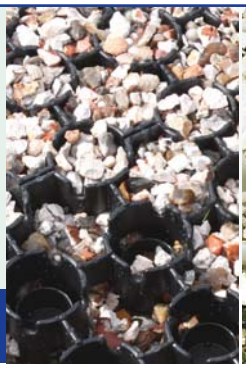
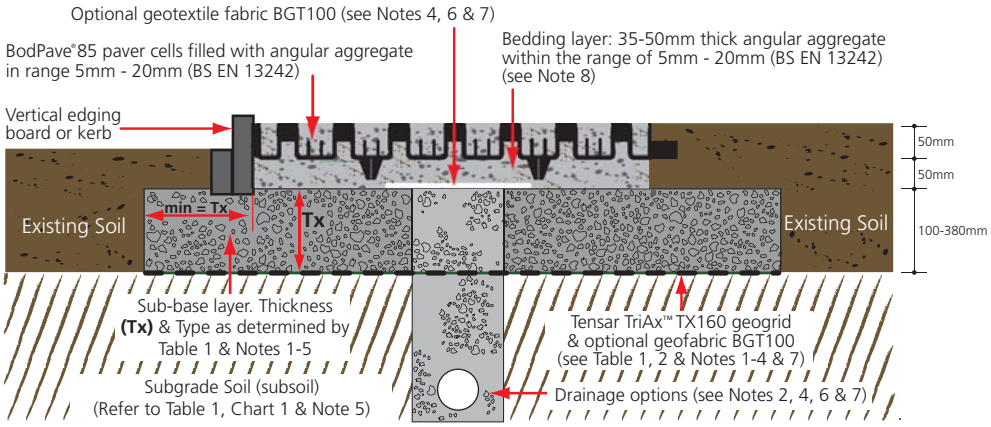
BodPave®85

SPECIFICATION, DESIGN & INSTALLATION GUIDANCE

For Gravel Surfaces



Typical Construction Profile



BODPAVE®85 INSTALLATION METHOD

1. Install edge retention as specified: Either tanalised timber boards, concrete, steel or plastic kerbs as appropriate.
2. Ensure that the gravel/aggregate bedding layer is the correct & uniform thickness, is level & well consolidated.
3. **Place the paver units:** With the 2 sets of **edge loop** connectors facing in directions of laying, place BodPave®85 firmly onto the surface so that its ground spikes are pressed fully into the bedding and the base of the paver cells sit flat on the bedding layer surface. **Connect adjacent pavers together by slotting the edge cell connectors down into the edge loops (LOOPS ALWAYS LEAD)** & progress over the area in rows. Pavers are locked in place by snap-fit clips. If paver separation is required, clips can be dislocated using careful, firm hand or screwdriver pressure or by gently twisting the paver joints. Use protective gloves to avoid abrasions.
4. Pavers can be offset by 1 cell increments or cut to fit around obstructions & curves using a hand or power saw. The use of cut-pieces which do not have integral snap-fit connectors should be avoided wherever possible.
5. Fill pavers with specified angular decorative gravel/aggregate to finished levels. A light whacker plate may be used to consolidate the pavers and settle the fill. Top up the cells as required after settlement. It is preferable not to overfill the cells. The use of 'rounded pea gravel' is not recommended.
6. If the area is to be used for horses, it may be preferable to cover the surface with 50 – 100mm of a fine sand or bark mulch.
7. The surface may be trafficked immediately.

DESIGN NOTES

Note 1: If Tensar TriAx™ TX160 geogrid is omitted, the total Granular Sub-Base (GSB) layer thickness (Tx) must be increased by minimum 50%.

Note 2: A'DoT Type 1' sub-base may be used provided that an adequate drainage system is installed. Alternatively, a permeable/open-graded (reduced fines) sub-base layer (i.e Type 3) may be specified, e.g. as part of a Sustainable Urban Drainage System (SUDS).

Note 3: If construction traffic axle loads will be greater than 60kN (approx' 6 Tonnes), minimum sub-base thickness over Tensar TriAx™ TX160 geogrid shall be 150mm. Maximum sub-base particle size should match minimum sub-base thickness but not exceed 75mm diameter. For sub-base thicknesses of around 100mm, a minimum 37.5mm particle size should be adopted to allow effective installation of Tensar TriAx™ TX160 geogrid

Note 4: Where drains are omitted and a 'reduced fines' sub-base is specified for SUDS, this may be covered with a geotextile fabric (i.e. Boddingtons BGT100) to avoid contaminants leaching into the sub-base.

Note 5: Specific advice on CBR% strengths, ground conditions and construction over weak ground with a CBR less than 1% is available from Boddingtons Limited. CBR% = California Bearing Ratio, a measurement of subgrade soil strength.

Note 6: Typical standard drainage detail: 100mm diameter perforated pipe drains laid at minimum gradient 1:100, bedded on gravel in trench backfilled with 'DoT Type A' drainage aggregate, trench covered &/or wrapped with a geotextile fabric (i.e Boddingtons BGT100), pipes leading to a suitable outfall or soakaway. Drains installed down centre or one edge of areas up to 5m wide. Wider areas may require additional lateral drains at 5m - 10m centres. Drainage design to be determined by the specifier based on specific site conditions.

Note 7: Drainage for a Sustainable Urban Drainage System (SUDS) application will vary according to the site but generally omits the requirement for extensive pipe & trench drainage systems within the sub-base layer and may require an additional layer of BGT100 geotextile fabric at base of construction.

Note 8: The selected gravel fill & bedding should be clean, free-draining, angular shaped material in the specified size range.

Note 9: Maximum advised gradient for traffic applications: 12% (1:8) 7°. Bodpave®85 has specific pegging points if required for steep slope applications. Pegging is not necessary for standard access route applications.

Note 10: BodPave®85 complies with BS8300:2009 - "Design of buildings and their approaches to meet the needs of disabled people" - Code of Practice. (ISBN 978 0 580 57419) & Building Regulations Document 'M' section 6.

Specific advice on the use of BodPave®85 on steep slopes, drainage suitability and Sustainable Urban Drainage Systems (SUDS) applications, can be obtained from Boddingtons Limited.

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BODPAVE®85 PAVING GRIDS

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Table 1: Typical Sub-base Thickness (Tx) Requirements - refer to construction profile overleaf

APPLICATION/LOAD	CBR (%) STRENGTH OF SUBGRADE SOIL *(see Chart 1)*	(TX) DoT SUB-BASE THICKNESS (mm) *(see Notes 1 - 5)*	TENSAR TriAx™ GEOGRID *(see Notes 1 - 3)*
Fire trucks, Coaches and occasional HGV access	≥ 6 = 4 < 6 = 2 < 4 = 1 < 2	100 120 190 380	TX160 TX160 TX160 TX160
Light vehicle access and overspill car parking	≥ 6 = 4 < 6 = 2 < 4 = 1 < 2	100 100 135 260	TX160 TX160 TX160 TX160

Table 2: Paving Grid Specification

DESCRIPTION	DATA
Product **Material** **Colour options** **Paver dimensions** **Installed Paver size** **Nominal internal cell size** **Structure Type** **Cell wall thickness** **Weight (Nominal)** **Load bearing capacity (filled)** **Crush Resistance (unfilled)** **Basal support & Anti-Shear** **Open cell %** **Connection type** **Interlock Mechanism** **Chemical resistance** **UV resistance** **Toxicity**	BodPave®85 100% recycled polyethylene Black, Green & Natural 500mm x 500mm x 50mm + 35mm ground spike 500mm x 500mm (4 grids per m^2) Castellated 67mm Plaque & 46mm Round Shaped Rigid-walled, flexible semi-closed cell combination 2.5mm – 4.4mm 1.56 kg/paver - (6.24kg/m^2) < 400 tonnes/m^2 * < 250 tonnes/m^2 * Integral 35mm long Cross & T section ground spikes (18 per paver) Top 92% / Base 75% Overlapping Edge Loop & Cell connection Integral self locking Snap-Fit Clips Excellent High Non Toxic
Bedding Layer	35 - 50mm thick of 5–20mm clean, angular aggregate (BSEN13242)
Paver fill	To top of cells using 5–20mm clean, angular aggregate (BSEN13242)
Sub-base type	DoT Type 1 or a modified permeable Type 3 sub-base *(Table 1 & Notes 1-5)*
Sub-base reinforcement	Tensar TriAx™ TX160 geogrid *(Table 1 & Notes 1-4 & 7)*-Specification on request.
Geotextile Fabric	Boddingtons BGT100 Geotextile where appropriate

Chart 1: Field guidance for estimating sub-grade strengths

Consistency	Indicator			Strength	
	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	Loaded construction vehicle ruts by 25mm	15-30	4-6	75-150

This field guide is provided as an aid to assessing the mechanical stabilisation requirements in commonly encountered site conditions. Boddingtons Limited accepts no responsibility for any loss or damage resulting from the use of this guide.

*Research carried out by Sheffield University Department of Mechanical Engineering. (Rennison/Allen March 2009)

Please note that the information above is given as a guide only. All sizes and weights are nominal figures and may vary to what is published. Boddingtons cannot be liable for damage caused by incorrect installation of this product. Final determination of the suitability of any information or material for the use contemplated and the manner of its use is the sole responsibility of the user and the user must assume all risk and responsibility in connection therewith.

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