

'REDUCED DIG' INSTALLATION GUIDANCE

Gravel & Grassed Surfaces



The 'Reduced Dig' method of installation for BodPave[®]85 is suitable for pedestrian and light vehicle applications where firm ground conditions already exist. It is particularly advantageous where there are budgetary limitations, restrictions on excavation due to SSSI conservation and archeological issues or Tree Preservation Orders (TPO).

BENEFITS OF REDUCED DIG

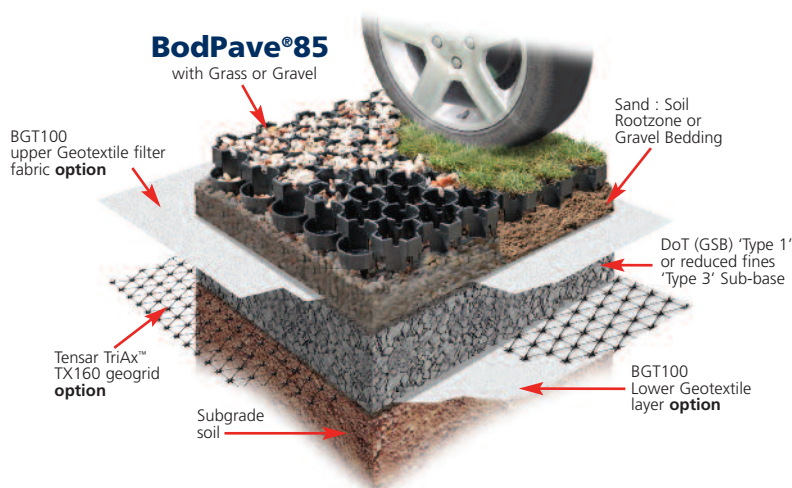
- Minimal site preparation or variation to existing levels
- Reduced installation time and costs
- Reduced import of materials and disposal of debris
- Rapid establishment and usage of site after installation
- Compliant with current guidance for Sustainable Urban Drainage Systems (SUDS)
- Suitable for grass or gravel surfaces

APPLICATIONS

- Light vehicle parking and access routes
- Pedestrian access & Cycle routes
- Tree root protection
- Golf buggy paths and Tow paths
- Caravan and Leisure site access routes
- Wheelchair and disabled access (DDA compliant)
- Light aircraft parking and taxiways

SITE SUITABILITY

- Where existing ground conditions are firm (ie: CBR > 7%) and free draining or where a suitable hardcore/stone base already exists.
- Where trafficking is irregular or occasional
- Where loads will not exceed that of cars and light vans



Paving Grid Specification

DESCRIPTION	DATA
Product	BodPave [®] 85
Material	100% recycled polyethylene
Colour options	Black, Green & Natural
Paver dimensions	500mm x 500mm x 50mm + 35mm ground spike
Installed Paver size	500mm x 500mm (4 grids per m ²)
Nominal internal cell size	Castellated 67mm Plaque & 46mm Round Shaped
Structure Type	Rigid-walled, flexible semi-closed cell combination
Cell wall thickness	2.5mm – 4.4mm
Weight (Nominal)	1.56 kg/paver - (6.24kg/m ²)
Load bearing capacity (filled)	< 400 tonnes/m ² *
Crush Resistance (unfilled)	< 250 tonnes/m ² *
Basal support & Anti-Shear	Integral 35mm long Cross & T section ground spikes (18 per paver)
Open cell %	Top 92% / Base 75%
Connection type	Overlapping Edge Loop & Cell connection
Interlock Mechanism	Integral self locking Snap-Fit Clips
Chemical resistance	Excellent
UV resistance	High
Toxicity	Non Toxic

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

BODPAVE[®]85 PAVING GRIDS - 'REDUCED DIG' METHOD

INSTALLATION METHODS

After confirming that the ground conditions are suitably firm and free-draining for this type of 'reduced dig' application, one of the following methods of installation should be followed.

A. FOR GRASSED SURFACES

1. Cut the grass very close to the surface or where specified remove the turf/topsoil to a depth of <100mm according to local levels. Dispose of all debris. Level the formation layer, lightly consolidate & install drains as specified.
2. Install edge retention as specified: Either tanalised timber boards, concrete, steel or plastic kerbs as appropriate.
3. Place a layer of Tensar TriAx[™] TX160 geogrid on the formation layer and ensure it is flat to the surface by pinning as required. Note: An optional geotextile fabric layer (BGT100) can be placed onto the formation prior to the Tensar TriAx[™] TX160 geogrid installation, to prevent migration/contamination (**see Note 2**).
4. Place a 35 - 50mm thick bedding layer of 10 -20mm diameter angular gravel / aggregate evenly over the geogrid. The geogrid must not be allowed to become exposed above the gravel / aggregate layer.
5. With the 2 sets of edge **loop** connectors facing in directions of laying, place the BodPave[®]85 firmly onto the screeded bedding layer so that the ground spikes are pressed fully into the bedding and the base of the paver cells sit flat on the surface. **Connect adjacent pavers together by slotting the edge cell connectors down into the edge loops (LOOPS ALWAYS LEAD)**. Pavers are locked in place by the integral snap-fit clips. Progress over the area in rows. Use protective gloves to avoid abrasions.
6. 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.
7. Fill pavers with the specified propriety rootzone to finished levels of 5-7mm below the top of the cells after settlement. A light whacker plate may be used to consolidate the pavers and settle rootzone fill. Do not overfill the cells. Additional settlement of the rootzone may occur where an open graded bedding is used, & further topping-up may be required.
8. Rootzone fill must be a free-draining, structurally sound propriety blend of sand:soil or sand:compost such as used in sports/golf construction & normally identified as a 60:40 or 70:30 ratio blend. The use of site-won materials or in-situ self-blending is NOT recommended without taking further advice.
9. Carry out a normal seeding, fertilising & 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 paver cells. Thin-cut or Washed Turf may be rolled into the surface as an alternative if required.
10. The surface may be trafficked immediately, but it is preferable to allow grass to fully establish prior to use.

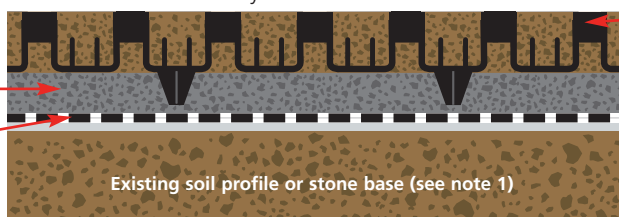
B. FOR RETAINED GRAVEL SURFACES

After confirming that the ground conditions are suitably firm and free-draining for this type of 'reduced dig' application, the following method of installation should be followed.

1. Follow steps 1-6 above. Note: An optional geotextile fabric layer (BGT100) can be placed onto the formation prior to the Tensar TriAx[™] TX160 geogrid installation (Step 3), to prevent migration/contamination (**see Note 2**).
2. Fill the pavers with the specified angular gravel or aggregate. Preferably a clean, evenly graded angular material with a range of 5 - 20mm diameter. Rounded 'pea gravel' is not recommended.
3. Consolidate the surface using a light vibratory whacker plate if required.
4. Refill any localised low areas with aggregate and repeat consolidation until satisfied with final compacted finish.
5. The surface can be trafficked immediately.

Bedding Layer
35-50mm thick layer of 10-20mm diameter, angular gravel or crushed aggregate.

Optional Tensar TriAx[™] TX160 geogrid layer and BGT100 geotextile (See note 2)



BodPave[®]85
50mm deep open-celled plastic pavers. Filled with 60:40 sand/soil or sand/compost rootzone blend. Then seeded and fertilised.
Or
Filled with selected gravel/angular aggregate (5-20mm dia.)

Note 1: Determination of requirement for placement of an imported sub-base for the application and the required thickness of that sub-base material shall be determined by the strength and condition of the existing soils, the extent of allowable excavation and in consideration of the proposed traffic loadings. Standard Bodpave[®]85 Access Route design may apply. Certain ground conditions may require placement of a drainage system within the design.

Note 2: Specific site criteria will determine if Tensar TriAx[™] TX160 geogrid &/or BGT100 Geotextile are required.

Note 3: 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 4: 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.

For BodPave[®]85 product specification please refer to the Design documents for use in Grassed & Gravel Surfaces.

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

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