



#### DESIGN NOTES:

- Note 1: Minimum subbase thickness (Tx) can be selected from table 1 or 2. In the absence of any site specific ground investigation report, please refer to the specification, design and installation guide for estimating ground strength and soil properties.
- Note 2: If the Terram Bodgrid layer is omitted, then the total subbase layer thickness (Tx) must be increased by 50%. A Terram standard geotextile separation layer should be specified with lower subgrade strength (CBR value) requiring a more robust grade in accordance with BS8661:2019 (see table 2).
- Note 3: Bodpave units are an ideal surface for source control porous paving (SUDS (Sustainable Drainage Systems) with a permeable sub-base. DoT Type 3 (Type 1x) porous/open graded granular material as described in Specification for Highways Works clause 805. If a higher water storage (attenuation) capacity (void ratio) is required a hard crushed angular "clean stone" such as a coarse graded aggregate (CGA) type 4/20 (4 mm minimum and 20 mm maximum particle size) can be used. The type of SUDS design (attenuation, total or partial infiltration) will depend upon the underlying ground conditions and not all sites are suitable for infiltration. Weak and low-permeability cohesive sub-grades are generally unsuitable for infiltration (permeability coefficient  $k < 10^{-6}$  m/s). Clays with a low plasticity index (<20%) will reduce in strength when saturated: a full attenuation system with an impermeable membrane directly on top of the subgrade is recommended. Specific advice on suitable drainage and construction over very weak ground (CBR <1%) is available from TERRAM.
- Note 4: Alternatively traditional DoT Type 1 well graded granular material may be used for the subbase provided that an adequate drainage system is installed. Typical drainage details: 100mm diameter perforated pipe drain laid at minimum gradient 1:100, bedded on gravel in trench backfilled with SHW Cbase 505 Type A drainage aggregate (or CGA type 4/20), covered or wrapped with Terram T1000 standard nonwoven geotextile and leading to a suitable outlet or soakaway. Drains placed down the centre or along the edge of access routes up to 5m wide. Wider areas may require additional drains at 5m - 10m centres.
- Note 5: The subbase must be covered with a layer of Terram T1000 standard or Inbitex™ nonwoven geotextile to prevent settlement due to mixing of the bedding & subbase layers and to provide filtration & pollution control.
- Note 6: Rootzone bedding and paver fill must be a free-draining, structurally sound proprietary 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. Following initial seeding, the grass will require several weeks to establish during the growing season (Spring/Summer/Autumn). The root sward may take 6-8 weeks or 2-3 cuts of the grass to fully establish and will require regular irrigation. The area should not be trafficked during this time.
- Note 7: The final pavement and drainage design should be undertaken by a suitably qualified civil engineer and based on specific site conditions.
- Note 8: Maximum advised gradient for traffic: applications is 12% (1:8) % . Bodpave units have specific fixing points for steel u-pins if required for steep slope applications.

For further guidance, please refer to the specification, design and installation guide for estimating ground strength and soil properties.

**TABLE 1 MINIMUM SUBBASE THICKNESS (Tx) WITH BODGRID**

SUBGRADE CBR* %	Cars/ light vehicles (#)		Coaches/Heavy goods/emergency vehicles (#)		Overlap (mm)
	Thickness (mm)	Bodgrid	Thickness (mm)	Bodgrid	
1	300	GC30	400	GC30	600
2	150	GC30	250	GC30	500
3	125	GC30	175	GC30	450
4	125	GC30	150	GC30	400
5+	100	GC30	125	GC30	300

**TABLE 2 MINIMUM SUBBASE THICKNESS (Tx) WITHOUT BODGRID**

SUBGRADE CBR* %	Cars/ light vehicles (#)		Coaches/Heavy goods/emergency vehicles (#)		Overlap (mm)
	Thickness (mm)	Standard geotextile	Thickness (mm)	Standard geotextile	
1	450	T2000	600	T2000	600
2	225	T1500	375	T1500	500
3	200	T1000	300	T1000	450
4	200	T1000	225	T1000	400
5+	150	T1000	200	T1000	300

\* California Bearing Ratio test

# Regular light taring of vehicles and "dry" steering may cause damage to the Bodpave units and compaction of the rootzone fill restricting grass growth; vehicle manoeuvring and frequency of use should be carefully considered at specification/design stage. Terram Bodpave™ and Truckpave™ pavers are generally recommended for occasional overrun or regular HGV traffic respectively. If construction traffic axle load exceeds 60KN (6 Tonnes), minimum subbase thickness over TERRAM Bodgrid should be 200mm.