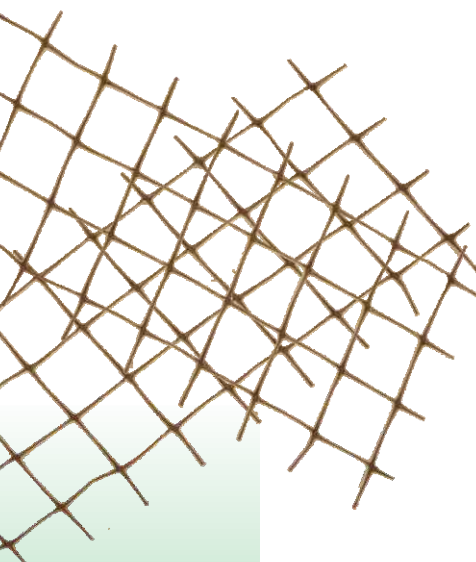




Surface Solutions for Grass & Gravel

Design guidance for Access Roads

Fire Service and HGV, overflow car parks, events areas and occasional vehicle routes.



Typical Profile

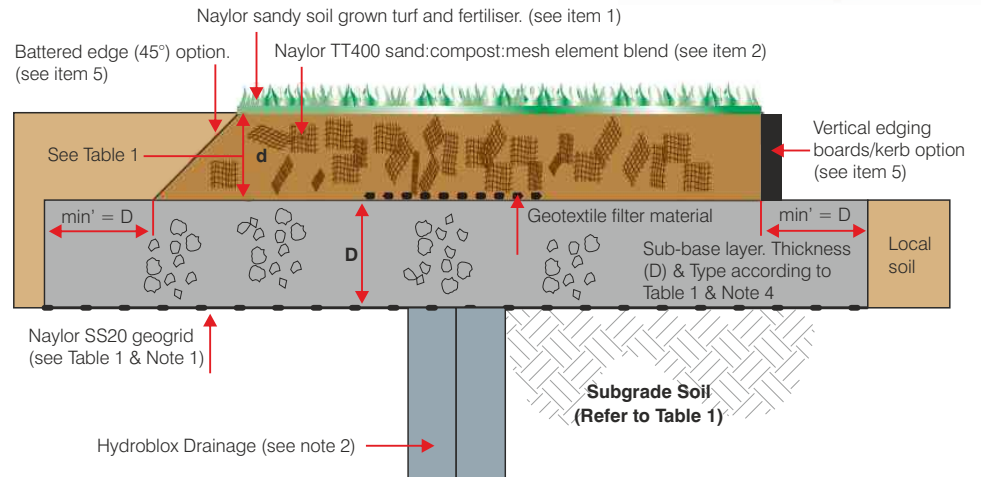


Table 1

Sub-grade Soil Strength CBR%* (see Chart 1)	Required layer thickness in millimetres			Naylor Geogrid Type
	Naylor Rootzone 'TT400' (d)	DoT sub-base layer (D) (refer to Notes 4 & 5)		
		For Light vehicles	For HGV's	
> 12% (light vehicles)	150mm	No sub-base	N/A	None
> 12% (HGV's)	200mm	N/A	No sub-base	None
6- 12%	200mm	No sub-base	No sub-base	None
4- 6%	200mm	100mm	150mm	SS20
2- 4%	200mm	150mm	200mm	SS30
1-2%	200mm	250mm	350mm	SS30

* CBR% = California Bearing Ratio. (see Chart 1)

A typical vehicle access route profile would consist:

1. The specified Naylor Environmental sandy soil grown turf (<20mm thick) and Naylor installation fertiliser.
2. A 150mm or 200mm thick layer of Naylor TechTurf TT400 rootzone, installed according to Naylor Environmental recommendations. Refer to Table 1 above for advice on the required TT400 layer thickness.
3. **Where a sub-base is not required.**
Lightly cultivate and re-consolidate the sub-grade formation layer. Refer to Table 1 above to determine if a sub-base layer is required.
4. **Where a sub-base is required.**
A layer of DoT Type 1 sub-base (see Note 4) or similar approved material, compacted in accordance with DoT specification for Highway works. Refer to Table 1 for required sub-base layer thickness.

In some cases, such as Sustainable Drainage Systems (SUDS) applications, where improved drainage is required, a reduced fines, permeable DoT Type sub-base or similar may be specified. (see Notes 4 & 5).

5. Edges of the TechTurf can be retained with kerbs or edging boards or by leaving a (45°) battered edge to the Naylot TT400 rootzone where it abutts an adjacent grassed area.
6. Access routes can be delineated using kerbs, bollards, shrubs or trees etc.

Refer to ADP 'Installation Guidance' literature for detailed installation advice.

Items 1-2 above are normally supplied to site by Naylor Environmental as part of the TechTurf System. Specific project application advice and design support can be obtained from Naylor Environmental technical advisors.

Note 1: If Naylor geogrid is omitted, then the total Sub-base layer thickness must be increased by a minimum 50%.

Note 2: Typical drainage details: Double row of Naylor Hydroblox irrigation system to be inserted into subgrade below geogrid to transport water to outlet. Units do not require a geotextile surround and are placed down the centre or one edge of access routes up to 5m wide. Units can be placed at 5m centres to drain larger areas. Advice is available from Naylor Environmental.

Note 3: Specific advice on ground conditions, CBR% and construction over ground with a CBR less than 1% is available from Naylor Environmental technical advisors.

Note 4: 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 may be specified. If specified this permeable sub-base layer must be covered with either a geotextile filter membrane and/or a suitable clean gravel blinding layer, to avoid loss of the over laying rootzone (TT400) into the permeable sub-base.

Note 5: Specific advice on Sustainable Urban Drainage Systems (SUDS) is available from Naylor technical advisors.

Chart 1: Field guidance for estimating sub-grade strengths

Consistency	Indicator			Strength	
	Tactile (feel)	Visual (observation)	Mechanical (test)	CBR %	CU kN/sqm
Very Soft	Hand sample squeezes through fingers	Man standing will sink >75mm	SPT <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 a guideline for assessing the mechanical stabilisation requirements in commonly encountered field conditions. ADP accepts no responsibility for any loss or damage resulting from the use of this guide.

Surface
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