

Importance of a Subbase

The subbase of a driveway is arguably the most crucial aspect. It provides a stable foundation underneath your final wearing course (i.e CORE DRIVE). A properly prepared subbase distributes the weight of vehicles, preventing rutting or sinking. Without a proper subbase, the driveway can become uneven and may eventually fail, leading to costly repairs and a reduced lifespan. The two key factors to consider with a Subbase are the depth and the material.

MOT TYPE 1



The most commonly used material for subbases in the UK, also referred to as Scalpings. The mix in size of aggregate (40mm to down to dust) provides an incredibly strong foundation once compacted. However it is not considered a Permeable subbase material and therefore not suitable if a SuDS complaint build up is required.

4-20mm Clean Aggregate



Similar to MOT Type 1, this is typically a Limestone or Granite aggregate. The key difference being that the 'fines' have been removed to increases its porosity making it ideal for SuDS complaint Build ups.

CBR % VALUE INDICATOR



Use the table opposite to determine the CBR% value of your subgrade once you have carried out either the tactile, visual or mechanical test.

INTENDED TRAFFIC LOAD



2 Next, use this table to help you identify your intended traffic load according to vehicle size and frequency.

SUB BASE CALCULATION



Lastly, use the CBR% value and traffic type you have identified to calculate the depth of subbase required for your project.

	IDENTIFYING FACTOR			STRENGTH	
CUNSISTENCY	Tactile (feel)	Visual (observation)	Mechanical (test) SPT	CBR %	CU kn/m2
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	Can't be moulded but can be indented	Construction vehicle ruts by 25mm	15 - 30	4 - 6	70 - 150

Vehicle Type →	Domestic vehicles	Commercial vehicles	Heavy goods vehicles
Traffic Frequency ↓			
Low Frequency < 10 a day	Light traffic	Medium traffic	Heavy traffic
Medium Frequency 10 - 20 a day	Medium traffic	Medium traffic	Heavy traffic
High Frequency >20 a day	Heavy traffic	Heavy traffic	Heavy traffic

CBR (%) STRENGTH OF EXISTING SUBGRADE	Light traffic	Medium traffic	Heavy traffic	
>6	100mm	110mm	120mm	
= 4 >6	100mm	125mm	150mm	
= 2 >4	135mm	165mm	200mm	
=1>2	260mm	330mm	400mm	

The table indicates typical sub base thicknesses required depending on the subgrade CBR value and intended traffic load. Please note this is intended as a general quide in accordance with BS7533.

For further details on permeable paving design please refer to BS7533 Part 13; for installation refer to Part 1. The design for build up should satisfy two parts - firstly to support the intended traffic load and secondly to manage surface water.