



## Scala Penetrometer Notes:

### **Description**

Our penetrometers are made to New Zealand Standards specification in accordance with NZS 4402 Test 6.5.2: 1988.

The weight is 9kg and drops 510mm.

**If you have to unscrew or replace the handle or anvil, you need to make sure you maintain this 510mm travel for the weight.**

### **CBR Estimates**

For CBR estimates these penetrometers can be used in conjunction with the tables from the Country Roads Board, Victoria, New South Wales, Australia.

Tables are overleaf. You can also see the tables on our website.

### **Extension Rods**

It is easy to add extension rods to the kit: for convenience we make a set of consecutively numbered 800mm extensions. The rods have flats milled on them so you can easily tighten them up with an adjustable wrench.

We make the penetrometers as tough as is practical but breakages are not uncommon. If uninterrupted continuity of fieldwork is important, it is advisable to carry spares.

### **Extraction**

When the penetrometer is removed from a hole by back-hammering the weight against the handle, the weakest link is the guide rod. We recommend that users carry a spare guide rod and anvil.

(Of course we recommend that users employ our penetrometer extractor or some method of gently retrieving the rods without back-hammering.)

It is wise to carry a spare cone also if there is any risk of losing it or of it being damaged from repeated encounters with rocky material.

### **Groundtest Equipment**

Tel: (09) 634 1509

Fax: (09) 634 1560

[www.groundtest.co.nz](http://www.groundtest.co.nz)

**Table 1: Field CBR Estimated from Scala Penetrometer  
(Table From Country Roads Board)**

**Penetration In Millimetres**

**Estimated Field CBR**

less than...	1 blow	2 blows	4 blows	8 blows
5	50 +	50 +	50 +	50 +
6	50	50 +	50 +	50 +
	32	50 +	50 +	50 +
10	22	50	50 +	50 +
	18	39	50 +	50 +
15	14	32	50 +	50 +
	12	26	50 +	50 +
20	10	22	50	50 +
	9	20	45	50 +
25	8	18	40	50 +
	7	16	36	50 +
30	6	14	32	50 +
	6	13	29	50 +
35	5	12	26	50 +
	5	11	24	50
40	4.5	10	22	50
	4.5	10	21	47
45	4	9	20	45
	4	9	19	43
50	3.5	8	18	40
	3.5	8	17	38
55	3.5	7	16	36
	3			
60	3			
	2.5			
65 - 70	2.5			
75 - 100	2			
100 - 160	1.5			

**Table 2: Example of test records with field CBR Estimated**

Number of Blows	Depth in mm	Penetration mm	Estimate CBR	Layer CBR
0	881			7
1	847	34	5	
1	813	36	5	
1	786	27	7	
1	756	30	6	
1	730	16	8	
1	703	27	7	
1	678	25	8	9
1	657	21	10	
1	634	23	4	
1	610	24	8	
1	587	23	9	
2	542	45	9	
2	500	42	10	
2	458	42	10	13
2	412	46	9	
2	374	38	11	
2	345	24	14	
2	313	32	13	
2	285	28	16	
2	255	30	16	
2	228	27	16	
2	193	35	12	
2	158	35	12	