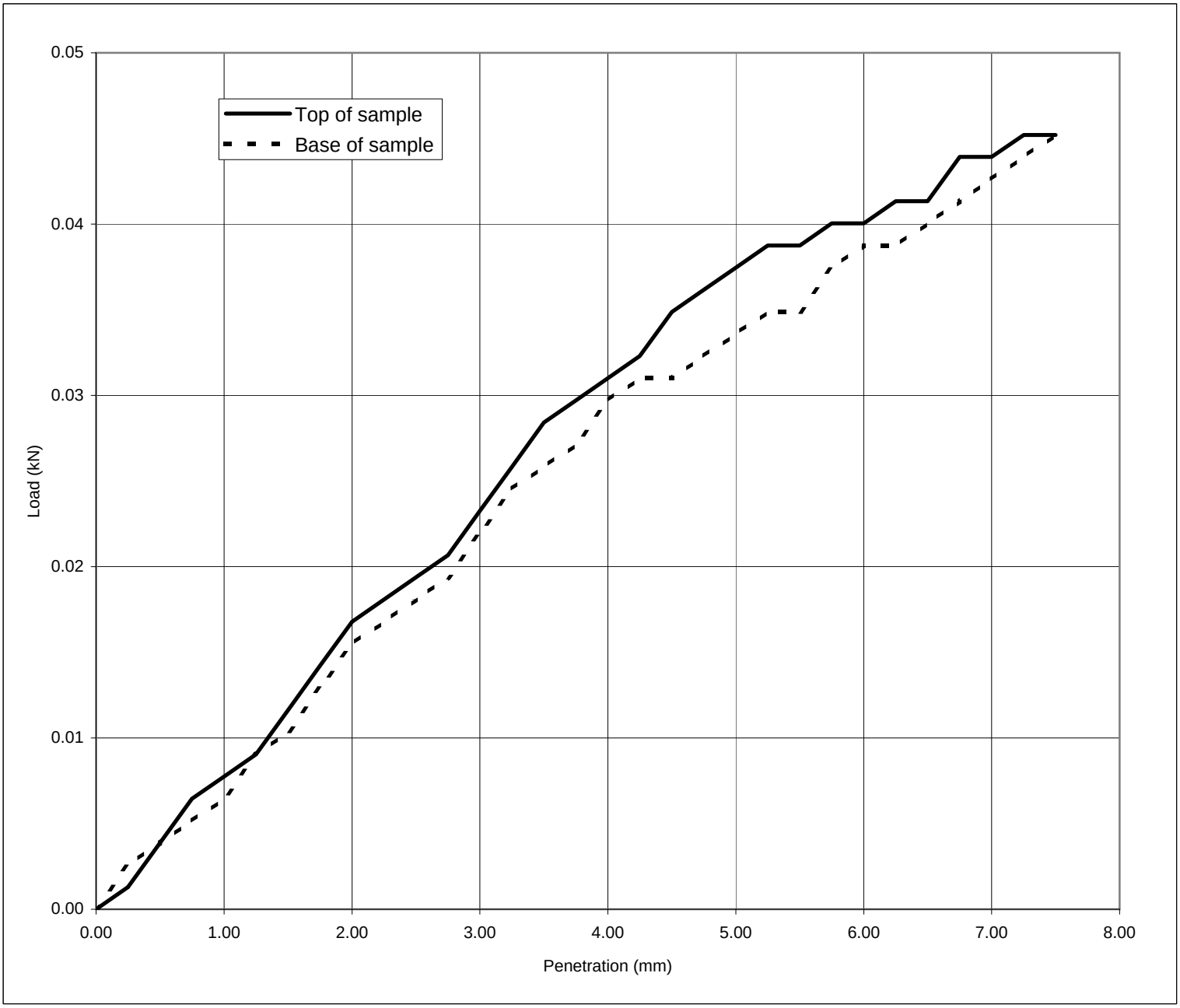
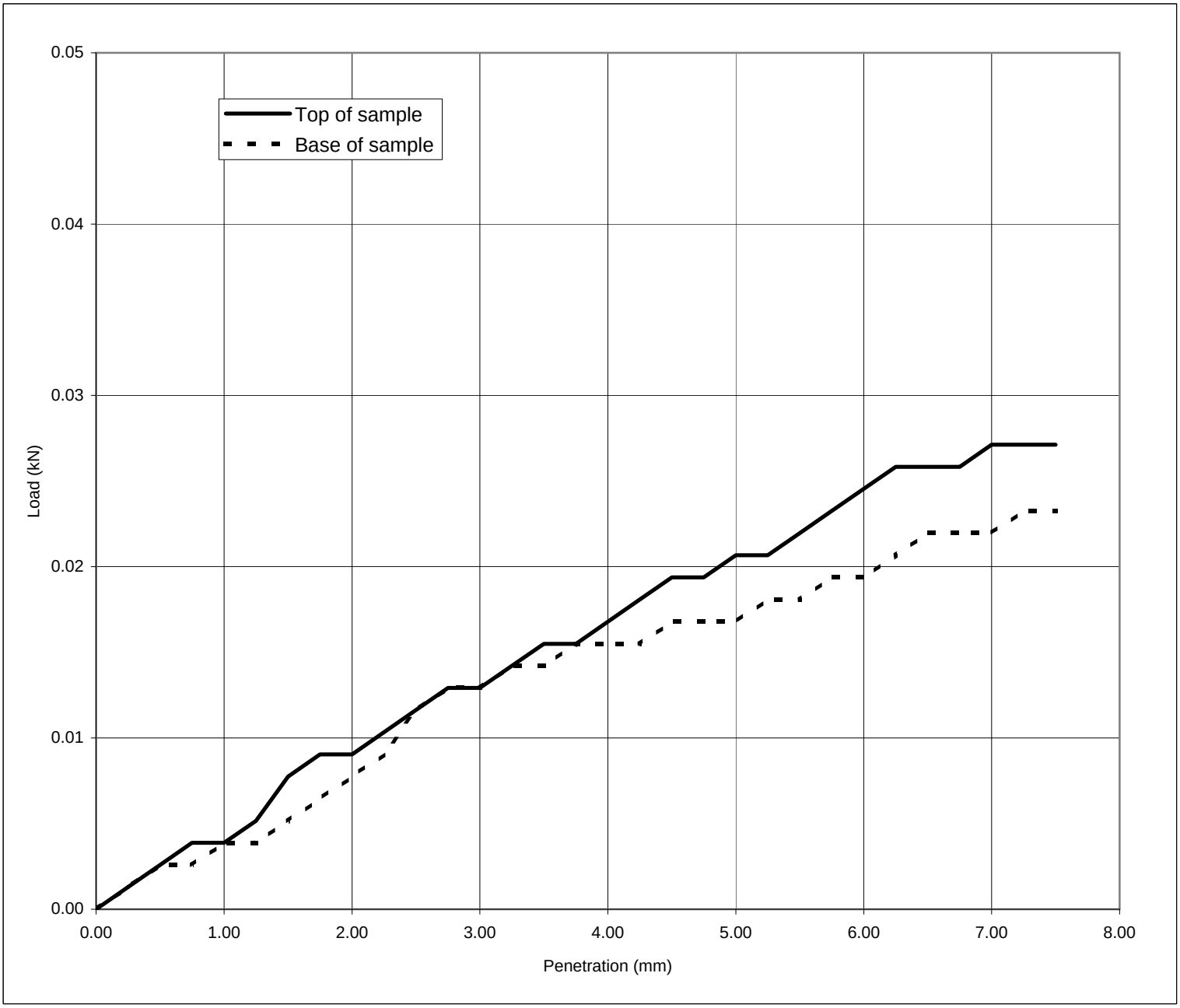


California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	20	%		Top	Base				
Bulk Density	1.98	Mg/m^3	Moisture Content	22	18	%	**Trialpit**	**CBR01**
Dry Density	1.65	Mg/m^3	CBR (%) at 2.5mm	0.1	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	6		%	**Accepted CBR (%)**	**0.2**

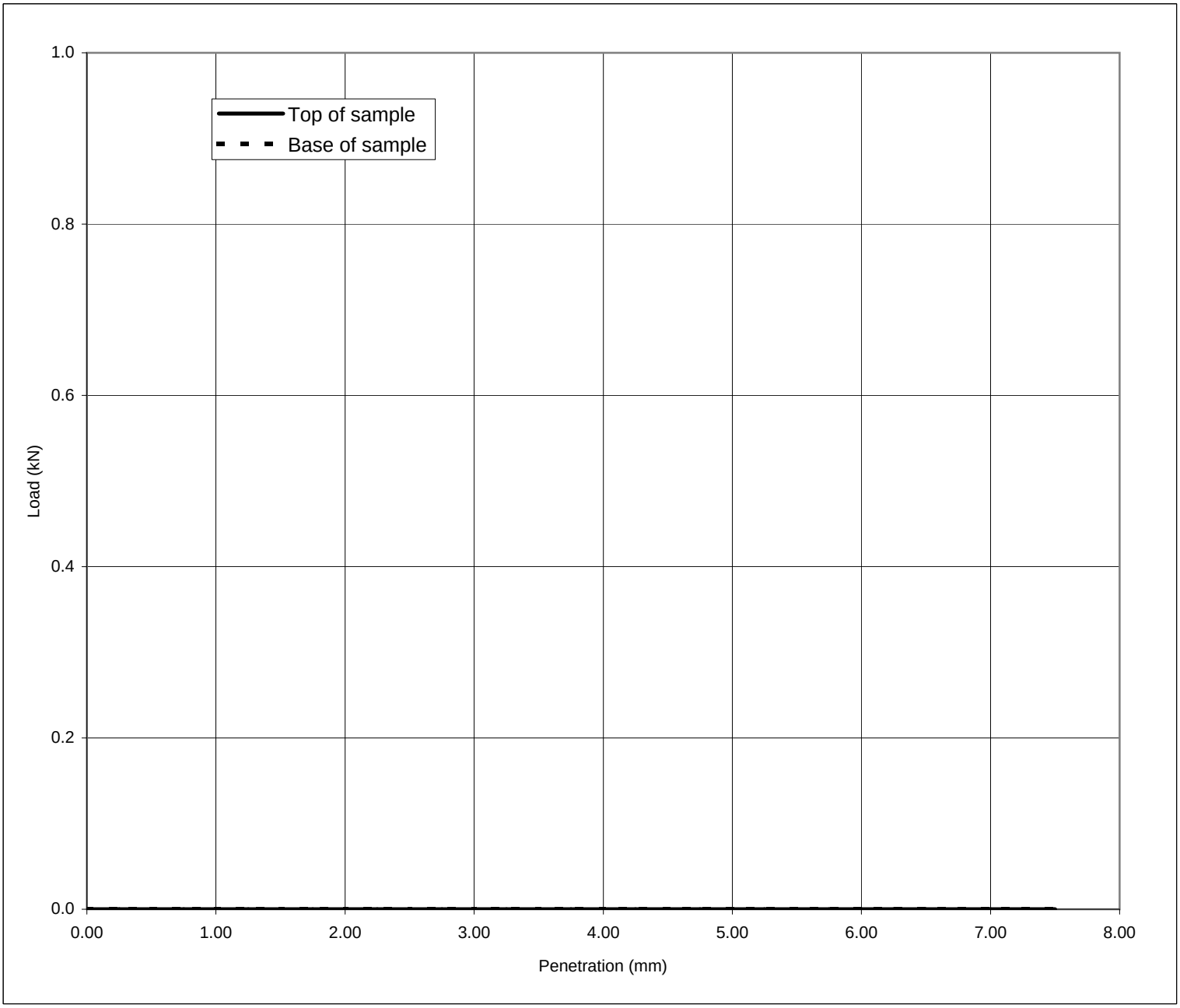
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	17	%		Top	Base				
Bulk Density	1.89	Mg/m^3	Moisture Content	17	17	%	**Trialpit**	**CBR01**
Dry Density	1.62	Mg/m^3	CBR (%) at 2.5mm	0.1	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.1	0.1	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	4		%	**Accepted CBR (%)**	**0.1**

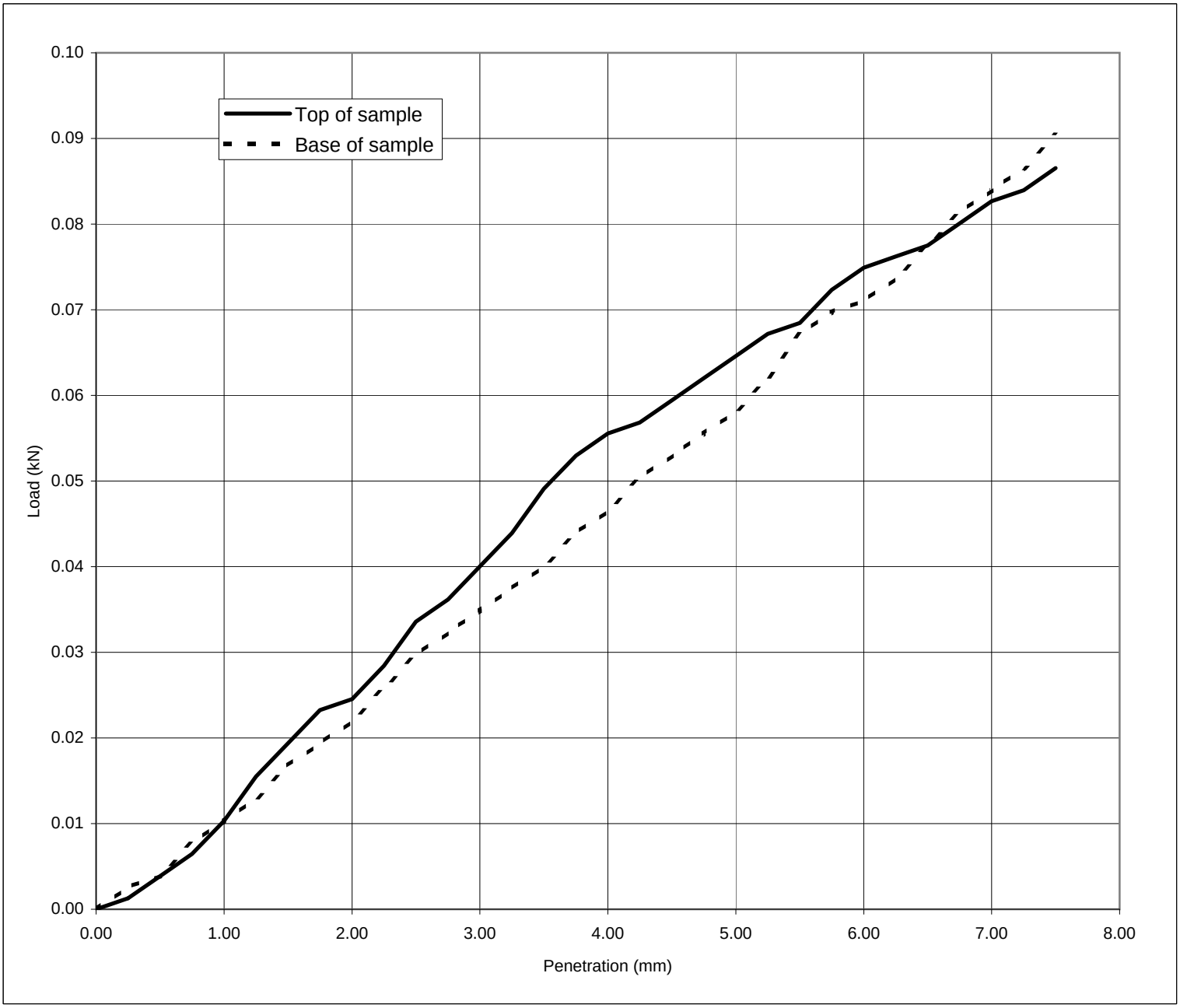
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	23	%		Top	Base				
Bulk Density	1.84	Mg/m^3	Moisture Content	23	23	%	**Trialpit**	**CBR03**
Dry Density	1.50	Mg/m^3	CBR (%) at 2.5mm	<0.1	<0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	<0.1	<0.1	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	5		%	**Accepted CBR (%)**	**<0.1**

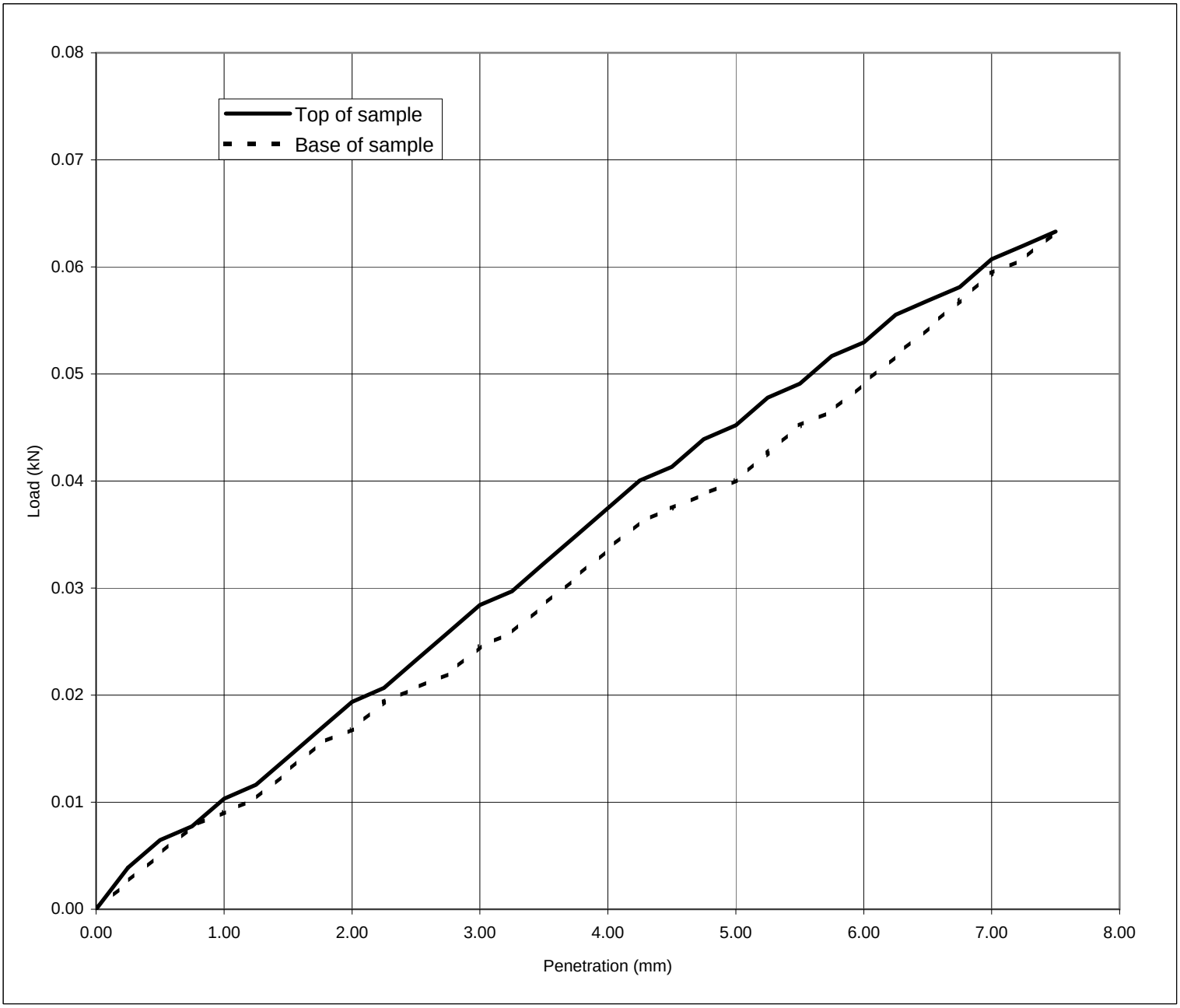
Test Notes;
Test specimen did not register any reading on load measuring device as the material is too soft



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	18	%		Top	Base				
Bulk Density	1.96	Mg/m^3	Moisture Content	18	18	%	**Trialpit**	**CBR03**
Dry Density	1.66	Mg/m^3	CBR (%) at 2.5mm	0.3	0.2	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.3	0.3	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	3		%	**Accepted CBR (%)**	**0.3**

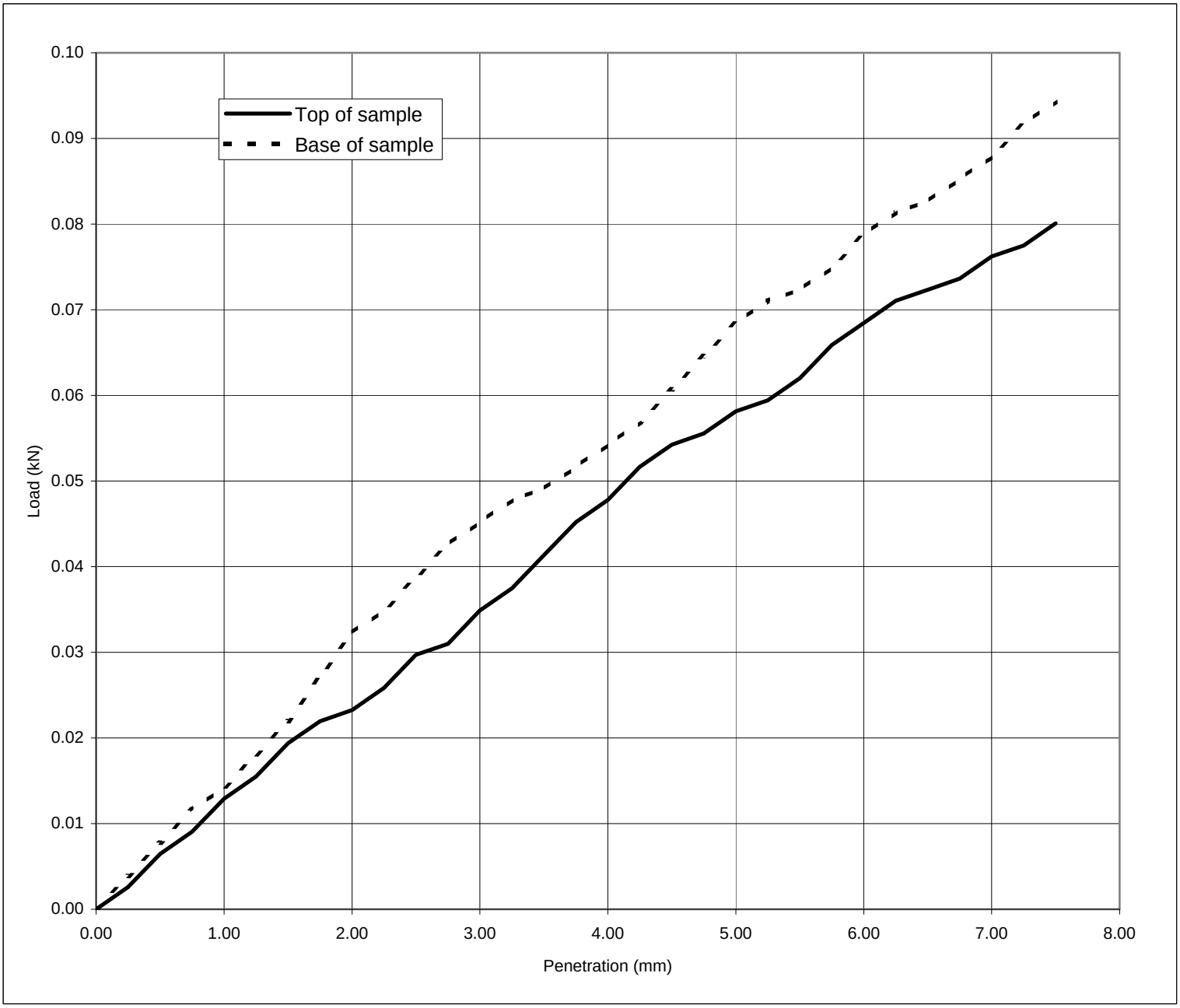
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	24	%		Top	Base				
Bulk Density	1.95	Mg/m^3	Moisture Content	25	23	%	**Trialpit**	**CBR05**
Dry Density	1.58	Mg/m^3	CBR (%) at 2.5mm	0.2	0.2	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	20		%	**Accepted CBR (%)**	**0.2**

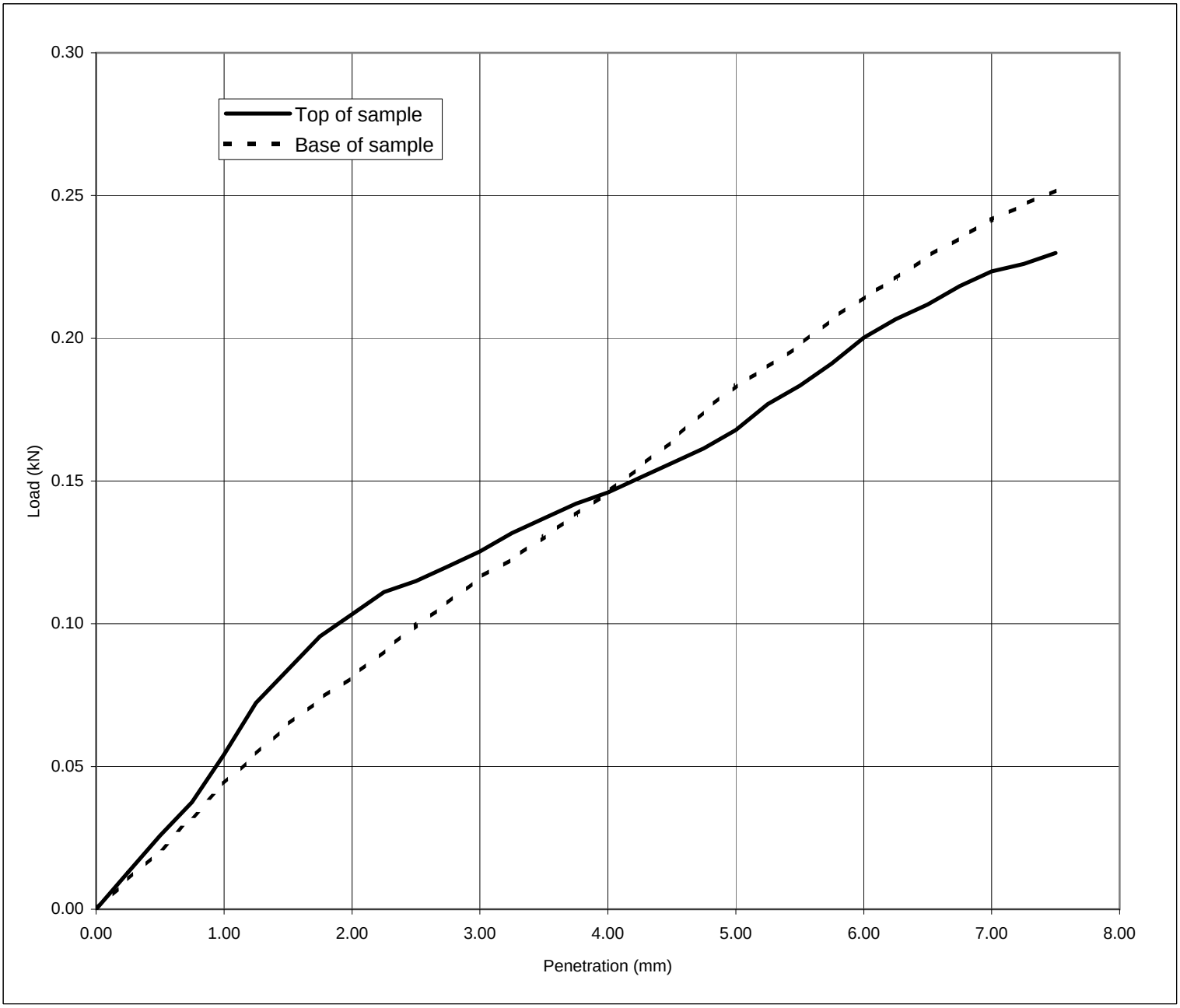
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	23	%		Top	Base				
Bulk Density	1.84	Mg/m^3	Moisture Content	23	24	%	**Trialpit**	**CBR05**
Dry Density	1.50	Mg/m^3	CBR (%) at 2.5mm	0.2	0.3	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.3	0.3	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	12		%	**Accepted CBR (%)**	**0.3**

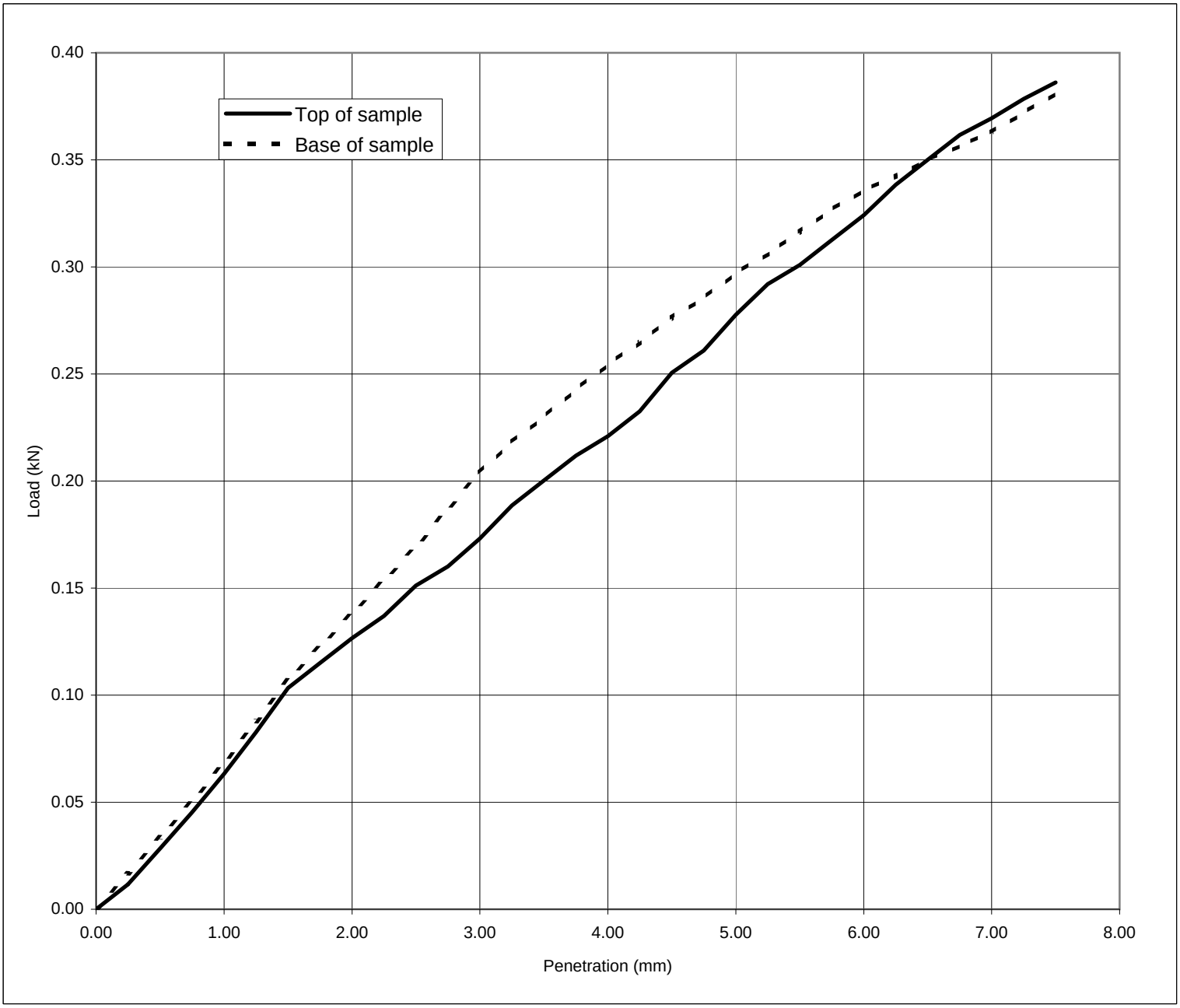
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	20	%		Top	Base				
Bulk Density	2.05	Mg/m^3	Moisture Content	19	20	%	**Trialpit**	**CBR07**
Dry Density	1.72	Mg/m^3	CBR (%) at 2.5mm	0.9	0.8	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.8	0.9	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	13		%	**Accepted CBR (%)**	**0.9**

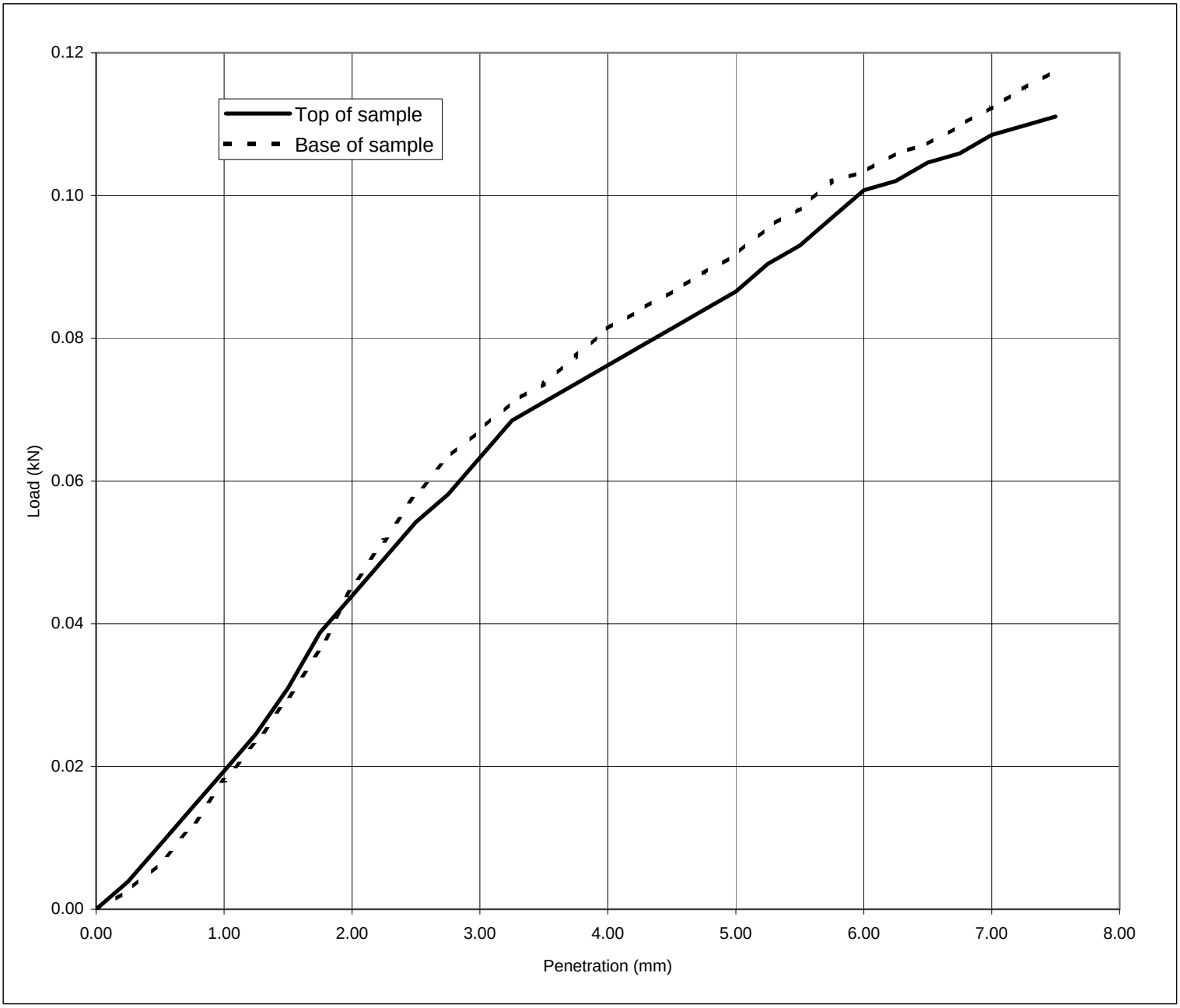
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	15	%		Top	Base				
Bulk Density	2.01	Mg/m^3	Moisture Content	14	16	%	**Trialpit**	**CBR07**
Dry Density	1.74	Mg/m^3	CBR (%) at 2.5mm	1.1	1.3	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	1.4	1.5	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	6		%	**Accepted CBR (%)**	**1.5**

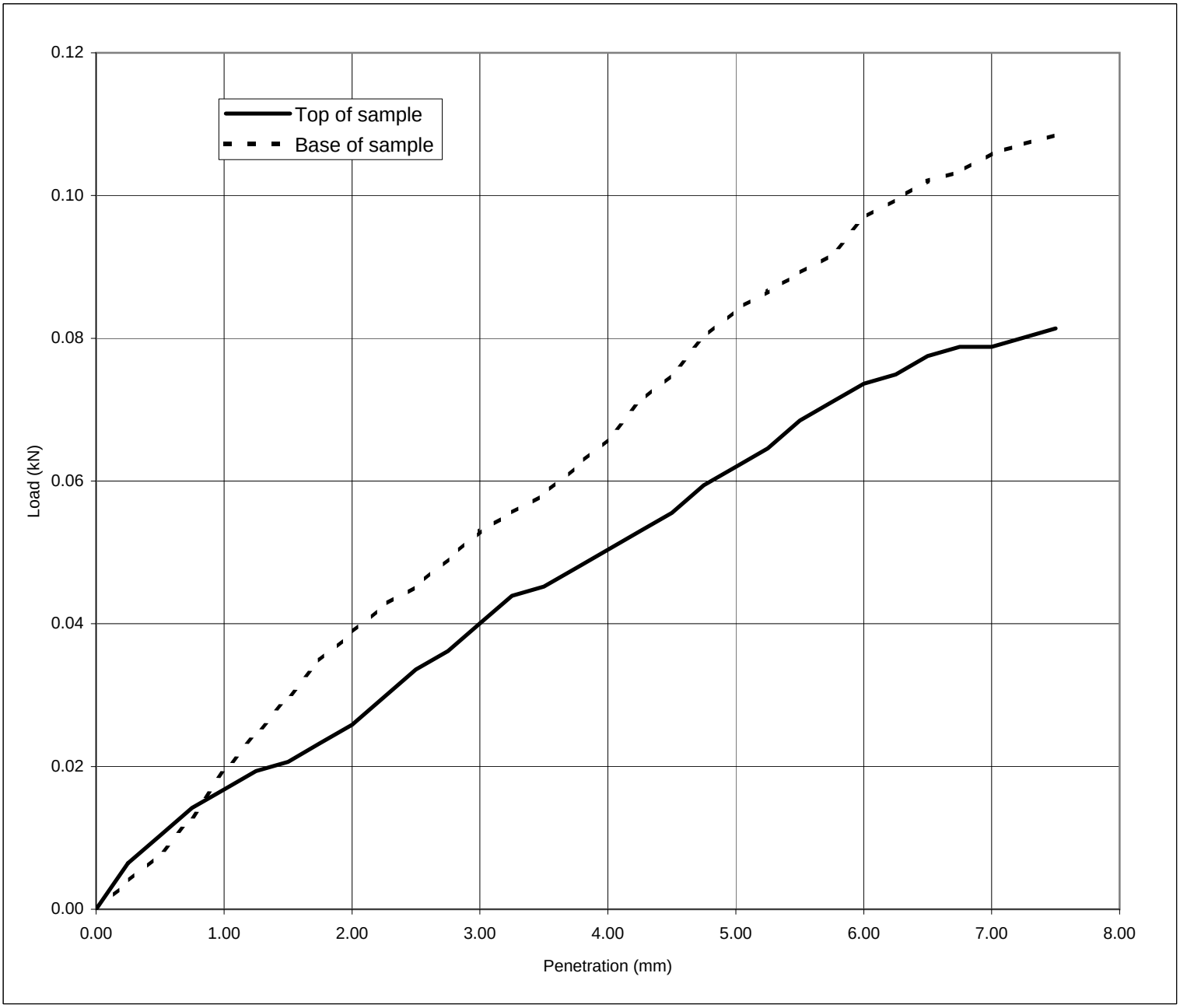
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	17	%		Top	Base				
Bulk Density	2.05	Mg/m^3	Moisture Content	17	17	%	**Trialpit**	**CBR09**
Dry Density	1.75	Mg/m^3	CBR (%) at 2.5mm	0.4	0.4	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.4	0.5	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	7		%	**Accepted CBR (%)**	**0.5**

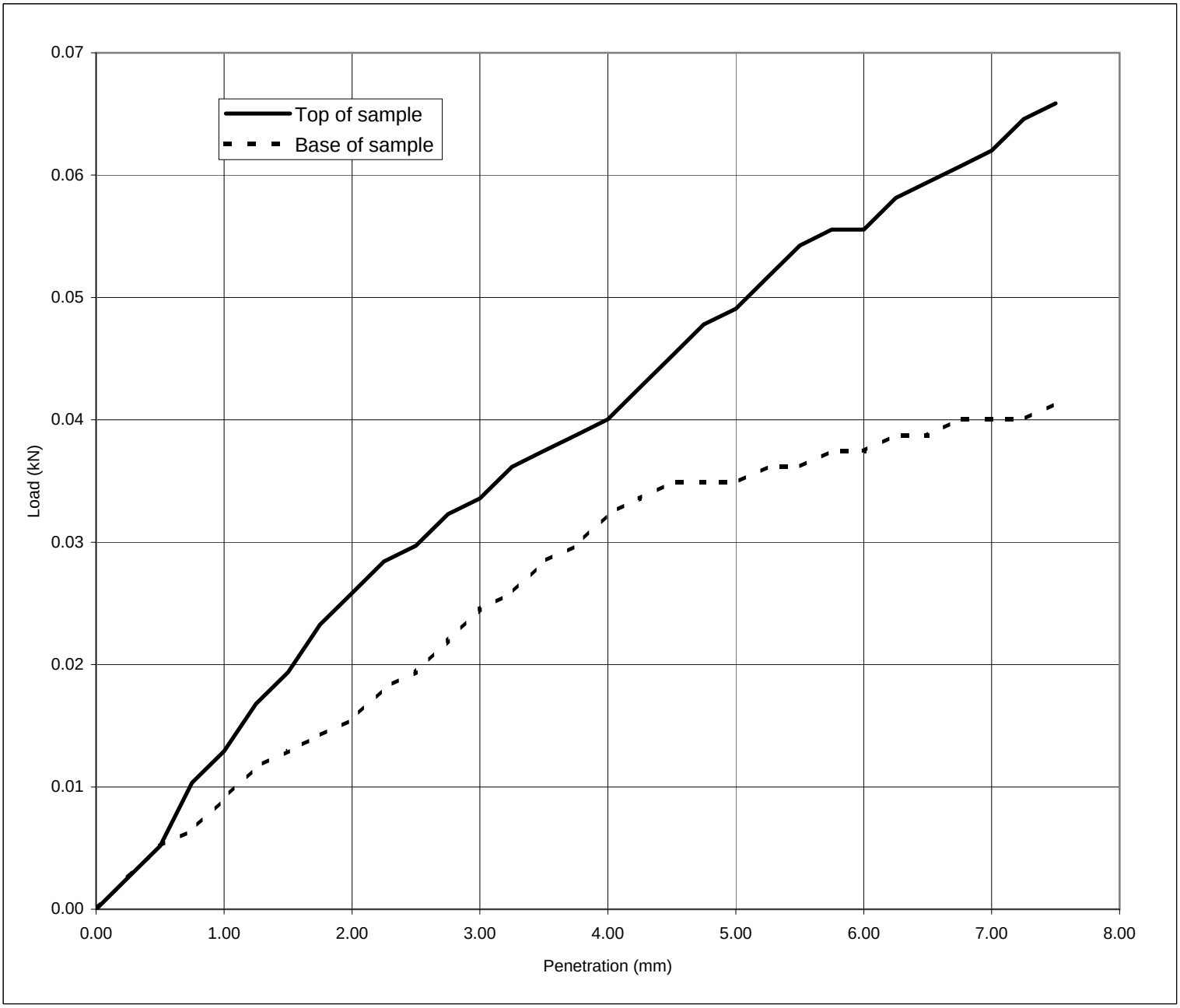
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	17	%		Top	Base				
Bulk Density	2.03	Mg/m^3	Moisture Content	17	18	%	**Trialpit**	**CBR09**
Dry Density	1.73	Mg/m^3	CBR (%) at 2.5mm	0.3	0.3	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.3	0.4	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	8		%	**Accepted CBR (%)**	**0.4**

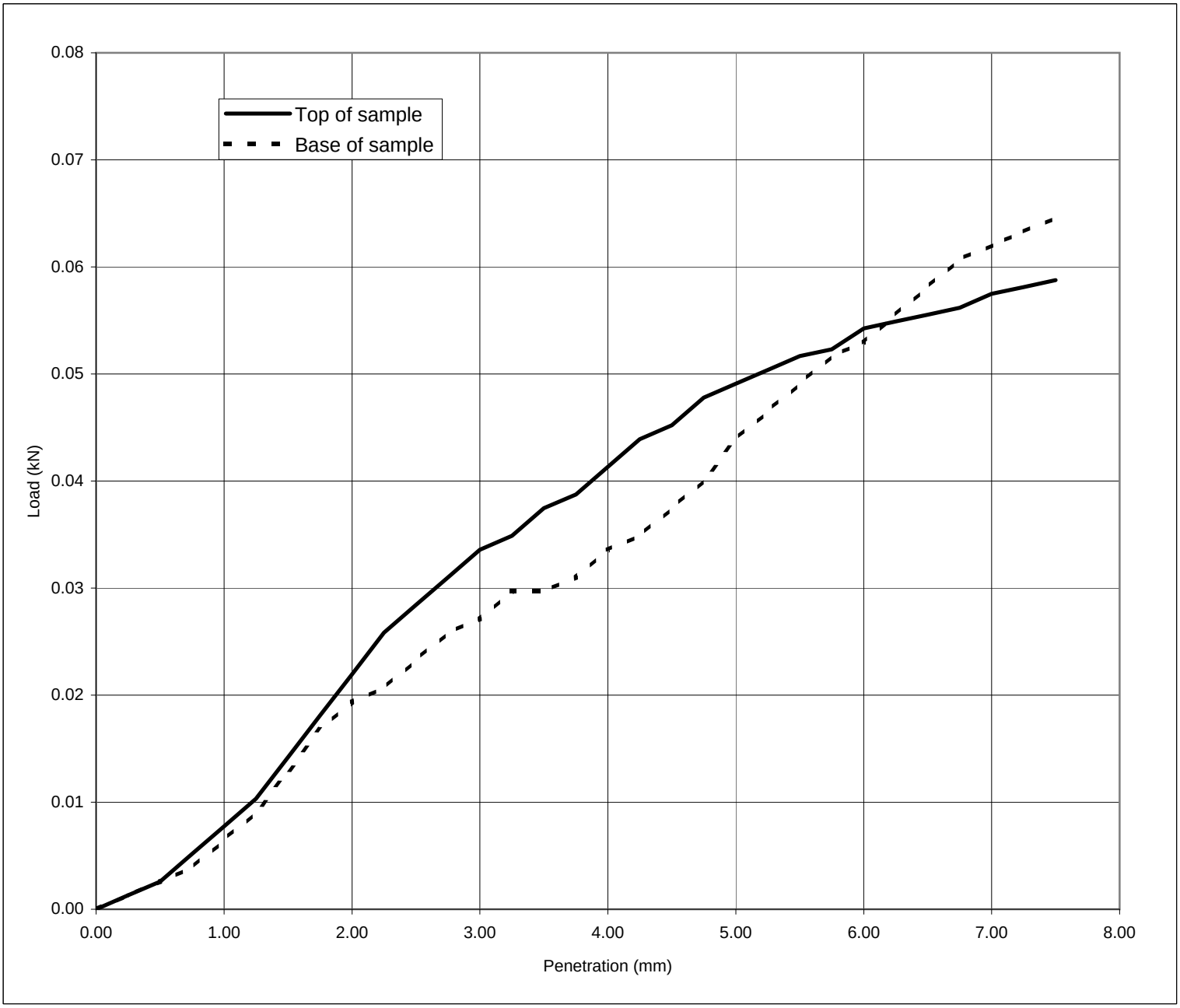
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	20	%		Top	Base				
Bulk Density	2.07	Mg/m^3	Moisture Content	20	19	%	**Trialpit**	**CBR11**
Dry Density	1.73	Mg/m^3	CBR (%) at 2.5mm	0.2	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	13		%	**Accepted CBR (%)**	**0.2**

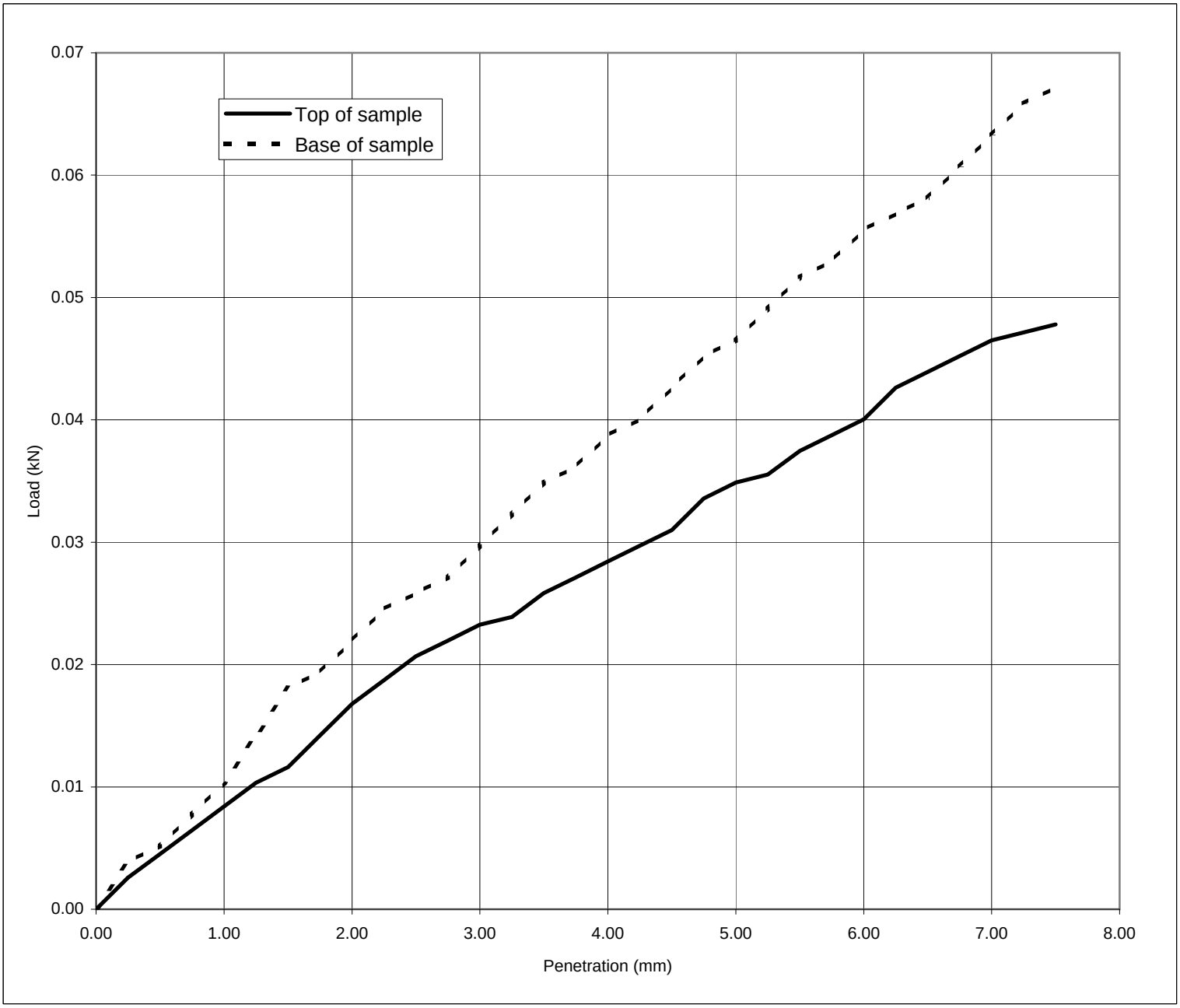
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	16	%		Top	Base				
Bulk Density	2.10	Mg/m^3	Moisture Content	16	17	%	**Trialpit**	**CBR11**
Dry Density	1.81	Mg/m^3	CBR (%) at 2.5mm	0.2	0.2	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	8		%	**Accepted CBR (%)**	**0.2**

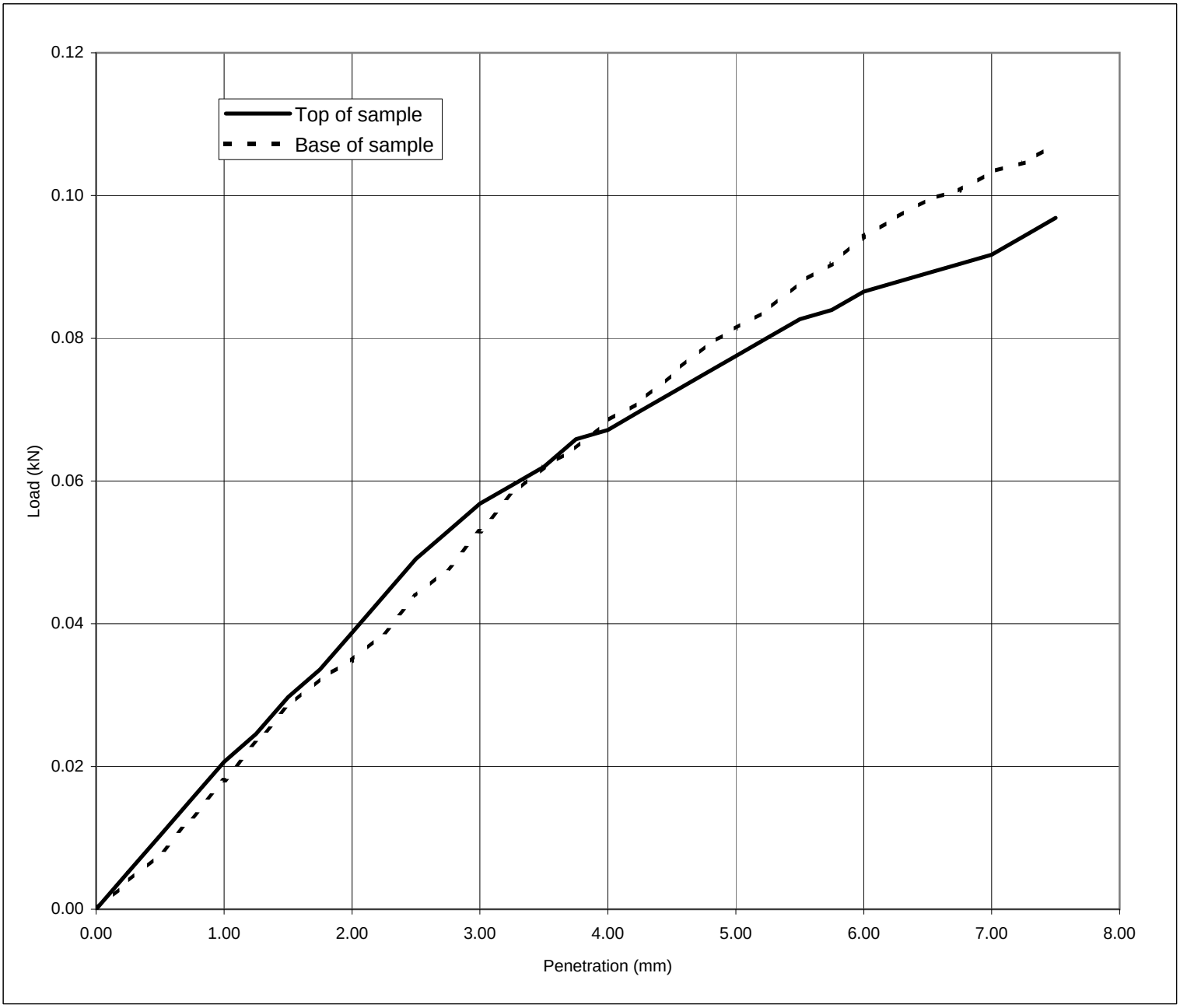
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	21	%		Top	Base				
Bulk Density	2.01	Mg/m^3	Moisture Content	22	21	%	**Trialpit**	**CBR13**
Dry Density	1.66	Mg/m^3	CBR (%) at 2.5mm	0.2	0.2	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	9		%	**Accepted CBR (%)**	**0.2**

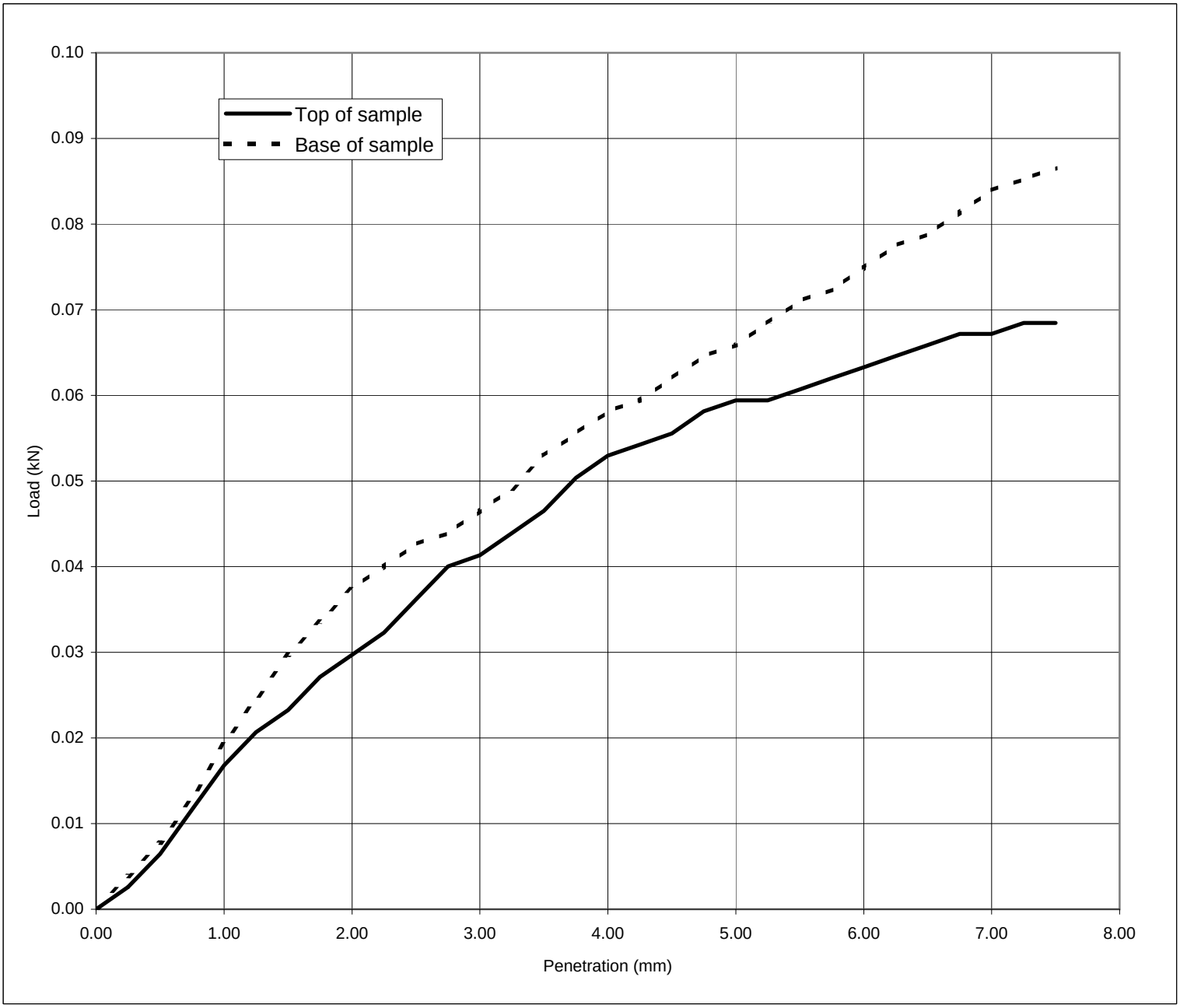
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	23	%		Top	Base				
Bulk Density	2.04	Mg/m^3	Moisture Content	24	22	%	**Trialpit**	**CBR13**
Dry Density	1.65	Mg/m^3	CBR (%) at 2.5mm	0.4	0.3	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.4	0.4	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	4		%	**Accepted CBR (%)**	**0.4**

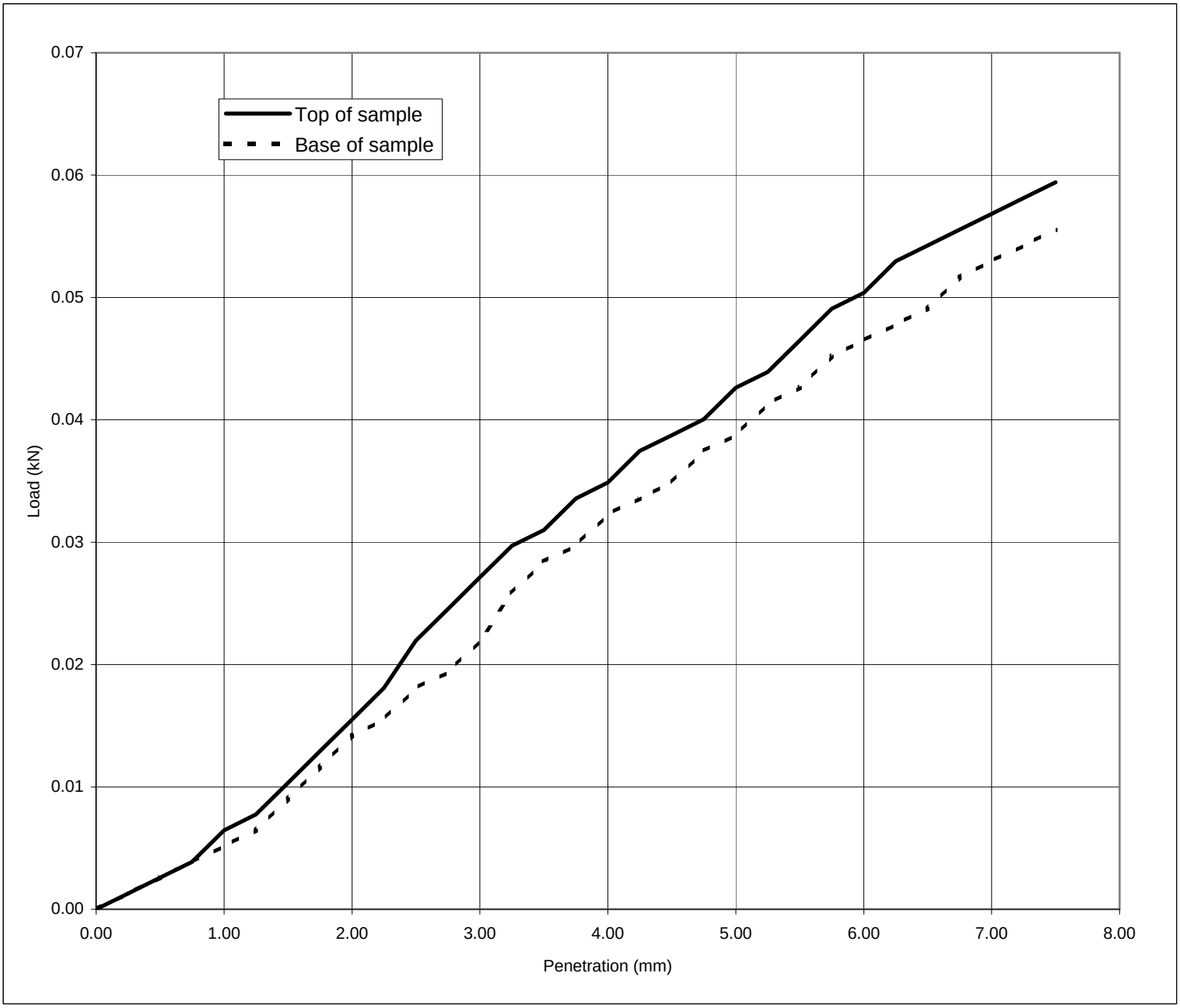
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	19	%		Top	Base				
Bulk Density	2.07	Mg/m^3	Moisture Content	20	19	%	**Trialpit**	**CBR15**
Dry Density	1.74	Mg/m^3	CBR (%) at 2.5mm	0.3	0.3	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.3	0.3	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	11		%	**Accepted CBR (%)**	**0.3**

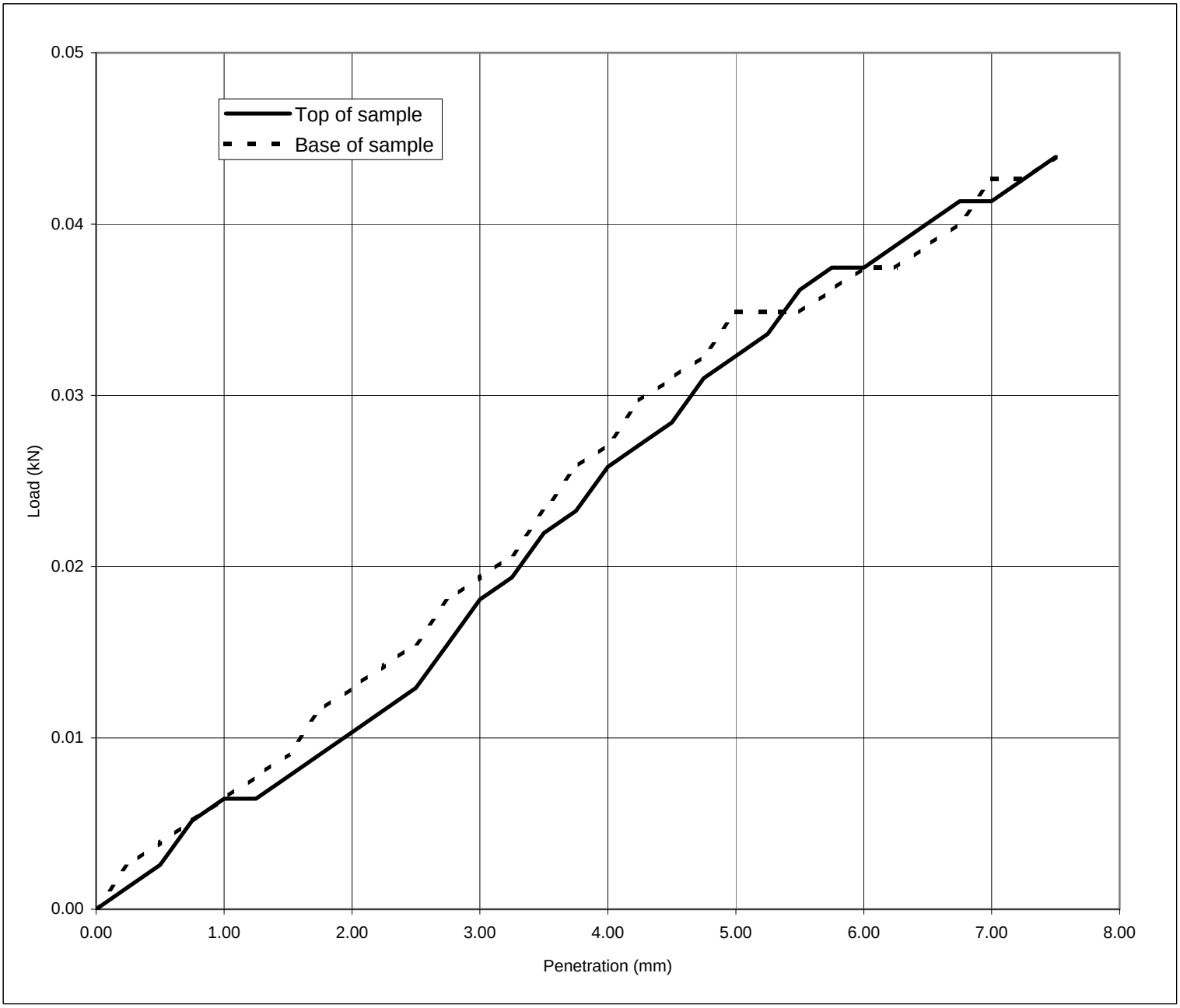
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	18	%		Top	Base				
Bulk Density	2.07	Mg/m^3	Moisture Content	18	19	%	**Trialpit**	**CBR15**
Dry Density	1.74	Mg/m^3	CBR (%) at 2.5mm	0.2	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.50**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	7		%	**Accepted CBR (%)**	**0.2**

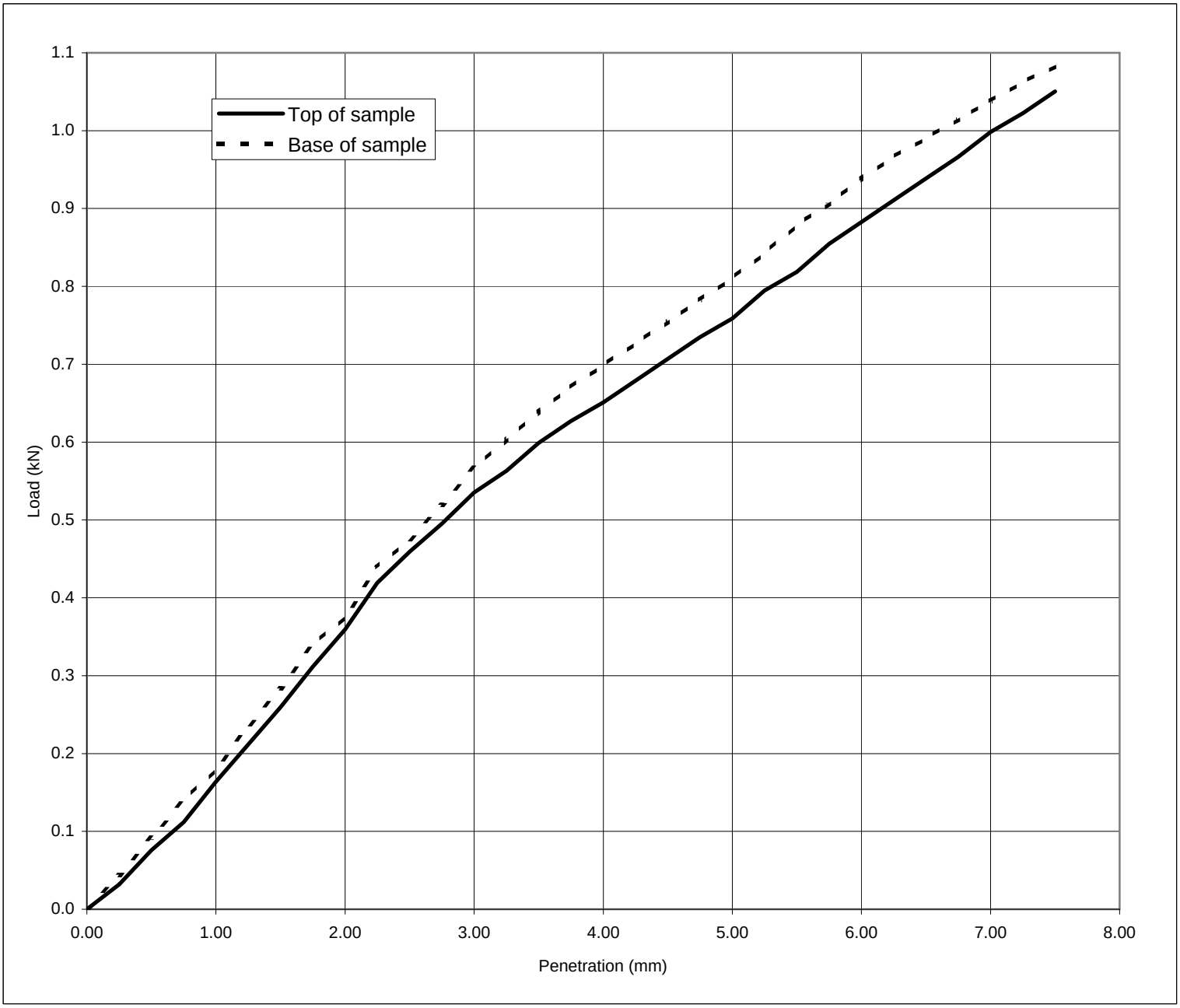
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	34	%		Top	Base				
Bulk Density	1.84	Mg/m^3	Moisture Content	33	36	%	**Trialpit**	**CBR17**
Dry Density	1.37	Mg/m^3	CBR (%) at 2.5mm	0.1	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	17		%	**Accepted CBR (%)**	**0.2**

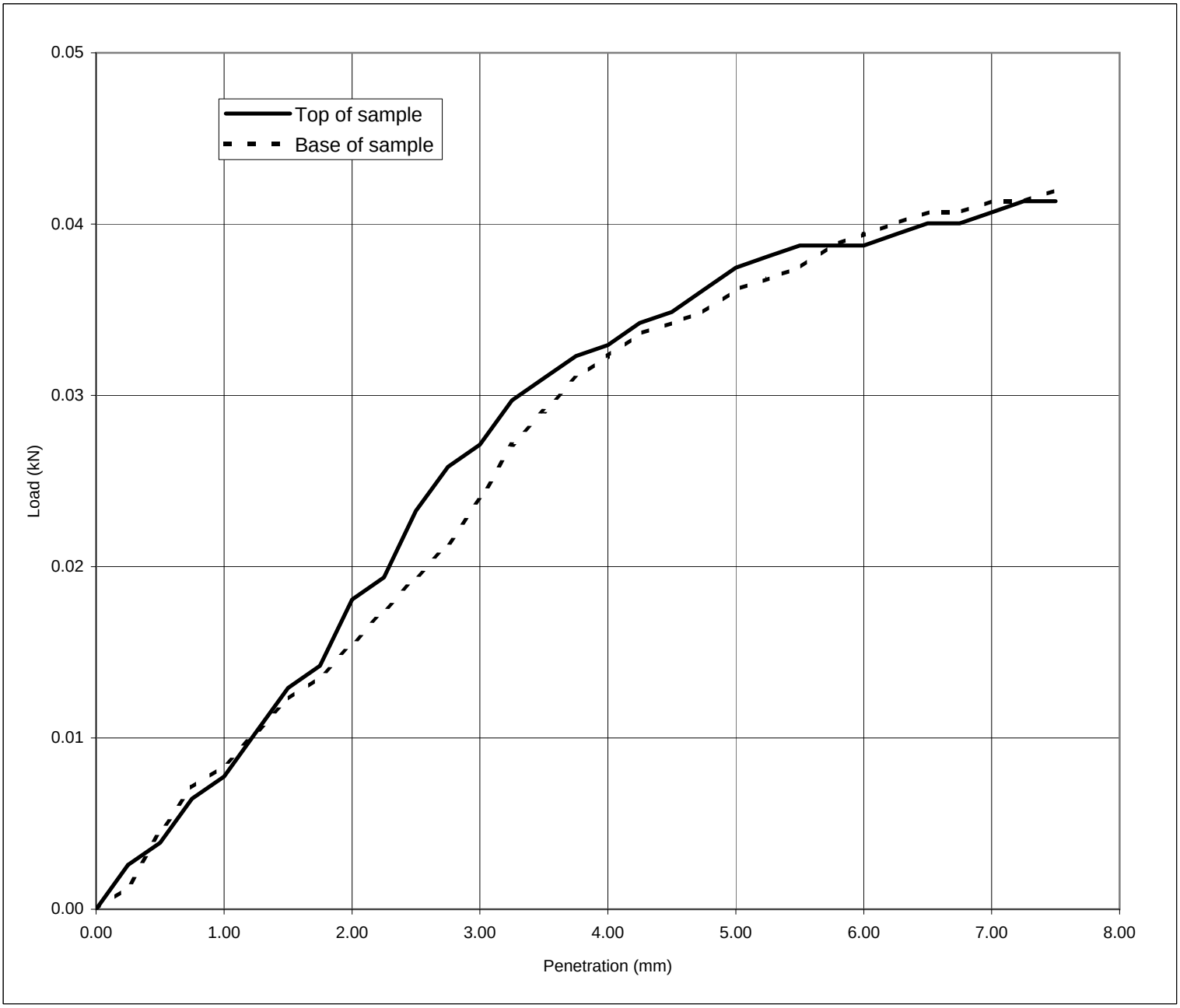
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	17	%		Top	Base				
Bulk Density	2.18	Mg/m^3	Moisture Content	16	17	%	**Trialpit**	**CBR17**
Dry Density	1.87	Mg/m^3	CBR (%) at 2.5mm	3.5	3.6	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	3.8	4.1	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	13		%	**Accepted CBR (%)**	**4.1**

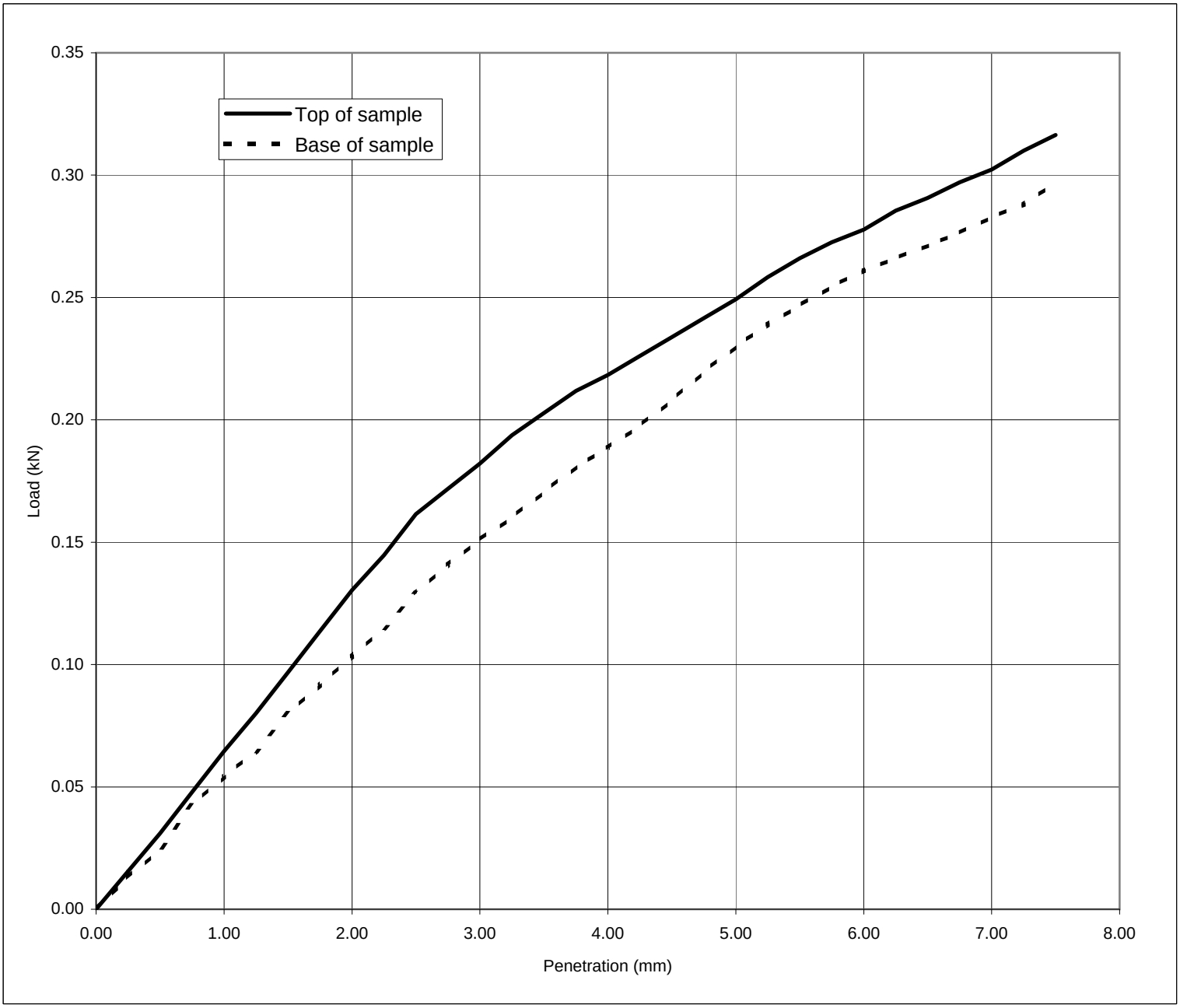
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	27	%		Top	Base				
Bulk Density	2.02	Mg/m^3	Moisture Content	25	28	%	**Trialpit**	**CBR19**
Dry Density	1.60	Mg/m^3	CBR (%) at 2.5mm	0.2	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	10		%	**Accepted CBR (%)**	**0.2**

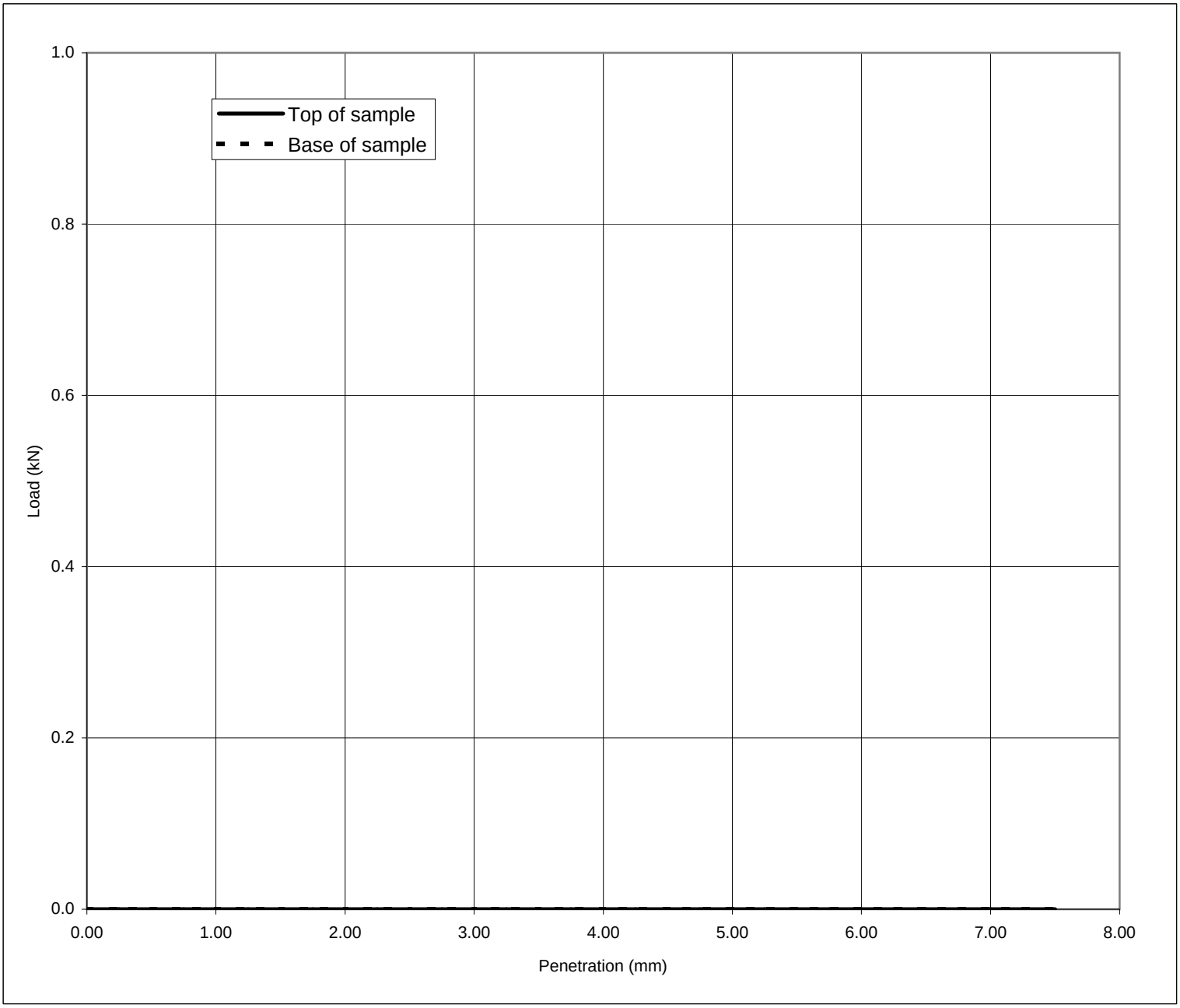
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	19	%		Top	Base				
Bulk Density	2.15	Mg/m^3	Moisture Content	20	18	%	**Trialpit**	**CBR19**
Dry Density	1.80	Mg/m^3	CBR (%) at 2.5mm	1.2	1.0	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	1.2	1.1	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	13		%	**Accepted CBR (%)**	**1.2**

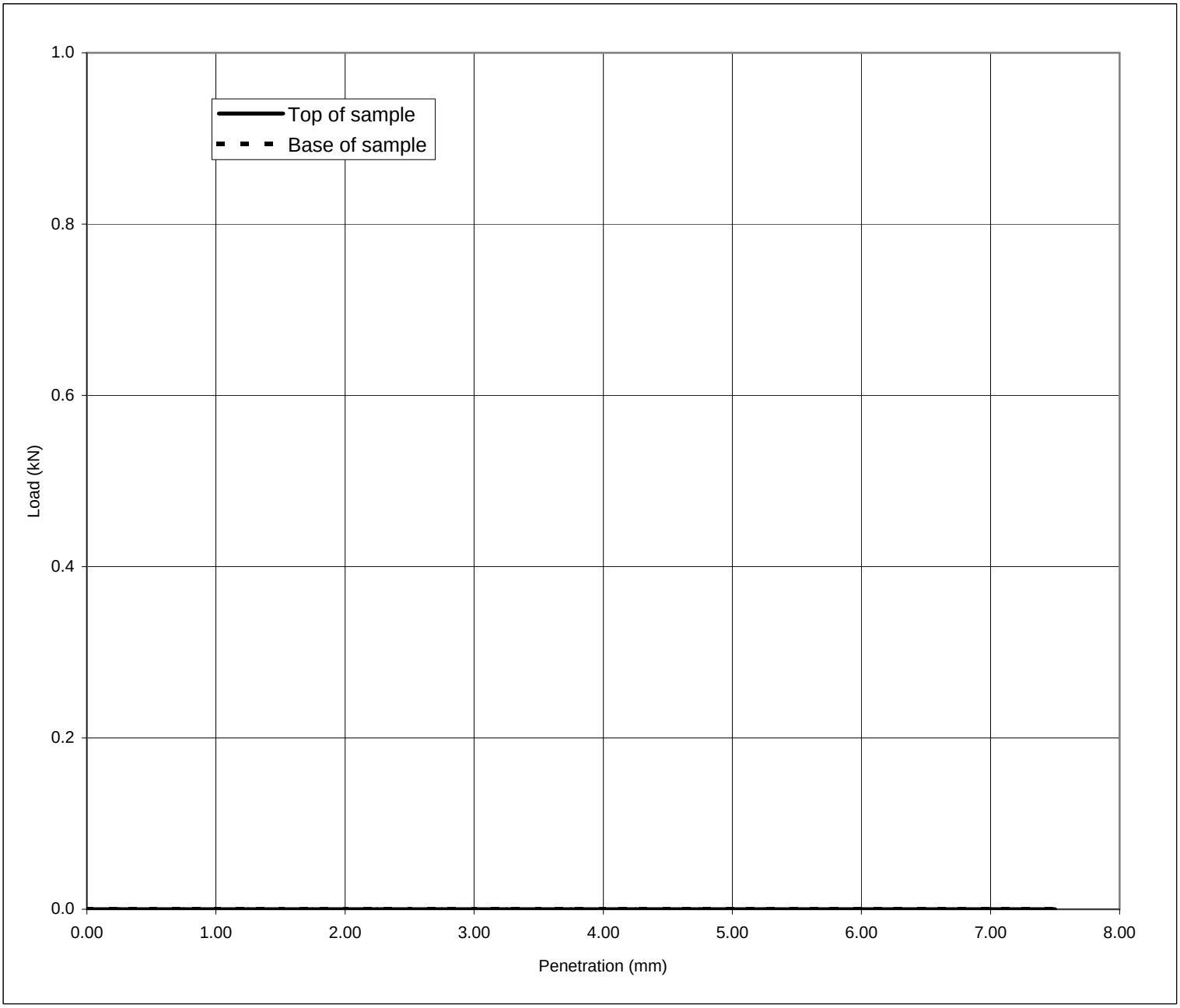
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	24	%		Top	Base				
Bulk Density	1.85	Mg/m^3	Moisture Content	23	24	%	**Trialpit**	**CBR21**
Dry Density	1.49	Mg/m^3	CBR (%) at 2.5mm	<0.1	<0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	<0.1	<0.1	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	0	mm	Material Removed	3		%	**Accepted CBR (%)**	**<0.1**

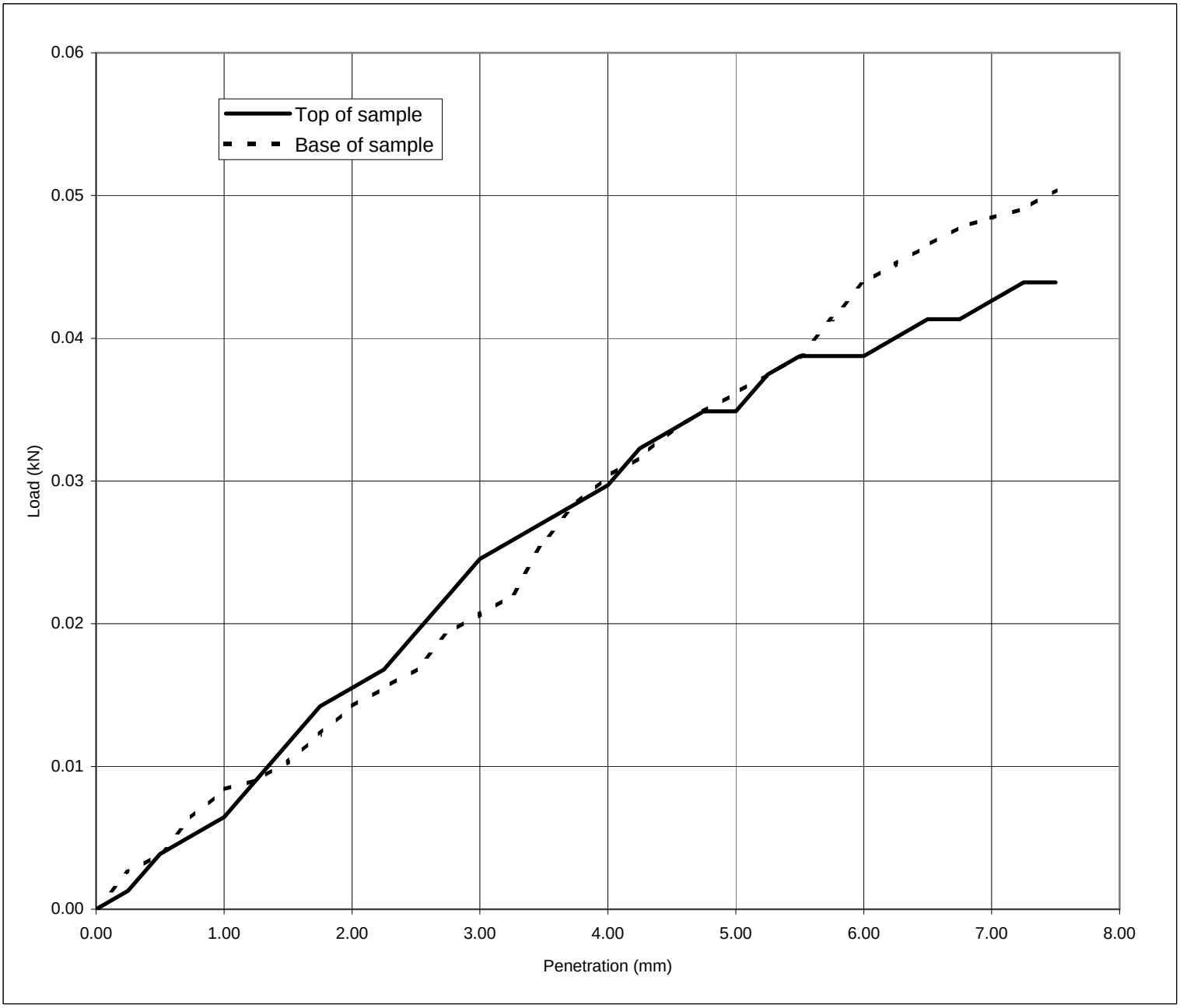
Test Notes;
Test specimen did not register any reading on load measuring device as the material is too soft



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	21	%		Top	Base				
Bulk Density	1.91	Mg/m^3	Moisture Content	20	22	%	**Trialpit**	**CBR21**
Dry Density	1.58	Mg/m^3	CBR (%) at 2.5mm	<0.1	<0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	<0.1	<0.1	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	9		%	**Accepted CBR (%)**	**<0.1**

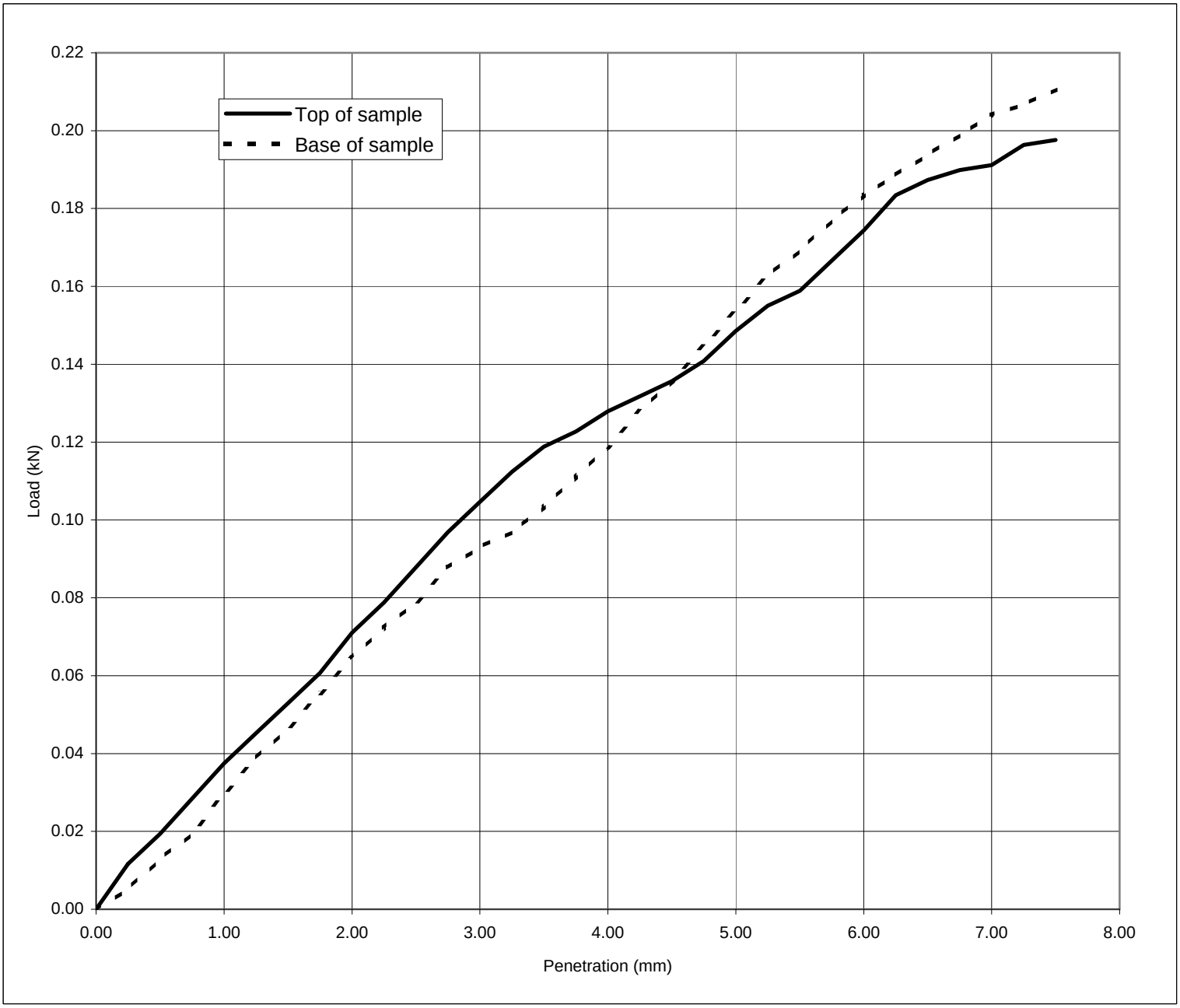
Test Notes;
Test specimen did not register any reading on load measuring device as the material is too soft



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	30	%		Top	Base				
Bulk Density	2.01	Mg/m^3	Moisture Content	32	29	%	**Trialpit**	**CBR23**
Dry Density	1.54	Mg/m^3	CBR (%) at 2.5mm	0.1	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	10		%	**Accepted CBR (%)**	**0.2**

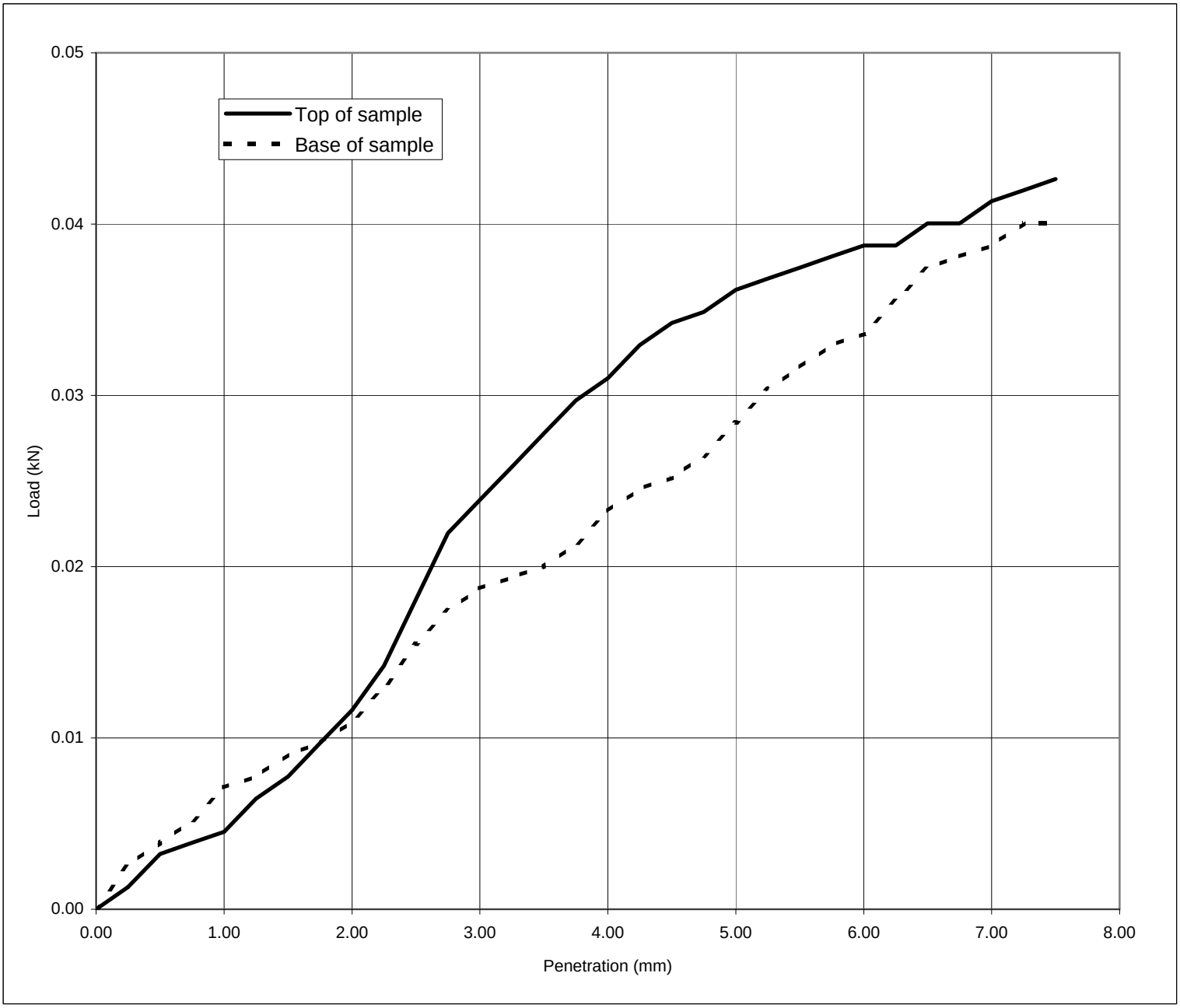
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	15	%		Top	Base				
Bulk Density	2.05	Mg/m^3	Moisture Content	15	15	%	**Trialpit**	**CBR23**
Dry Density	1.79	Mg/m^3	CBR (%) at 2.5mm	0.7	0.6	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.7	0.8	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	10		%	**Accepted CBR (%)**	**0.8**

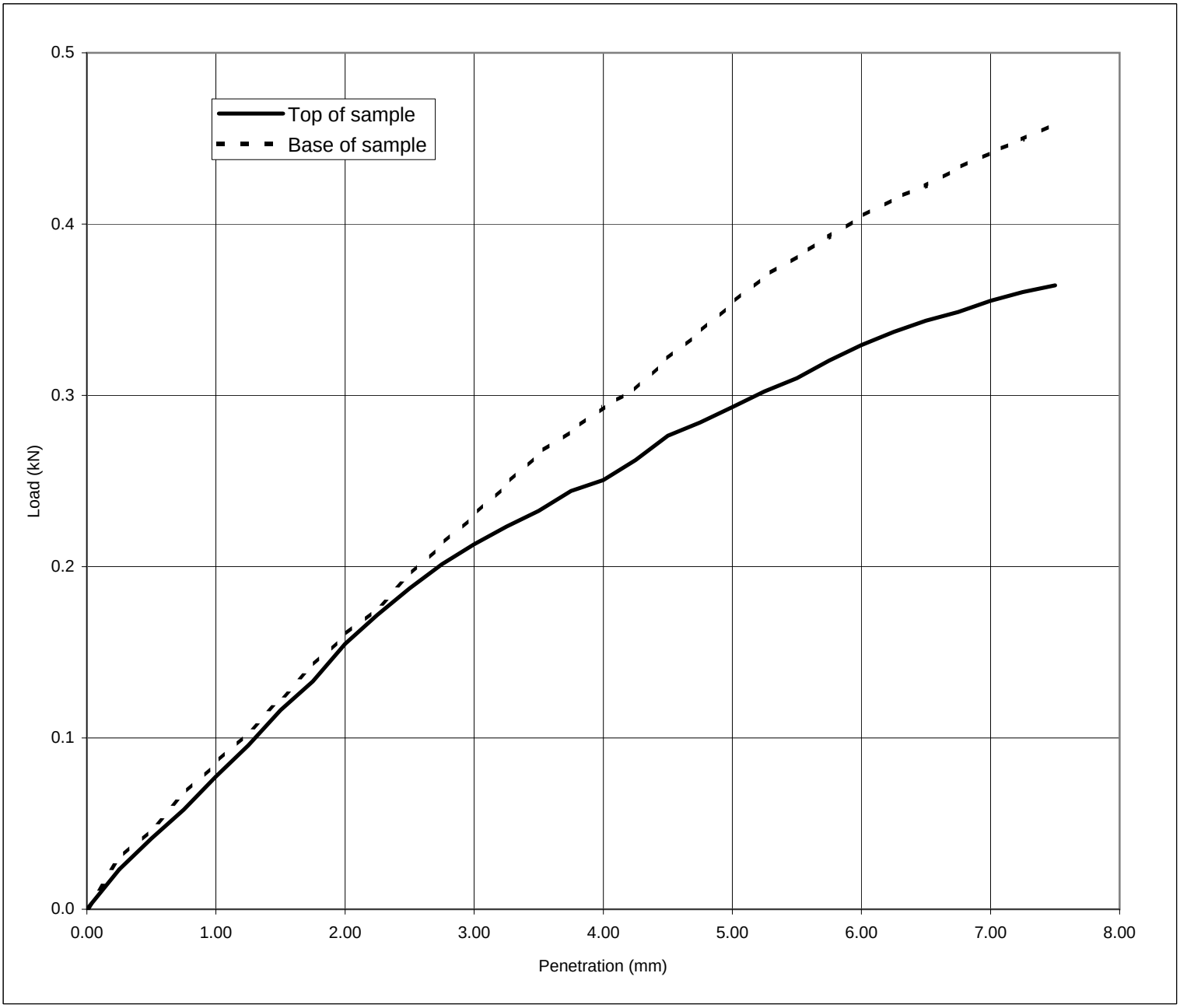
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	26	%		Top	Base				
Bulk Density	1.98	Mg/m^3	Moisture Content	25	27	%	**Trialpit**	**CBR25**
Dry Density	1.57	Mg/m^3	CBR (%) at 2.5mm	0.1	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.1	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	9		%	**Accepted CBR (%)**	**0.2**

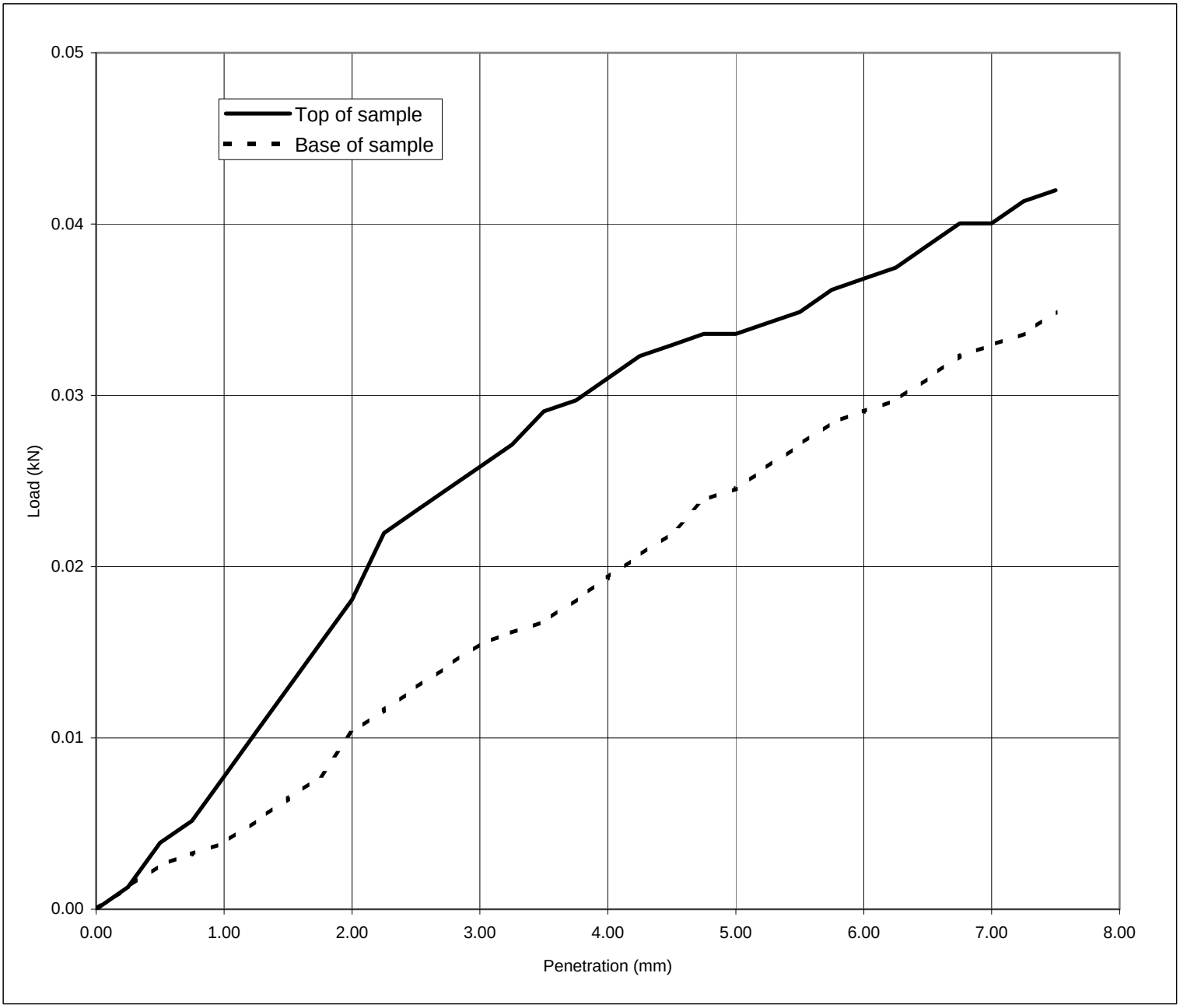
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	18	%		Top	Base				
Bulk Density	2.14	Mg/m^3	Moisture Content	18	18	%	**Trialpit**	**CBR25**
Dry Density	1.81	Mg/m^3	CBR (%) at 2.5mm	1.4	1.5	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	1.5	1.8	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	18		%	**Accepted CBR (%)**	**1.8**

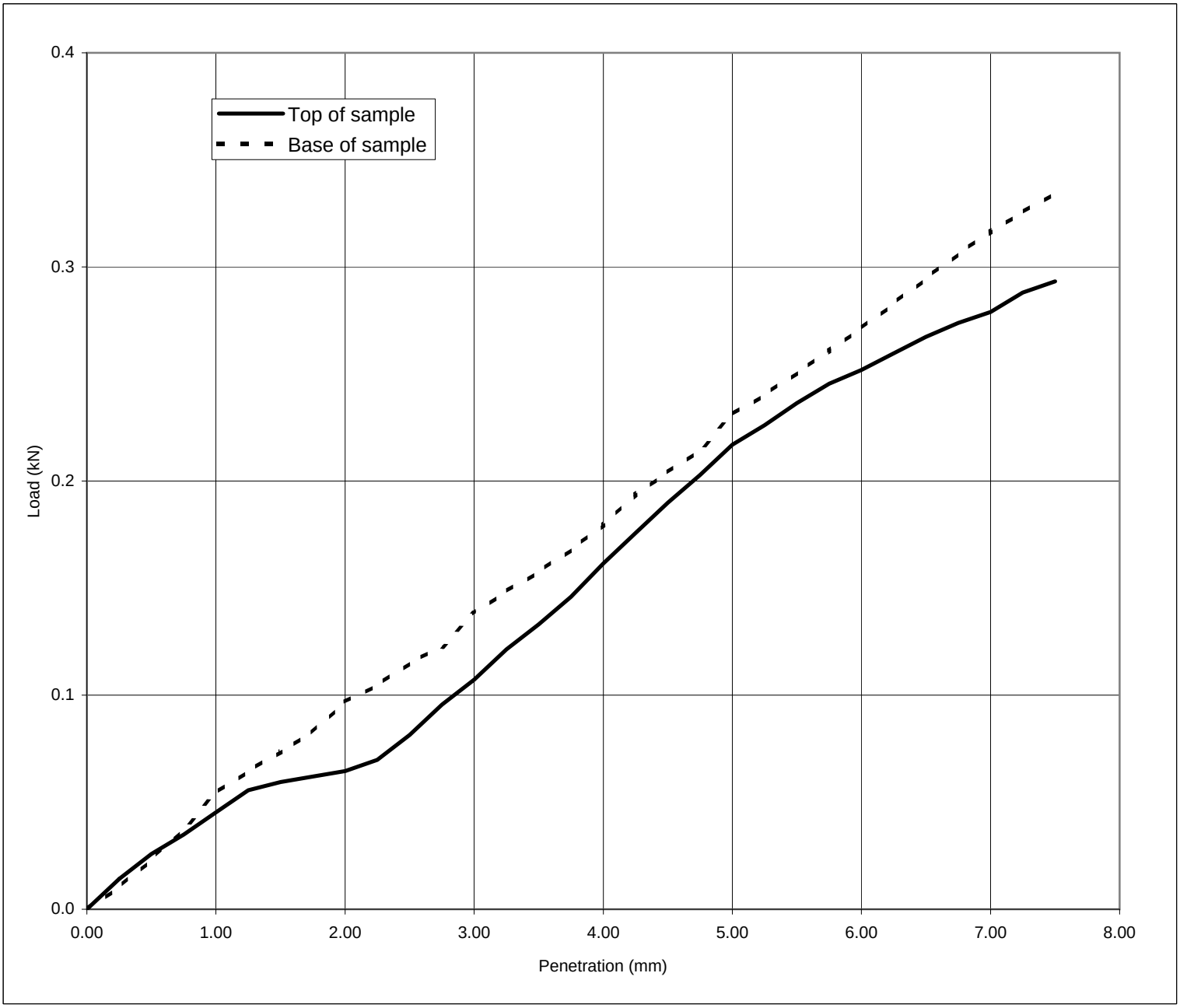
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	35	%		Top	Base				
Bulk Density	1.89	Mg/m^3	Moisture Content	35	35	%	**Trialpit**	**CBR27**
Dry Density	1.40	Mg/m^3	CBR (%) at 2.5mm	0.2	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.1	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	9		%	**Accepted CBR (%)**	**0.2**

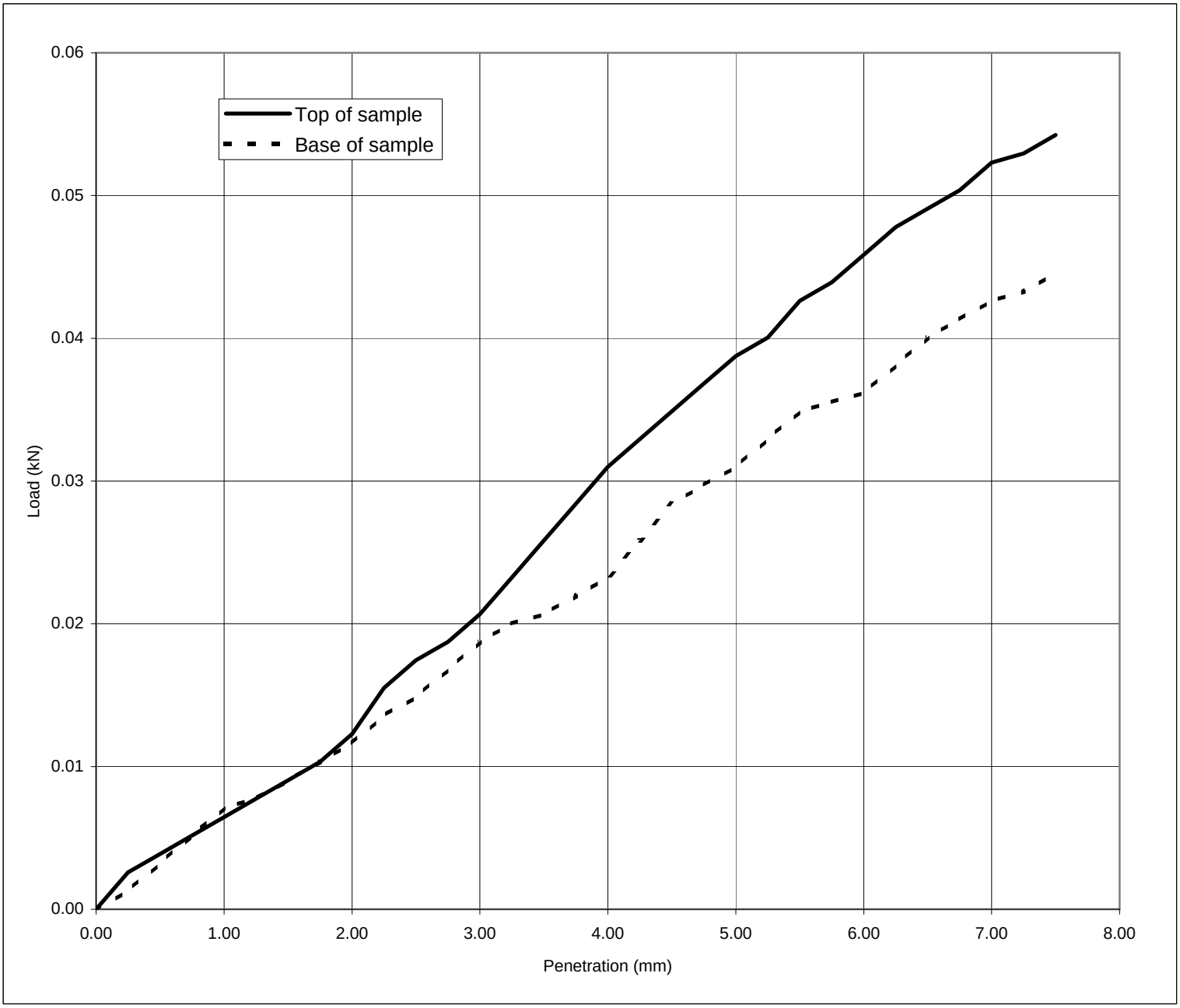
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	17	%		Top	Base				
Bulk Density	2.11	Mg/m^3	Moisture Content	17	17	%	**Trialpit**	**CBR27**
Dry Density	1.80	Mg/m^3	CBR (%) at 2.5mm	0.6	0.9	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	1.1	1.2	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	0.0	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	14		%	**Accepted CBR (%)**	**1.2**

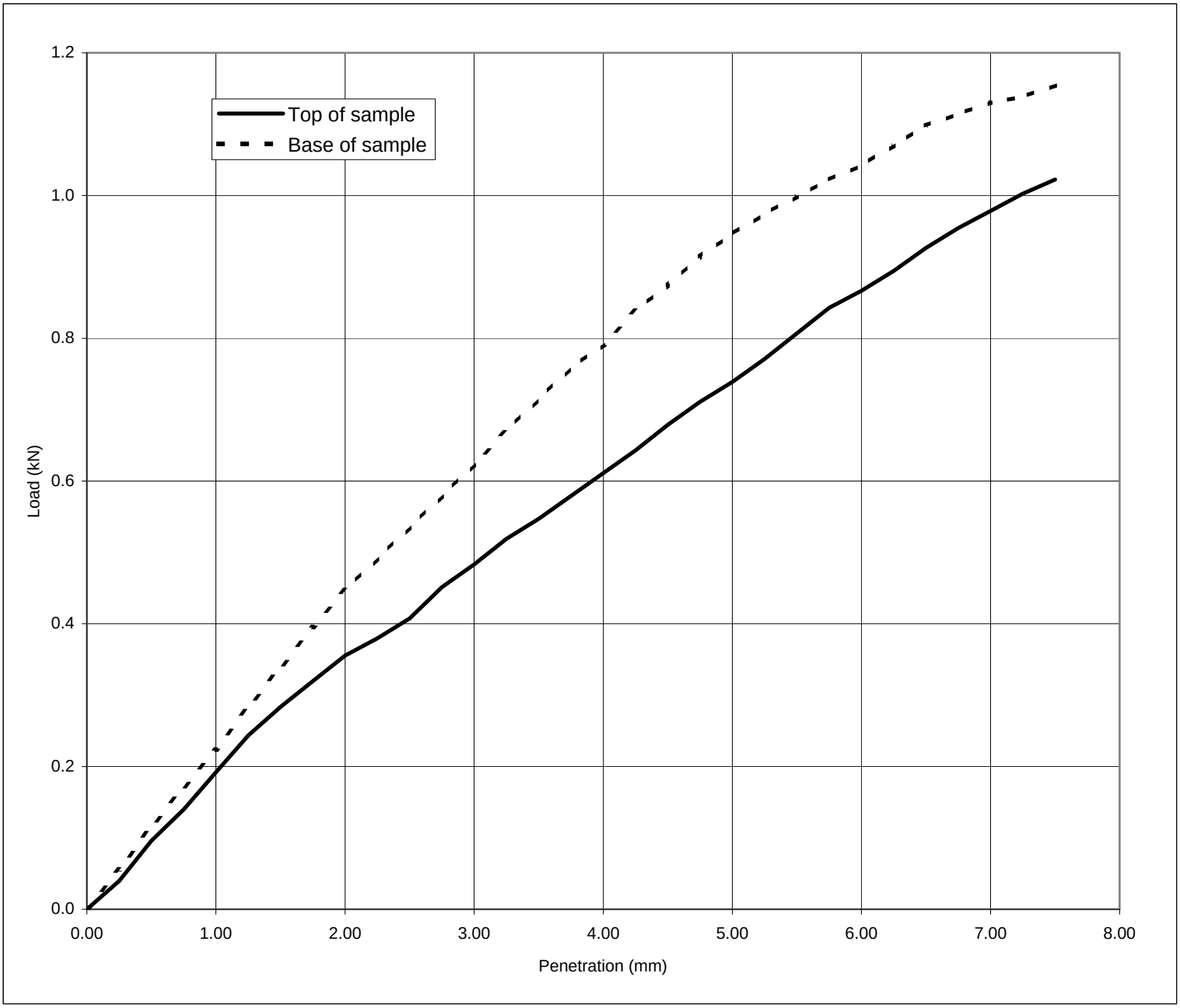
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	20	%		Top	Base				
Bulk Density	2.06	Mg/m^3	Moisture Content	20	20	%	**Trialpit**	**CBR29**
Dry Density	1.71	Mg/m^3	CBR (%) at 2.5mm	0.1	0.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	0.2	0.2	%	**Depth (m)**	**0.30**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	16		%	**Accepted CBR (%)**	**0.2**

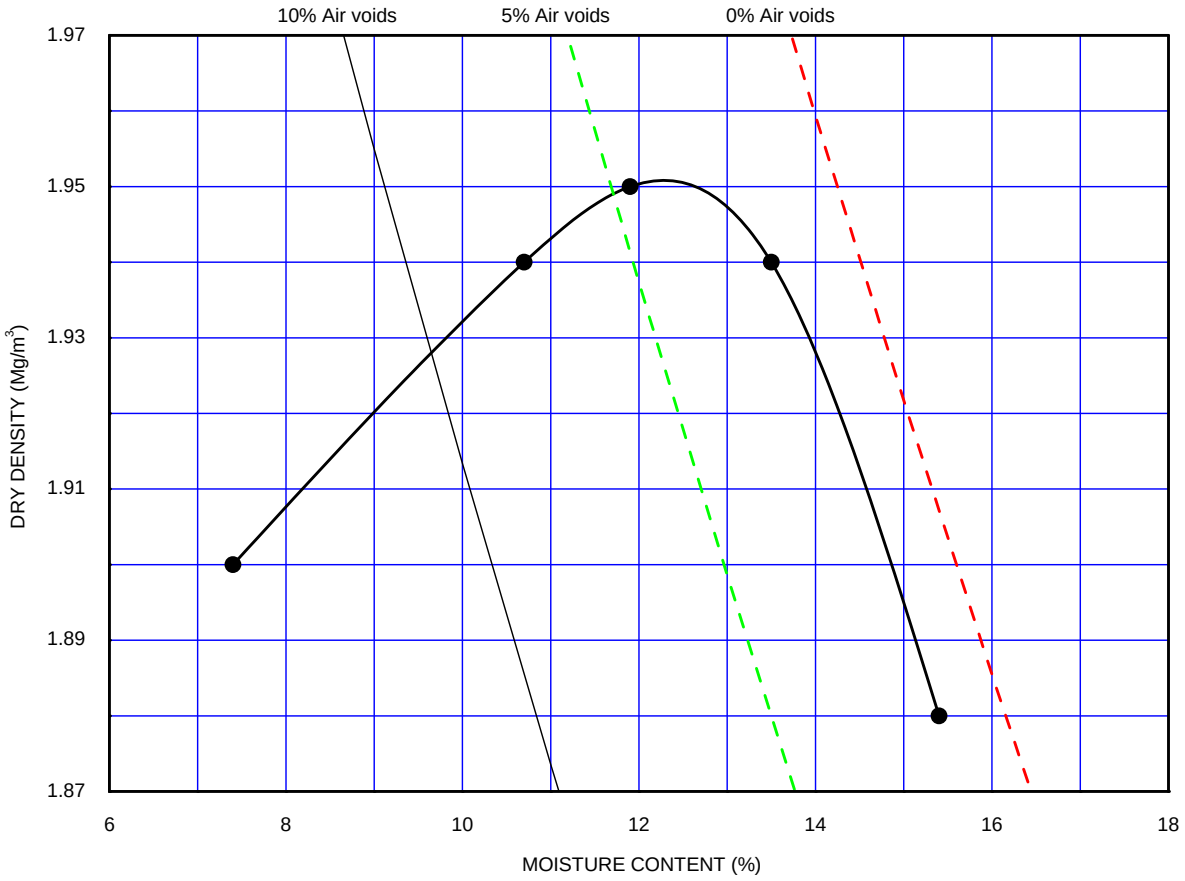
Test Notes;



California Bearing Ratio (CBR) - BS 1377 : Part 4 : 1990

Moisture Content	17	%		Top	Base				
Bulk Density	2.16	Mg/m^3	Moisture Content	17	17	%	**Trialpit**	**CBR29**
Dry Density	1.85	Mg/m^3	CBR (%) at 2.5mm	3.1	4.1	%	**Sample**	**B**
Compactive Effort	2.5kg Rammer		CBR (%) at 5.0mm	3.7	4.7	%	**Depth (m)**	**0.60**
Surcharge Used	0.0	kg	Curve Corrected	No				
Soaking Period	-	days	Test Condition	Unsoaked				
Amount of swell	-	mm	Material Removed	16		%	**Accepted CBR (%)**	**4.7**

Test Notes;

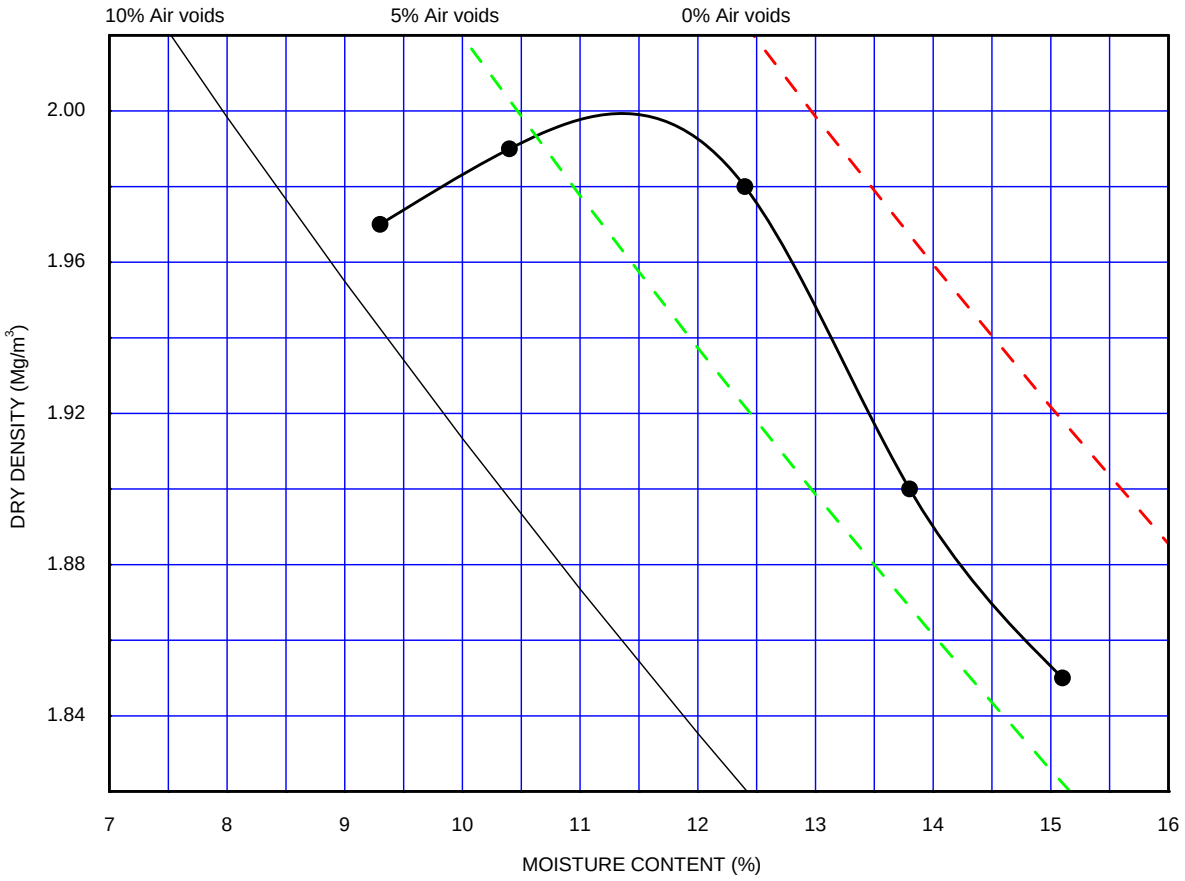


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 12.3	%			
Maximum dry density	: 1.95	Mg/m^3	Trial Pit	:	TP03
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 92	%			
Proportion of sample < 20mm	: 85	%	Depth (m)	:	2.00
Grading Zone	: 5				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

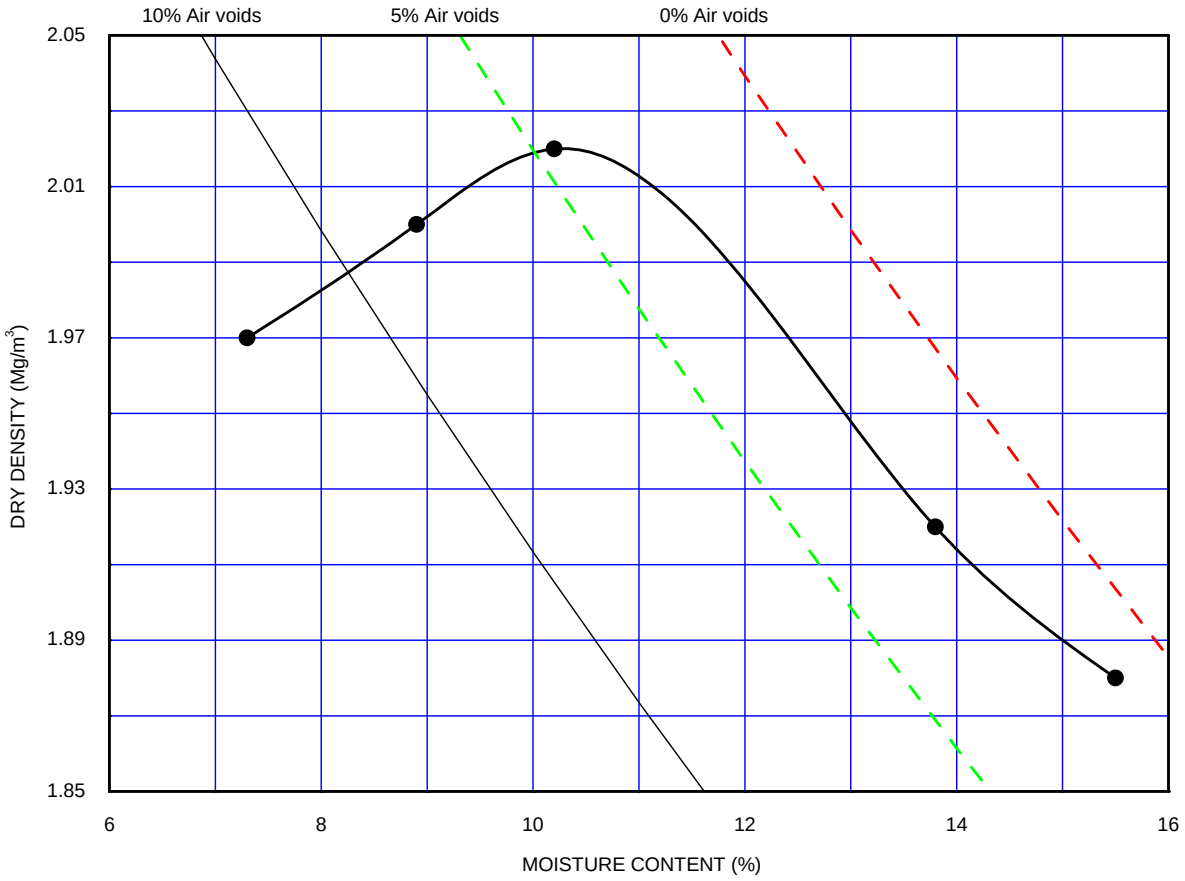


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.4	%			
Maximum dry density	: 2.00	Mg/m^3	Trial Pit	:	TP04
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 87	%			
Proportion of sample < 20mm	: 78	%	Depth (m)	:	2.00
Grading Zone	: X				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

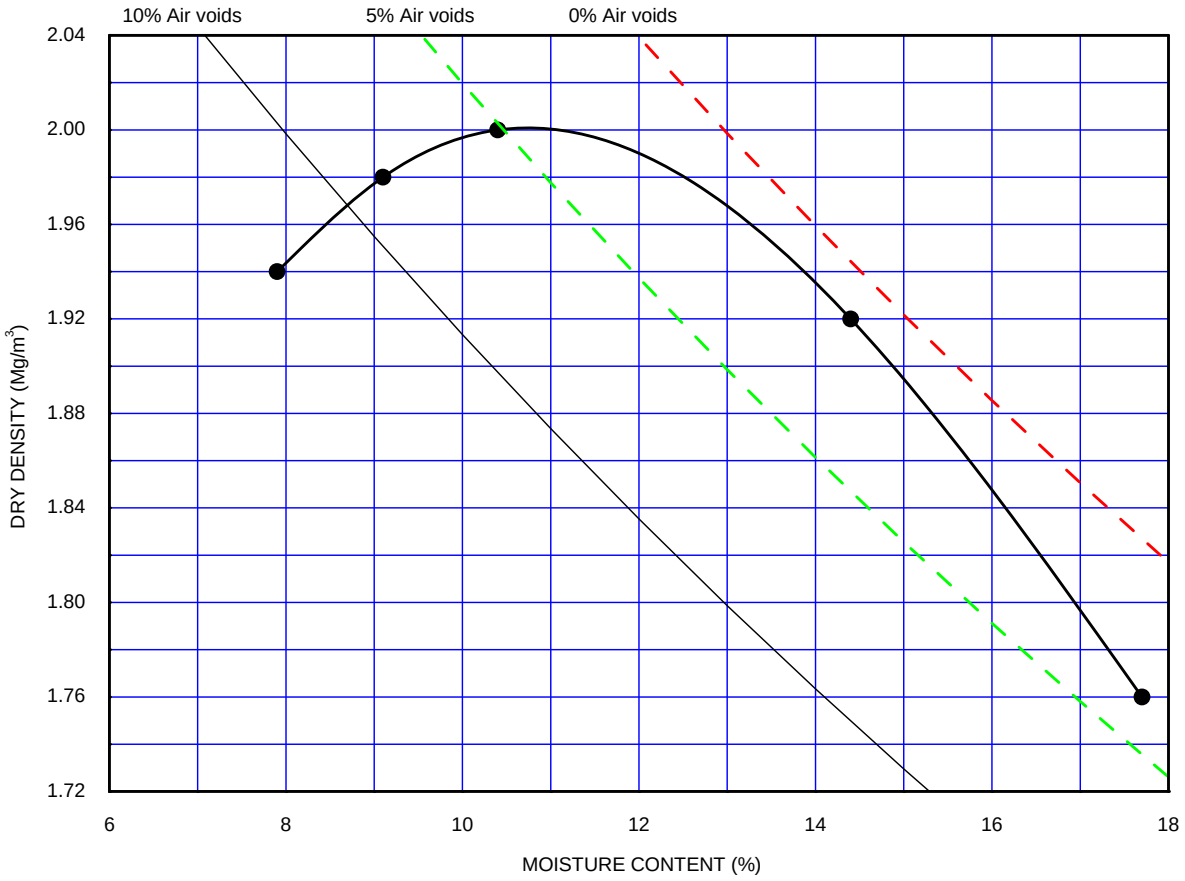


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.3	%			
Maximum dry density	: 2.02	Mg/m^3	Trial Pit	:	TP05
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 99	%			
Proportion of sample < 20mm	: 94	%	Depth (m)	:	1.00
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

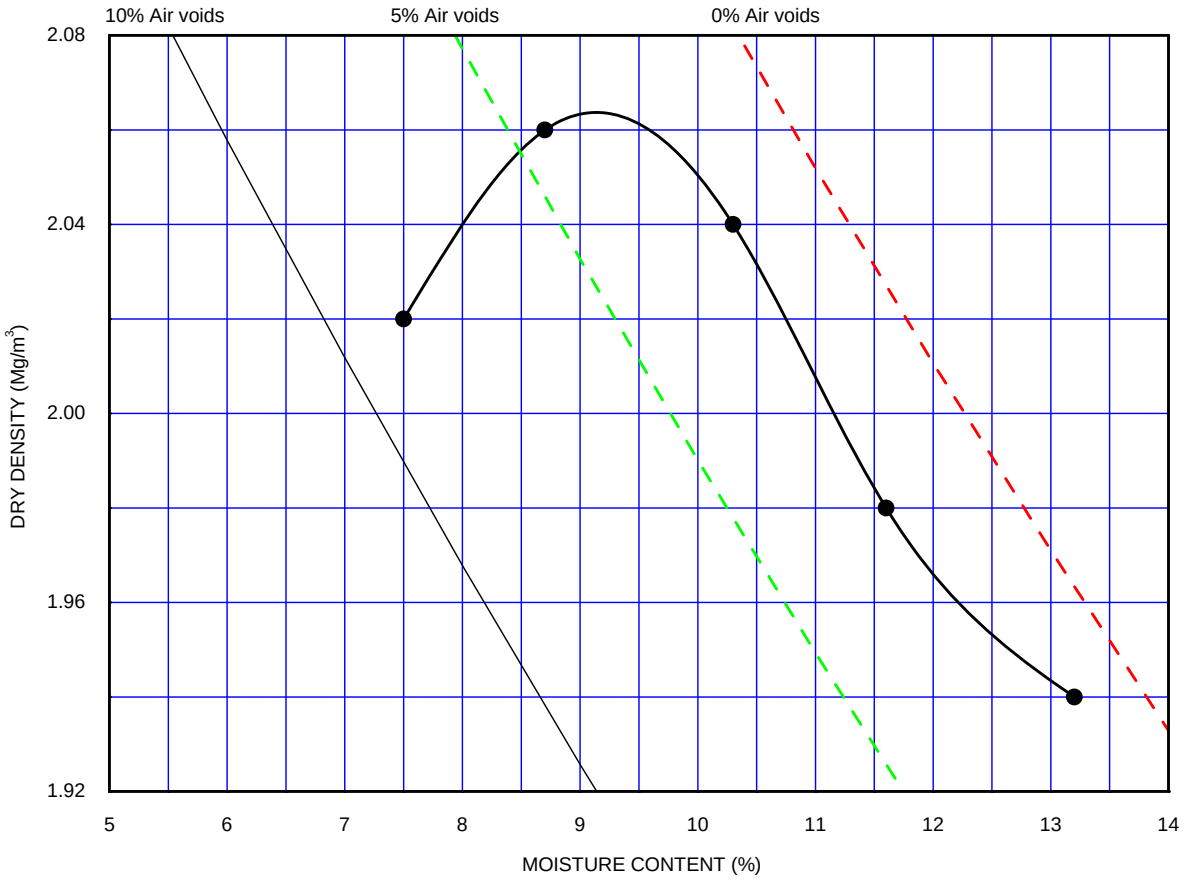


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.7	%			
Maximum dry density	: 2.00	Mg/m^3	Trial Pit	:	TP06
Test method (see above)	: 3.3				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 100	%			
Proportion of sample < 20mm	: 98	%	Depth (m)	:	0.50
Grading Zone	: 2				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

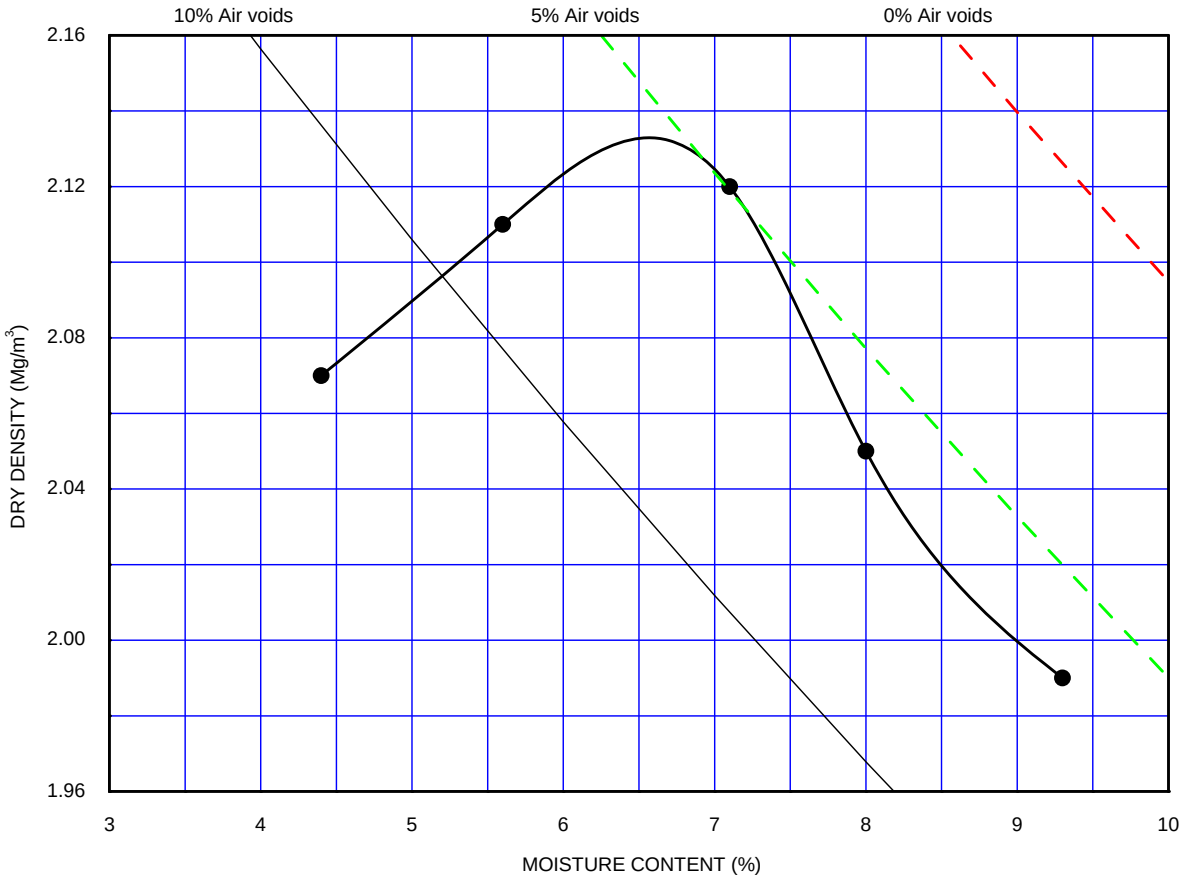


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 9.1	%			
Maximum dry density	: 2.06	Mg/m^3	Trial Pit	:	TP07
Test method (see above)	: 3.3				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 99	%			
Proportion of sample < 20mm	: 94	%	Depth (m)	:	1.00
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

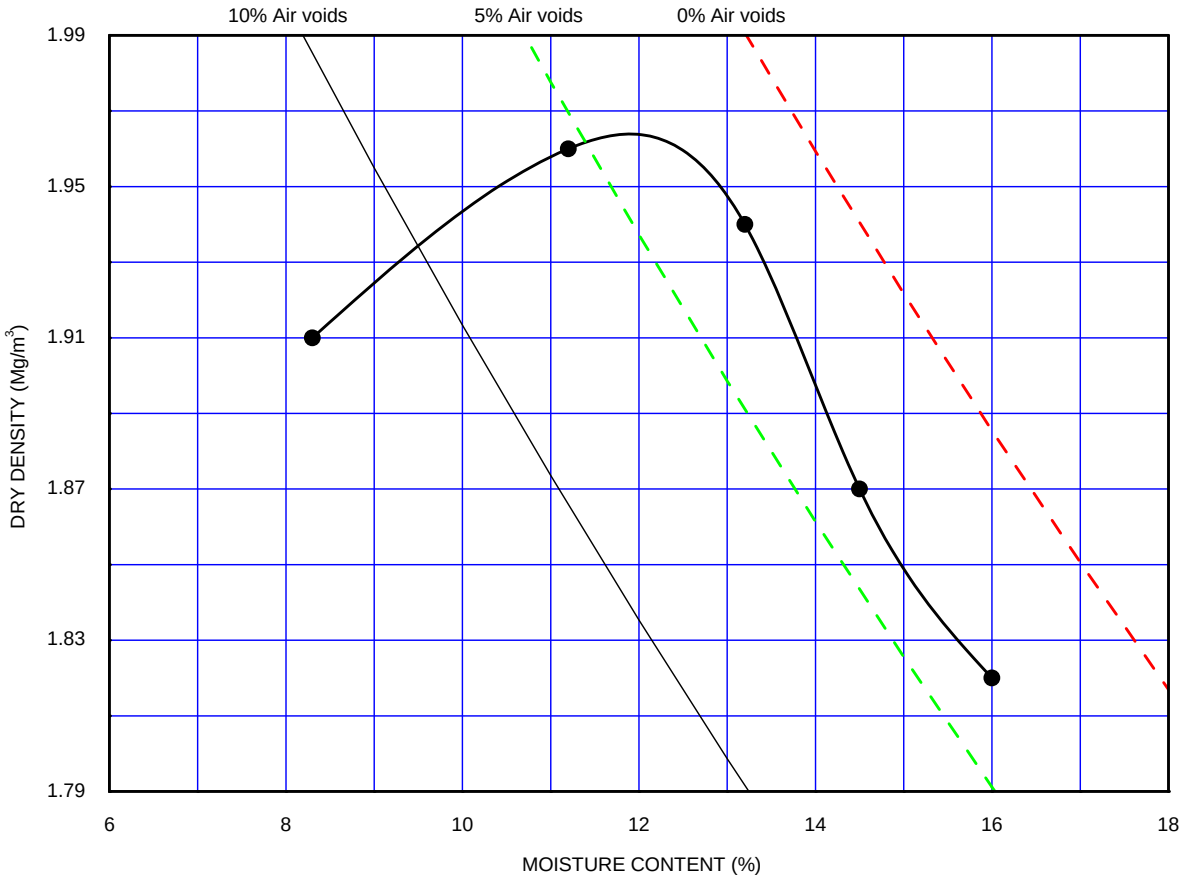


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 6.6	%			
Maximum dry density	: 2.13	Mg/m^3	Trial Pit	:	TP09
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 98	%			
Proportion of sample < 20mm	: 86	%	Depth (m)	:	1.00
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

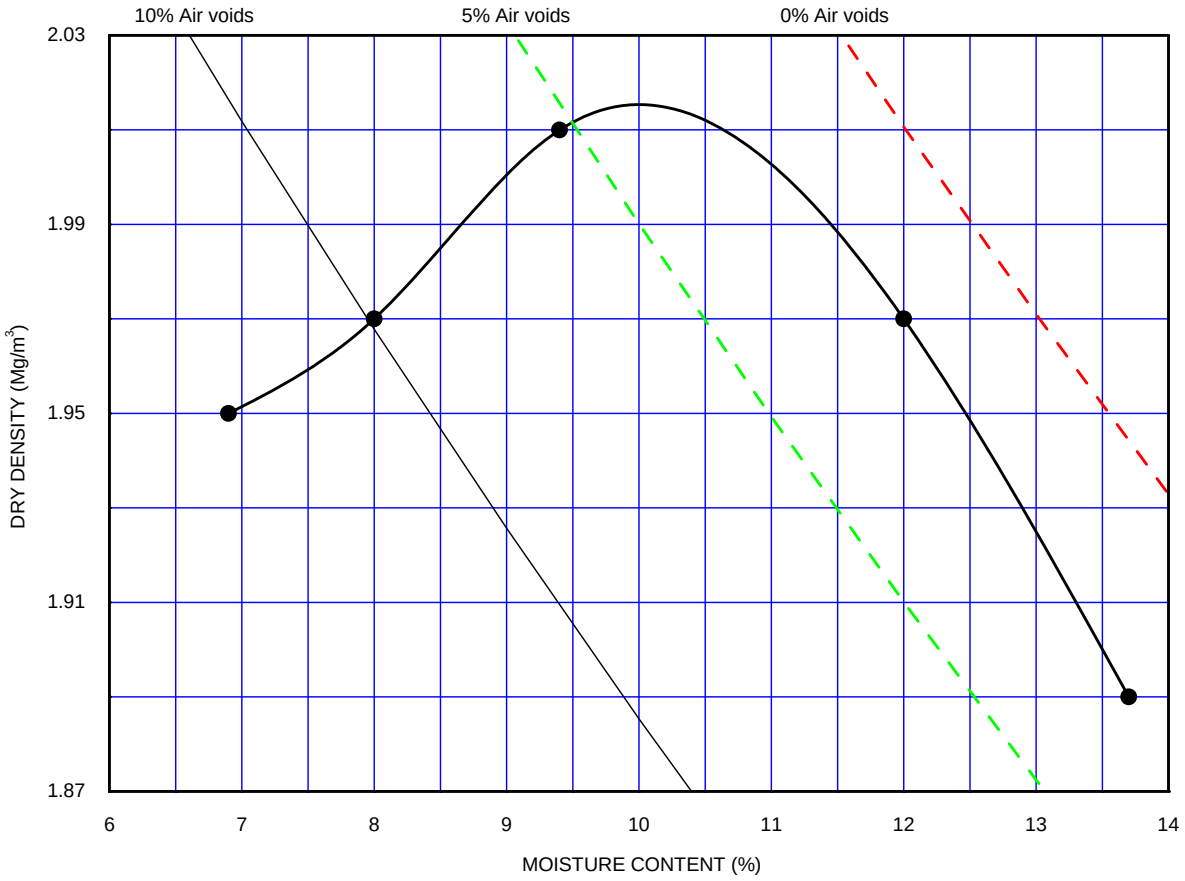


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.9	%			
Maximum dry density	: 1.96	Mg/m^3	Trial Pit	:	TP11
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 77	%			
Proportion of sample < 20mm	: 74	%	Depth (m)	:	1.00
Grading Zone	: X				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

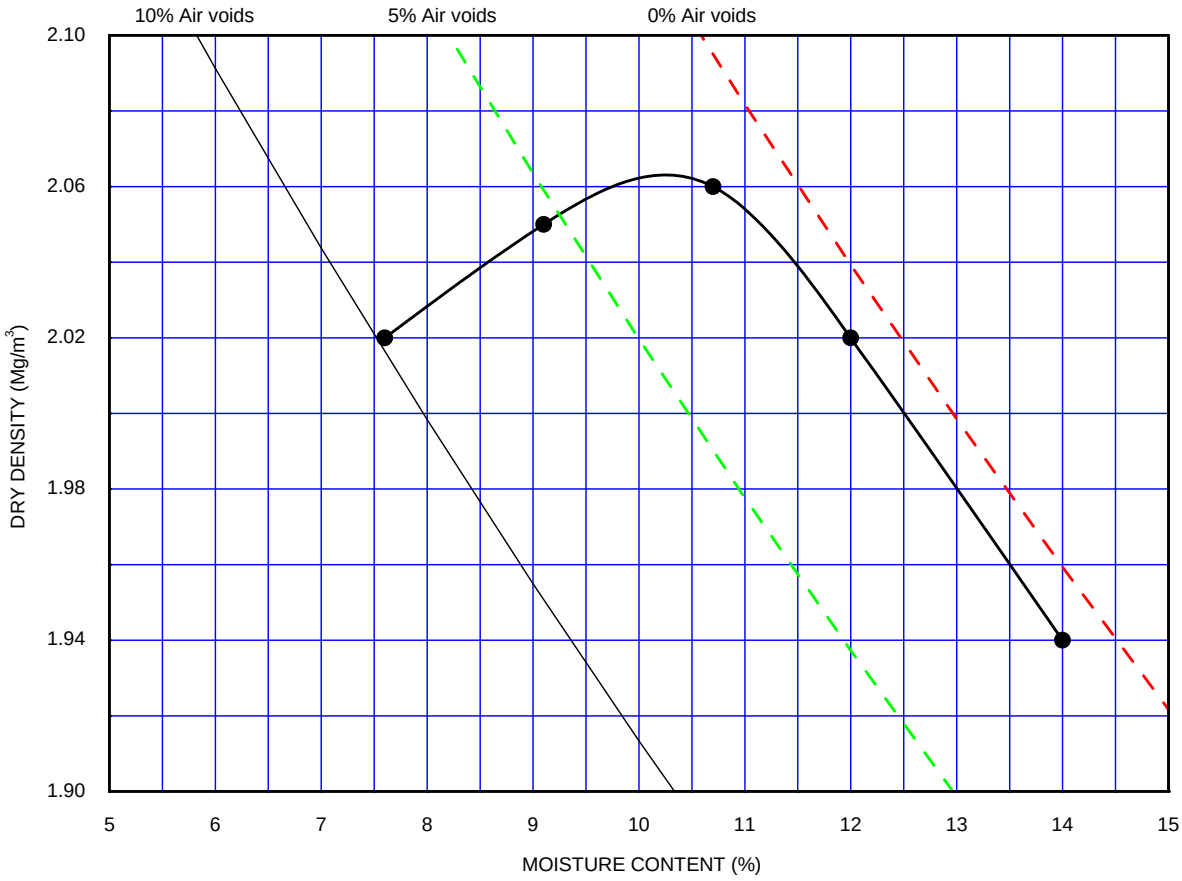


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.0	%			
Maximum dry density	: 2.02	Mg/m^3	Trial Pit	:	TP13
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 88	%			
Proportion of sample < 20mm	: 74	%	Depth (m)	:	0.50
Grading Zone	: X				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

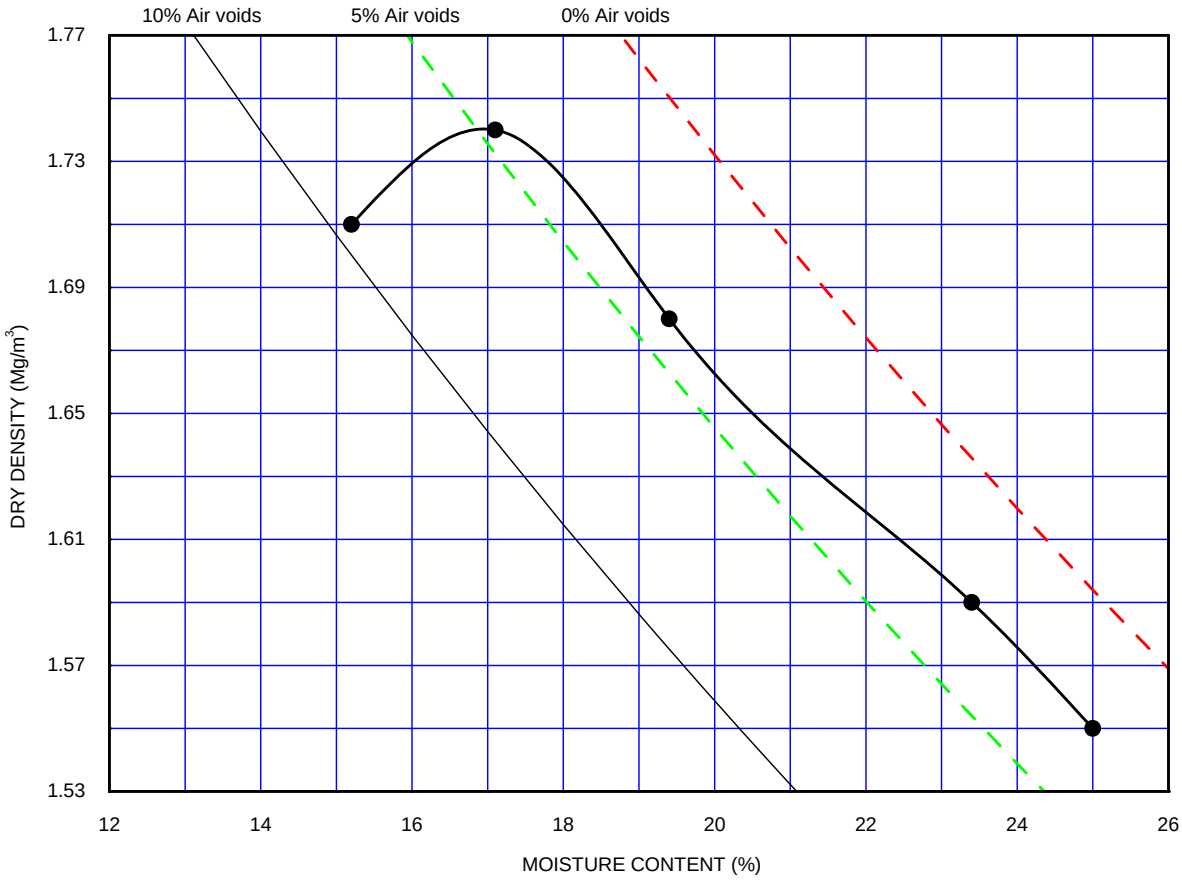


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.2	%			
Maximum dry density	: 2.06	Mg/m^3	Trial Pit	: TP14	
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	: B	
Proportion of sample < 37.5mm	: 91	%			
Proportion of sample < 20mm	: 86	%	Depth (m)	: 2.00	
Grading Zone	: 5				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

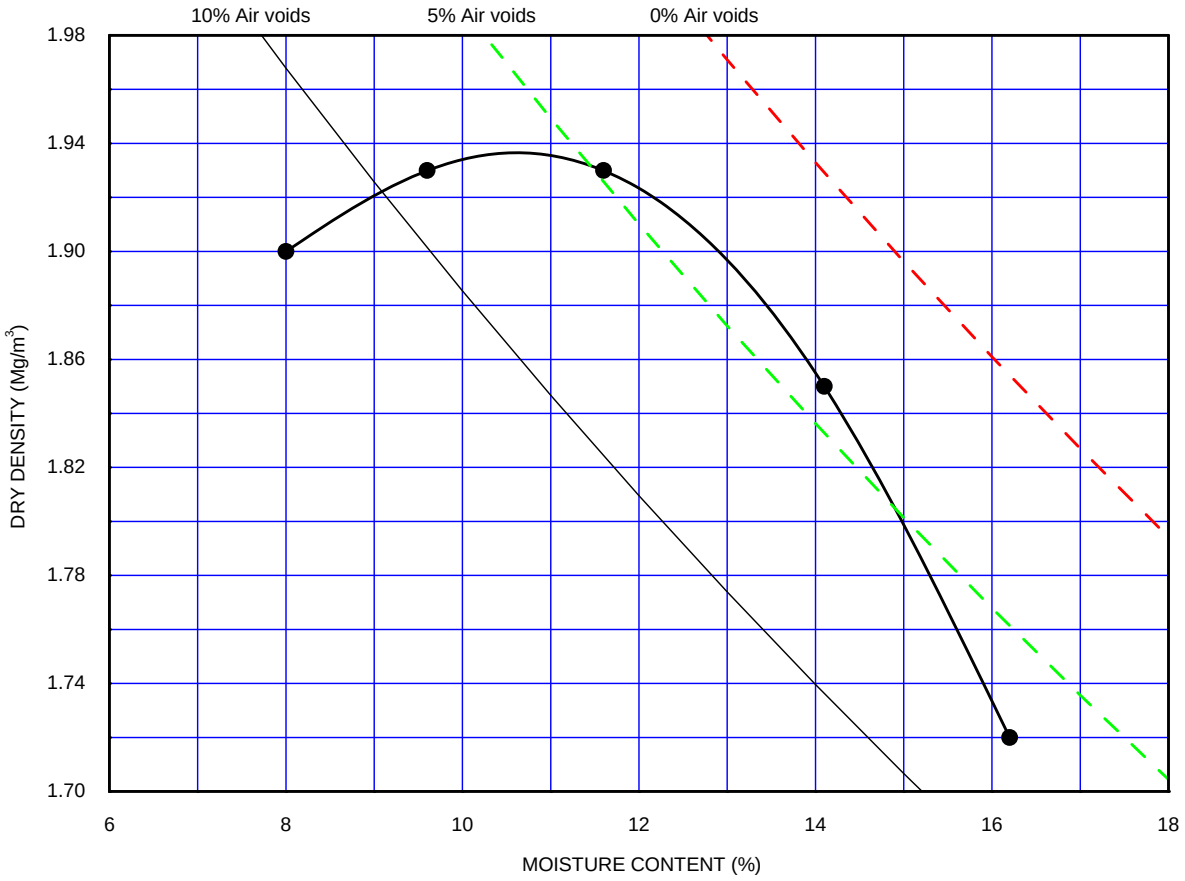


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 17.0	%			
Maximum dry density	: 1.74	Mg/m^3	Trial Pit	:	TP16
Test method (see above)	: 3.3				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 100	%			
Proportion of sample < 20mm	: 100	%	Depth (m)	:	1.00
Grading Zone	: 1				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

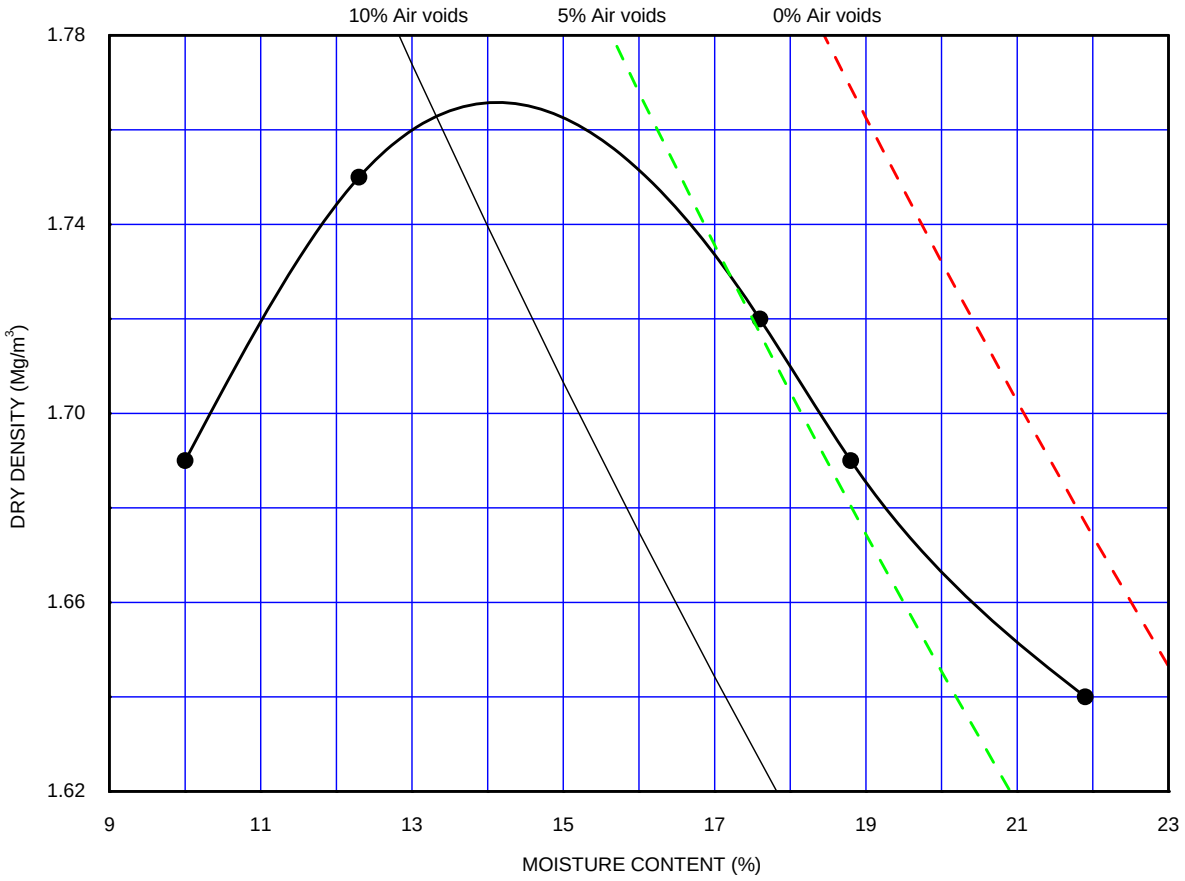


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.6	%			
Maximum dry density	: 1.94	Mg/m^3	Trial Pit	:	TP18
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 98	%			
Proportion of sample < 20mm	: 96	%	Depth (m)	:	0.50
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

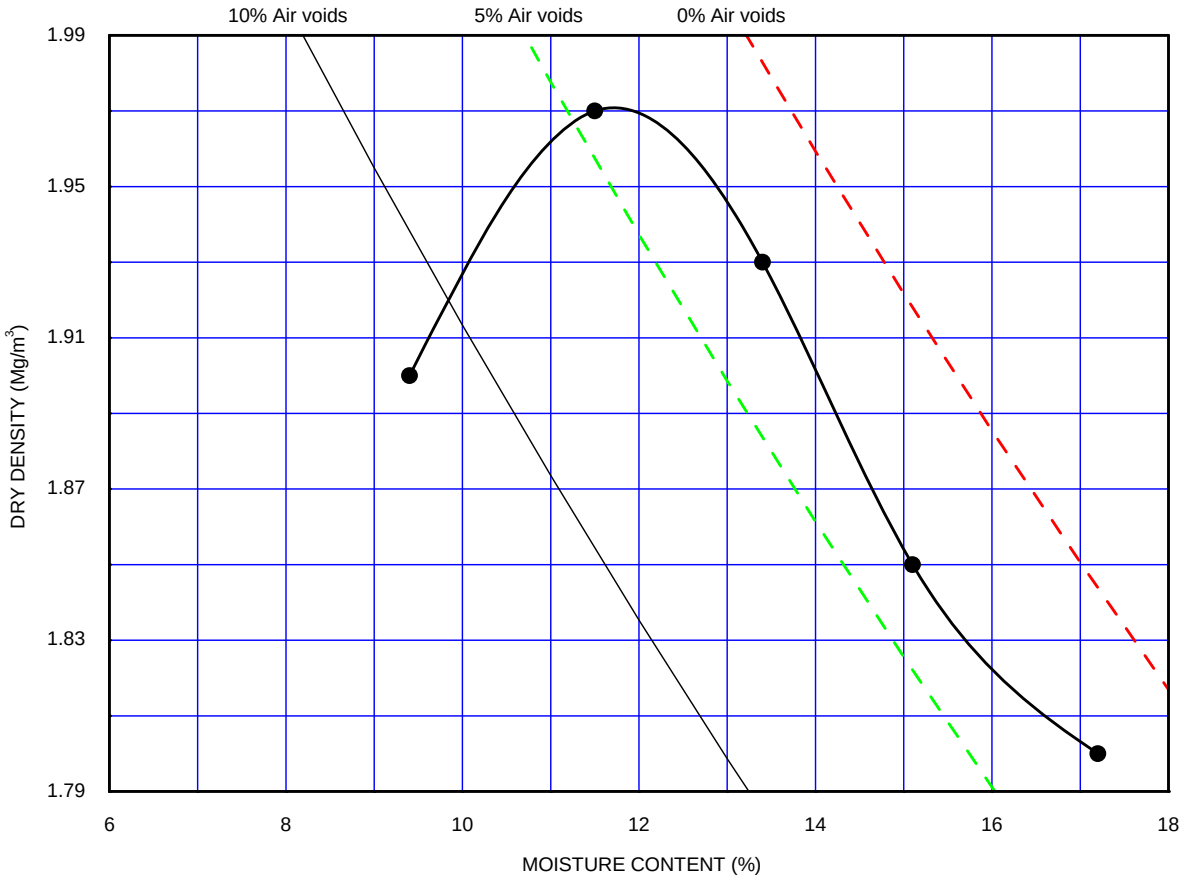


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 14.1	%			
Maximum dry density	: 1.77	Mg/m^3	Trial Pit	:	TP19
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 92	%			
Proportion of sample < 20mm	: 76	%	Depth (m)	:	0.50
Grading Zone	: 5				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

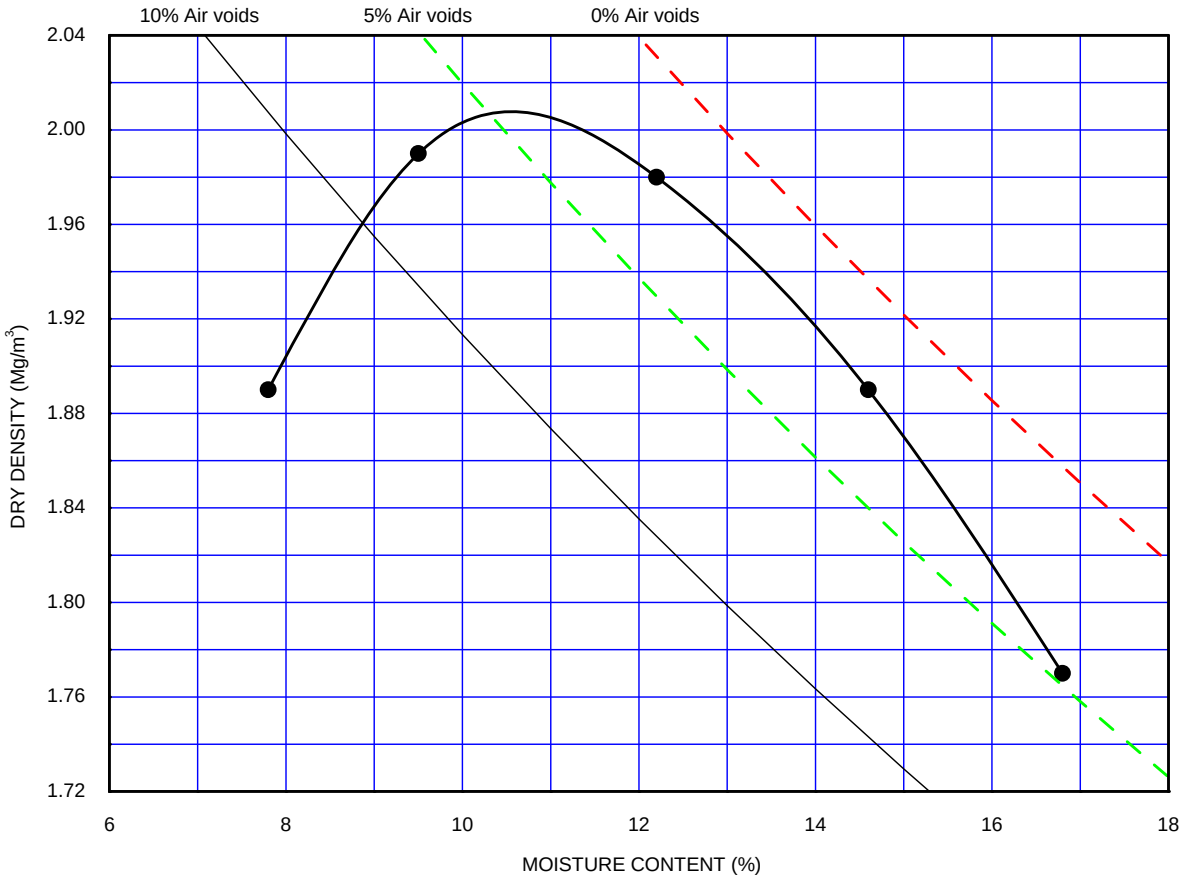


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.7	%			
Maximum dry density	: 1.97	Mg/m^3	Trial Pit	:	TP20
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 100	%			
Proportion of sample < 20mm	: 97	%	Depth (m)	:	0.50
Grading Zone	: 2				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

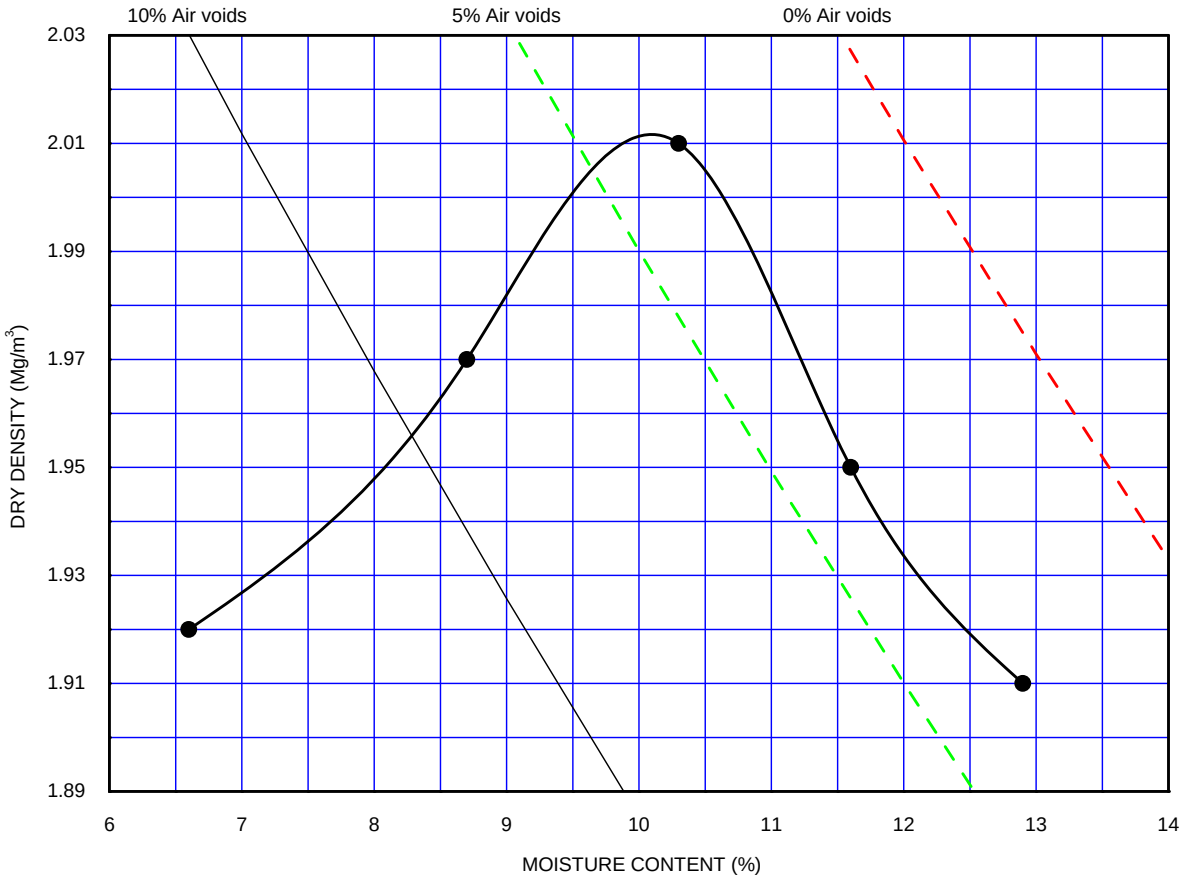


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.5	%			
Maximum dry density	: 2.01	Mg/m^3	Trial Pit	:	TP22
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 87	%			
Proportion of sample < 20mm	: 74	%	Depth (m)	:	2.00
Grading Zone	: X				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

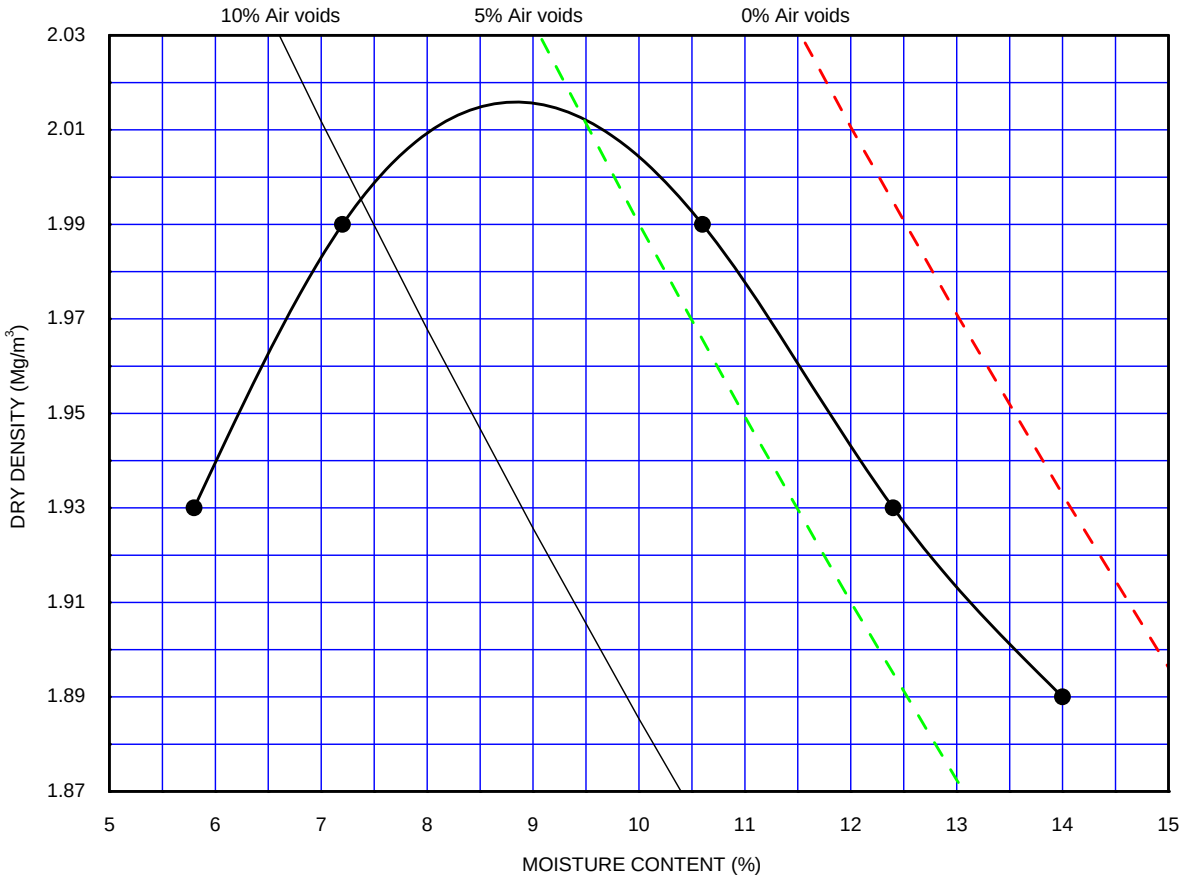


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.1	%			
Maximum dry density	: 2.01	Mg/m^3	Trial Pit	:	TP34
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 93	%			
Proportion of sample < 20mm	: 81	%	Depth (m)	:	0.80
Grading Zone	: 5				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

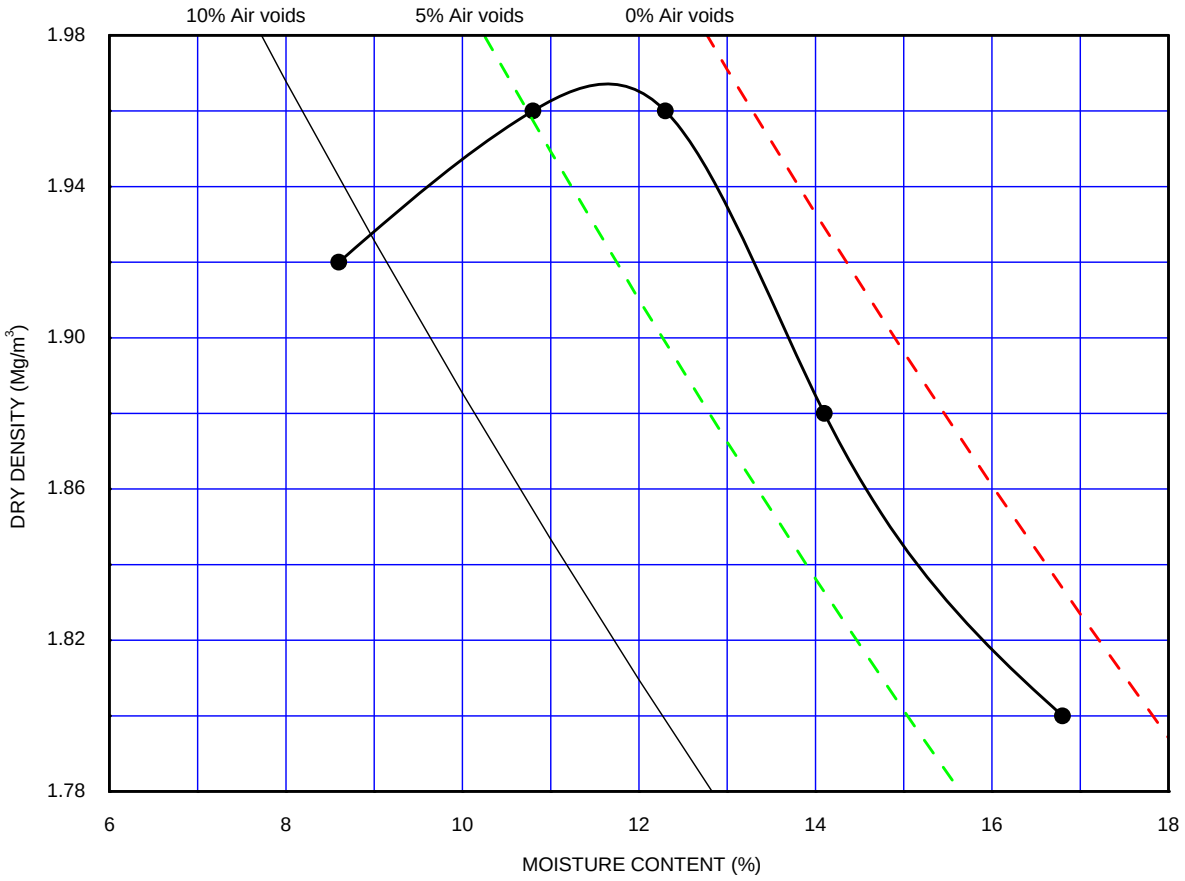


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 8.8	%			
Maximum dry density	: 2.02	Mg/m^3	Trial Pit	:	TP38
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 86	%			
Proportion of sample < 20mm	: 72	%	Depth (m)	:	1.00
Grading Zone	: X				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

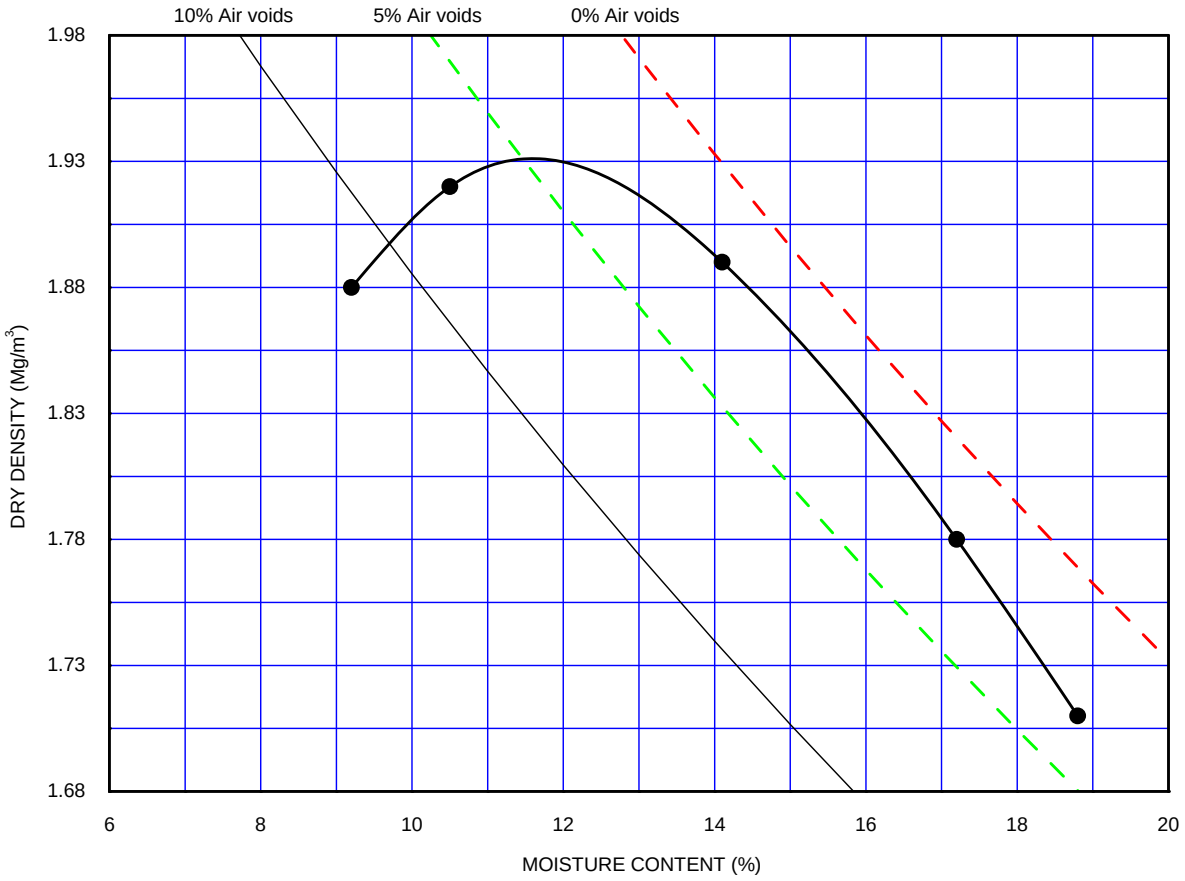


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.6	%			
Maximum dry density	: 1.97	Mg/m^3	Trial Pit	:	TP39
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 97	%			
Proportion of sample < 20mm	: 92	%	Depth (m)	:	2.00
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

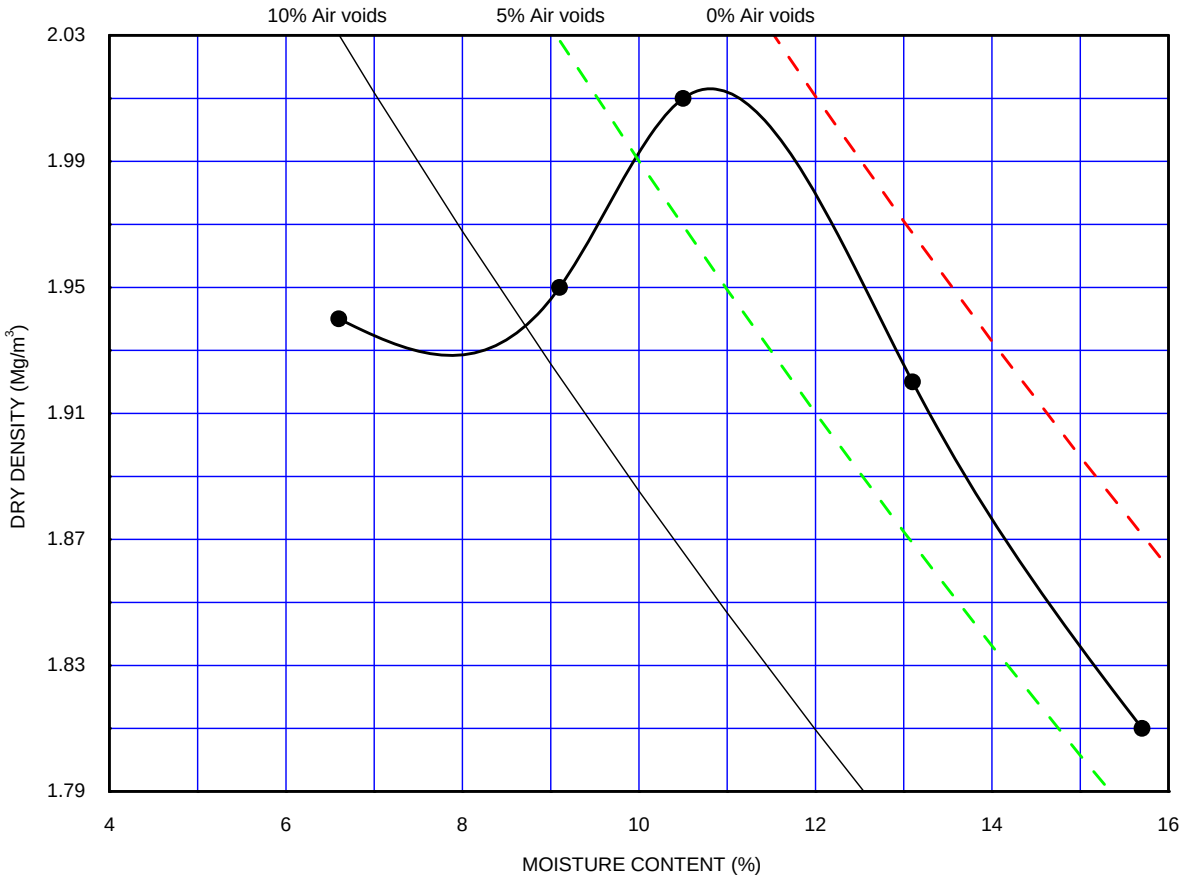


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.6	%			
Maximum dry density	: 1.93	Mg/m^3	Trial Pit	:	TP43
Test method (see above)	: 3.3				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 100	%			
Proportion of sample < 20mm	: 96	%	Depth (m)	:	0.50
Grading Zone	: 2				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

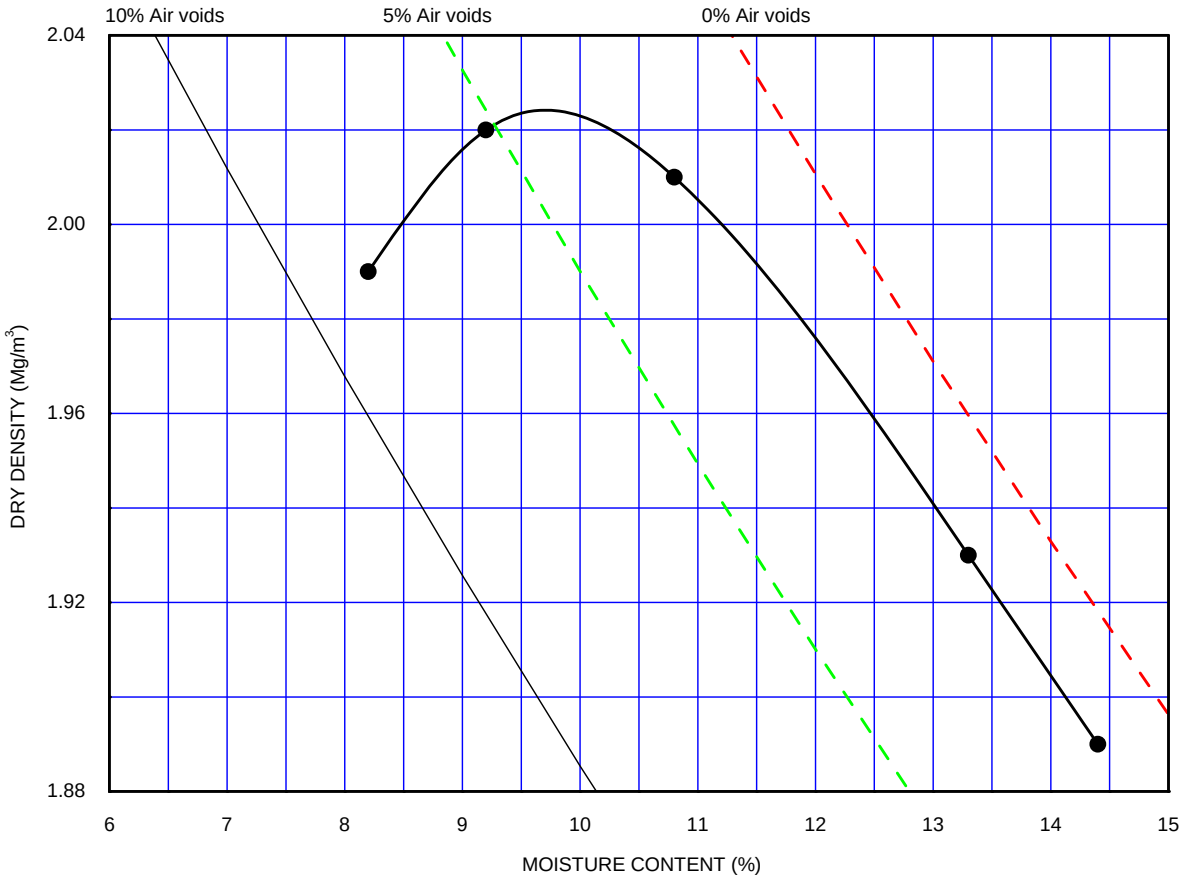


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.8	%			
Maximum dry density	: 2.01	Mg/m^3	Trial Pit	:	TP44
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 98	%			
Proportion of sample < 20mm	: 87	%	Depth (m)	:	2.00
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

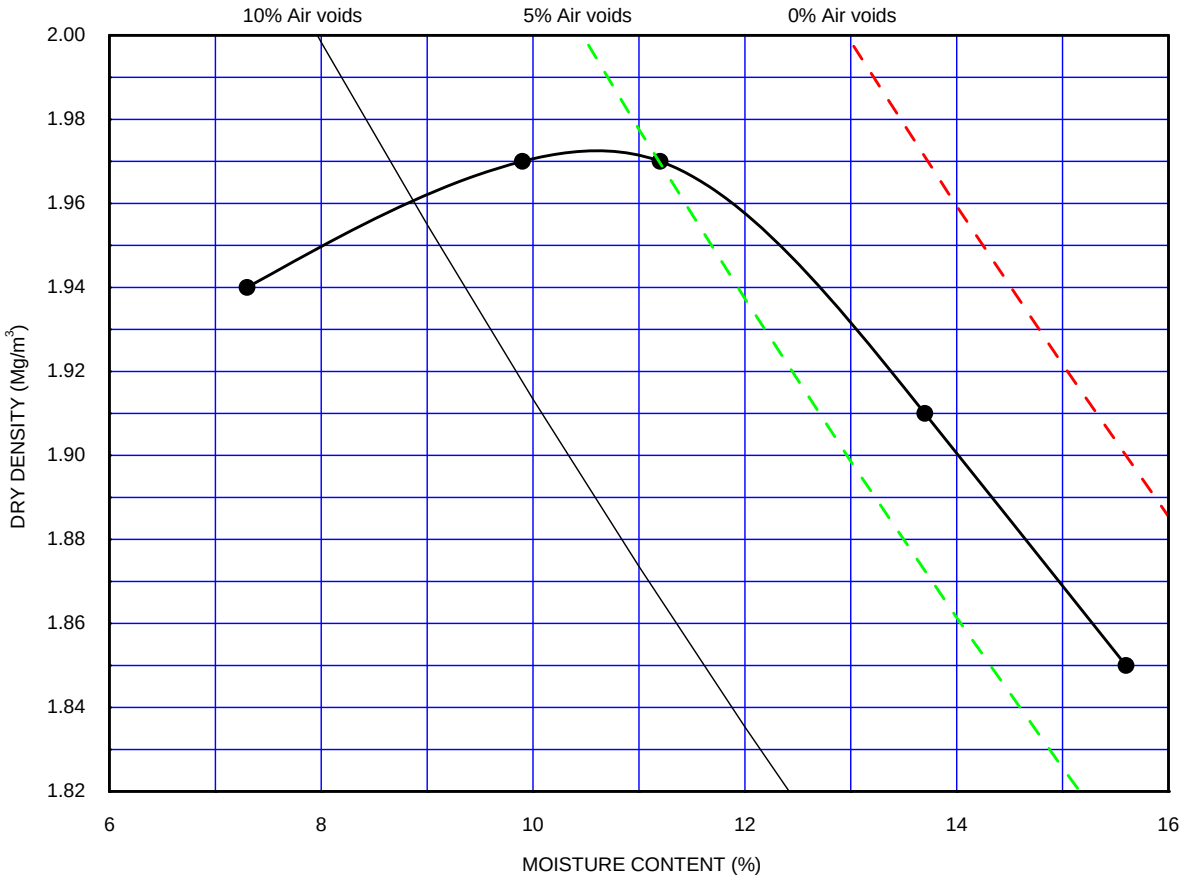


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 9.7	%			
Maximum dry density	: 2.02	Mg/m^3	Trial Pit	:	TP45
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 100	%			
Proportion of sample < 20mm	: 92	%	Depth (m)	:	2.00
Grading Zone	: 3				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

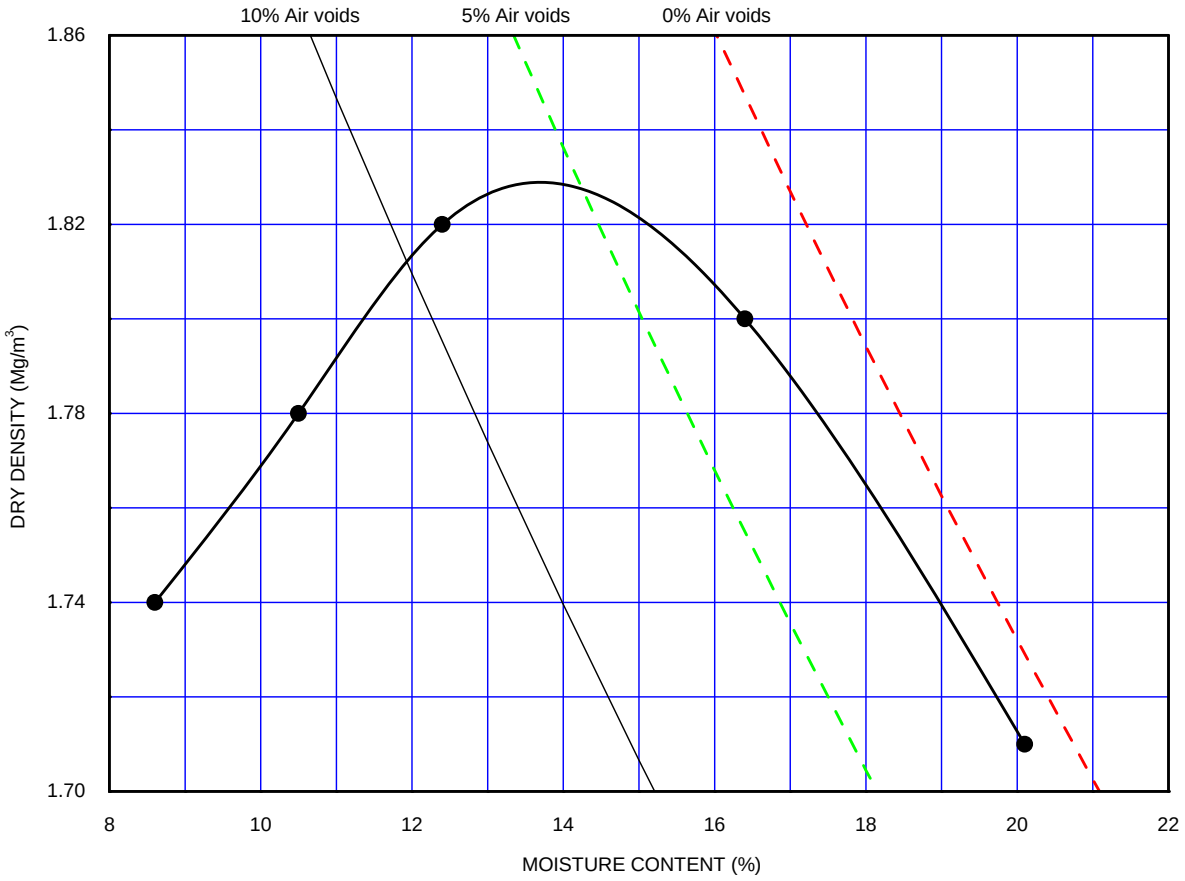


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 10.6	%			
Maximum dry density	: 1.97	Mg/m^3	Trial Pit	:	TP46
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 95	%			
Proportion of sample < 20mm	: 83	%	Depth (m)	:	1.00
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

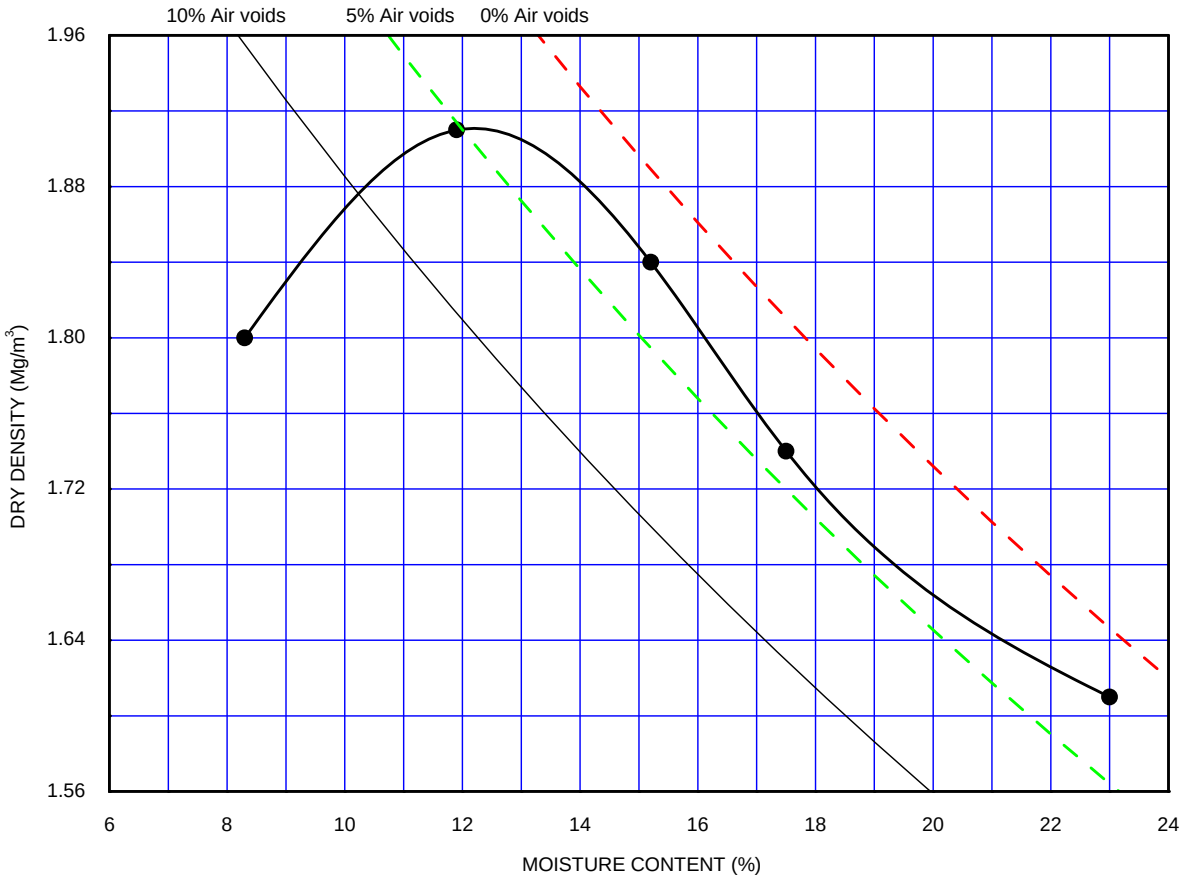


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 13.7	%			
Maximum dry density	: 1.83	Mg/m^3	Trial Pit	:	TP49
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 80	%			
Proportion of sample < 20mm	: 72	%	Depth (m)	:	1.00
Grading Zone	: X				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

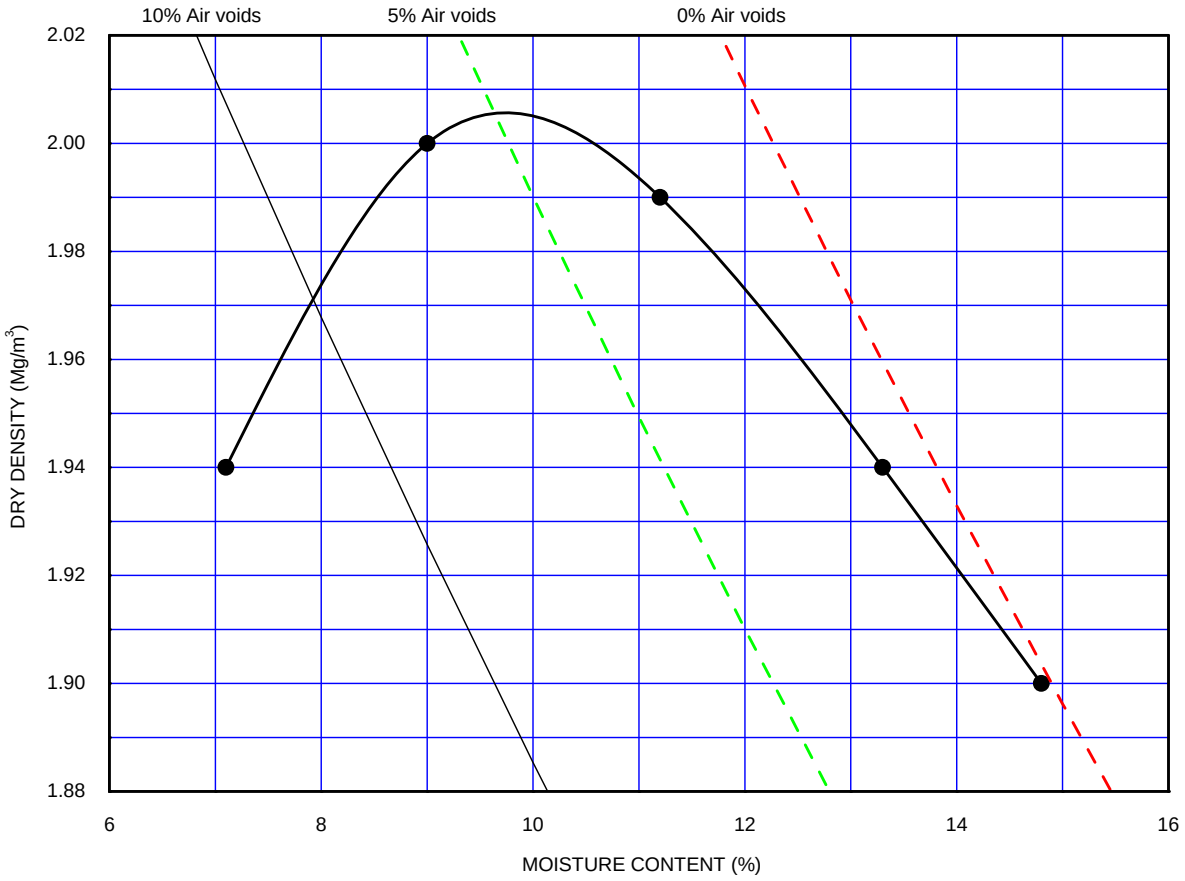


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 13.7	%			
Maximum dry density	: 1.83	Mg/m^3	Trial Pit	:	TP51
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 78	%			
Proportion of sample < 20mm	: 66	%	Depth (m)	:	1.00
Grading Zone	: X				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

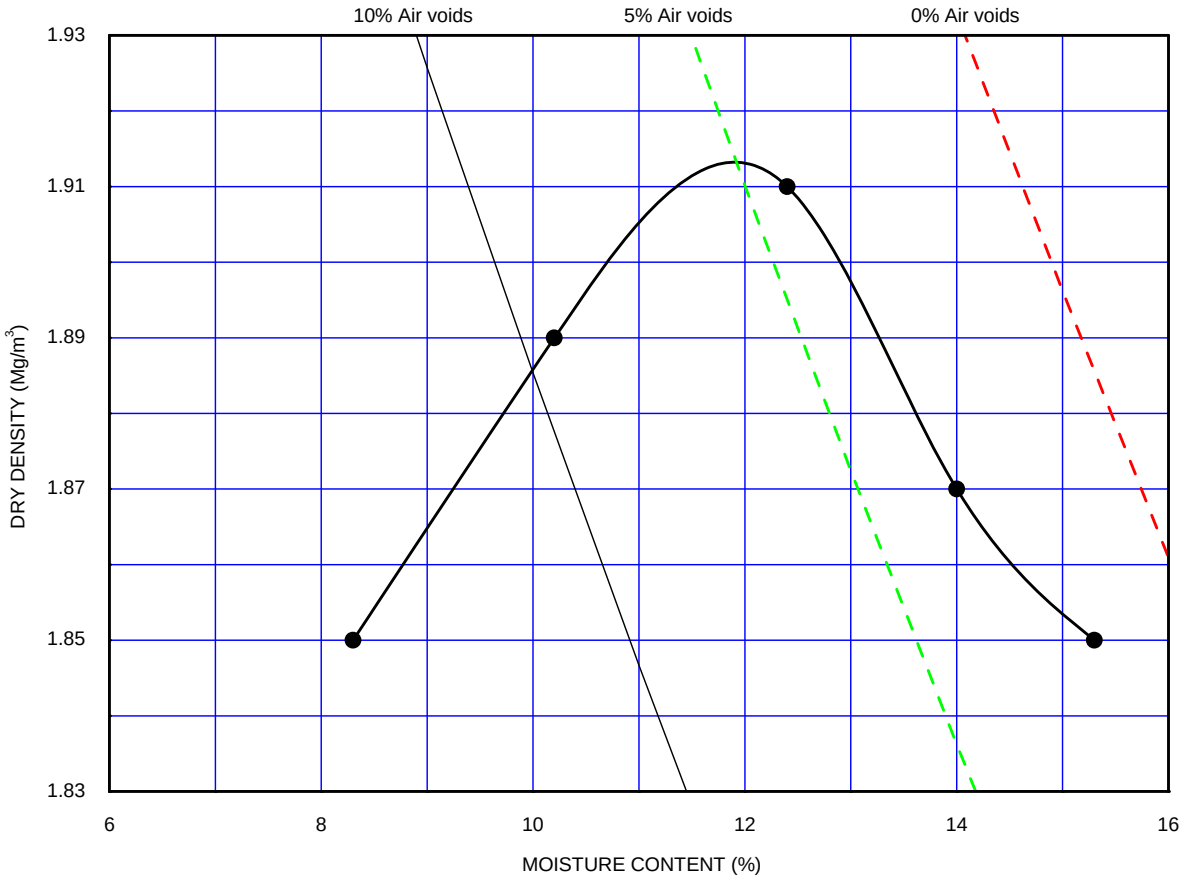


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 9.7	%			
Maximum dry density	: 2.01	Mg/m^3	Trial Pit	:	TP55
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 94	%			
Proportion of sample < 20mm	: 90	%	Depth (m)	:	1.00
Grading Zone	: 5				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

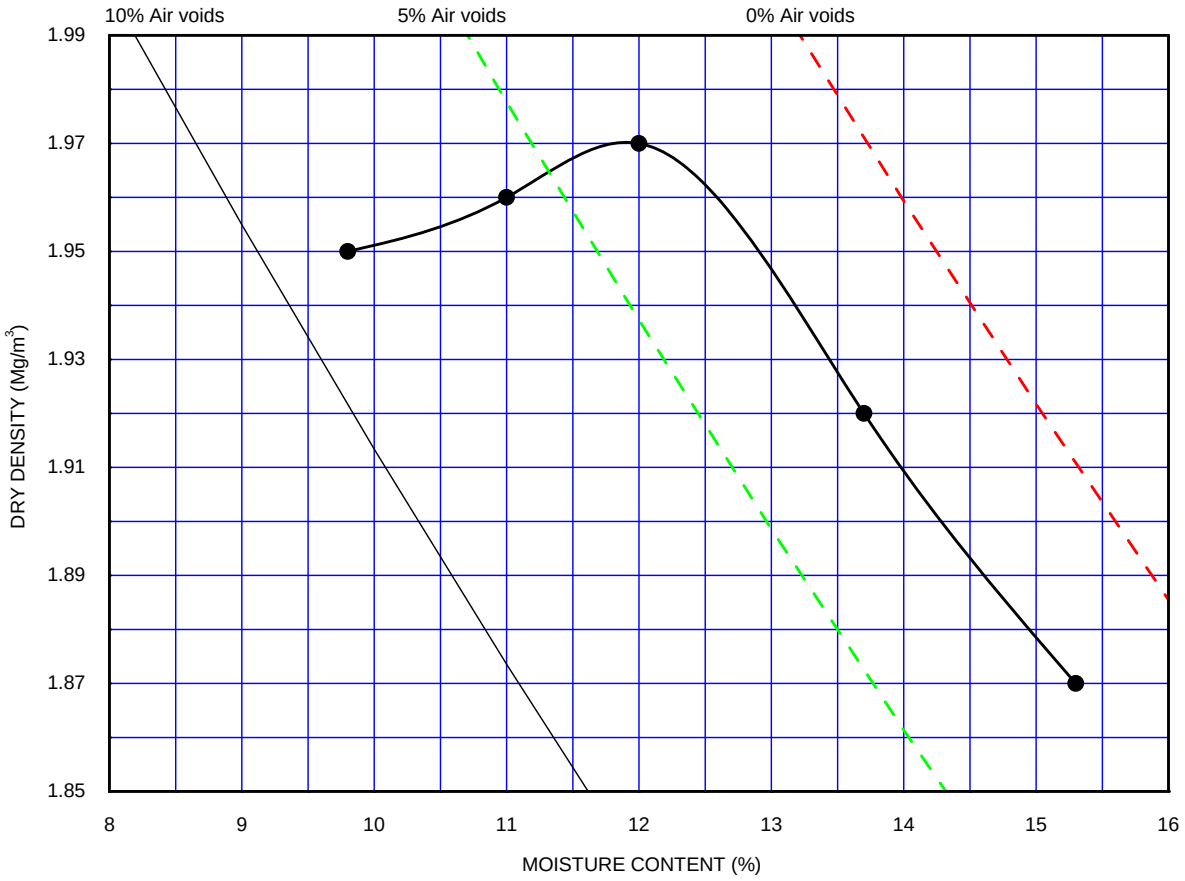


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.9	%			
Maximum dry density	: 1.91	Mg/m^3	Trial Pit	:	TP59
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 94	%			
Proportion of sample < 20mm	: 85	%	Depth (m)	:	1.00
Grading Zone	: 5				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

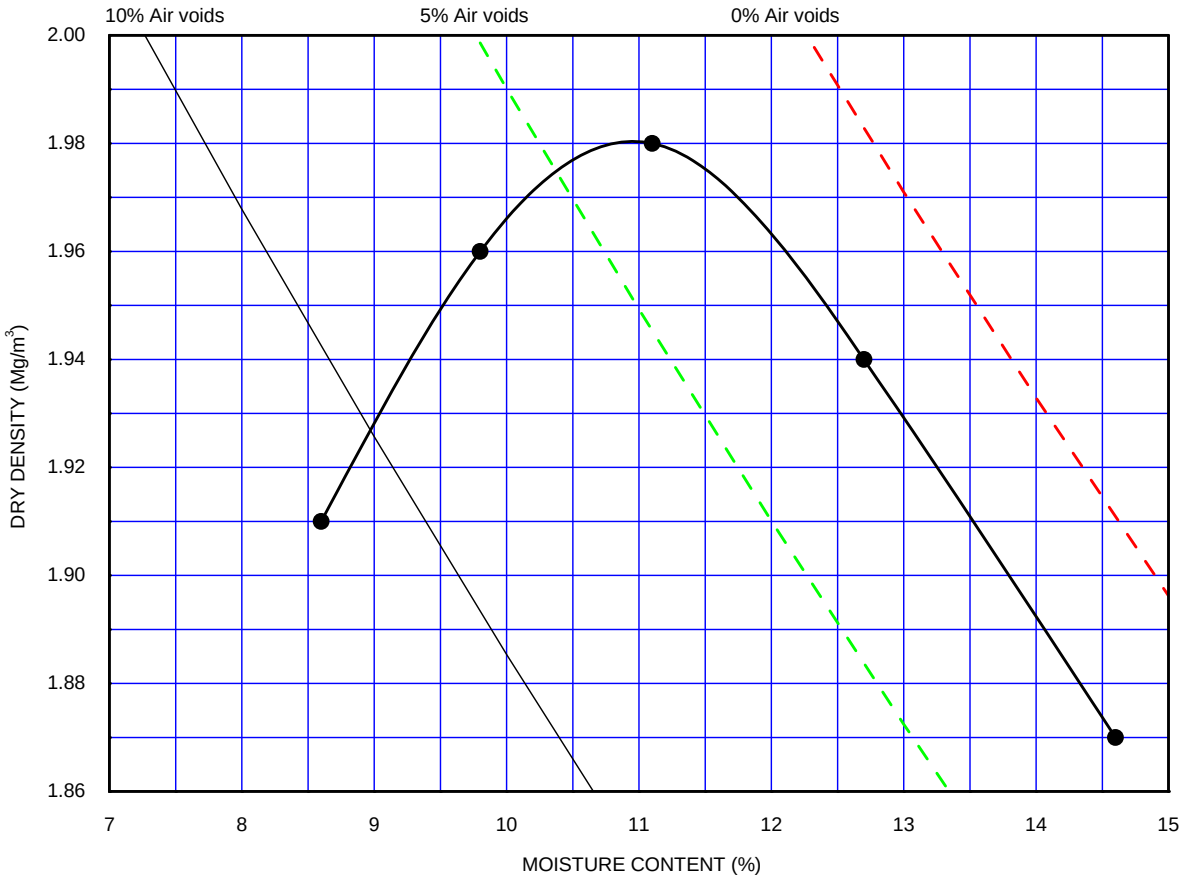


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.9	%			
Maximum dry density	: 1.97	Mg/m^3	Trial Pit	:	TP62
Test method (see above)	: 3.4				
Particle density	: 2.70	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 97	%			
Proportion of sample < 20mm	: 91	%	Depth (m)	:	3.00
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

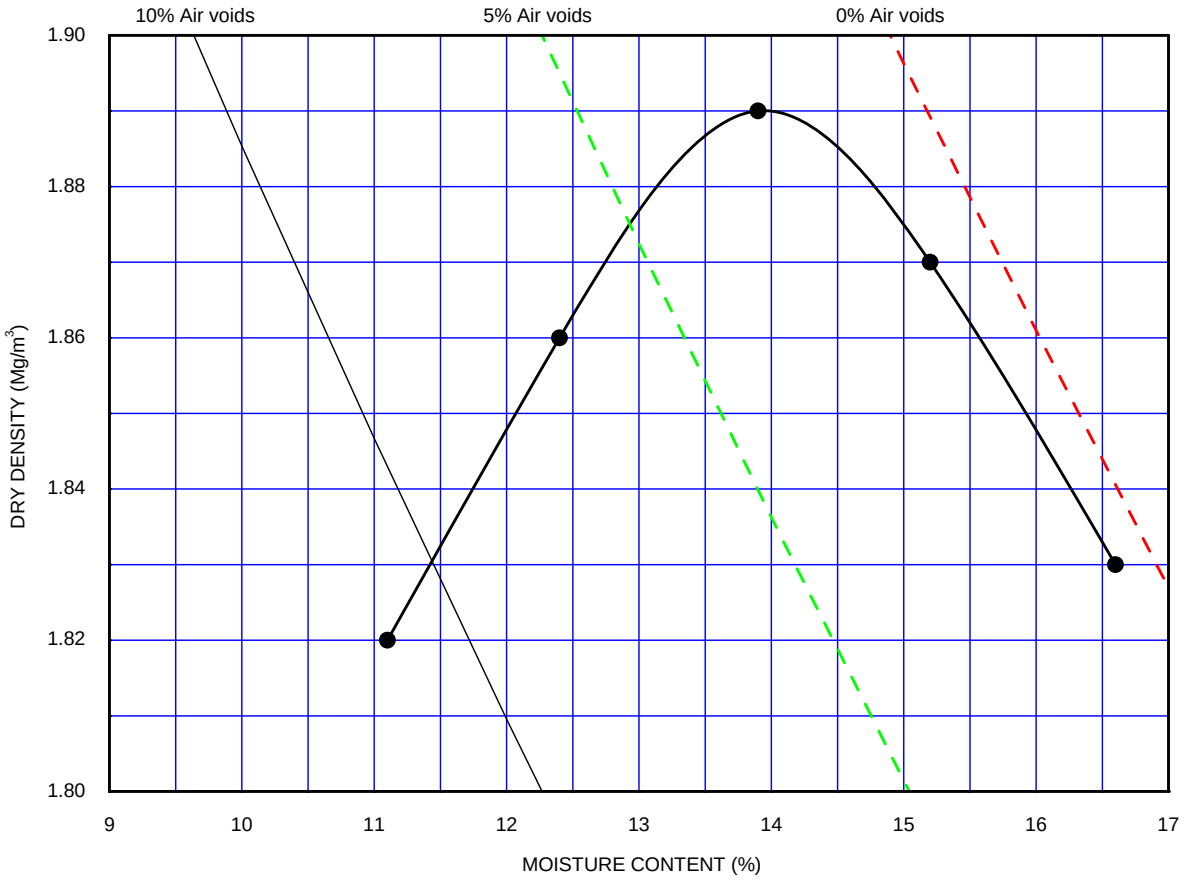


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 11.0	%			
Maximum dry density	: 1.98	Mg/m^3	Trial Pit	:	TP64
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 93	%			
Proportion of sample < 20mm	: 88	%	Depth (m)	:	1.00
Grading Zone	: 5				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

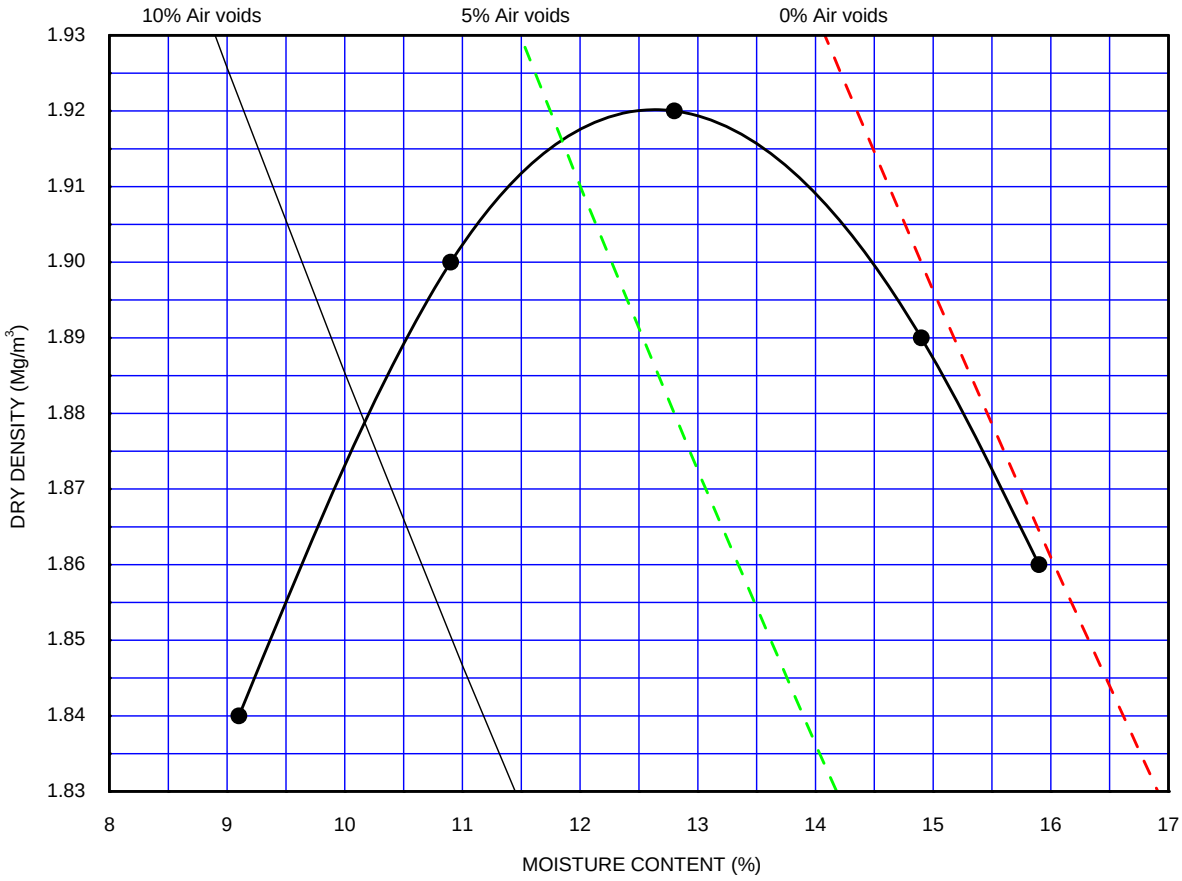


Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 13.9	%			
Maximum dry density	: 1.89	Mg/m^3	Trial Pit	:	SA07
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 100	%			
Proportion of sample < 20mm	: 94	%	Depth (m)	:	1.50
Grading Zone	: 3				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION



Tested in accordance with BS 1377: Part 4: 1990: (see table below for method used)

Clause 3.3:	Clause 3.4:	Clause 3.5:	Clause 3.6:	Clause 3.7:
2.5kg rammer	2.5kg rammer	4.5kg rammer	4.5kg rammer	Vibrating hammer
3 layers	3 layers	5 layers	5 layers	3 layers
27 blows/layer	62 blows/layer	27 blows/layer	62 blows/layer	1 minute/layer

Optimum moisture content	: 12.6	%			
Maximum dry density	: 1.92	Mg/m^3	Trial Pit	:	SA08
Test method (see above)	: 3.4				
Particle density	: 2.65	Mg/m^3 (Assumed)	Sample	:	B
Proportion of sample < 37.5mm	: 97	%			
Proportion of sample < 20mm	: 90	%	Depth (m)	:	1.40
Grading Zone	: 4				

DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP BY COMPACTION

TRIALPIT	SAMPLE	DEPTH (m)	SPECIMEN § ORIENTATION	PREPARATION METHOD *	BS TEST METHODS *	SAMPLE PASSING 2mm SIEVE (%)	TOTAL SULPHATE (% SO3)	2:1 WATER SOLUBLE SULPHATE (g/l SO3)	pH VALUE
TP03	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	70	-	<0.01	5.7
TP03	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	39	-	<0.01	5.5
TP04	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	68	-	0.01	6.4
TP04	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	44	-	<0.01	5.9
TP05	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	64	-	<0.01	6.2
TP05	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	57	-	<0.01	6.6
TP06	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	79	-	<0.01	6.1
TP06	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	61	-	0.01	5.9
TP07	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	62	-	<0.01	5.9
TP07	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	62	-	<0.01	5.8
TP09	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	52	-	0.03	6.6
TP09	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	75	-	0.01	7.6
TP11	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	58	-	0.02	5.8
TP11	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	65	-	0.01	6.7
TP13	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	74	-	<0.01	7.3
TP13	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	63	-	<0.01	7.6

All tests performed on fraction of sample passing 2mm sieve
NOTE: To convert sulphate results from SO_3 to SO_4 multiply by 1.2

§ Specimen orientation :

N/A	Not applicable due to preparation method and/or sample type
V	Cut vertically from undisturbed sample
H	Cut horizontally from undisturbed sample

* Tested in accordance with the following clauses of BS 1377: Part 3: 1990:

5.2	Acid extract method	9.4	Preparation of pH test specimen
5.3	Water extract method	9.5	Determination of the pH value
5.5	Gravimetric method of analysis		

SUMMARY OF SULPHATE & pH TEST RESULTS

TRIALPIT	SAMPLE	DEPTH (m)	SPECIMEN § ORIENTATION	PREPARATION METHOD *	BS TEST METHODS *	SAMPLE PASSING 2mm SIEVE (%)	TOTAL SULPHATE (% SO3)	2:1 WATER SOLUBLE SULPHATE (g/l SO3)	pH VALUE
TP14	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	69	-	0.02	6.7
TP14	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	72	-	0.01	6.5
TP16	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	70	-	0.01	6.7
TP16	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	62	-	<0.01	7.2
TP18	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	72	-	0.01	6.5
TP18	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	64	-	<0.01	6.8
TP19	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	64	-	0.01	5.7
TP19	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	61	-	0.01	5.5
TP20	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	68	-	<0.01	6.0
TP20	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	64	-	0.02	6.7
TP22	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	72	-	0.03	6.5
TP22	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	61	-	0.05	7.5
TP29	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	69	-	<0.01	5.5
TP29	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	39	-	<0.01	5.7
TP32	T	0.50	N/A	5.3 / 9.4	5.5 / 9.5	41	-	0.01	6.6
TP32	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	31	-	<0.01	7.1

All tests performed on fraction of sample passing 2mm sieve
NOTE: To convert sulphate results from SO_3 to SO_4 multiply by 1.2

§ Specimen orientation :

N/A	Not applicable due to preparation method and/or sample type
V	Cut vertically from undisturbed sample
H	Cut horizontally from undisturbed sample

* Tested in accordance with the following clauses of BS 1377: Part 3: 1990:

5.2	Acid extract method	9.4	Preparation of pH test specimen
5.3	Water extract method	9.5	Determination of the pH value
5.5	Gravimetric method of analysis		

SUMMARY OF SULPHATE & pH TEST RESULTS

TRIALPIT	SAMPLE	DEPTH (m)	SPECIMEN § ORIENTATION	PREPARATION METHOD *	BS TEST METHODS *	SAMPLE PASSING 2mm SIEVE (%)	TOTAL SULPHATE (% SO3)	2:1 WATER SOLUBLE SULPHATE (g/l SO3)	pH VALUE
TP34	T	0.50	N/A	5.3 / 9.4	5.5 / 9.5	62	-	<0.01	5.2
TP38	T	0.50	N/A	5.3 / 9.4	5.5 / 9.5	74	-	0.01	5.5
TP38	T	1.50	N/A	5.3 / 9.4	5.5 / 9.5	48	-	0.02	6.0
TP39	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	66	-	<0.01	5.9
TP39	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	49	-	<0.01	6.4
TP40	T	0.50	N/A	5.3 / 9.4	5.5 / 9.5	37	-	<0.01	5.9
TP43	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	76	-	0.02	7.3
TP43	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	72	-	0.01	6.8
TP44	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	64	-	<0.01	6.5
TP44	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	73	-	0.01	6.3
TP45	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	65	-	0.04	6.8
TP45	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	70	-	0.02	6.7
TP46	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	67	-	0.01	6.4
TP49	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	52	-	0.01	6.0
TP51	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	60	-	<0.01	5.6
TP55	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	75	-	<0.01	6.3
TP55	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	49	-	<0.01	6.2

All tests performed on fraction of sample passing 2mm sieve
NOTE: To convert sulphate results from SO_3 to SO_4 multiply by 1.2

§ Specimen orientation :

N/A	Not applicable due to preparation method and/or sample type
V	Cut vertically from undisturbed sample
H	Cut horizontally from undisturbed sample

* Tested in accordance with the following clauses of BS 1377: Part 3: 1990:

5.2	Acid extract method	9.4	Preparation of pH test specimen
5.3	Water extract method	9.5	Determination of the pH value
5.5	Gravimetric method of analysis		

SUMMARY OF SULPHATE & pH TEST RESULTS

TRIALPIT	SAMPLE	DEPTH (m)	SPECIMEN § ORIENTATION	PREPARATION METHOD *	BS TEST METHODS *	SAMPLE PASSING 2mm SIEVE (%)	TOTAL SULPHATE (% SO3)	2:1 WATER SOLUBLE SULPHATE (g/l SO3)	pH VALUE
TP57	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	78	-	0.02	5.7
TP57	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	72	-	0.01	6.2
TP58	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	62	-	<0.01	6.5
TP58	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	67	-	<0.01	6.7
TP59	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	71	-	0.04	6.8
TP59	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	38	-	<0.01	7.3
TP62	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	43	-	<0.01	6.9
TP62	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	71	-	0.01	5.8
TP63	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	66	-	0.02	6.4
TP63	T	2.00	N/A	5.3 / 9.4	5.5 / 9.5	36	-	0.01	6.7
TP64	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	78	-	0.01	6.8
SA07	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	60	-	0.03	6.0
SA08	T	1.00	N/A	5.3 / 9.4	5.5 / 9.5	70	-	0.02	6.2

All tests performed on fraction of sample passing 2mm sieve
NOTE: To convert sulphate results from SO_3 to SO_4 multiply by 1.2

§ Specimen orientation :

N/A	Not applicable due to preparation method and/or sample type
V	Cut vertically from undisturbed sample
H	Cut horizontally from undisturbed sample

* Tested in accordance with the following clauses of BS 1377: Part 3: 1990:

5.2	Acid extract method	9.4	Preparation of pH test specimen
5.3	Water extract method	9.5	Determination of the pH value
5.5	Gravimetric method of analysis		

SUMMARY OF SULPHATE & pH TEST RESULTS

NOTIFICATION OF TEST UNSUITABILITY

MATtest Limited
materials testing & competency

Edinburgh Road
Shotts
ML7 5DT
Tel: 01501 822244
Fax 01501 825044

MATtest Project No 13/075 **Batch Number** **1**

Project Title Chapeltown

Client ERS Land Regeneration

For the Attention Of Phil Amos

Dear Sirs,

The following samples, although listed on the testing schedule, are unsuitable for testing.

Borehole / Trialpit	Sample	Depth (m)	Test Item Requested	Reason
TP32	B	1.00	Compaction	Insufficient material

Date 27/03/2013

C Ferrie (Laboratory Manager)