



Soil properties applied to geotechnical engineering

2010 LABORATORY TESTING FEES SOILPRO TECHNICAL SERVICES SDN BHD

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Item	Description	Test Reference	Unit	Rate (RM)	Item	Description	Test Reference	Unit	Rate (RM)
1.0	Classification Tests				4.0	Total Stress Tests	BS1377: 1990		
1.1	Moisture Content	BS1377: 1990			4.1	Unconfined compression strength			
1.1.1	Oven-drying method	- Part 2, Method 3.2	No	2.00	4.1.1	38mm diameter, 1 specimen	- Part 7, Method 7.2	No	15.00
1.1.2	Speedy moisture tester	ASTM D4944, 1998	No	5.00	4.1.2	50mm diameter, 1 specimen	- Part 7, 7.2	No	20.00
1.2	Liquid Limit (LL)	BS1377: 1990			4.1.3	70 / 72mm diameter, 1 specimen	- Part 7, 7.2	No	40.00
1.2.1	Cone-four point method	- Part 2, Method 4.3	Set	20.00	4.1.4	38mm diameter, 3 specimens	- Part 7, 7.2	Set	40.00
1.2.2	Cone-one point method	- Part 2, 4.4	No	6.00	4.1.5	50mm diameter, 3 specimens	- Part 7, 7.2	Set	60.00
1.2.3	Casagrande-four point method	- Part 2, 4.5	Set	20.00	4.1.6	70 / 72mm diameter, 3 specimens	- Part 7, 7.2	Set	120.00
1.2.4	Casagrande-one point method	- Part 2, 4.6	No	6.00	4.2	UU Triaxial without pwp			
1.3	Plastic Limit (PL)	- Part 2, Method 5.3	No	5.00	4.2.1	38mm diameter, 1 specimen	- Part 7, Method 8.4	No	20.00
1.4	Plasticity Index (PI) – derivation	- Part 2, 5.4	No	1.00	4.2.2	50mm diameter, 1 specimen	- Part 7, 8.4	No	40.00
1.5	Linear Shrinkage (LS)	- Part 2, Method 6.5	No	12.00	4.2.3	70 / 72mm diameter, 1 specimen	- Part 7, 8.4	No	50.00
1.6	Bulk Density	BS1377: 1990			4.2.4	38mm diameter, 3 specimens	- Part 7, 8.4	Set	60.00
1.6.1	Linear measurement	- Part 2, Method 7.2	No	10.00	4.2.5	50mm diameter, 3 specimens	- Part 7, 8.4	Set	120.00
1.6.2	Immersion in water	- Part 2, 7.3	No	40.00	4.2.5	70 / 72mm diameter, 3 specimens	- Part 7, 8.4	Set	150.00
1.6.3	Water displacement	- Part 2, 7.4	No	40.00	5.0	Effective Stress Test	BS1377: 1990		
1.7	Particle Density (specific gravity)	BS1377: 1990			5.1	UU Triaxial with pwp (K.H.Head, Vol.3)	- Part 3, 3		
1.7.1	Gas Jar	- Part 2, Method 8.2	No	75.00	5.1.1	38mm diameter, 3 specimens	-	Set	400.00
1.7.2	Small pycnometer	- Part 2, 8.3	No	10.00	5.1.2	50mm diameter, 3 specimens	-	Set	500.00
1.8	Mass-Volume Relationship				5.1.3	70 / 72mm diameter, 3 specimens	-	Set	600.00
1.8.1	Void ratio		No	20.00	5.2	CU Triaxial (up to 3 days)			
1.8.2	Submerged Unit Weight		No	20.00	5.2.1	38mm diameter, 1 specimen	- Part 8,1-6 & 7	No	200.00
1.9	Particle Size Distribution	BS1377: 1990			5.2.2	50mm diameter, 1 specimen	- Part 8,1-6 & 7	No	300.00
1.9.1	Coarse grained - sieving	- Part 2, Method 9.2, 9.3	No	12.00	5.2.3	70 / 72mm diameter, 1 specimen	- Part 8,1-6 & 7	No	350.00
1.9.2	Fine grained- hydrometer, dry mass(+ sieving)	- Part 2, 9.2, 9.3, 9.5	No	32.00	5.2.4	38mm diameter, 3 specimens	- Part 8,1-6 & 7	Set	550.00
1.9.3	Fine grained- hydrometer, natural state	- ditto - (Part 1, 7.4.5)	No	100.00	5.2.5	50mm diameter, 3 specimens	-	Set	850.00
1.9.4	Double hydrometer - refer to Item 9.3	- Part 5, Method 6.4	No	Item 9.3	5.2.6	70 / 72mm diameter, 3 specimens	-	Set	1100.00
1.10	Soil Classification for Engineering Purposes				5.2.7	Additional days to Item 5.2	-	Day	280.00
1.10.1	British System	BS5930: 1999	No	10.00	5.3	CD Triaxial (up to 4 days)			
1.10.2	Unified Soil Classification System	ASTM D 2487, 2000	No	10.00	5.3.1	38mm diameter, 1 specimen	- Part 8,1-6 & 8	No	300.00
1.11	Samples Logging and Record				5.3.2	50mm diameter, 1 specimen	- Part 8,1-6 & 8	No	450.00
1.11.1	Split UD, photograph and logging		No	150.00	5.3.3	70 / 72mm diameter, 1 specimen	- Part 8,1-6 & 8	No	550.00
1.11.2	Provide small record samples		No	12.00	5.3.4	38mm diameter, 3 specimens	- Part 8,1-6 & 8	Set	850.00
2.0	Compaction-related Tests	BS1377: 1990			5.3.5	50mm diameter, 3 specimens	- Part 8,1-6 & 8	Set	1300.00
2.1	2.5 kg Rammer				5.3.6	70 / 72mm diameter, 3 specimens	- Part 8,1-6 & 8	Set	1600.00
2.1.1	1.0 Litre mould (upto medium gravel) - 1 No.	- Part 4, Method 3.3	No	40.00	5.3.7	Additional days to Item 5.3	-	Day	280.00
2.1.2	2.3 Litre CBR mould (upto coarse gravel) - 1 No.	- Part 4, 3.4	No	50.00	5.4	Remould specimens for Items No.4 and No.5	- Part 7, 8.3.3.2 (c)		
2.1.3	1 Litre mould – 5 No. (DD vs MC)	- Part 4, 3.3	Set	200.00		Based on natural condition:			
2.1.4	2.3 Litre CBR mould – 5 No. (DD vs MC)	- Part 4, 3.4	Set	250.00	5.4.1	At received moisture & density, 1 specimen	-	No	40.00
2.1.5	CBR, unsoaked – 1 No.	- Part 4, Method 7.2	No	50.00	5.4.2	At received moisture & density, 3 specimens	-	Set	75.00
2.1.6	CBR, soaked 4 days – 1 No.	- Part 4, 7.3	No	55.00		Based on compaction (Item No.2) results:			
2.1.7	CBR, top unsoaked & bottom soaked 4 days - 1 No		No	60.00	5.4.3	At specified moisture & density, 1 specimen	-	No	115.00
2.1.8	CBR, unsoaked – 5 No.	- Part 4, 7.2	Set	250.00	5.4.4	At specified moisture & density, 3 specimens	-	Set	235.00
2.1.9	CBR, soaked 4 days – 5 No.	- Part 4, 7.3	Set	275.00	6.0	Compressibility Tests	BS1377: 1990		
2.1.10	CBR, top unsoaked & bottom soaked 4 days - 5 No		Set	300.00	6.1	Oedometer (1-Dimensional) Consolidation	- Part 5, Method 3		
2.2	4.5 kg Rammer				6.1.1	7 loadings and 3 unloadings	- Part 5, 3.5	No	150.00
2.2.1	1.0 Litre mould (upto medium gravel) - 1 No.	- Part 4, 3.5	No	45.00	6.1.2	Swelling pressure determination	- Part 5, 4.3	No	200.00
2.2.2	2.3 Litre CBR mould (upto coarse gravel) - 1 No.	- Part 4, 3.6	No	60.00	6.1.3	Measurement of swelling	- Part 5, 4.4	No	360.00
2.2.3	1 Litre mould - 5 No. (DD vs MC)	- Part 4, 3.5	Set	225.00	6.1.4	Settlement on saturation	- Part 5, 4.5	No	360.00
2.2.4	2.3 Litre CBR mould - 5 No. (DD vs MC)	- Part 4, 3.6	Set	300.00	6.1.5	Additional loading to Item 6.1.1	-	Day	30.00
2.2.5	CBR, unsoaked - 1 No.	- Part 4, Method 7.2	No	55.00	6.2	1-Dimensional Swell or Settlement Potential of Soils	ASTM D4546, 2003		
2.2.6	CBR, soaked 4 days - 1 No.	- Part 4, 7.3	No	60.00	6.2.1	Free swell, heave % & swell pressure	- Method A		400.00
2.2.7	CBR, top unsoaked & bottom soaked 4 days - 1 No		No	65.00	6.2.2	Heave % or settle % & swell pressure	- Method B		250.00
2.2.8	CBR, unsoaked - 5 No.	- Part 4, 7.2	Set	275.00	6.2.3	Prevent swell, swell pressure & pre-con pressure	- Method C		400.00
2.2.9	CBR, soaked 4 days - 5 No.	- Part 4, 7.3	Set	300.00	6.3	Expansion Index of Soils (Cell id - 101.9mm)	ASTM D4829, 2003		600.00
2.2.10	CBR, top unsoaked & bottom soaked 4 days - 5 No		Set	320.00	6.4	Measurement of Collapse Potential of Soils	ASTM D5333, 1996	No	350.00
3.0	Direct Shear Test	BS1377: 1990							
3.1	Rapid (1mm/min): Normal shear	- Part 7, 3							
3.1.1	(60x60)mm, 3 specimens	- Part 7, 4	Set	350.00					
3.1.2	(100x100)mm, 3 specimens	- Part 7, 4	Set	600.00					
3.1.3	(300x300)mm, 3 specimens - outsourced	- Part 7, 5	Set	1100.00					
3.2	Consolidated Drained: Normal shear	- Part 7							
3.2.1	(60x60)mm, 3 specimens	- Part 7, 4	Set	400.00					
3.2.2	(60x60)mm, 3 specimens - multi reversal	- Part 7, 4.5.5	Set	800.00					
3.2.3	(100x100)mm, 3 specimens	- Part 7, 4	Set	650.00					
3.2.4	(100x100)mm, 3 specimens - multi reversal	- Part 7, 4.5.5	Set	1300.00					
3.2.5	(300x300)mm, 3 specimens - outsourced	- Part 7, 5	Set	1400.00					



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Item	Description	Test Reference	Unit	Rate (RM)	Item	Description	Test Reference	Unit	Rate (RM)
7.0	Permeability Tests	BS1377: 1990			11.0	Rock / Aggregate Tests			
7.1	Constant Head permeameter for non-cohesive soil	- Part 5, Method 5	No	300.00	11.1	Sieve Analysis	BS812:1985, 103.1	No	45.00
7.2	Falling Head permeameter for cohesive soil	K.H.Head, Vol.2	No	400.00	11.2	Moisture Content	BS812:1990, 109	No	20.00
7.3	Constant Head triaxial cell for cohesive soil	BS1377: 1990			11.3	Aggregate relative density and absorption	ASTM C127, 2001	No	120.00
7.3.1	38mm diameter, 1 specimen	- Part 6, Method 6	No	400.00	11.4	Rock S.G. and absorption for erosion control	ASTM D6473, 1999	No	120.00
7.3.2	50mm diameter, 1 specimen	- Part 6, 6	No	500.00	11.5	Rock Compressive strength	ASTM D2938, 2002	No	130.00
7.3.3	70 / 72mm diameter, 1 specimen	- Part 6, 6	No	600.00	11.6	Do- Young Modulus - outsourced	ASTM D3148, 2002	No	300.00
7.4	Saturated Hydraulic Conductivity	ASTM F1815, 2006			11.7	Do- Young Modulus & Poisson Ratio - outsourced	ASTM D3148, 2002	No	450.00
7.4.1	Putting green and sports tuff root zones	- Method A, B, C, D	No	500.00	11.8	Rock Petrographic Analysis -outsourced	ASTM C295, 2003	No	500.00
					11.9	Rock Point Load Index	ASTM D5371, 2002	No	90.00
8.0	Other Total Stress Tests				11.10	Rock hardness by Rebound Hammer	ASTM D5873, 2000	No	50.00
8.1	Hand vane shear, pilcon		No	20.00	11.11	Rebound Number of hardened concrete	ASTM C805, 2002	No	50.00
8.2	Pocket penetrometer		No	20.00	11.12	Crushing Value - outsourced	BS812:1990, 110	No	120.00
9.0	Durability/Dispersibility Tests	BS1377: 1990			11.13	Ten Percent Fines - outsourced	BS812:1990, 111	No	120.00
9.1	Pinhole Method	- Part 5, Method 6.2	No	400.00	11.14	Impact Value - outsourced	BS812:1990, 112	No	120.00
9.2	Crumb Method	- Part 5, 6.3	No	250.00	11.15	Abrasion Value - outsourced	BS812:1990, 113	No	350.00
9.3	Dispersion Method - double hydrometer	- Part 5, 6.4	No	100.00	11.16	Polished Stone Value - outsourced	BS812:1989, 114	No	120.00
9.4	Emersion test (same as Item 9.2)	AS1289.3.8.1, 1997	No	250.00	11.17	Flakiness Index - outsourced	BS812:1989, 105.1	No	70.00
10.0	Soil/water Chemical Tests	BS1377: 1990			11.18	Elongation Index	BS812:1990, 105.2	No	70.00
10.1	Organic matter - outsourced	- Part 3, Method 3	No	35.00	11.19	Angularity Number - outsourced	BS812:1975, Part1, 7.5	No	70.00
10.2	Loss on Ignition - outsourced	- Part 3, 4	No	60.00	11.20	Soundness Test - outsourced	ASTM C88, 1999	No	400.00
10.3	Total/soluble sulphate	- Part 3, 5	No	30.00	11.21	Alkali Silica Reactivity - outsourced	ASTM C289, 2003	No	400.00
10.4	Carbonate - outsourced	- Part 3, 6	No	100.00	11.22	Organic impurities - outsourced	ASTM C40, 2004	No	70.00
10.5	Chloride	- Part 3, 7	No	30.00	12.0	Concrete			
10.6	Total dissolved solids -outsourced	- Part 3, 8	No	50.00	12.1	Concrete core test, diameter 100mm	BS1881:1983, 120	No	100.00
10.7	pH value	- Part 3, 9	No	15.00	12.2	Concrete cube test	BS1881:1983, 116	No	5.00
10.8	Total suspended solids	Apha 2540D	No	35.00	13.0	Photograph			
					13.1	Digital photo		No	10.00

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