

LIST OF TESTS IN GEOTECHNICAL ENGINEERING

PIEZOCONE

Item	Description of Work	Unit	Rate (RM)
1.0	<u>Piezocone Plant (10 tonnes) - Mobilisation & Demobilisation</u>		
1.1	Bring the Piezocone Plant to the site and remove the same from the the Site after completion of the work, including erecting the plant at the first sounding position, when the site is:		
1.1.1	Up to 25km from USM	LS	1,100.00
1.1.2	Over 25km and up to 125km from USM	LS	4,300.00
1.1.3	Over 125km and up to 225km from USM	LS	5,000.00
1.1.4	Over 225km and up to 325km from USM	LS	5,600.00
1.1.5	Over 325km and up to 425km from USM	LS	6,200.00
1.1.6	Over 425km and up to 525km from USM	LS	6,800.00
1.1.7	Over 525km from USM	LS	7,400.00
1.1.8	Extra over item 1.1 if Site is in the states of Kelantan (excluding Kota Bharu district) Terangganu (excluding Kuala Terangganu district) Pahang (excluding Kuantan and Temerloh district) and the Ulu Perak (Grid) district in Perak.	LS	480.00
1.2	<u>Piezocone - Setting up & Dismantling within the Site</u>		
1.2.1	Move the Piezocone Plant from one sounding position to the next including dismantling it at the old position and erecting it at the new position on land	LS	480.00
1.3	<u>Piezocone Test</u>		
1.3.1	Carry out Piezocone tests:-		
1.3.2	Depth from existing ground level ot exceeding (n.e)10m	M	29.00
1.3.3	--- ditto --- exceeding 10m but n.e 20m	M	38.00
1.3.4	--- ditto --- exceeding 20m but n.e 30m	M	45.00
1.4	<u>Dissipation Test</u>		
1.4.1	Carry out dissipation test up to maximum of one hour	No.	190.00
1.4.2	Extra over item 1.4.1 for dissipation test exceeding one hour	No.	200.00

Laboratory Tests

Item	Description of Work	Unit	Rate (RM)
3.0	<u>Classification Tests</u>		
3.1	Moisture Content	No.	5.00
3.2	Atterberg Limits	No.	150.00
3.3	Linear Shrinkage	No.	100.00
3.4	Particle Density (specific gravity) - Small pyknometer	No.	75.00
3.5	Particle Size Distribution - Fine grained - sieve and hydrometer	No.	250.00
3.6	Compaction tests	No.	300.00
3.7	California Bearing Ratio (CBR) - Unsoaked	No.	250.00
3.8	California Bearing Ratio (CBR) - Soaked	No.	300.00
3.9	Soil Strength Tests		
3.9.1	Unconfined compression strength		
3.9.1.1	38mm diameter, 1 specimen	No.	50.00
3.9.1.2	50mm diameter, 1 specimen	No.	60.00
3.9.1.3	70/72mm diameter, 1 specimens	No.	70.00
3.9.1.4	38mm diameter, 3 specimen	Series	150.00
3.9.1.5	50mm diameter, 3 specimen	Series	180.00
3.9.1.6	70/72mm diameter, 3 specimens	Series	210.00
3.9.2	Unconsolidated undrained triaxial compression without pore water pressure measurement:-		
3.9.2.1	38mm diameter, 1 specimen	No.	100.00
3.9.2.2	50mm diameter, 1 specimen	No.	120.00
3.9.2.3	70/72mm diameter, 1 specimen	No.	140.00
3.9.2.4	38mm diameter, 3 specimens	Series	300.00
3.9.2.5	50mm diameter, 3 specimens	Series	360.00
3.9.2.6	70/72mm diameter, 3 specimens	Series	420.00
3.9.3	Unconsolidated undrained triaxial compression with pore water pressure measurement:-		
3.9.3.1	38mm diameter, 3 specimens	Series	600.00
3.9.3.2	50mm diameter, 3 specimens	Series	660.00
3.9.3.3	70/72mm diameter, 3 specimens	Series	720.00
3.9.4	Consolidated undrained triaxial compression test with pore water pressure:-		
3.9.4.1	38mm diameter - 3 specimens	Series	800.00
3.9.4.2	50mm diameter - 3 specimens	Series	1,100.00
3.9.4.3	70/72mm diameter - 3 specimens	Series	1,400.00
3.9.5	Consolidated drained triaxial compression test with pore water pressure:-		
3.9.5.1	38mm diameter - 3 specimens	Series	1,200.00
3.9.5.2	50mm diameter - 3 specimens	Series	1,500.00
3.9.5.3	70/72mm diameter - 3 specimens	Series	1,900.00

3.10	Shear Box Test		
3.10.1	Determination of Shear Strenght by direct Shear (Small Shearbox) - 60mm square	Series	450.00
3.10.2	Determination of Shear Strenght by direct Shear (Small Shearbox) - 100mm square	Series	550.00
3.10.3	Determination of Shear Strenght by direct Shear (Small Shearbox) - 300mm square	Series	800.00
3.11	Compressibility Tests - Oedometer Consolidation - 6 loadings and 3 unloadings	No.	1,500.00
3.12	Permeability Tests		
3.12.1	Carry out constant head permeability test for granular soil	No.	200.00
3.12.2	Carry out falling head permeability test for granular soil	No.	300.00
3.13	Rock Core Tests		
3.13.1	Unconfined Compression Test + Coring + Cutting	No.	300.00
3.13.2	Unconfined Compression Test + Cutting	No.	200.00
3.13.3	Point Load Tests	No.	110.00
3.13.4	Point Load Tests + Coring + Cutting	No.	250.00
3.14	Soil chemical tests		
3.14.1	Loss On Ignition	No.	150.00
3.14.2	pH value	No.	20.00

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Other Field Tests

Item	Description of Work	Unit	Rate (RM)
2.0	<u>Other Field Tests</u>		
2.1	<u>Mobilisation of personnel and equipment to site and demobilisation upon completion.</u>		
2.1.1	Up to 25km from USM	LS	1,200.00
2.1.2	Over 25km and up to 225km from USM	LS	1,700.00
2.1.3	Over 225km and up to 425km from USM	LS	2,100.00
2.1.4	Over 425km from USM	LS	2,400.00
2.2	<u>Mackintosh Probe Test</u>		
2.2.1	Carry out Mackintosh or JKR Probe test to depth not exceeding 15m below ground level or 400 blow per 0.30m penetration whichever achieved first.	No	300.00
2.3	<u>Insitu California Bearing Ratio Tests</u>		
2.3.1	Carry out Insitu Californi Bearing Ratio Test	No.	300.00
2.4	<u>Field Density Tets</u> Sand replacement method (small Pouring Cylinder Method)	No.	160.00
2.5	<u>Dynamic Cone Penetration Test (DCP)</u>		
2.5.1	Carry out 150mm diameter pavement coring	No.	130.00
2.5.2	Dynamic cone Penetration Test in pavement cored hole through the base couse (crusher run), sub-base and sub-grade up to 1.2 m below the road surface	No.	150.00
2.5.3	Re-instate cores hole with bituminous premix or approved material	No.	50.00