

AVERAGE VALUE OF PHYSICO - MECHANICAL PROPERTIES
Layer 3a : Loose, blackish grey CLAYEY SAND (SC)

Table : 3

No	Property	Sign	Average value.	Maximum value	Minimum value	Number of test
1	Sieve Analysis, % Passing					
	3/4" (19 mm)					
	1/2" (12.5 mm)					
	3/8" (9.5 mm)					
	#4 (4.75 mm)					
	#8 (2.36 mm)		100.0			1
	#16 (1.18 mm)		97.8			1
	#30 (0.6 mm)		97.1			1
	#50 (0.3 mm)		94.7			1
	#100 (0.15 mm)		72.0			1
	#200 (0.075 mm)		48.8			1
	< 0.005 mm		23.1			1
2	Natural moisture content (%)	w	47.34			1
3	Natural unit weight (g/cm ³)	γ	1.618			1
4	Dry unit weight (g/cm ³)	γ _d	1.098			1
5	Specific gravity	G _s	2.677			1
6	Porosity	n	0.59			1
7	Void ratio	e _o	1.438			1
8	Degree saturation (%)	S	88.1			1
9	Liquid limit (%)	LL	47.1			1
10	Plastic limit (%)	LP	27.1			1
11	Plastic index (%)	PI	20.0			1
12	Water plasticity ratio (%)	B	1.01			1
13	Unconfined compression (Kg/cm ²)	qu				
14	Compression index	C _c				
15	Coefficient of consolidation (cm ² /Kg)	C _v				
16	Preconsolidation pressure (kg/cm ²)	P _c				
17	Coefficient of volumm compressibility (cm ² /g)	M _v				
18	Permeability (cm/sec)	k ₂₀				

AVERAGE VALUE OF PHYSICO - MECHANICAL PROPERTIES
Layer 4 : Medium dense, yellowish grey CLAYEY SAND (SC)

Table : 4

No	Property	Sign	Average value.	Maximum value	Minimum value	Number of test
1	Sieve Analysis, % Passing					
	3/4" (19 mm)					
	1/2" (12.5 mm)					
	3/8" (9.5 mm)					
	#4 (4.75 mm)					
	#8 (2.36 mm)		100.0	100.0	100.0	7
	#16 (1.18 mm)		91.6	99.7	86.8	7
	#30 (0.6 mm)		75.5	95.4	61.5	7
	#50 (0.3 mm)		49.1	56.5	36.0	7
	#100 (0.15 mm)		37.0	43.2	27.6	7
	#200 (0.075 mm)		31.8	38.3	24.7	7
	< 0.005 mm		19.1	25.1	10.5	7
2	Natural moisture content (%)	w	19.26	20.24	14.00	7
3	Natural unit weight (g/cm ³)	γ	1.956	2.116	1.837	7
4	Dry unit weight (g/cm ³)	γ _d	1.669	1.804	1.537	7
5	Specific gravity	G _s	2.663	2.669	2.649	7
6	Porosity	n	0.37	0.42	0.32	7
7	Void ratio	e _o	0.600	0.734	0.477	7
8	Degree saturation (%)	S	77.4	96.5	63.1	7
9	Liquid limit (%)	LL	24.2	26.7	22.1	4
10	Plastic limit (%)	LP	14.1	15.2	12.6	4
11	Plastic index (%)	PI	10.1	12.8	7.6	4
12	Water plasticity ratio (%)	B	0.22	0.44	0.12	4
13	Unconfined compression (Kg/cm ²)	qu	1.075			1
14	Compression index	C _c	0.121	0.137	0.107	3
15	Coefficient of consolidation (cm ² /Kg)	C _v	1.08E-03	1.13E-03	1.04E-03	3
16	Preconsolidation pressure (kg/cm ²)	P _c	1.056	1.321	0.784	3
17	Coefficient of volumm compressibility (cm ² /g)	M _v	2.96E-05	3.01E-05	2.90E-05	3
18	Permeability (cm/sec)	k ₂₀	2.54E-08	2.74E-08	2.27E-08	3

AVERAGE VALUE OF PHYSICO - MECHANICAL PROPERTIES

Layer 4a : Medium dense, reddish yellowish brown SILTY, CLAYEY SAND (SM-SC)

Table : 5

No	Property	Sign	Average value.	Maximum value	Minimum value	Number of test
1	Sieve Analysis, % Passing					
	3/4" (19 mm)		100.0	100.0	100.0	29
	1/2" (12.5 mm)		99.4	100.0	91.3	29
	3/8" (9.5 mm)		98.6	100.0	85.3	29
	#4 (4.75 mm)		96.2	100.0	62.9	29
	#8 (2.36 mm)		94.3	100.0	43.0	29
	#16 (1.18 mm)		90.6	99.9	35.2	29
	#30 (0.6 mm)		80.5	98.1	33.1	29
	#50 (0.3 mm)		42.9	64.7	27.6	29
	#100 (0.15 mm)		23.4	35.1	15.8	29
	#200 (0.075 mm)		18.5	31.1	12.5	29
	< 0.005 mm		8.6	15.9	3.7	29
2	Natural moisture content (%)	w	17.58	21.23	14.43	29
3	Natural unit weight (g/cm ³)	γ	1.969	2.040	1.913	29
4	Dry unit weight (g/cm ³)	γ_d	1.675	1.742	1.598	29
5	Specific gravity	Gs	2.654	2.672	2.636	29
6	Porosity	n	0.37	0.40	0.34	29
7	Void ratio	e _o	0.586	0.672	0.516	29
8	Degree saturation (%)	S	79.7	88.4	69.1	29
9	Liquid limit (%)	LL	18.9	20.5	17.4	16
10	Plastic limit (%)	LP	13.3	15.3	11.1	16
11	Plastic index (%)	PI	5.5	6.9	4.1	16
12	Water plasticity ratio (%)	B	0.67	1.10	0.18	16
13	Unconfined compression (Kg/cm ²)	qu	0.901			1
14	Compression index	Cc	0.121	0.158	0.103	5
15	Coefficient of consolidation (cm ² /Kg)	Cv	9.94E-04	1.12E-03	8.14E-04	5
16	Preconsolidation pressure (kg/cm ²)	Pc	1.684	2.641	1.213	5
17	Coefficient of volumn compressibility (cm ² /g)	Mv	2.60E-05	3.06E-05	1.74E-05	5
18	Permeability (cm/sec)	k ₂₀	2.31E-08	3.03E-08	1.43E-08	5

AVERAGE VALUE OF PHYSICO - MECHANICAL PROPERTIES

Layer 4b : Medium dense, reddish, yellowish brown SILTY SAND (SM)

Table :

No	Property	Sign	Average value.	Maximum value	Minimum value	Number of test
1	Sieve Analysis, % Passing					
	3/4" (19 mm)					
	1/2" (12.5 mm)					
	3/8" (9.5 mm)					
	#4 (4.75 mm)					
	#8 (2.36 mm)					
	#16 (1.18 mm)		100.0	100.0	100.0	22
	#30 (0.6 mm)		94.6	98.7	84.6	22
	#50 (0.3 mm)		78.2	91.5	62.1	22
	#100 (0.15 mm)		38.3	44.3	30.5	22
	#200 (0.075 mm)		19.0	25.7	13.4	22
	< 0.005 mm		14.5	19.3	12.0	22
2	Natural moisture content (%)	w	16.98	19.21	12.93	22
3	Natural unit weight (g/cm ³)	γ	1.953	2.043	1.825	22
4	Dry unit weight (g/cm ³)	γ_d	1.670	1.759	1.543	22
5	Specific gravity	Gs	2.647	2.664	2.633	22
6	Porosity	n	0.37	0.42	0.33	22
7	Void ratio	e _o	0.586	0.711	0.499	22
8	Degree saturation (%)	S	76.8	87.2	64.1	3
9	Liquid limit (%)	LL	17.1	17.4	16.9	3
10	Plastic limit (%)	LP	13.4	13.5	13.3	3
11	Plastic index (%)	PI	3.7	3.9	3.5	3
12	Water plasticity ratio (%)	B	0.76	0.80	0.71	3
13	Unconfined compression (Kg/cm ²)	qu	0.715	0.745	0.687	2
14	Compression index	Cc	0.138	0.144	0.132	2
15	Coefficient of consolidation (cm ² /Kg)	Cv	6.09E-04	7.20E-04	4.98E-04	2
16	Preconsolidation pressure (kg/cm ²)	Pc	1.878	2.411	1.344	2
17	Coefficient of volumn compressibility (cm ² /g)	Mv	2.60E-05	3.08E-05	2.12E-05	2
18	Permeability (cm/sec)	k ₂₀	1.27E-08	1.36E-08	1.19E-08	2