

AVERAGE VALUE OF PHYSICA - MECHANICAL PROPERTIES
Layer 4a : Stiff, high plasticity, reddish yellowish grey CLAY (CH)

Table : 5

No	Properties	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)		99.2			1
	#30 (0.6 mm)		97.1			1
	#50 (0.3 mm)		85.4			1
	#100 (0.15 mm)		71.4			1
	#200 (0.075 mm)		64.9			1
	< 0.005 mm		44.3			1
2	Natural moisture content (%)	w	20.79			1
3	Natural unit weight (g/cm ³)	γ	1.951			1
4	Dry unit weight (g/cm ³)	γ _d	1.615			1
5	Specific gravity	G _s	2.694			1
6	Porosity	n	0.600			1
7	Void ratio	e _o	0.668			1
8	Degree saturation (%)	S	83.90			1
9	Liquid limit (%)	LL	58.0			1
10	Plastic limit (%)	LP	19.3			1
11	Plastic index (%)	PI	38.7			1
12	Water plasticity ratio (%)	B	0.04			1
13	Unconfined compression (Kg/cm ²)	qu	1.925			1
14	Compression index (cm ² /kg)	C _c	0.3020			1
15	Coefficient of consolidation (cm ² /s)	C _v	7.06E-04			1
16	Preconsolidation pressure (kg/cm ²)	P _c	2.144			1
17	Coefficient of volumm compressibility (cm ² /g)	M _v	2.72E-05			1
18	Permeability (cm/sec)	k ₂₀	1.69E-08			1

AVERAGE VALUE OF PHYSICA - MECHANICAL PROPERTIES
Layer 4b : Medium dense, yellowish brown CLAYEY GRAVEL with SAND.

Table : 6

No	Properties	Sign	Average value.	Maximum value	Minimum value	Number of test
1	Sieve Analysis, % Passing					
	3/4" (19 mm)		93.4			1
	1/2" (12.5 mm)		80.5			1
	3/8" (9.5 mm)		74.2			1
	#4 (4.75 mm)		50.6			1
	#8 (2.36 mm)		35.0			1
	#16 (1.18 mm)		32.1			1
	#30 (0.6 mm)		30.5			1
	#50 (0.3 mm)		27.8			1
	#100 (0.15 mm)		24.6			1
	#200 (0.075 mm)		22.0			1
	< 0.005 mm		14.4			1
2	Natural moisture content (%)	w	20.37			1
3	Natural unit weight (g/cm ³)	γ	2.012			1
4	Dry unit weight (g/cm ³)	γ _d	1.672			1
5	Specific gravity	G _s	2.719			1
6	Porosity	n	0.390			1
7	Void ratio	e _o	0.627			1
8	Degree saturation (%)	S	88.40			1
9	Liquid limit (%)	LL	42.9			1
10	Plastic limit (%)	LP	22.8			1
11	Plastic index (%)	PI	20.1			1
12	Water plasticity ratio (%)	B	-0.12			1
13	Unconfined compression (Kg/cm ²)	qu				
14	Compression index (cm ² /kg)	C _c				
15	Coefficient of consolidation (cm ² /s)	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 PHYSICA - MECHANICAL PROPERTIES
Layer 4c : Medium stiff, high plasticity yellowish white SILT (MH)

Table : 7

No	Properties	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)					
	#30 (0.6 mm)					
	#50 (0.3 mm)					
	#100 (0.15 mm)		100.0			1
	#200 (0.075 mm)		94.2			1
	< 0.005 mm		54.7			1
2	Natural moisture content (%)	w	55.60			1
3	Natural unit weight (g/cm ³)	γ	1.630			1
4	Dry unit weight (g/cm ³)	γ _d	1.048			1
5	Specific gravity	G _s	2.587			1
6	Porosity	n	0.600			1
7	Void ratio	e _o	1.470			1
8	Degree saturation (%)	S	97.90			1
9	Liquid limit (%)	LL	65.0			1
10	Plastic limit (%)	LP	48.3			1
11	Plastic index (%)	PI	16.7			1
12	Water plasticity ratio (%)	B	0.44			1
13	Unconfined compression (Kg/cm ²)	qu	0.563			1
14	Compression index (cm ² /kg)	C _c	0.7326			1
15	Coefficient of consolidation (cm ² /s)	C _v	4.43E-04			1
16	Preconsolidation pressure (kg/cm ²)	P _c	1.278			1
17	Coefficient of volum compressibility (cm ² /g)	M _v	5.42E-05			1
18	Permeability (cm/sec)	k ₂₀	2.30E-08			1

AVERAGE VALUE OF PHYSICA - MECHANICAL PROPERTIES
Layer 4d : Loose, yellowish grey CLAYEY SAND (SC)

Table : 8

No	Properties	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	10
	#16 (1.18 mm)		99.7	100.0	99.1	10
	#30 (0.6 mm)		97.3	99.9	89.9	10
	#50 (0.3 mm)		69.9	87.7	40.8	10
	#100 (0.15 mm)		36.1	53.3	20.2	10
	#200 (0.075 mm)		29.3	47.6	15.1	10
	< 0.005 mm		16.9	38.0	4.3	10
2	Natural moisture content (%)	w	18.37	22.40	14.95	10
3	Natural unit weight (g/cm ³)	γ	2.057	2.113	1.900	10
4	Dry unit weight (g/cm ³)	γ _d	1.738	1.789	1.647	10
5	Specific gravity	G _s	2.659	2.698	2.629	10
6	Porosity	n	0.350	0.380	0.320	10
7	Void ratio	e _o	0.531	0.602	0.476	10
8	Degree saturation (%)	S	92.00	98.90	72.400	10
9	Liquid limit (%)	LL	24.4	33.3	18.00	10
10	Plastic limit (%)	LP	15.6	18.3	13.7	10
11	Plastic index (%)	PI	8.8	17.7	4.3	10
12	Water plasticity ratio (%)	B	0.33	0.72	0.23	10
13	Unconfined compression (Kg/cm ²)	qu	0.394	0.526	0.261	2
14	Compression index (cm ² /kg)	C _c	0.2710			1
15	Coefficient of consolidation (cm ² /s)	C _v	4.54E-04			1
16	Preconsolidation pressure (kg/cm ²)	P _c	0.576			1
17	Coefficient of volum compressibility (cm ² /g)	M _v	5.81E-05			1
18	Permeability (cm/sec)	k ₂₀	2.46E-08			1