

AVERAGE VALUE OF PHYSICA - MECHANICAL PROPERTIES
Layer 3a : Soft, low plasticity, blackish grey SANDY CLAY (CL)

Table : 3b

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)		100.0			1
	#30 (0.6 mm)		99.8			1
	#50 (0.3 mm)		99.3			1
	#100 (0.15 mm)		98.5			1
	#200 (0.075 mm)		96.6			1
	< 0.005 mm		50.2			1
2	Natural moisture content (%)	w	19.94			1
3	Natural unit weight (g/cm ³)	γ	1.647			1
4	Dry unit weight (g/cm ³)	γ_d	1.373			1
5	Specific gravity	Gs	2.720			1
6	Porosity	n	0.500			1
7	Void ratio	e _o	0.981			1
8	Degree saturation (%)	S	55.30			1
9	Liquid limit (%)	LL	36.3			1
10	Plastic limit (%)	LP	18.1			1
11	Plastic index (%)	PI	18.2			1
12	Water plasticity ratio (%)	B	0.10			1
13	Unconfined compression (Kg/cm ²)	qu				
14	Compression index (cm ² /kg)	Cc				
15	Coefficient of consolidation (cm ² /s)	Cv				
16	Preconsolidation pressure (kg/cm ²)	Pc				
17	Coefficient of volumm compressibility (cm ² /g)	Mv				
18	Permeability (cm/sec)	k ₂₀				

AVERAGE VALUE OF PHYSICA - MECHANICAL PROPERTIES
Layer 4 : Loose, whitish grey SILTY SAND (SM)

Table : 4b

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	2
	#16 (1.18 mm)		94.0	98.2	89.8	2
	#30 (0.6 mm)		80.5	92.9	68.0	2
	#50 (0.3 mm)		50.4	65.9	34.9	2
	#100 (0.15 mm)		23.9	32.3	15.5	2
	#200 (0.075 mm)		16.4	22.3	10.4	2
	< 0.005 mm		6.7	9.8	3.6	2
2	Natural moisture content (%)	w	15.74	15.77	15.70	2
3	Natural unit weight (g/cm ³)	γ	2.051	2.053	2.048	2
4	Dry unit weight (g/cm ³)	γ_d	1.772	1.774	1.769	2
5	Specific gravity	Gs	2.642	2.647	2.636	2
6	Porosity	n	0.330	0.330	0.330	2
7	Void ratio	e _o	0.491	0.492	0.490	2
8	Degree saturation (%)	S	84.70	84.80	84.50	2
9	Liquid limit (%)	LL	20.2			1
10	Plastic limit (%)	LP	17.9			1
11	Plastic index (%)	PI	2.3			1
12	Water plasticity ratio (%)	B	-0.93			1
13	Unconfined compression (Kg/cm ²)	qu				
14	Compression index (cm ² /kg)	Cc				
15	Coefficient of consolidation (cm ² /s)	Cv				
16	Preconsolidation pressure (kg/cm ²)	Pc				
17	Coefficient of volumm compressibility (cm ² /g)	Mv				
18	Permeability (cm/sec)	k ₂₀				

AVERAGE VALUE OF PHYSICA - MECHANICAL PROPERTIES
 Layer 4 : Medium dense, reddish yellow CLAYEY SAND (SC)

Table : 5b

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)		99.7			1
	#30 (0.6 mm)		96.1			1
	#50 (0.3 mm)		72.7			1
	#100 (0.15 mm)		40.6			1
	#200 (0.075 mm)		35.0			1
	< 0.005 mm		11.2			1
2	Natural moisture content (%)	w	14.81			1
3	Natural unit weight (g/cm ³)	γ	2.064			1
4	Dry unit weight (g/cm ³)	γ _d	1.798			1
5	Specific gravity	G _s	2.704			1
	#100 (0.15 mm)		35.0			1
	#200 (0.075 mm)		11.2			1
	< 0.005 mm					1
	Natural moisture content (%)	w	14.81			1
	Natural unit weight (g/cm ³)	γ	2.064			1
	Dry unit weight (g/cm ³)	γ _d	1.798			1
	Specific gravity	G _s	2.704			1
	#100 (0.15 mm)		35.0			1
	#200 (0.075 mm)		11.2			1
	< 0.005 mm					1
	Natural moisture content (%)	w	18.33			1
	Natural unit weight (g/cm ³)	γ	2.086			1
	Dry unit weight (g/cm ³)	γ _d	1.763			1
	Specific gravity	G _s	2.696			1
	#200 (0.075 mm)		89.8			1

AVERAGE VALUE OF PHYSICA - MECHANICAL PROPERTIES
 Layer 5 : Very stiff, low plasticity, reddish yellow SANDY CLAY (CL)

Table : 6b

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)		100.0			1
	#30 (0.6 mm)		99.9			1
	#50 (0.3 mm)		99.0			1
	#100 (0.15 mm)		97.6			1
	#200 (0.075 mm)		89.8			1
	< 0.005 mm		58.2			1
2	Natural moisture content (%)	w	18.33			1
3	Natural unit weight (g/cm ³)	γ	2.086			1
4	Dry unit weight (g/cm ³)	γ _d	1.763			1
5	Specific gravity	G _s	2.696			1
	#200 (0.075 mm)		89.8			1
	< 0.005 mm		58.2			1
2	Natural moisture content (%)	w	18.33			1
3	Natural unit weight (g/cm ³)	γ	2.086			1
4	Dry unit weight (g/cm ³)	γ _d	1.763			1
5	Specific gravity	G _s	2.696			1
	#200 (0.075 mm)		89.8			1

2. BORING LOGS

THE DETAILED DESIGN STUDY ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT SOIL INVESTIGATION PROGRAM						BORING LOG : DUB- 01 sheet 1 of 1															
Station : Ben Me Coc (1) Drainage Area																					
Date commenced : 7th June 2000						Depth (m) : 50.0															
Date completed : 8th June 2000						Elevation (m) : 1.87															
Logged by : Nguyen Xuan Hong						Boring Type : XJ - 100															
Checked by : Pham Van Manh						Underground water level (m) : -1.0															
Depth (m)	Elevation (m)	Thickness(m)	LOG 1/100	SOIL DESCRIPTION	STANDARD PENETRATION TEST																
					Depth (m)		N	Blows/15cm					N								
					From	To		15	15	15	0	10		20	30	40	50				
0	1.87																				
1	1.00	0.87	1.0	DUB-01-1	Ground made: Soft, blackish grey SANDY CLAY	0.50	0.95	9	3	5	4										
2				1.0 - 1.6		1.60	2.05	0	0	0	0										
3				DUB-01-2		2.50	2.95	0	0	0	0										
4				3.0 - 3.6		3.60	4.05	0	0	0	0										
5				DUB-01-3		4.50	4.95	0	0	0	0										
6				5.0 - 5.6		5.60	6.05	0	0	0	0										
7				DUB-01-4		6.50	6.95	0	0	0	0										
8				7.0 - 7.6		7.60	8.05	0	0	0	0										
9				DUB-01-5	Very soft, high plasticity, blackish grey, ORGANIC CLAY	8.50	8.95	0	0	0	0										
10				9.0 - 9.6		9.60	10.05	0	0	0	0										
11				DUB-01-6		10.50	10.95	0	0	0	0										
12				11.0 - 11.6		11.60	12.05	0	0	0	0										
13						12.50	12.95	1	0	0.5	0.5										
14						13.60	14.05	1	0	0.5	0.5										
15	15.00	-13.13	14.0			14.50	14.95	1	0	0.5	0.5										

*Note: Underground water level measured from ground surface.