PT. MENARA MARITIM INDONESIA

Jalan Pasoso No. 1 – Tanjung Priok Jakarta

PEMBANGUNAN MARITIME TOWER

LAPORAN PENYELIDIKAN TANAH

Doc. No. 18-386 / LAPORAN / 02

DESIGN AND BUILD BY:
PT. PP (Persero), Tbk.

IN ASSOCIATION WITH:
PENTA ARCHITECTURE

Rev. 00

LAPORAN HASIL PENYELIDIKAN TANAH

MARITIM TOWER

JAKARTA

REPORT

8 FEBRUARI 2018

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

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Prakata

Laporan ini merupakan laporan hasil penyelidikan tanah pada proyek **Maritim Tower** yang berlokasi di **Jakarta** berdasarkan perintah kerja dari PT. Penta Rekayasa.

Atas kesempatan dan kerpercayaan yang telah diberikan untuk menerima pekerjaan ini, kami mengucapkan terima kasih yang sebesar-besarnya. Semoga hasil penyelidikan ini bermanfaat bagi pihak-pihak yang bersangkutan dengan pelaksanaan proyek tersebut.

PT. Testana Indoteknika

Daftar Isi

Lampiran

I. Pendahuluan

Sebagai bagian dari perencanaan pembangunan Maritim Tower yang berlokasi di Jakarta adalah sangat penting untuk mengetahui profil dan karakteristik tanah pada lokasi dimana bangunan tersebut akan didirikan. Karena itu, perlu untuk melakukan penyelidikan tanah sebagai bagian dari perhitungan struktur secara keseluruhan.

Tujuan dari penyelidikan tanah ini adalah untuk memberi informasi kepada pihak-pihak yang berkepentingan dengan proyek tersebut, yaitu pemilik proyek dan perencana agar desain pondasi yang akan dibangun dapat dilakukan secara ekonomis dan aman.

II. Lingkup Pekerjaan

Pekerjaan penyelidikan tanah meliputi:

- Uji lapangan dengan melakukan pemboran teknik sebanyak 6 titik dengan kedalaman pemboran 40.0 hingga 60.0m, disertai dengan uji SPT setiap interval 2.0m.

- Uji laboratorium dilakukan pada sample-sample yang meliputi index properties, Atterberg limits, analisa saringan butir, kuat geser tanah, dan uji konsolidasi. Standar dan tujuan setiap uji laboratorium yang dilakukan disampaikan pada Subsection berikutnya.

- Analisa teknik yang berupa data faktual dan rekomendasi pondasi.

II.1. Uji Lapangan

Jenis Pengujian	Standar	Tujuan
Bor	ASTM D-1452	Mengetahui jenis dan struktur tanah secara visual.
Pengujian SPT	ASTM D-1586	Mengetahui kekuatan tanah dengan menghitung jumlah tumbukan yang diperlukan oleh standar hammer untuk menembus lapisan tanah sedalam 30 cm.
Pengambilan Contoh Tanah Tidak Terganggu	ASTM D-1587	Keperluan pengujian pada laboratorium.

Catatan: Drilling Log ditampilkan dalam lampiran 2

II.2. Uji Laboratorium

Jenis Pengujian	Standar	Tujuan
Water Content	ASTM D-2216	Mengetahui kondisi kelembaban contoh tanah asli.
Specific Gravity, G_s	ASTM D-854	Mengetahui berat relative contoh tanah terhadap berat air.
Unit Weight, γ	ASTM D-C	Mengetahui berat per satuan volume.
Atterberg Limits	ASTM D-4318	Menentukan batas plastis dan batas cair yang dipakai untuk mengklasifikasikan tanah berbutir halus.

Jenis Pengujian	Standar	Tujuan
Grain size distribution	ASTM D-422 ASTM D-1140	Mengetahui ukuran dan susunan butir tanah.
Strength Test: Triaxial UU, UCT dan Triaxial CU	ASTM D-2850 ASTM D-2166 ASTM D-4767	Mendapatkan sudut perlawanan geser dalam dan kohesi tanah.
Consolidation Test	ASTM D-2435	Mengetahui sifat dan perilaku pemampatan tanah di bawah tegangan kerja.

Catatan:

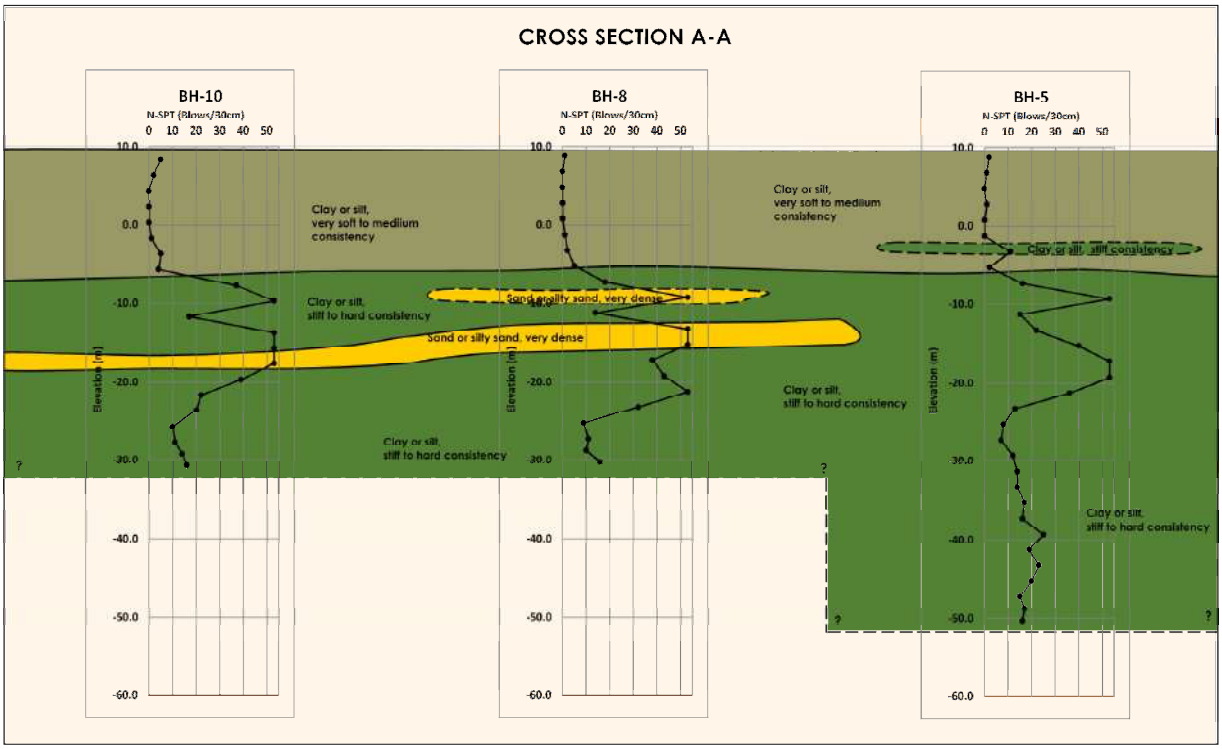
- *Water content, specific gravity, unit weight, dan Atterberg limits dicantumkan dalam Lampiran 3 dan dalam drilling log yang terdapat pada Lampiran 2*
- *Hasil uji Grain Size Distribution disajikan pada Lampiran 4.*
- *Hasil uji kuat geser tanah disajikan pada Lampiran 5.*
- *Hasil uji konsolidasi disajikan pada Lampiran 6.*
- *Ringkasan hasil uji laboratorium disajikan pada Lampiran 7.*

III. Perkiraan Profil Berdasarkan Pemboran dan SPT

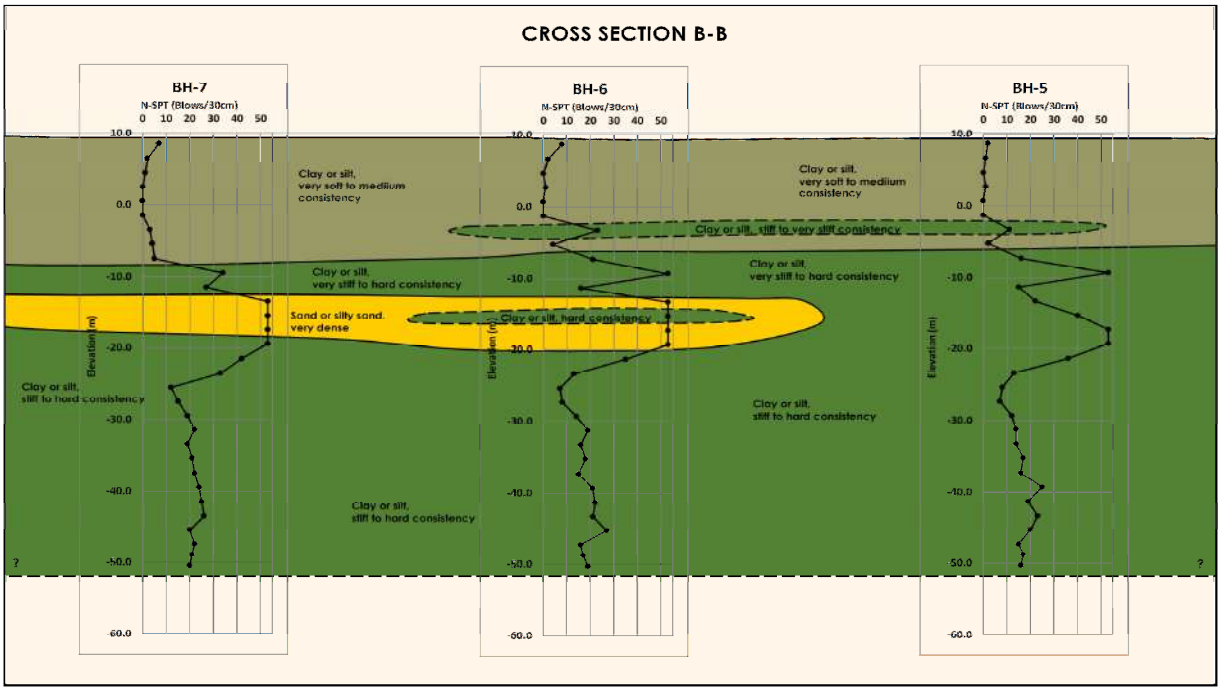
Uji lapangan dengan melakukan pemboran teknik sebanyak 6 titik dengan kedalaman pemboran 40.0 hingga 60.0m, disertai dengan uji SPT setiap interval 2.0m. Pemboran dilakukan menggunakan metode pemboran kering dengan sistem *coring*.

Berdasarkan hasil pemboran teknik, secara umum mulai dari permukaan tanah hingga kedalaman elevasi sekitar –5.247m hingga -7.475m terdiri dari lempung dan lanau dengan konsistensi sangat lunak hingga lunak, namun dijumpai pula lapisan lempung

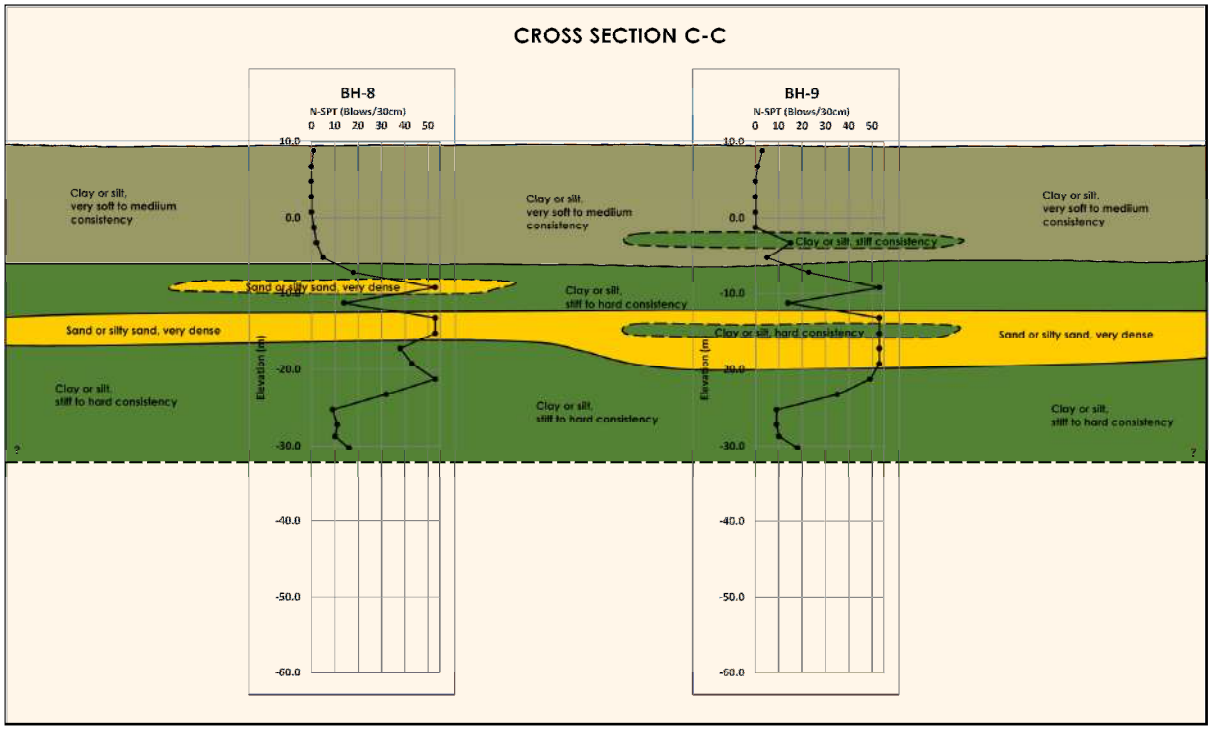
atau lanau dengan konsistensi sedang hingga teguh. Berikutnya hingga elevasi sekitar -21.298m hingga -23.247m tanah tersusun oleh lapisan lempung atau lanau dengan konsistensi sangat teguh hingga keras dan berselang seling dengan lensa pasir atau pasir kelanauan sedang hingga padat. Berikutnya hingga akhir pengujian tanah tesusun oleh lapisan lempung atau lanau dengan konsistensi teguh hingga sangat teguh. Hasil uji secara lengkap dapat dilihat pada Lampiran 2. Gambaran potongan dapat dilihat pada Gambar 1 hingga Gambar 3.



Gambar 1. Potongan A-A



Gambar 2. Potongan B-B

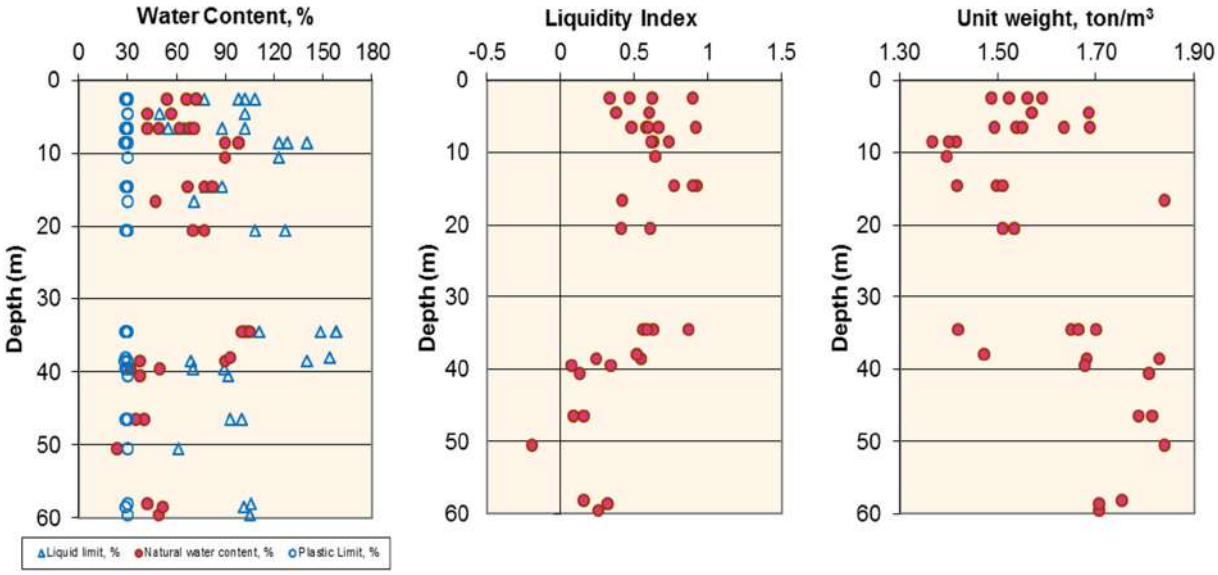


Gambar 3. Potongan C-C

IV. Karakteristik Tanah Hasil Uji Laboratorium

IV.1. Index Properties

Berdasarkan hasil uji index properties diperoleh nilai water content berkisar antara 24% hingga 105%, dengan batas cair berkisar antara 50% hingga 158%, dan batas plastis berkisar antara 28% hingga 30%. Nilai specific gravity diperkirakan berkisar antara 2.53 hingga 2.75. Rangkuman hasil uji index properties tersaji pada Gambar 4, sedangkan hasil selengkapnya disajikan pada Lampiran 3.

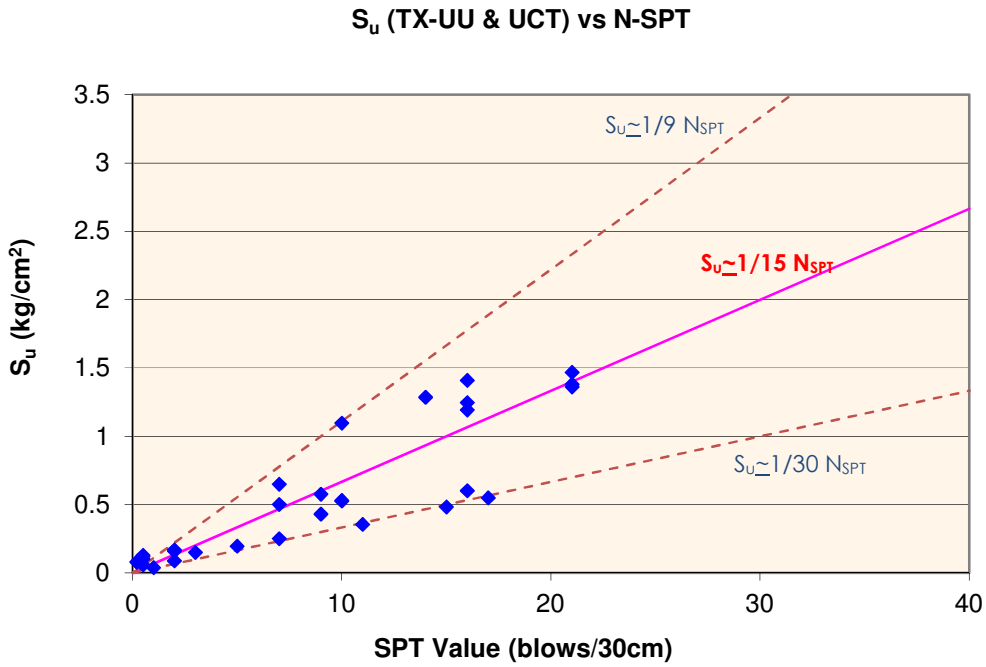


Gambar 4. Index Properties versus Kedalaman

IV.2. Kuat Geser Tanah

Uji yang dilakukan untuk menentukan kuat geser tanah adalah Triaxial UU, Unconfined Compression Test. Korelasi hasil uji kuat geser tanah dengan nilai SPT ditampilkan pada Gambar 5. Berdasarkan hasil korelasi tersebut diperkirakan nilai kuat geser tanahnya

(S_U) berkisar $S_U \approx 1/15\ N_{SPT}$, dengan rentang antara $S_U \approx 1/9$ hingga $1/30\ N_{SPT}$.

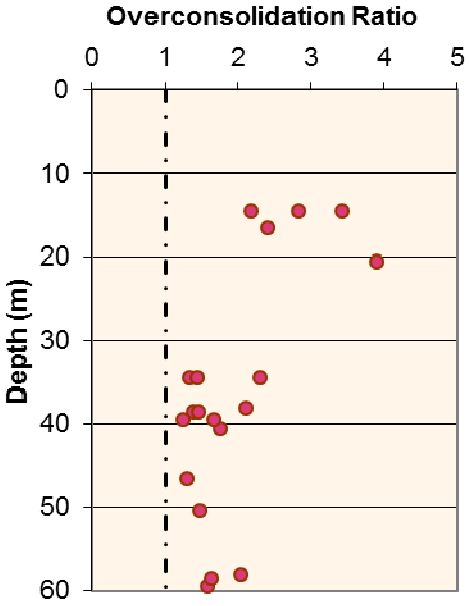


Gambar 5. Nilai Kuat Geser Tanah vs Nilai N-SPT

Hasil uji Triaxial CU pada tanah dipermukaan menunjukkan nilai Kohesi (total) berkisar antara 0.10 - 0.33kg/cm^2, dengan nilai sudut geser (total) sebesar 6 - 13^o. Nilai kohesi (efektif) sebesar 0.07 - 0.28kg/cm^2, dengan sudut geser (efektif) 9 - 22^o. Rangkuman hasil uji kuat geser tanah ditampilkan selengkapnya pada Lampiran 5.

IV.3. Kompresibilitas dan Karakteristik Konsolidasi

Berdasarkan hasil uji konsolidasi, diperoleh hasil preconsolidation pressure berkisar antara 1.70kg/cm^2 dan 8.00kg/cm^2 dengan compression index berkisar antara 0.301 dan 1.642. Rangkuman hasil uji kompresibilitas dan karakteristik konsolidasi ditampilkan selengkapnya pada Lampiran 6. Adapun perkiraan nilai Overconsolidation Ratio (OCR) dapat dilihat sebagai berikut:



Gambar 6. Overconsolidation Ratio (OCR) versus Depth

V. Kapasitas Dukung Pondasi Dalam

Untuk sub struktur bangunan Maritim Tower 30 lantai yang akan dibangun disarankan menggunakan pondasi dalam sebagai substruktur. Dari hasil pemboran dijumpai lapisan lensa yang bervariasi dan dengan ketebalan yang bervariasi, maka pondasi dalam yang disarankan dapat berupa pondasi tiang bor dengan perkiraan daya dukung tercantum dalam Tabel 1.

Pondasi tiang bor dihitung dengan menggunakan program BORPILE versi 2.1 yang dikeluarkan oleh Rahardjo & Salim (1997) berdasarkan metoda Reese.

Untuk perhitungan daya dukung pondasi tiang bor, unit daya dukung ujung tiang dihitung sebagai berikut:

$q_p = 9c_u \quad untuk\ tanah\ kohesif$ dan $q_p = \frac{2}{3} N_{SPT} \quad untuk\ tanah\ non-kohesif$

Sedangkan unit daya dukung selimut tiang dihitung sebagai berikut:

$q_s = \alpha c_u \quad untuk\ tanah\ kohesif$ dan $q_s = 0.3N_{SPT} \quad untuk\ tanah\ non-kohesif$

Dimana:

N_{SPT} = Nilai resistansi dari uji SPT

α = Faktor yang diusulkan oleh Reese

Daya dukung tarik tiang diperoleh dengan mereduksi gesekan pada kondisi tekan sebagai berikut: $Q_{all,tarik} = 0.7Q_{s,tekan}/FK$

Asumsi yang digunakan dalam perhitungan adalah:

- Pondasi tiang bor besar diletakkan pada kedalaman 40.0m atau dapat juga disesuaikan sesuai kebutuhan.
- Faktor keamanan untuk kapasitas dukung ujung tiang bor diambil sebesar 3.0 dan untuk selimut tiang sebesar 2.5.
- Faktor keamanan untuk kapasitas dukung tarik sebesar 3.0.

Tabel 1. Perkiraan daya dukung pondasi

Tipe dan Diameter Pondasi (cm)	Panjang Tiang (m)	Panjang Effektif (m)	Q_p (ton)	Q_s (ton)	Q_{all} tekan (ton)	$Q_{all,}$ tarik (ton)
Tiang Bor						
Ø 80	40.0	39.0	70	841	360	195
Ø 100	40.0	39.0	109	1051	455	245

VI. Kesimpulan dan Rekomendasi

- Berdasarkan hasil pemboran teknik, secara umum mulai dari permukaan tanah hingga kedalaman sekitar 15.0 hingga 17.0m terdiri dari lempung dan lanau dengan konsistensi sangat lunak hingga lunak, namun dijumpai pula lapisan

lempung atau lanau dengan konsistensi sedang hingga teguh. Berikutnya hingga kedalaman sekitar 29.0 hingga 33.0m tanah tersusun oleh lapisan lempung atau lanau dengan konsistensi sangat teguh hingga keras dan berselang seling dengan lensa pasir atau pasir kelanauan sedang hingga padat. Berikutnya hingga akhir pengujian tanah tesusun oleh lapisan lempung atau lanau dengan konsistensi teguh hingga sangat teguh.

- Untuk sub struktur bangunan Maritim Tower yang akan dibangun disarankan menggunakan pondasi dalam sebagai substruktur. Dari hasil pemboran dijumpai lapisan lensa yang bervariasi dan dengan ketebalan yang bervariasi, maka pondasi dalam yang disarankan dapat berupa pondasi tiang bor dengan perkiraan daya dukung tercantum dalam Tabel 1.

- Dalam hal pelaksanaan pondasi tiang bor, harus dilakukan pembersihan serta pengawasan yang ketat guna meningkatkan mutu tiang. Daya dukung pondasi tiang bor sangat dipengaruhi oleh kualitas dan mutu pengerjaannya.

- Disarankan untuk melakukan uji pembebanan. Bilamana daya dukung dari hasil uji pembebanan terpenuhi, maka daya dukung dapat ditingkatkan.

- Pemilihan jenis dan dimensi pondasi hendaknya dilakukan oleh konsultan perencana untuk mendapatkan hasil yang optimal baik dari segi biaya, waktu dan keamanan bangunan.

- Mengingat terdapat tanah lunak yang cukup tebal, maka perlu diperhatikan perhitungan yang tertera pada Tabel 1 belum memperhitungkan kemungkinan adanya NSF (negative skin friction) khususnya bilamana terdapat timbunan.

Lampiran 1

Lokasi Titik Pengujian

Titik	x	y	z
BH-5	545.000	523.778	9.690
BH-6	530.872	541.507	9.702
BH-7	507.981	557.601	9.525
BH-8	538.167	598.594	9.748
BH-9	506.345	597.020	9.753
BH-10	531.439	662.172	9.300

Symbol	Description
	Boring

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Denah Lokasi Titik Pengujian
Maritim Tower
Jakarta

Lampiran 2

Drilling Log

DRILLING LOG

HOLE NO : BH-5.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 545.000
y = 523.778
z = 9.690

Depth : 60.00 m.
GWL : - 1.30m.
Drill Master : Hakim.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
0			Fill of Materials										
1				1.00	1 15 1 15								
2			Silty clay, with trace of sand and trace of shell fragments, dark grey, very soft to soft consistency			UNC (U)	0.16		0.32	29 66 108	1.52	2.70	1.94
3		CH		1.45		(R)	0.11		0.22				
				3.00	1 30	CU (T)	0.10	13					
4				3.45		(E)	0.07	22					
5			Silty clay, dark grey, very soft consistency	5.00	0								
6			Silty clay, greyish brown	5.45									
7		CH	Silty clay, with a trace of sand, dark grey, very soft consistency	7.00	1 30	CU (T)	0.19	9		29 68 88	1.54	2.64	1.89
8				7.45		(E)	0.16	15					
9				9.00	0								
10			Silty clay, with a trace of shell fragments, dark grey, very soft consistency	9.45									
11				11.00	0								
12				11.45									
13			Clayey silt, brownish grey, stiff consistency	13.00	4 7 11 15 15								
14				13.45									
15		CH	Silty clay, with a trace of sand, brown, soft consistency	15.00	2 30	UU	0.28	5		30 77 81	1.50	2.61	2.08
16				15.45									
17			Clayey silt, light brown, very stiff consistency	17.00	5 11 16 15 15								
18				17.45									
19			Clayey silt, brown, hard consistency	19.00	36 14 50 15 5 20								
20				19.35									

16 – 17 December 2018

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-5.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 545.000
y = 523.778
z = 9.690

Depth : 60.00 m.
GWL : - 1.30m.
Drill Master : Hakim.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
21	18 – 20 December 2018		Silty clay, light brownish grey, very stiff consistency	21.00 / 21.45	6 9 / 15 15								
22			Clayey silt, grey										
23			Clayey silt, with a little of sand, dark grey, medium grained, very stiff consistency	23.00 / 23.45	9 13 / 15 15								
24			Clayey silt, dark brown										
25			Clayey silt, brown, hard consistency	25.00 / 25.45	19 21 / 15 15								
26													
27			Clayey silt, brownish grey, hard consistency	27.00 / 27.45	20 30 / 15 15								
28													
29			Clayey silt, grey, hard consistency	29.00 / 29.45	17 33 / 15 15								
30													
31			Clayey silt, with trace to little of sand, brownish grey, hard consistency	31.00 / 31.45	16 20 / 15 15								
32													
33			Silty clay, grey, stiff consistency	33.00 / 33.45	6 7 / 15 15								
34													
35			Silty clay, grey, medium to stiff consistency	35.00 / 35.45	4 4 / 15 15								
36													
37				37.00 / 37.45	3 4 / 15 15								
38													
39		CH	Silty clay, brownish grey, stiff consistency	39.00 / 39.45	5 7 / 15 15	UU	0.40	5		28 38 69	1.83	2.63	0.98
40													

SPT: 0 20 40 60 — 15, 22, 40, 50, 50, 36, 13, 8, 7, 12

ATTERBERG LIMITS: 0 20 40 60 80 100

REMARKS :
0 TO 10 % : TRACE
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35 TO 50 % : AND

Open Drive Sample

Mazier Sample

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△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-5.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 545.000
y = 523.778
z = 9.690

Depth : 60.00 m.
GWL : - 1.30m.
Drill Master : Hakim.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
41	21 – 22 December 2018		Silty clay, brownish grey, stiff consistency	41.00 / 41.45	6 8 / 15 15 = 14								
42													
43				43.00 / 43.45	6 8 / 15 15 = 14								
44			Silty clay, light grey, very stiff consistency										
45				45.00 / 45.45	7 10 / 15 15 = 17								
46													
47		CH	Silty clay, brownish grey, very stiff consistency	47.00 / 47.45	8 8 / 15 15 = 16	UU	0.98	7		30 40 93	1.79	2.58	1.02
48													
49			Silty clay, brownish grey, very stiff consistency	49.00 / 49.45	10 15 / 15 15 = 25								
50													
51			Silty clay, light brownish grey, very stiff consistency	51.00 / 51.45	9 10 / 15 15 = 19								
52													
53			Silty clay, brownish grey, very stiff consistency	53.00 / 53.45	10 13 / 15 15 = 23								
54													
55				55.00 / 55.45	8 12 / 15 15 = 20								
56													
57			Silty clay, grey, very stiff consistency	57.00 / 57.45	6 9 / 15 15 = 15								
58				58.50 / 58.95	7 10 / 15 15 = 17								
59		CH				UU	0.73	6		30 49 105	1.71	2.65	1.31
60			End of Drilling	60.00 / 60.45	7 9 / 15 15 = 16								

REMARK :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-6.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 530.872
y = 541.507
z = 9.702

Depth : 60.00 m.
GWL : - 1.35 m.
Drill Master : Hakim.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	qu	ATTERBERG LIMITS	γt t/m³	Gs	eo
0	23 – 24 December 2018		Fill of Materials										
1			Silty clay, with a little of gravel, reddish brown, stiff consistency	1.00 / 1.45	3 5 / 15 15 → 8								
2		CH	Silty clay, with trace of sand and trace of shell fragments, grey			CU (T) 0.28 (E) 0.28		7 9		29 77			
3		CH		3.00 / 3.45	1 1 / 15 15 → 2	UNC (U) 0.17 (R) 0.15			0.34 0.30	72	1.56	2.66	1.93
4		CH	Silty clay, with a trace of sand, dark grey, very soft to soft consistency							30 57 102			
5		CH		5.00 / 5.45	0 → 0	CU (T) 0.15 (E) 0.12		7 12			1.57	2.64	1.64
6													
7			Silty clay, with a trace of sand, dark grey, very soft consistency	7.00 / 7.45	1 / 30 → 1								
8													
9		CH	Silty clay, dark grey, very soft consistency	9.00 / 9.45	0 → 0					28 140 / 98	1.42	2.64	2.69
10		CH											
11		CH		11.00 / 11.45	0 → 0								
12													
13			Clayey silt, brown, very stiff consistency	13.00 / 13.45	12 11 / 15 15 → 23								
14													
15			Clayey silt, light brownish grey, medium consistency	15.00 / 15.45	2 2 / 15 15 → 4								
16													
17													
18			Clayey silt, dark brown, very stiff consistency	17.00 / 17.45	8 13 / 15 15 → 21								
19			Clayey silt, with trace to little of sand, dark brown, hard consistency	19.00 / 19.25	50 / 10 → 50 / 10								
20													

REMARKS :
0 TO 10 % : TRACE
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20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

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Soil Investigation and Foundation Engineering

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Drill Master : Hakim.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
21	25 – 26 December 2018	CH	Silty clay, grey, very stiff consistency	21.00 / 21.45	7 9 / 15 15	UU	0.52	4		29 77 108	1.51	2.66	2.12
22–23			Silty sand, dark grey, fine grained, slightly cemented, very dense	23.00 / 23.33	40 10 / 15 3								
24–25			Clayey silt, dark brown, hard consistency	25.00 / 25.44	21 29 / 15 14								
26–27			Silty sand, dark grey, coarse grained, very dense	27.00 / 27.43	23 27 / 15 13								
28–29				29.00 / 29.42	26 24 / 15 12								
30–31			Clayey silt, dark grey, hard consistency	31.00 / 31.45	16 19 / 15 15								
32–33			Silty clay, grey, stiff consistency	33.00 / 33.45	6 7 / 15 15								
34–35		CH	Silty clay, with a trace of shell fragments, grey, medium to stiff consistency	35.00 / 35.45	3 4 / 15 15	UU	0.43	2		30 148 104	1.65	2.73	2.38
36–37				37.00 / 37.45	3 5 / 15 15								
38–39			Silty clay, brownish grey, stiff consistency	39.00 / 39.45	5 9 / 15 15								
40													

SPT N values: 16, 50/33, 50/29, 50/28, 50/27, 35, 13, 7, 8, 14

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-6.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 530.872
y = 541.507
z = 9.702

Depth : 60.00 m.
GWL : - 1.35 m.
Drill Master : Hakim.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ^0	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
41	27 – 28 December 2018	CH	Silty clay, light brownish grey, very stiff consistency	41.00 / 41.45	9 10 / 15 15 (19)	UU	0.88	9		38 30 92	1.81	2.61	0.99
42–43			Silty clay, light greyish brown, very stiff consistency	43.00 / 43.45	7 9 / 15 15 (16)								
44–45			Silty clay, light brownish grey, very stiff consistency	45.00 / 45.45	8 10 / 15 15 (18)								
46–47			Silty clay, dark grey, very stiff consistency	47.00 / 47.45	7 8 / 15 15 (15)								
48–49			Silty clay, with a trace of sand, brownish grey, very stiff consistency	49.00 / 49.45	9 12 / 15 15 (21)								
50–51		CH		51.00 / 51.45	10 12 / 15 15 (22)	UU	0.87	10		24 30 61	1.84	2.65	0.79
52–53			Silty clay, greyish brown, very stiff consistency	53.00 / 53.45	8 13 / 15 15 (21)								
54–55			Silty clay, brownish grey, very stiff consistency	55.00 / 55.45	13 14 / 15 15 (27)								
56–57			Silty clay, grey, very stiff consistency	57.00 / 57.45	7 9 / 15 15 (16)								
58–59		CH	Silty clay, with a trace of sand, brownsih grey, very stiff consistency	58.50 / 58.95	7 10 / 15 15 (17)	UU	0.76	7		29 52 101	1.71	2.64	1.35
60			End of Drilling	60.00 / 60.45	9 10 / 15 15 (19)								

REMARK :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-7.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 507.981
y = 557.601
z = 9.525

Depth : 60.00 m.
GWL : - 1.05 m.
Drill Master : Dusep.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
1	15 – 16 December 2018		Fill of Materials	1.00	3 4 = 7								
1.45					15 15								
2		CH	Silty clay, with a trace of sand, light brownish grey, soft consistency										
3				3.00	1 1 = 2	UNC (U)	0.25		0.50	30 54 102	1.59	2.75	1.66
3.45					15 15	(R)	0.17		0.34				
4													
5				5.00	1 = 1								
5.45					30								
6													
7		CH				UNC (U)	0.15	11		29 71 102	1.49	2.59	1.97
				7.00	0 = 0	(R)	0.15	16					
7.45			Silty clay, with a trace of sand, dark grey, very soft consistency										
8													
9				9.00	0 = 0								
9.45													
10													
11				11.00	0 = 0								
11.45													
12													
13				13.00	1 2 = 3								
13.45					15 15								
14													
15		CH	Silty clay, brown, soft to medium consistency			UU	0.11	3		29 88 82	1.42	2.63	2.38
				15.00	2 2 = 4								
15.45					15 15								
16													
17				17.00	2 3 = 5								
17.45					15 15								
18													
19			Clayey silt, brown, hard consistency	19.00	15 19 = 34								
19.45					15 15								
20													

REMARKS : 0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample

Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-7.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 507.981
y = 557.601
z = 9.525

Depth : 60.00 m.
GWL : - 1.05 m.
Drill Master : Dusep.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
21	17 – 18 December 2018		Silty clay, light brownish grey, very stiff consistency	21.00 – 21.45	12 15 / 15 15								
23			Silty sand, dark grey, medium grained, slightly cemented, very dense	23.00 – 23.24	50 / 9								
25				25.00 – 25.25	50 / 10								
27				27.00 – 27.37	33 17 / 15 7								
29			Clayey silt, light brownish grey, hard consistency	29.00 – 29.38	18 32 / 15 8								
31			Clayey silt, dark grey, hard consistency	31.00 – 31.45	18 24 / 15 15								
33			Clayey silt, grey, hard consistency	33.00 – 33.45	14 19 / 15 15								
35			Silty clay, grey, stiff consistency	35.00 – 35.45	5 7 / 15 15								
37		CH	Silty clay, with a trace of sand, light brownish grey, very stiff consistency	37.00 – 37.45	6 9 / 15 15	UU	0.40	2		30 / 90 140	1.68	2.68	2.03
39				39.00 – 39.45	9 10 / 15 15								

SPT plot: 0 20 40 60 — 27; 50/9; 50/10; 50/22; 50/23; 42; 33; 12; 15; 19

ATTERBERG LIMITS: 0 20 40 60 80 100

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample

Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-7.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 507.981
y = 557.601
z = 9.525

Depth : 60.00 m.
GWL : - 1.05 m.
Drill Master : Dusep.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	SPT 0 20 40 60	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	qu	ATTERBERG LIMITS 0 20 40 60 80 100	γt t/m³	Gs	eo
41	19 – 20 December 2018		Silty clay, light brownish grey, very stiff consistency	41.00 / 41.45	10 12 / 15 15	22								
42														
43				43.00 / 43.45	8 11 / 15 15	19								
44														
45				45.00 / 45.45	9 12 / 15 15	21								
46														
47		CH	Silty clay, with a trace of sand, dark grey, very stiff consistency	47.00 / 47.45	9 13 / 15 15	22	UU	1.20	3		29 35 100	1.82	2.59	0.93
48														
49				49.00 / 49.45	10 14 / 15 15	24								
50														
51				51.00 / 51.45	11 14 / 15 15	25								
52														
53			Silty clay, dark grey, very stiff consistency	53.00 / 53.45	11 15 / 15 15	26								
54														
55				55.00 / 55.45	9 11 / 15 15	20								
56			Silty clay, brownish grey, very stiff consistency											
57				57.00 / 57.45	10 12 / 15 15	22								
58		CH					UU	0.90	7		30 42 106	1.75	2.63	1.13
59			Silty clay, with a trace of sand, grey, very stiff consistency	58.50 / 58.95	10 11 / 15 15	21								
60				60.00 / 60.45	8 12 / 15 15	20								
			End of Drilling											

REMARK :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-8.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 538.167
y = 598.594
z = 9.748

Depth : 40.00 m.
GWL : - 0.90 m.
Drill Master : Ajid.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
1	14 – 15 December 2018		Fill of Materials	1.00 / 1.45									
2–4			Silty clay, dark grey, very soft consistency	3.00 / 3.45	0								
5–6			Silty clay, greyish brown, very soft consistency	5.00 / 5.45	0								
7–8		CH / MH	Silty clay, with a little of sand, dark grey, very soft consistency	7.00 / 7.45	0	CU (T) (E)	0.33 0.27	6 14		30 42 55	1.69	2.71	1.28
9		CH	Silty clay, dark grey, very soft consistency	9.00 / 9.45	0	UNC (U) (R)	0.13 0.11		0.26 0.22	30 123 98	1.37	2.58	2.74
10–12			Silty clay, dark grey, very soft to soft consistency	11.00 / 11.45	1 / 30								
13–14				13.00 / 13.45	1/15 1/15								
15–16			Silty clay, brown, medium consistency	15.00 / 15.45	2/15 3/15								
17–18		CH	Silty clay, with a trace of sand, brown, very stiff consistency	17.00 / 17.45	6/15 12/15 18					30 47 71	1.84	2.63	1.10
18–19			Clayey silt, light brown										
19–20			Silty sand, brown, fine grained, very dense	19.00 / 19.35	35/15 15/5 50/20								

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-8.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 538.167
y = 598.594
z = 9.748

Depth : 40.00 m.
GWL : - 0.90 m.
Drill Master : Ajid.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ^0	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
21	16 – 17 December 2018		Clayey silt, dark grey, stiff consistency	21.00 – 21.45	5 9 / 15 15 (14)								
22–23			Silty sand, dark grey, medium grained, medium cemented, very dense	23.00 – 23.20	50/5								
24–25				25.00 – 25.22	50/7								
26			Clayey silt, dark grey										
27–28			Clayey silt, dark grey, hard consistency	27.00 – 27.45	14 24 / 15 15 (38)								
29–30			Clayey silt, brown, hard consistency	29.00 – 29.45	16 27 / 15 15 (43)								
31			Clayey silt, with trace to little of sand, dark grey, hard consistency	31.00 – 31.43	24 26 / 15 13 (50/28)								
32–33			Silty clay, brownish grey, hard consistency	33.00 – 33.45	14 18 / 15 15 (32)								
34–35		CH	Silty clay, grey, stiff consistency	35.00 – 35.45	4 5 / 15 15 (9)	UU	0.40	4		29 – 158 / 101	1.70	2.65	2.13
36–37				37.00 – 37.45	5 6 / 15 15 (11)								
38				38.50 – 38.95	4 6 / 15 15 (10)								
39		CH	Silty clay, light brownish grey, very stiff consistency	39.50 – 39.95	8 9 / 15 15 (17)	UU	0.35	14		29 32 – 70	1.91	2.63	0.82
40			End of Drilling										

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-9.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 506.345
y = 597.020
z = 9.753

Depth : 40.00 m.
GWL : - 0.90 m.
Drill Master : Ajid.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
0			Fill of Materials										
1			Silty clay, reddish brown, soft consistency	1.00 / 1.45	1 2 / 15 15								
2–3			Silty clay, with trace to little of sand, dark grey, very soft consistency	3.00 / 3.45	1 / 30								
4–5		MH / ML	Clayey silt, with a trace of sand, greyish brown	5.00 / 5.45	0	CU (T) / (E) UNC (U) / (R)	0.23 / 0.22 0.04 / 0.03	9 / 14	0.08 / 0.06	30 42 50	1.69	2.70	1.28
6–7		CH	Silty clay, with a trace of sand, dark grey, very soft consistency	7.00 / 7.45	0	CU (T) / (E) UNC (U) / (R)	0.15 / 0.11 0.12 / 0.10	8 / 16	0.24 / 0.20	30 49 62	1.64	2.65	1.41
8–11	19 – 20 December 2018	CH	Silty clay, dark grey, very soft consistency	9.00 / 9.45 11.00 / 11.45	0 0	UU	0.08	2		30 90 123	1.40	2.65	2.61
12–13			Clayey silt, light brown, very stiff consistency	13.00 / 13.45	8 7 / 15 15								
14–15		CH	Silty clay, greyish brown, medium consistency	15.00 / 15.45	2 3 / 15 15	UU	0.18	1		30 67 78	1.51	2.66	1.94
16			Clayey silt, brown										
17–18			Clayey silt, dark brownish grey, very stiff consistency	17.00 / 17.45	11 12 / 15 15								
19–20			Clayey silt, with trace to little of sand, brown, hard consistency	19.00 / 19.34	39 11 / 15 4								

SPT scale: 0 20 40 60 — 3, 1, 0, 0, 0, 15, 5, 23, 50/19

ATTERBERG LIMITS scale: 0 20 40 60 80 100

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-9.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 506.345
y = 597.020
z = 9.753

Depth : 40.00 m.
GWL : - 0.90 m.
Drill Master : Ajid.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
21	21 – 23 December 2018		Clayey silt, greyish brown	21.00	6 8 (14)								
22			Clayey silt, light grey, stiff consistency	21.45	15 15								
23			Silty sand, dark grey, medium grained, medium cemented, very dense	23.00	50/5								
24				23.20									
25			Clayey silt, dark grey, hard consistency	25.00	29 21								
26				25.40	15 10								
27			Silty sand, dark grey, coarse grained, slightly cemented, very dense	27.00	40 10								
28				27.34	15 4								
29				29.00	37 13								
30				29.35	15 5								
31			Clayey silt, with a trace of sand, dark grey, hard consistency	31.00	19 30 (49)								
32				31.45	15 15								
33				33.00	15 20 (35)								
34				33.45	15 15								
35		CH	Silty clay, with trace of sand and trace of shell fragments, grey, stiff consistency	35.00	4 5 (9)	UU	0.34	3		29 – 111 – 100	1.60	2.67	2.34
36				35.45	15 15								
37				37.00	4 5 (9)								
38		CH	Silty clay, with trace of sand and trace of gravel, grey, stiff consistency	37.45	15 15								
				38.50	4 6 (10)	UU	0.46	2		29 – 154 – 93	1.65	2.73	2.19
39			Silty clay, brownish grey, very stiff consistency	38.95	15 15								
40				39.50	8 10 (18)								
			End of Drilling	39.95	15 15								

REMARKS : 0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample

Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-10.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 531.439, y = 662.172, z = 9.300

Depth : 40.00 m.
GWL : - 0.90 m.
Drill Master : Ajid.

DATE: 21 – 23 December 2018

SOIL / ROCK

DEPTH (m)	SYMBOL	DESCRIPTION
0 – 1		Fill of Materials
1 – 4	CH	Silty clay, with a trace of sand, dark grey, soft consistency
4 – 12	CH	Silty clay, with a trace of sand, dark grey, very soft consistency
12 – 16		Silty clay, light brownish grey, medium consistency
16 – 20		Clayey silt, with trace to little of sand, brown, hard consistency

SPT

SAMPLE DEPTH (m)	Blows	N
1.00 – 1.45	2/15, 3/15	5
3.00 – 3.45	1/15, 1/15	2
5.00 – 5.45	0	0
7.00 – 7.45	0	0
9.00 – 9.45	0	0
11.00 – 11.45	1/30	1
13.00 – 13.45	2/15, 3/15	5
15.00 – 15.45	2/15, 2/15	4
17.00 – 17.45	15/15, 22/15	37
19.00 – 19.39	24/15, 26/9	50/24

STRENGTH TEST, ATTERBERG LIMITS AND INDEX PROPERTIES

Approx. depth (m)	TYPE		C kg/cm²	ϕ^0	q_u	Plastic limit %	Water content %	Liquid limit %	γ_t t/m³	Gs	e_o
3	CU	(T)	0.10	11		30	72	98	1.49	2.67	2.09
		(E)	0.09	16							
	UNC	(U)	0.09		0.18						
		(R)	0.07		0.14						
7	CU	(T)	0.10	7		30	62	65	1.55	2.67	1.79
		(E)	0.10	10							
	UCT	(U)	0.08		0.16						
		(R)	0.07		0.14						
9	CU	(T)	0.11	8		29	90	128	1.40	2.61	2.54
		(E)	0.08	13							
	UCT	(U)	0.08		0.16						
		(R)	0.06		0.12						

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

DRILLING LOG

HOLE NO : BH-10.

PROJECT : Maritim Tower.
LOCATION : Jakarta.

COORDINATE : x = 531.439
y = 662.172
z = 9.300

Depth : 40.00 m.
GWL : - 0.90 m.
Drill Master : Ajid.

DEPTH (m)	DATE	SOIL / ROCK SYMBOL	SOIL / ROCK DESCRIPTION	SAMPLE DEPTH (m)	SPT N	STRENGTH TEST TYPE	C kg/cm²	ϕ⁰	q_u	ATTERBERG LIMITS	γ_t t/m³	Gs	e_o
21	23 – 25 December 2018	CH	Silty clay, with a trace of sand, dark grey, very stiff consistency	21.00 – 21.45	8 9 / 15 15	UU	0.47	4		30 70 127	1.53	2.53	1.81
22–24			Clayey silt, with trace to little of sand, dark grey, hard consistency	23.00 – 23.26	50 / 11								
25				25.00 – 25.40	23 27 / 15 10								
26–27			Silty sand, dark grey, medium grained, very dense	27.00 – 27.38	31 19 / 15 8								
28–30			Clayey silt, with trace to little of sand, dark grey, hard consistency	29.00 – 29.45	16 23 / 15 15								
31–33			Silty clay, grey, very stiff consistency	31.00 – 31.43	9 13 / 15 15								
				33.00 – 33.45	8 12 / 15 15								
34–37		CH	Silty clay, with a trace of sand, dark grey, stiff consistency	35.00 – 35.45	4 6 / 15 15	UU	0.46	2		29 158 105	1.66	2.65	2.26
				37.00 – 37.45	5 6 / 15 15								
38–39			Silty clay, light brownish grey, stiff to very stiff consistency	38.50 – 38.95	6 8 / 15 15								
40		CH		39.50 – 39.95	7 9 / 15 15					30 50 89	1.68	2.55	1.28
			End of Drilling										

SPT N-value profile: 17, 50/11, 50/25, 50/23, 39, 22, 20, 10, 11, 14, 16

REMARKS :
0 TO 10 % : TRACE
10 TO 20 % : LITTLE
20 TO 35 % : SOME
35 TO 50 % : AND

Open Drive Sample
Mazier Sample

● WATER CONTENT, %
○ PLASTIC LIMIT, %
△ LIQUID LIMIT, %

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

Lampiran 3

Index Properties

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

INDEX PROPERTIES

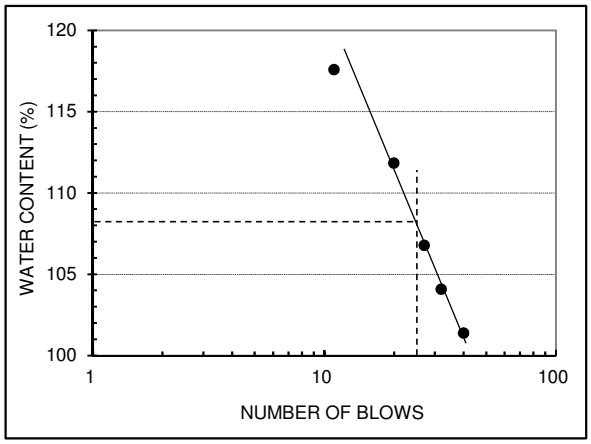
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-5.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 1 Depth : 2.50-3.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	101.37	1	28.83
2	32	104.07	2	29.27
3	27	106.78	3	29.01
4	20	111.83		
5	11	117.58	Average	29.03

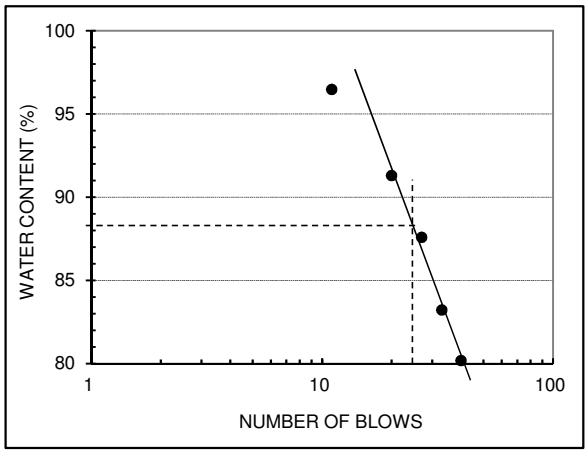
Liquid Limit, %	Plastic limit, %	Plasticity Index
108	29	79
Natural Water Content	**Specific Gravity**	**USCS**
66	2.70	**CH**



Sample No. : UDS 2 Depth : 6.50-7.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	80.18	1	29.52
2	33	83.20	2	28.96
3	27	87.57	3	29.68
4	20	91.29		
5	11	96.46	Average	29.39

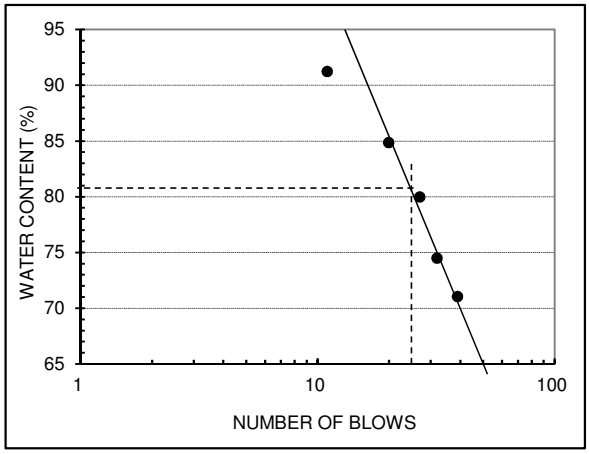
Liquid Limit, %	Plastic limit, %	Plasticity Index
88	29	59
Natural Water Content	**Specific Gravity**	**USCS**
68	2.64	**CH**



Sample No. : UDS 3 Depth : 14.50-15.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	71.03	1	29.51
2	32	74.47	2	30.20
3	27	79.95	3	30.37
4	20	84.84		
5	11	91.21	Average	30.03

Liquid Limit, %	Plastic limit, %	Plasticity Index
81	30	51
Natural Water Content	**Specific Gravity**	**USCS**
77	2.61	**CH**



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

INDEX PROPERTIES

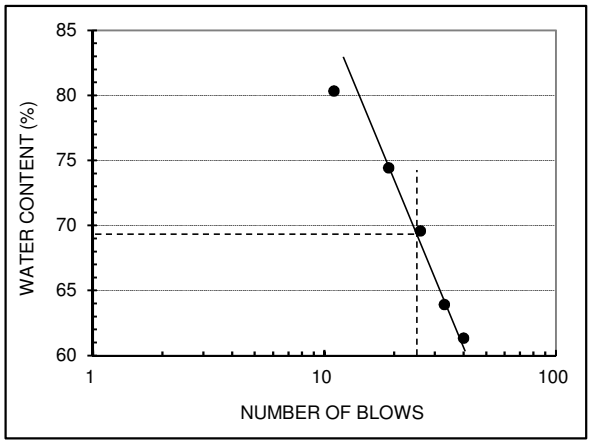
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-5.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 4 Depth : 38.50-39.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	61.32	1	28.54
2	33	63.92	2	27.96
3	26	69.57	3	28.90
4	19	74.42		
5	11	80.34	Average	28.47

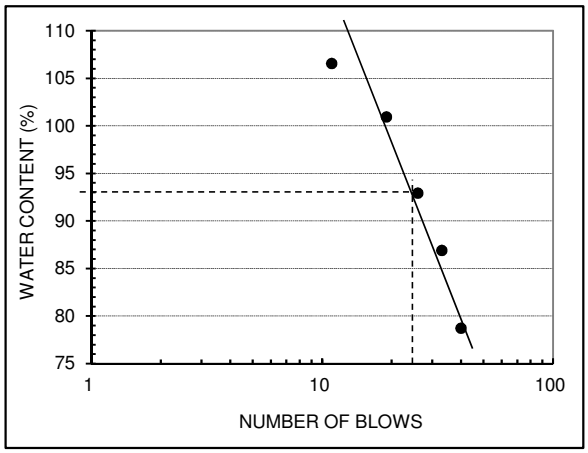
Liquid Limit, %	Plastic limit, %	Plasticity Index
69	28	41
Natural Water Content	**Specific Gravity**	**USCS**
38	2.63	**CH**



Sample No. : UDS 5 Depth : 46.50-47.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	78.69	1	28.90
2	33	86.87	2	30.28
3	26	92.91	3	29.59
4	19	100.93		
5	11	106.55	Average	29.59

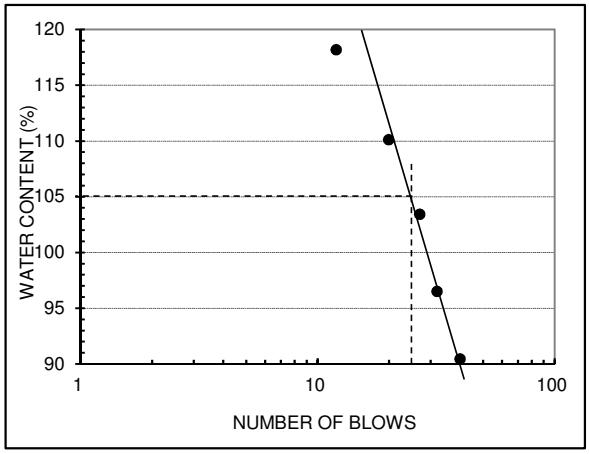
Liquid Limit, %	Plastic limit, %	Plasticity Index
93	30	63
Natural Water Content	**Specific Gravity**	**USCS**
40	2.58	**CH**



Sample No. : UDS 6 Depth : 59.50-60.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	90.44	1	29.48
2	32	96.48	2	29.41
3	27	103.40	3	29.71
4	20	110.11		
5	12	118.17	Average	29.53

Liquid Limit, %	Plastic limit, %	Plasticity Index
105	30	75
Natural Water Content	**Specific Gravity**	**USCS**
49	2.65	**CH**



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Soil Investigation and Foundation Engineering

INDEX PROPERTIES

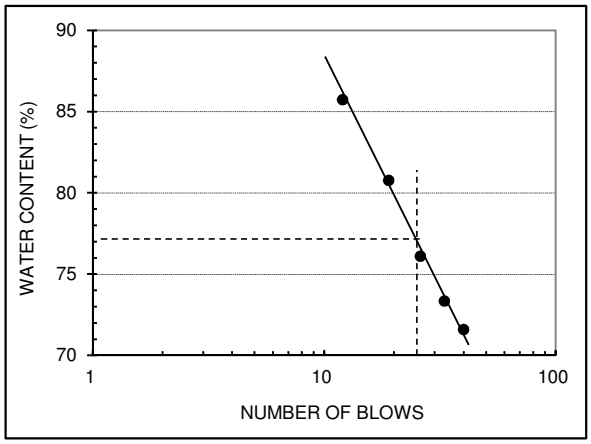
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-6.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 1 Depth : 2.50-3.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	71.58	1	28.69
2	33	73.34	2	28.89
3	26	76.10	3	29.24
4	19	80.77		
5	12	85.74	Average	28.94

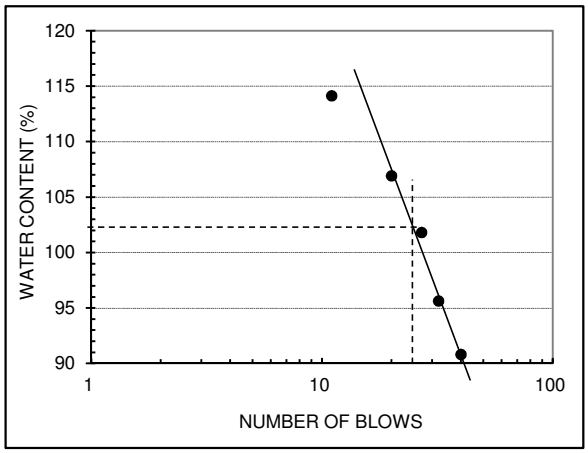
Liquid Limit, %	Plastic limit, %	Plasticity Index
77	29	48
Natural Water Content	**Specific Gravity**	**USCS**
72	2.66	**CH**



Sample No. : UDS 2 Depth : 4.50-5.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	90.82	1	29.72
2	32	95.62	2	29.99
3	27	101.79	3	29.85
4	20	106.90		
5	11	114.12	Average	29.85

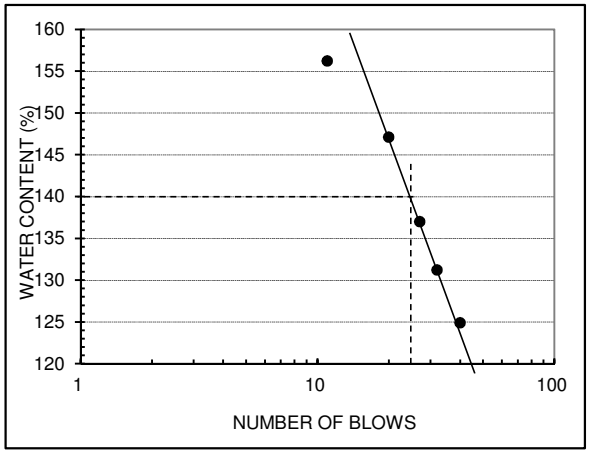
Liquid Limit, %	Plastic limit, %	Plasticity Index
102	30	72
Natural Water Content	**Specific Gravity**	**USCS**
57	2.64	**CH**



Sample No. : UDS 3 Depth : 8.50-9.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	124.90	1	28.11
2	32	131.22	2	28.69
3	27	136.98	3	28.50
4	20	147.11		
5	11	156.20	Average	28.43

Liquid Limit, %	Plastic limit, %	Plasticity Index
140	28	112
Natural Water Content	**Specific Gravity**	**USCS**
98	2.64	**CH**



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Soil Investigation and Foundation Engineering

INDEX PROPERTIES

Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-6.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 4 Depth : 20.50-21.00m.

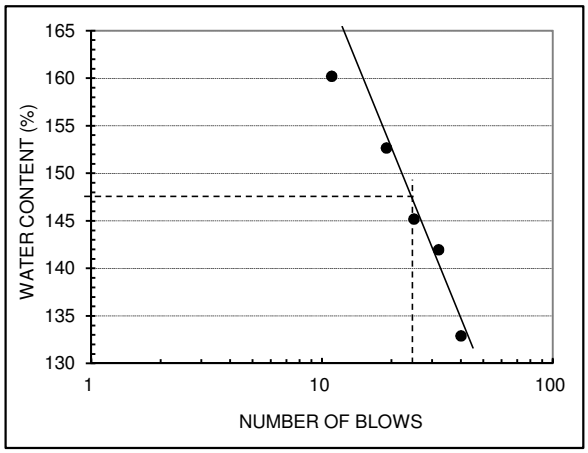
Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	95.40	1	29.22
2	33	100.33	2	28.80
3	27	107.36	3	29.25
4	20	112.33		
5	12	120.47	Average	29.09

Liquid Limit, %	Plastic limit, %	Plasticity Index
108	29	79
Natural Water Content	**Specific Gravity**	**USCS**
77	2.66	**CH**

Sample No. : UDS 5 Depth : 34.50-35.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	132.89	1	29.76
2	32	141.96	2	29.68
3	25	145.17	3	29.93
4	19	152.65		
5	11	160.20	Average	29.79

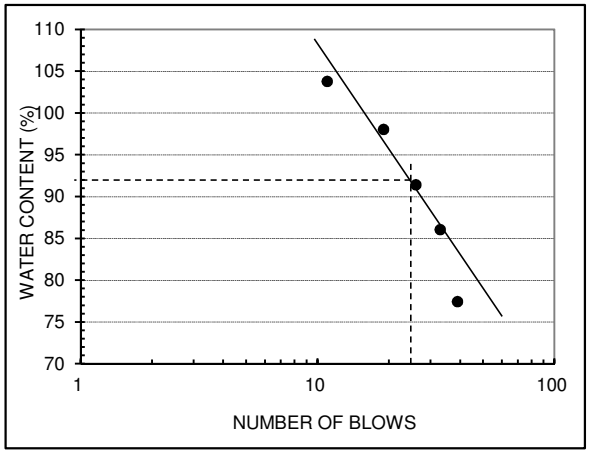
Liquid Limit, %	Plastic limit, %	Plasticity Index
148	30	118
Natural Water Content	**Specific Gravity**	**USCS**
104	2.73	**CH**



Sample No. : UDS 6 Depth : 40.50-41.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	77.41	1	31.14
2	33	86.03	2	29.79
3	26	91.42	3	29.37
4	19	98.02		
5	11	103.77	Average	30.10

Liquid Limit, %	Plastic limit, %	Plasticity Index
92	30	62
Natural Water Content	**Specific Gravity**	**USCS**
38	2.61	**CH**



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Soil Investigation and Foundation Engineering

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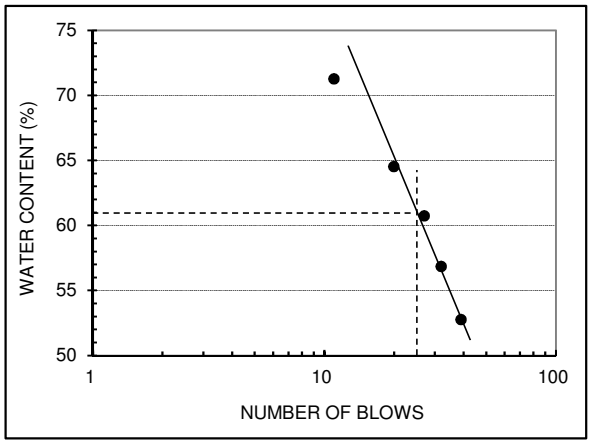
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-6.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 7 Depth : 50.50-51.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	52.75	1	29.57
2	32	56.83	2	29.87
3	27	60.73	3	29.52
4	20	64.52		
5	11	71.26	Average	29.65

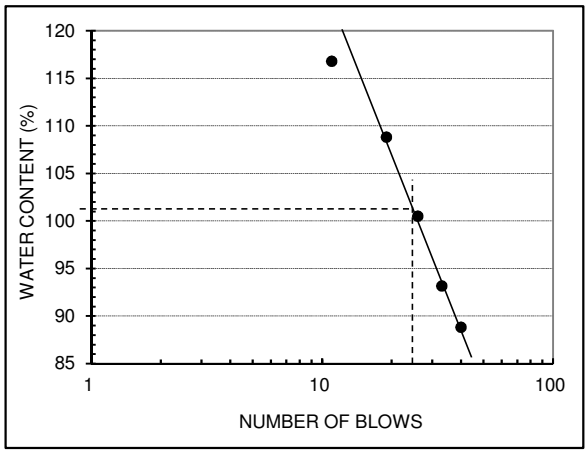
Liquid Limit, %	Plastic limit, %	Plasticity Index
61	30	31
Natural Water Content	Specific Gravity	USCS
24	2.65	**CH**



Sample No. : UDS 8 Depth : 58.50-59.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	88.82	1	29.18
2	33	93.14	2	28.51
3	26	100.49	3	29.36
4	19	108.79		
5	11	116.79	Average	29.02

Liquid Limit, %	Plastic limit, %	Plasticity Index
101	29	72
Natural Water Content	Specific Gravity	USCS
52	2.64	**CH**



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Soil Investigation and Foundation Engineering

INDEX PROPERTIES

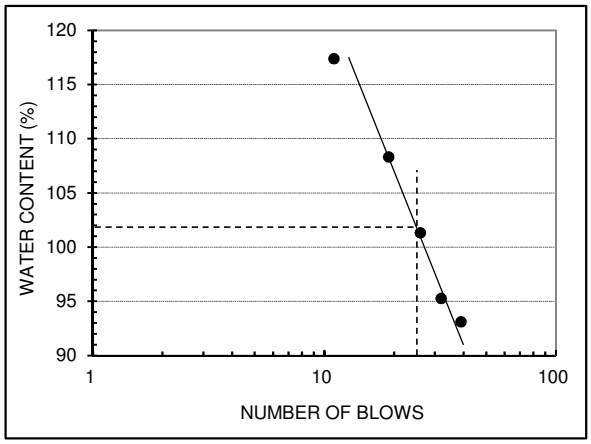
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-7.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 1 Depth : 2.50-3.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	93.09	1	29.93
2	32	95.26	2	29.89
3	26	101.32	3	30.14
4	19	108.32		
5	11	117.39	Average	29.99

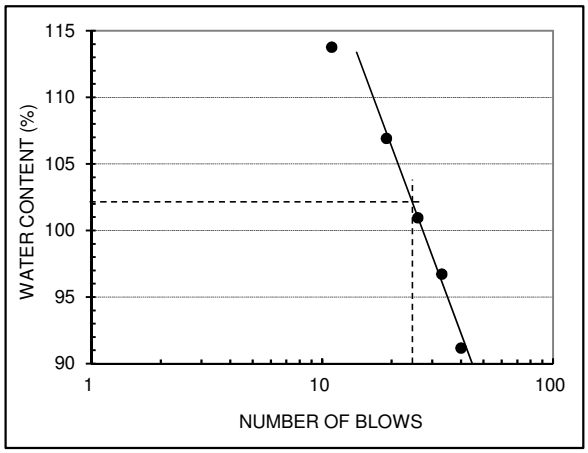
Liquid Limit, %	Plastic limit, %	Plasticity Index
102	30	72
Natural Water Content	Specific Gravity	USCS
54	2.75	**CH**



Sample No. : UDS 2 Depth : 6.50-7.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	91.15	1	29.44
2	33	96.72	2	29.16
3	26	100.94	3	29.65
4	19	106.91		
5	11	113.74	Average	29.42

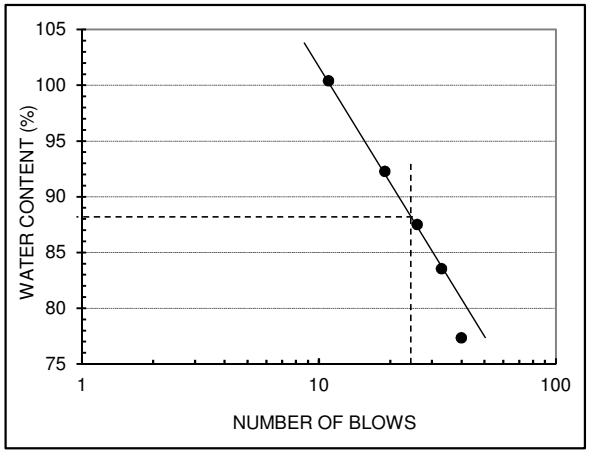
Liquid Limit, %	Plastic limit, %	Plasticity Index
102	29	73
Natural Water Content	Specific Gravity	USCS
71	2.59	**CH**



Sample No. : UDS 3 Depth : 14.50-15.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	77.32	1	29.22
2	33	83.51	2	29.03
3	26	87.48	3	29.16
4	19	92.24		
5	11	100.37	Average	29.14

Liquid Limit, %	Plastic limit, %	Plasticity Index
88	29	59
Natural Water Content	Specific Gravity	USCS
82	2.63	**CH**



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Soil Investigation and Foundation Engineering

INDEX PROPERTIES

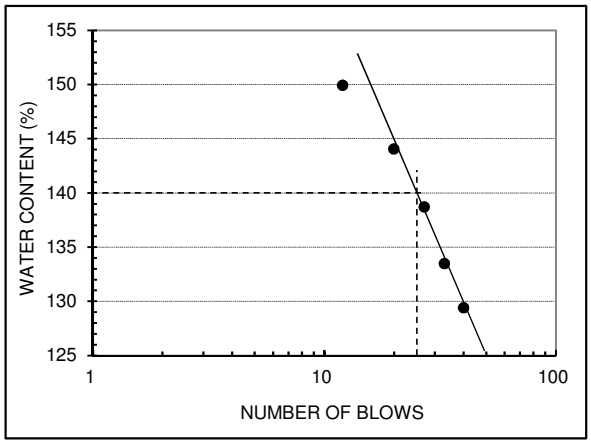
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-7.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 4 Depth : 38.50-39.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	129.39	1	29.50
2	33	133.48	2	29.56
3	27	138.70	3	29.94
4	20	144.03		
5	12	149.92	Average	29.67

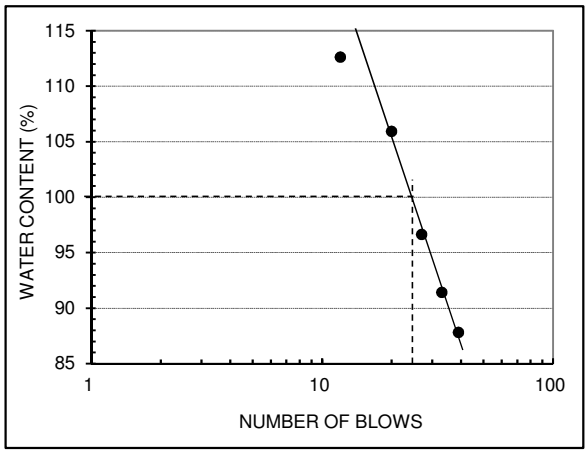
Liquid Limit, %	Plastic limit, %	Plasticity Index
140	30	110
Natural Water Content	Specific Gravity	USCS
90	2.68	**CH**



Sample No. : UDS 5 Depth : 46.50-47.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	87.80	1	28.89
2	33	91.40	2	29.14
3	27	96.64	3	28.93
4	20	105.93		
5	12	112.60	Average	28.99

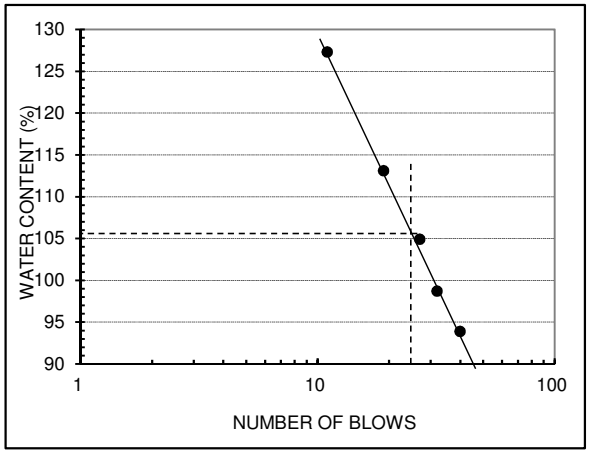
Liquid Limit, %	Plastic limit, %	Plasticity Index
100	29	71
Natural Water Content	Specific Gravity	USCS
35	2.59	**CH**



Sample No. : UDS 6 Depth : 58.00-58.50m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	93.87	1	30.24
2	32	98.68	2	29.94
3	27	104.90	3	29.96
4	19	113.10		
5	11	127.31	Average	30.05

Liquid Limit, %	Plastic limit, %	Plasticity Index
106	30	76
Natural Water Content	Specific Gravity	USCS
42	2.63	**CH**



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Soil Investigation and Foundation Engineering

INDEX PROPERTIES

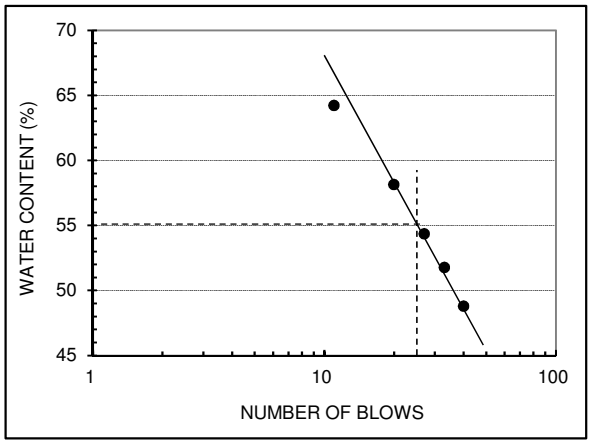
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-8.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 1 Depth : 6.50-7.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	48.78	1	29.96
2	33	51.77	2	30.76
3	27	54.34	3	29.24
4	20	58.14		
5	11	64.22	Average	29.99

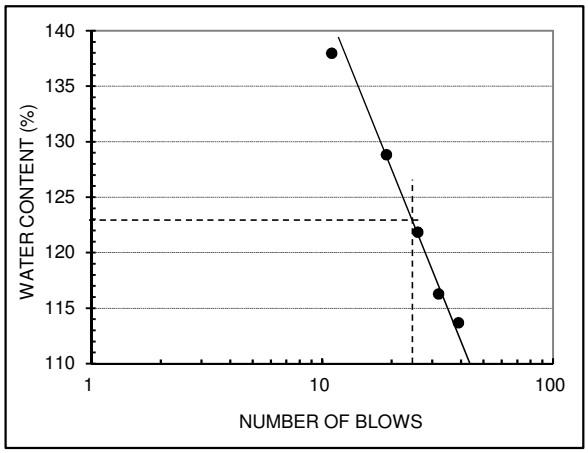
Liquid Limit, %	Plastic limit, %	Plasticity Index
55	30	25
Natural Water Content	**Specific Gravity**	**USCS**
42	2.71	**CH/MH**



Sample No. : UDS 2 Depth : 8.50-9.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	113.67	1	29.78
2	32	116.26	2	29.37
3	26	121.84	3	29.44
4	19	128.80		
5	11	137.95	Average	29.53

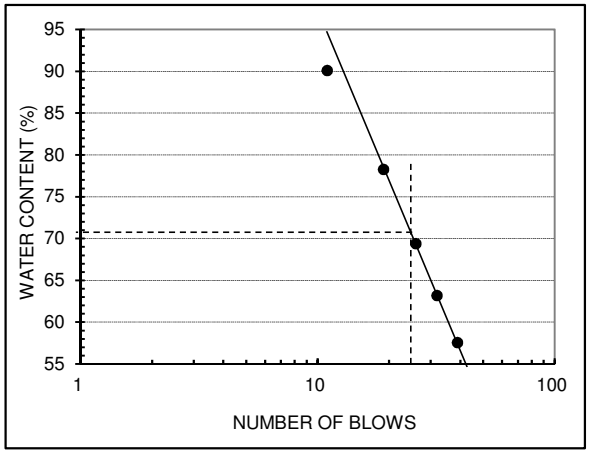
Liquid Limit, %	Plastic limit, %	Plasticity Index
123	30	93
Natural Water Content	**Specific Gravity**	**USCS**
98	2.58	**CH**



Sample No. : UDS 3 Depth : 16.50-17.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	57.53	1	30.16
2	32	63.16	2	29.37
3	26	69.37	3	29.72
4	19	78.25		
5	11	90.07	Average	29.75

Liquid Limit, %	Plastic limit, %	Plasticity Index
71	30	41
Natural Water Content	**Specific Gravity**	**USCS**
47	2.63	**CH**



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INDEX PROPERTIES

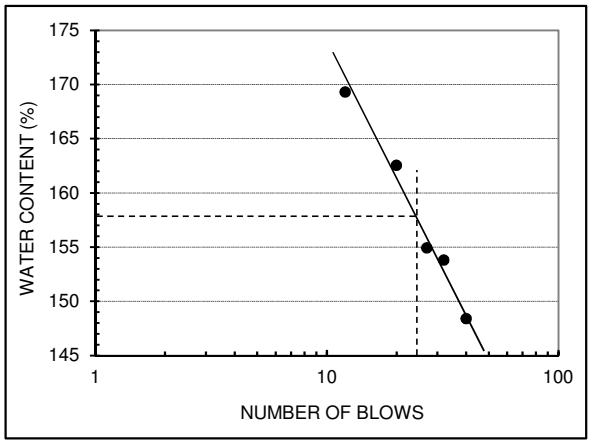
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-8.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 4 Depth : 34.50-35.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	148.38	1	29.96
2	32	153.80	2	29.27
3	27	154.91	3	29.27
4	20	162.53		
5	12	169.30	Average	29.50

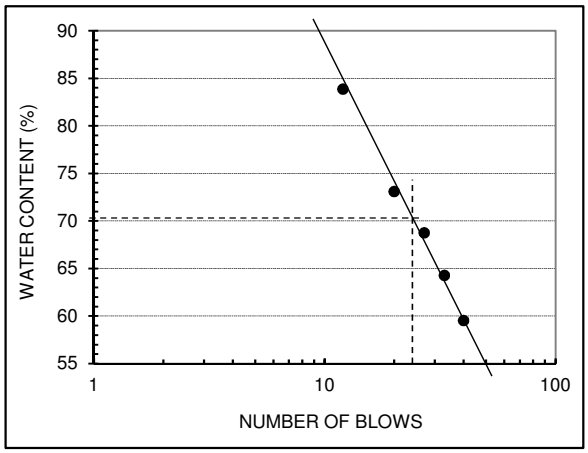
Liquid Limit, %	Plastic limit, %	Plasticity Index
158	29	129
Natural Water Content	Specific Gravity	USCS
101	2.65	**CH**



Sample No. : UDS 5 Depth : 39.50-40.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	59.50	1	29.57
2	33	64.27	2	29.71
3	27	68.74	3	28.42
4	20	73.07		
5	12	83.84	Average	29.24

Liquid Limit, %	Plastic limit, %	Plasticity Index
70	29	41
Natural Water Content	Specific Gravity	USCS
32	2.63	**CH**



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

INDEX PROPERTIES

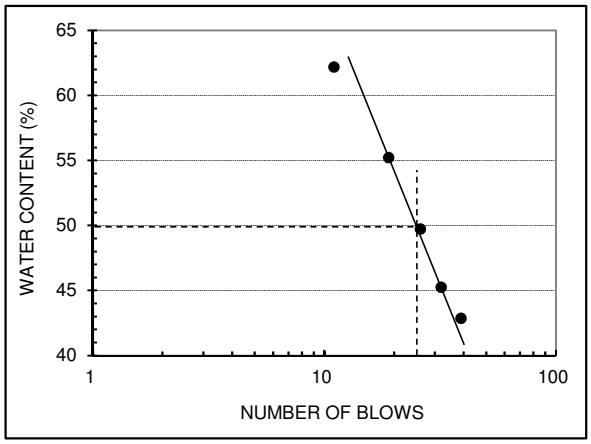
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-9.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 1 Depth : 4.50-5.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	42.84	1	30.56
2	32	45.23	2	29.89
3	26	49.71	3	29.89
4	19	55.21		
5	11	62.17	Average	30.11

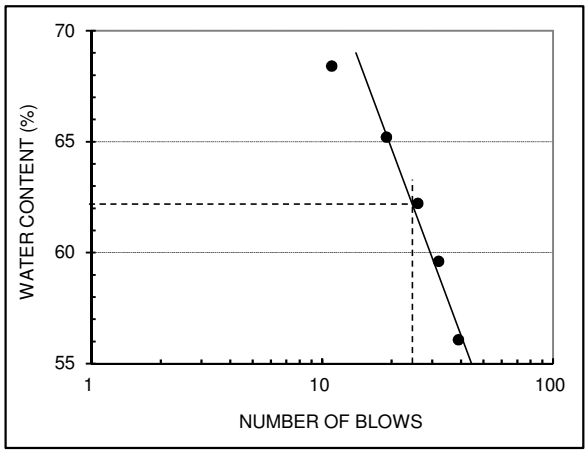
Liquid Limit, %	Plastic limit, %	Plasticity Index
50	30	20
Natural Water Content	**Specific Gravity**	**USCS**
42	2.70	**MH/ML**



Sample No. : UDS 2 Depth : 6.50-7.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	56.07	1	29.70
2	32	59.60	2	30.12
3	26	62.21	3	29.93
4	19	65.19		
5	11	68.40	Average	29.92

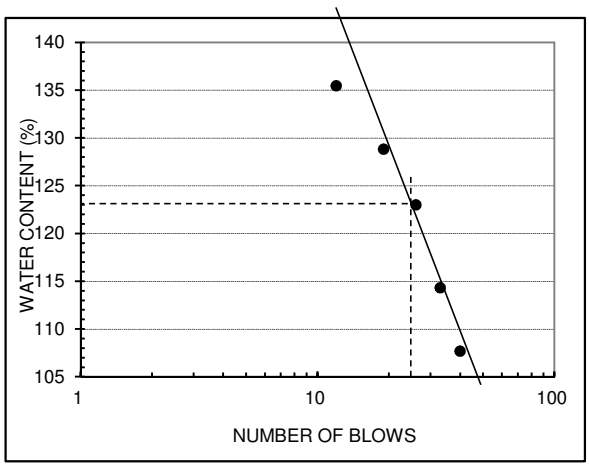
Liquid Limit, %	Plastic limit, %	Plasticity Index
62	30	32
Natural Water Content	**Specific Gravity**	**USCS**
49	2.65	**CH**



Sample No. : UDS 3 Depth : 10.50-11.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	107.68	1	29.97
2	33	114.31	2	29.79
3	26	122.98	3	29.72
4	19	128.82		
5	12	135.44	Average	29.83

Liquid Limit, %	Plastic limit, %	Plasticity Index
123	30	93
Natural Water Content	**Specific Gravity**	**USCS**
90	2.65	**CH**



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

INDEX PROPERTIES

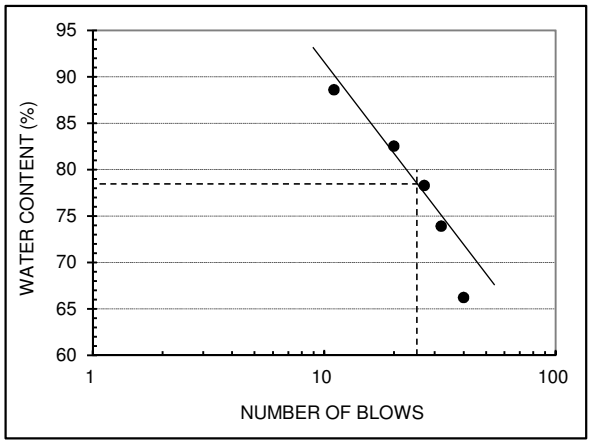
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-9.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 4 Depth : 14.50-15.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	66.23	1	29.99
2	32	73.92	2	29.72
3	27	78.28	3	29.89
4	20	82.53		
5	11	88.59	Average	29.87

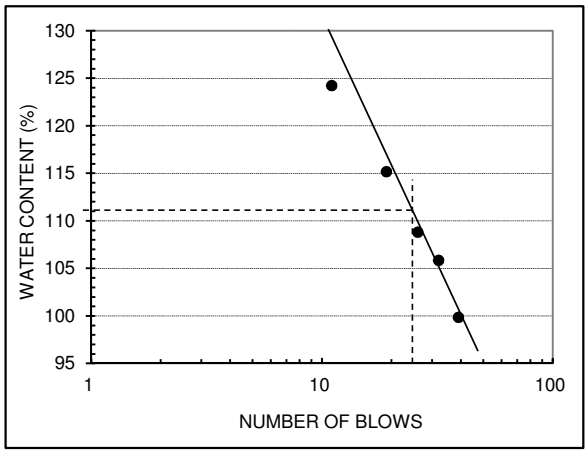
Liquid Limit, %	Plastic limit, %	Plasticity Index
78	30	48
Natural Water Content	Specific Gravity	USCS
67	2.66	**CH**



Sample No. : UDS 5 Depth : 34.50-35.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	39	99.84	1	29.45
2	32	105.83	2	28.75
3	26	108.80	3	29.18
4	19	115.17		
5	11	124.20	Average	29.13

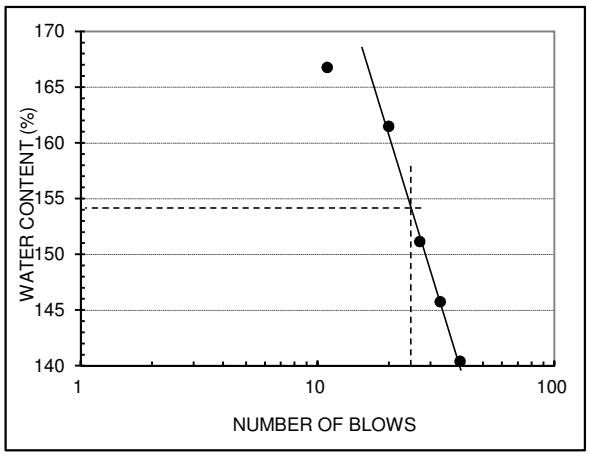
Liquid Limit, %	Plastic limit, %	Plasticity Index
111	29	82
Natural Water Content	Specific Gravity	USCS
100	2.67	**CH**



Sample No. : UDS 6 Depth : 38.00-38.50m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	140.40	1	28.80
2	33	145.75	2	29.18
3	27	151.13	3	28.99
4	20	161.47		
5	11	166.75	Average	28.99

Liquid Limit, %	Plastic limit, %	Plasticity Index
154	29	125
Natural Water Content	Specific Gravity	USCS
93	2.73	**CH**



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

INDEX PROPERTIES

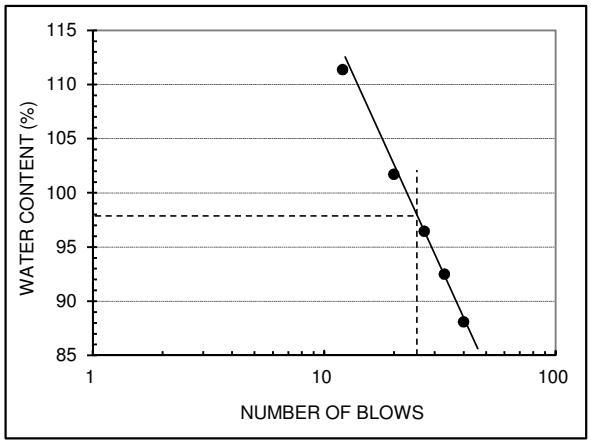
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-10.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 1 Depth : 2.50-3.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	88.09	1	29.83
2	33	92.50	2	30.14
3	27	96.45	3	29.99
4	20	101.72		
5	12	111.38	Average	29.99

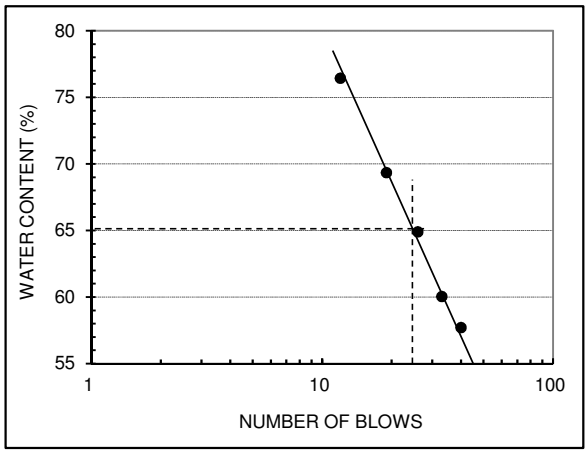
Liquid Limit, %	Plastic limit, %	Plasticity Index
98	30	68
Natural Water Content	**Specific Gravity**	**USCS**
72	2.67	**CH**



Sample No. : UDS 2 Depth : 6.50-7.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	57.68	1	29.68
2	33	60.02	2	29.82
3	26	64.88	3	29.85
4	19	69.33		
5	12	76.41	Average	29.78

Liquid Limit, %	Plastic limit, %	Plasticity Index
65	30	35
Natural Water Content	**Specific Gravity**	**USCS**
62	2.67	**CH**



Sample No. : UDS 3 Depth : 8.50-9.00m.

Liquid limit test			Plastic limit test	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	114.88	1	28.86
2	32	121.58	2	29.12
3	26	127.71	3	28.35
4	19	133.91		
5	11	138.94	Average	28.77

Liquid Limit, %	Plastic limit, %	Plasticity Index
128	29	99
Natural Water Content	**Specific Gravity**	**USCS**
90	2.61	**CH**

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

INDEX PROPERTIES

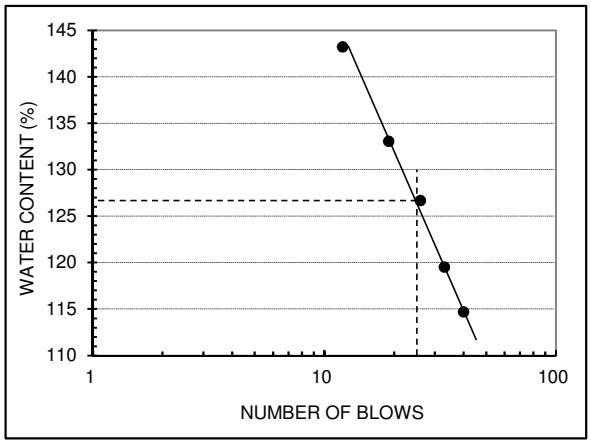
Project : **Maritim Tower.**
Location : Jakarta
Hole no. : BH-10.

Date of testing : January 2019.
Tested by : Dahlan.
Checked by : Y.

Sample No. : UDS 4 Depth : 20.50-21.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	114.68	1	29.63
2	33	119.52	2	29.80
3	26	126.67	3	29.62
4	19	133.04		
5	12	143.20	Average	29.68

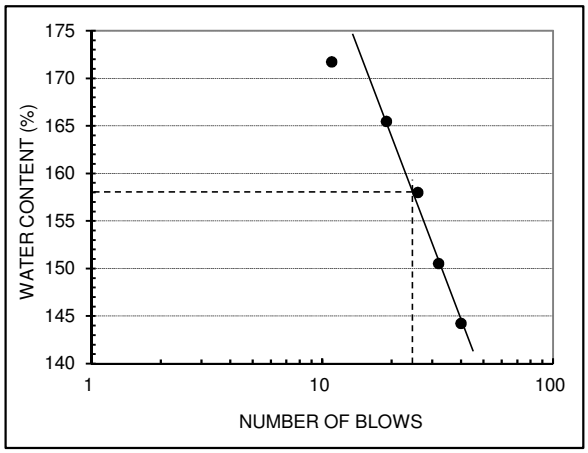
Liquid Limit, %	Plastic limit, %	Plasticity Index
127	30	97
Natural Water Content	Specific Gravity	USCS
70	2.53	**CH**



Sample No. : UDS 5 Depth : 34.50-35.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	144.22	1	29.21
2	32	150.51	2	29.37
3	26	157.97	3	29.04
4	19	165.45		
5	11	171.70	Average	29.21

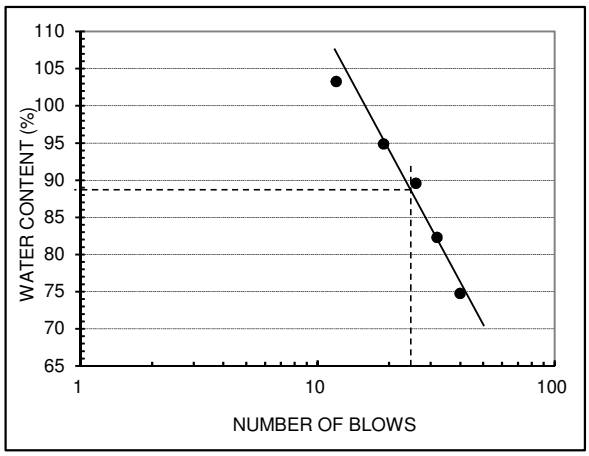
Liquid Limit, %	Plastic limit, %	Plasticity Index
158	29	129
Natural Water Content	Specific Gravity	USCS
105	2.65	**CH**



Sample No. : UDS 6 Depth : 39.50-40.00m.

Liquid limit test			**Plastic limit test**	
Test no.	No. of blows	W_L, %	Test no.	W_P, %
1	40	74.74	1	29.60
2	32	82.27	2	29.82
3	26	89.57	3	29.48
4	19	94.82		
5	12	103.24	Average	29.63

Liquid Limit, %	Plastic limit, %	Plasticity Index
89	30	59
Natural Water Content	Specific Gravity	USCS
50	2.55	**CH**



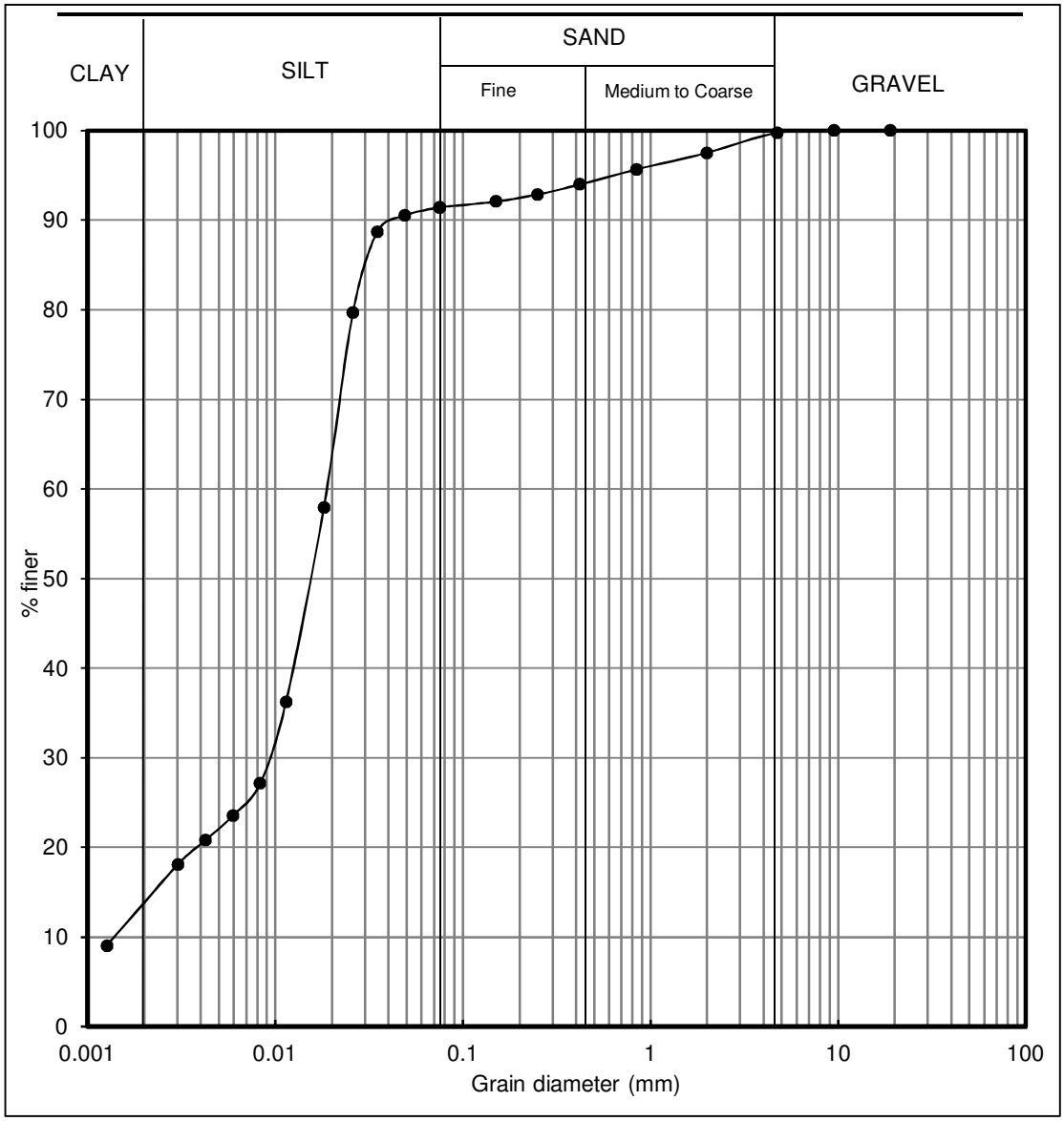
Lampiran 4

Uji Gradasi Butiran Tanah

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-5.	CHECKED BY	: Y.
DEPTH	: 2.50-3.00m.		



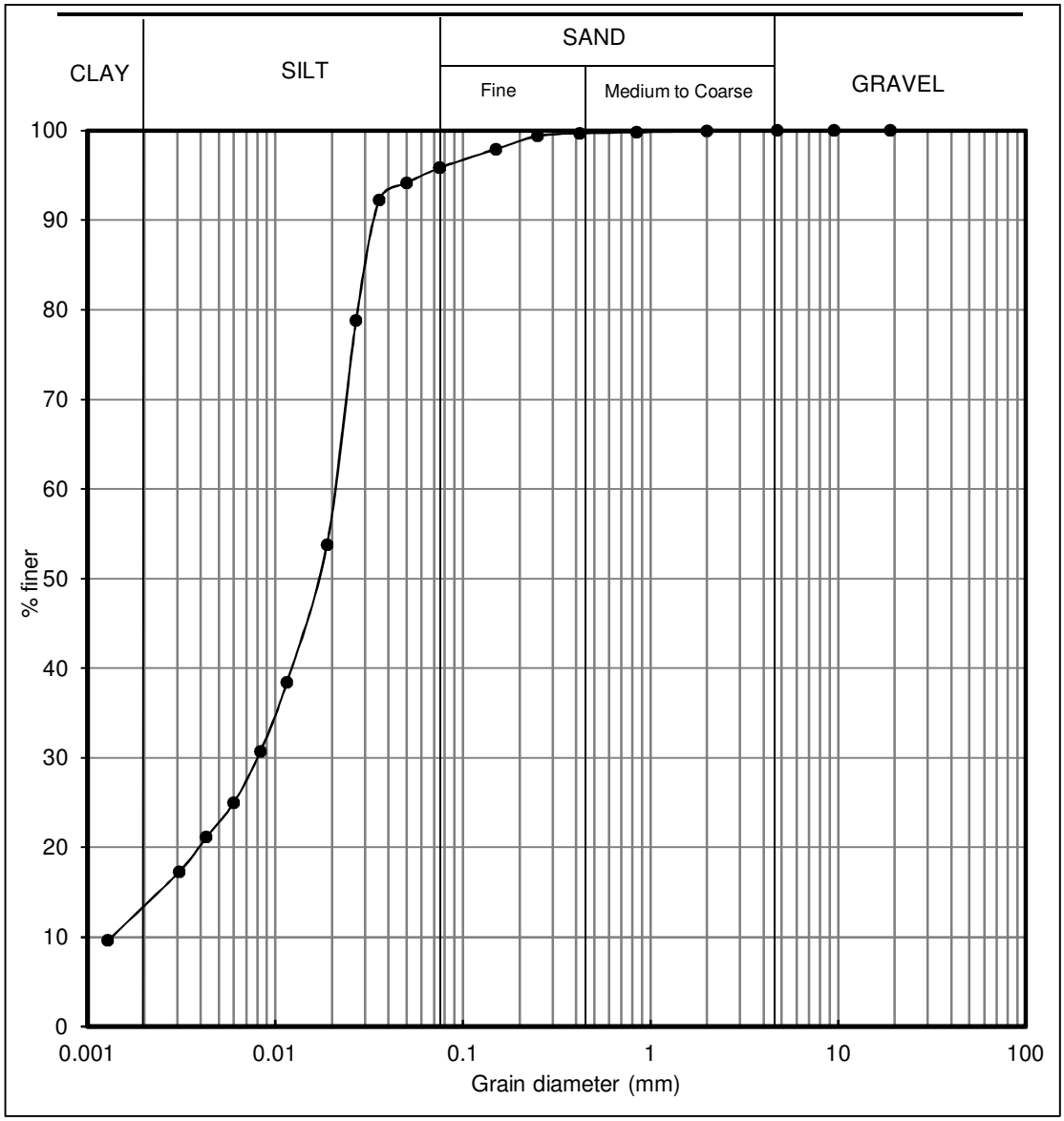
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	91.45	8.34	0.21

Visual soil description : Silty clay, with a trace of sand, dark grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-5.	CHECKED BY	: Y.
DEPTH	: 6.50-7.00m.		



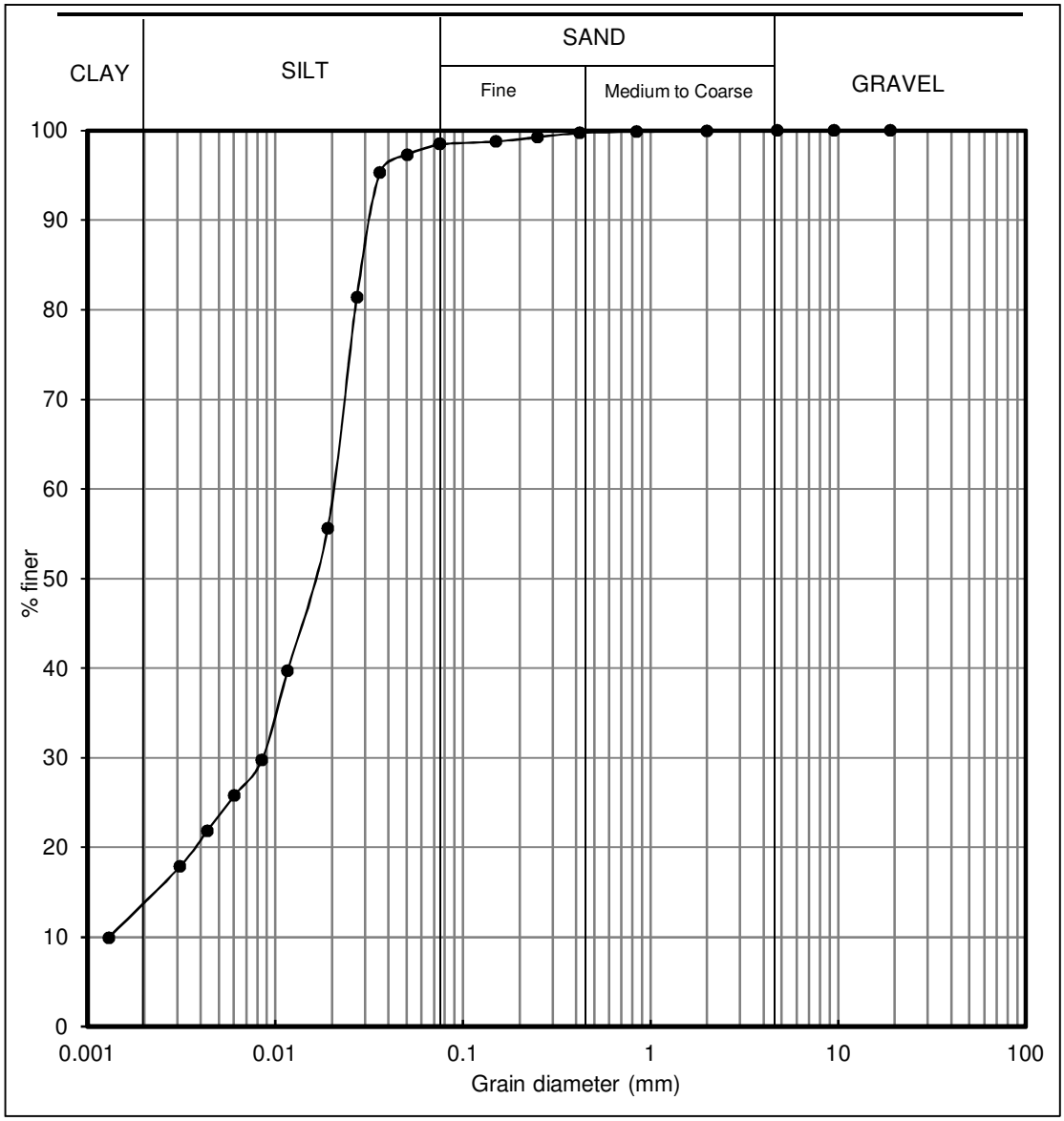
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	95.89	4.11	0.00

Visual soil description : Silty clay, with a trace of sand, dark grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-5.	CHECKED BY	: Y.
DEPTH	: 14.50-15.00m.		



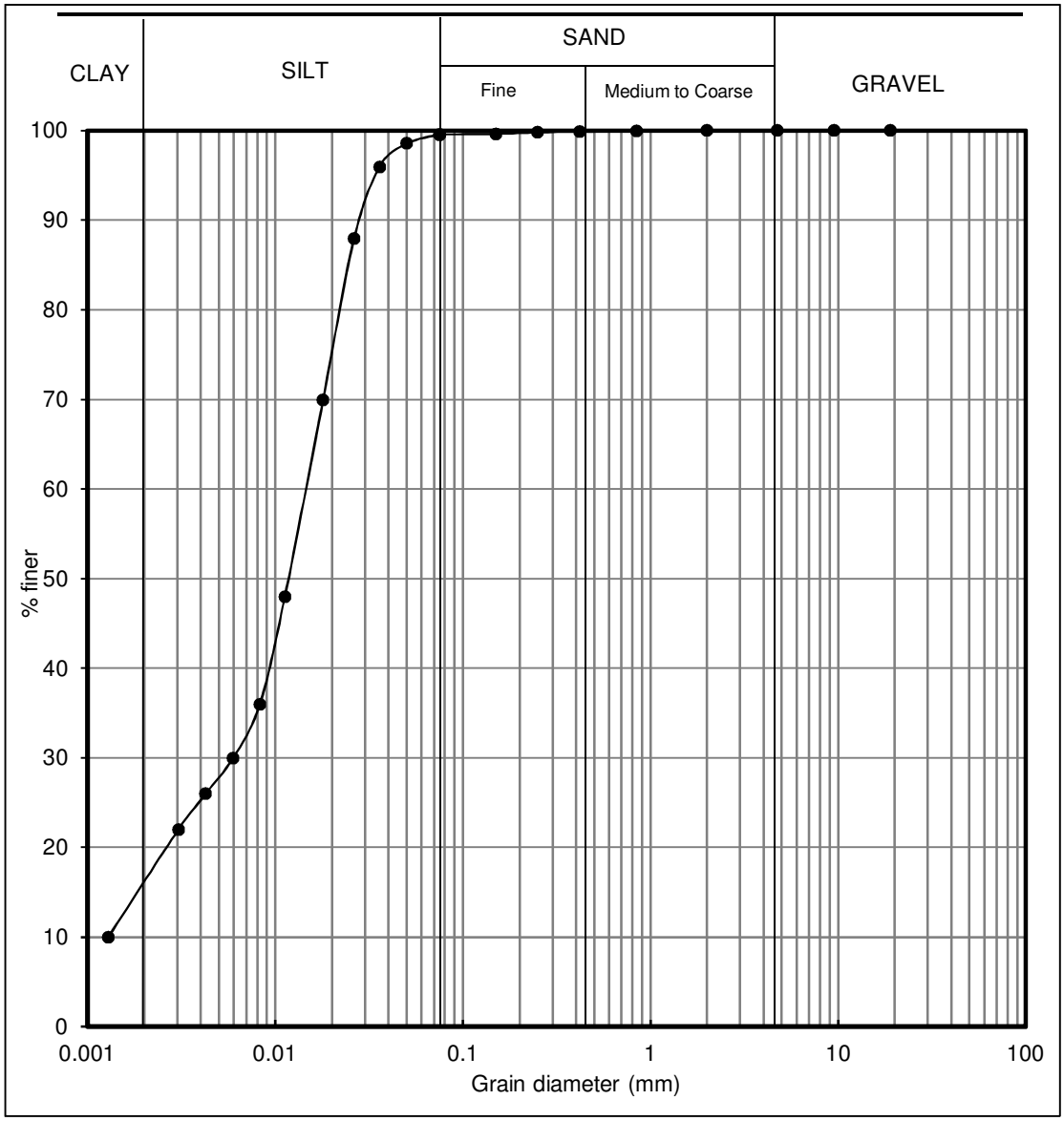
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.52	1.48	0.00

Visual soil description : Silty clay, with a trace of sand, brown.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-5.	CHECKED BY	: Y.
DEPTH	: 38.50-39.00m.		



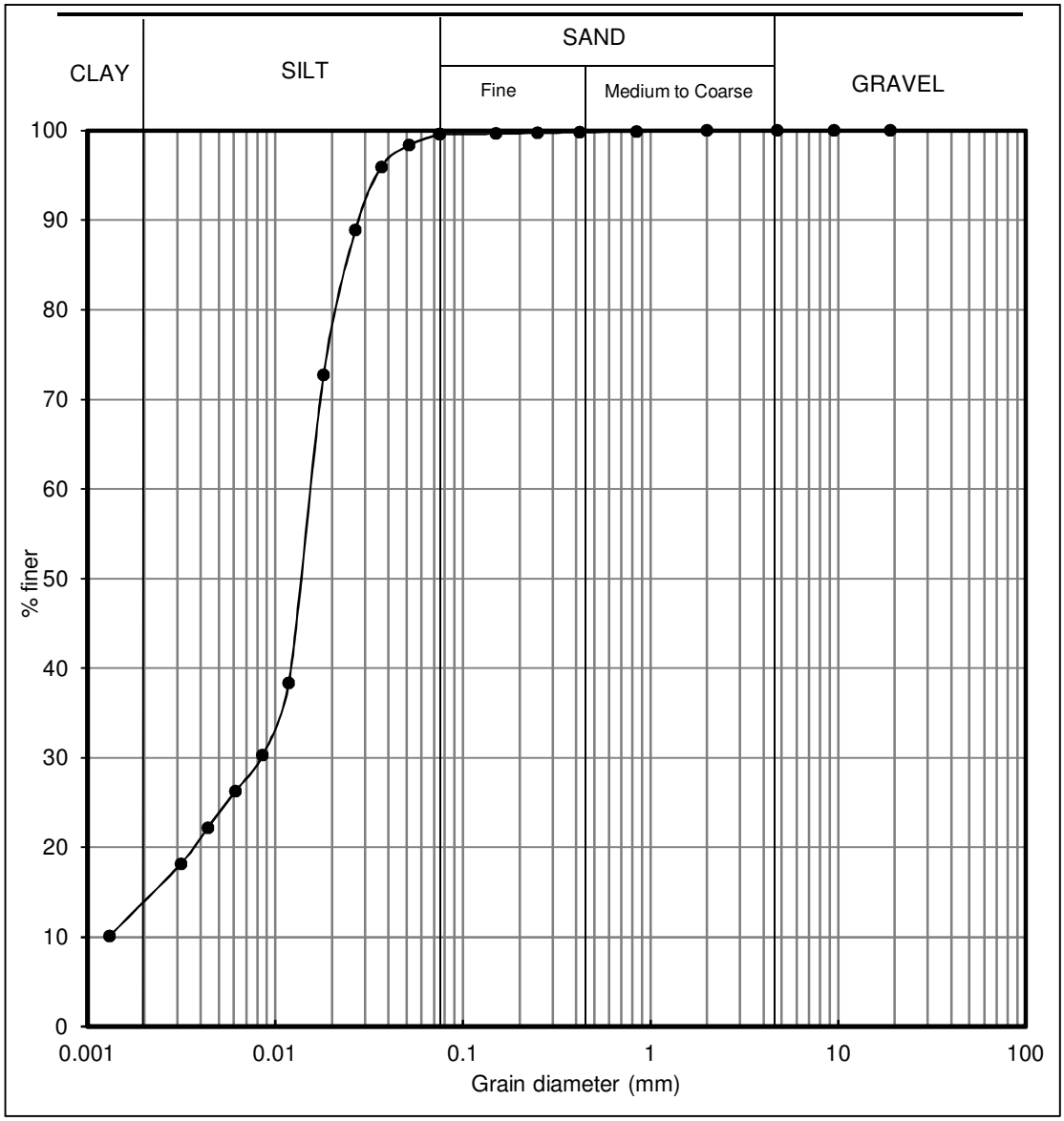
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.57	0.43	0.00

Visual soil description : Silty clay, brownish grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-5.	CHECKED BY	: Y.
DEPTH	: 46.50-47.00m.		



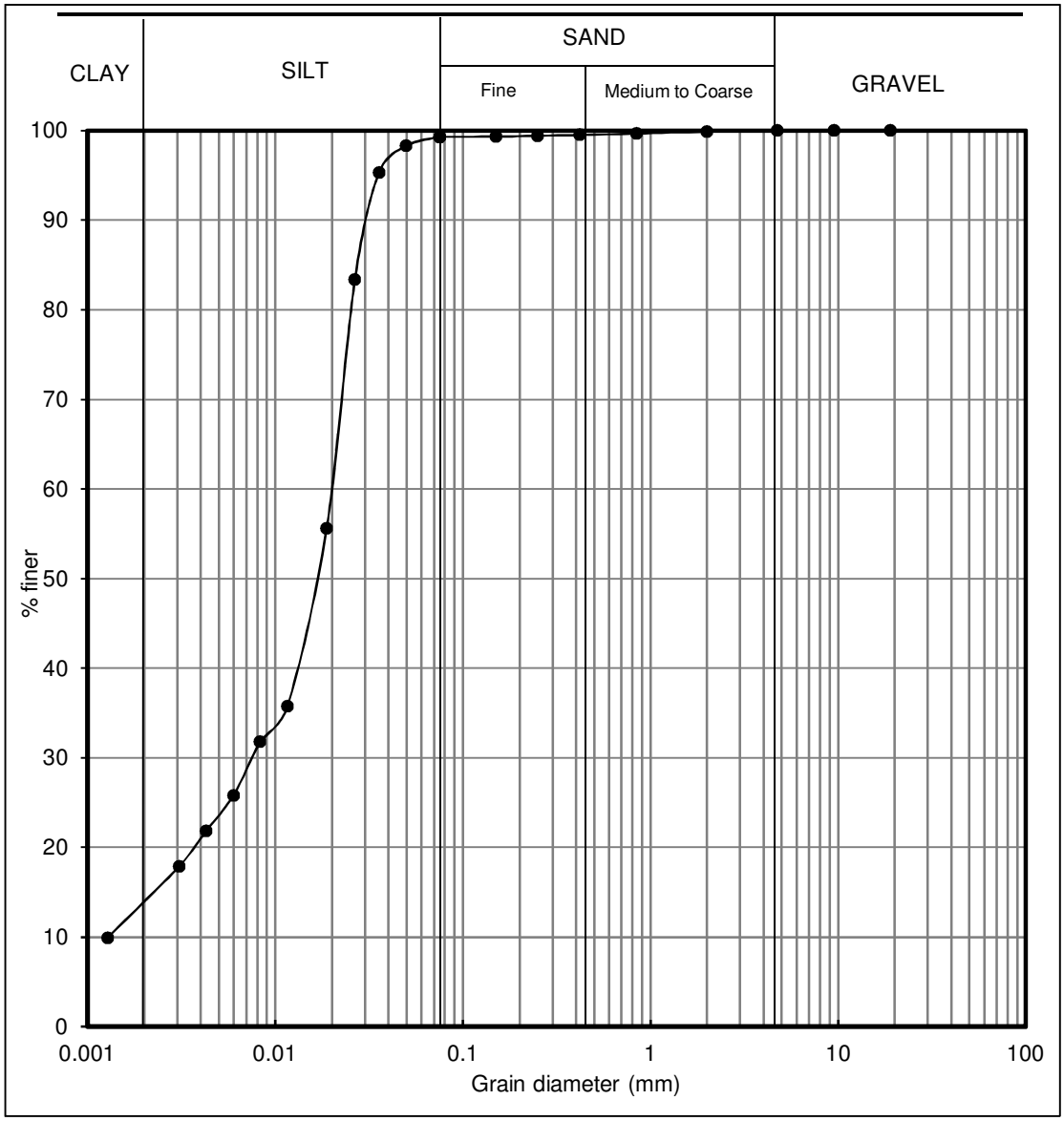
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.61	0.39	0.00

Visual soil description : Silty clay, brownish grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-5.	CHECKED BY	: Y.
DEPTH	: 59.50-60.00m.		



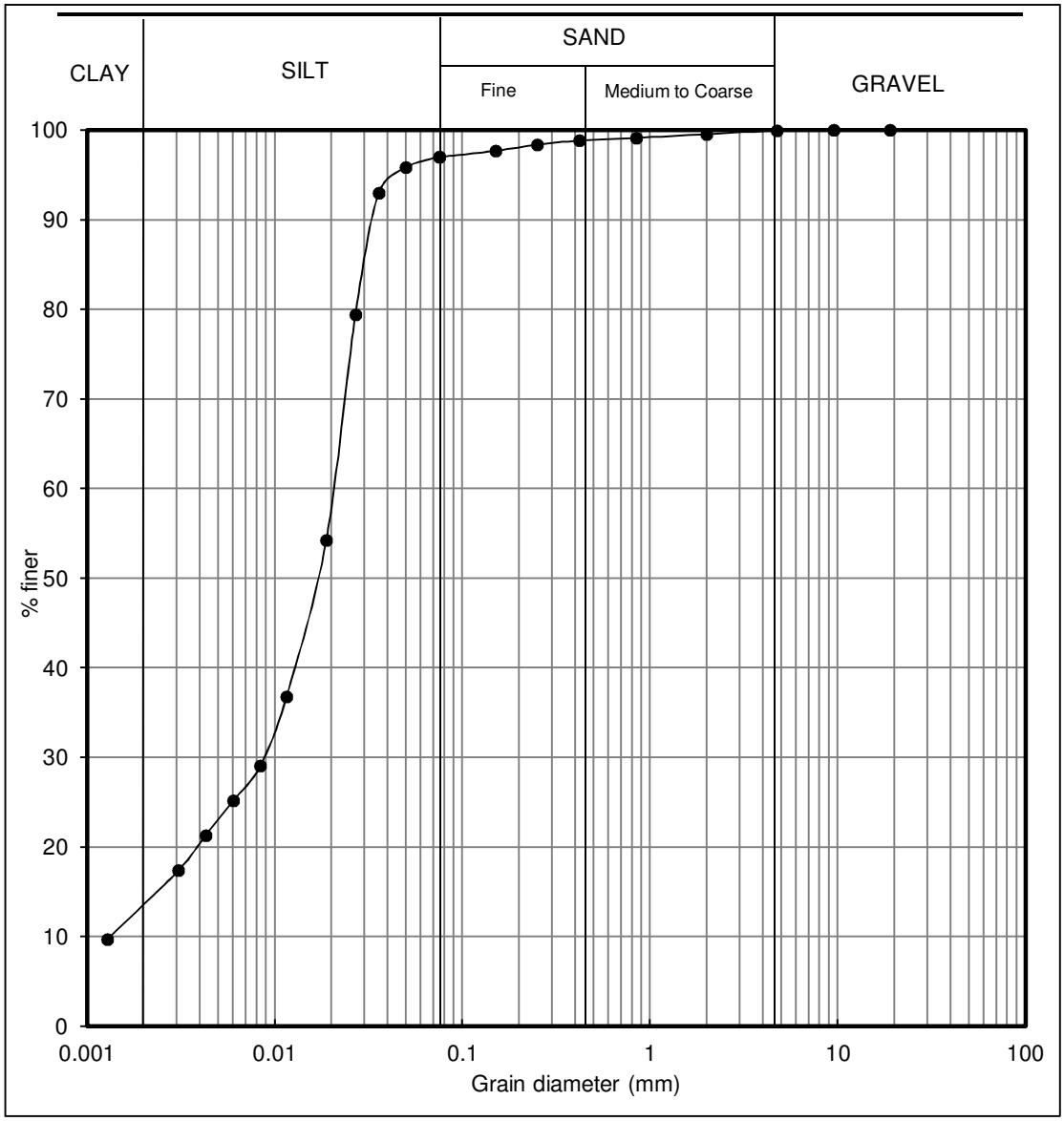
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.31	0.69	0.00

Visual soil description : Silty clay, grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 2.50-3.00m.		



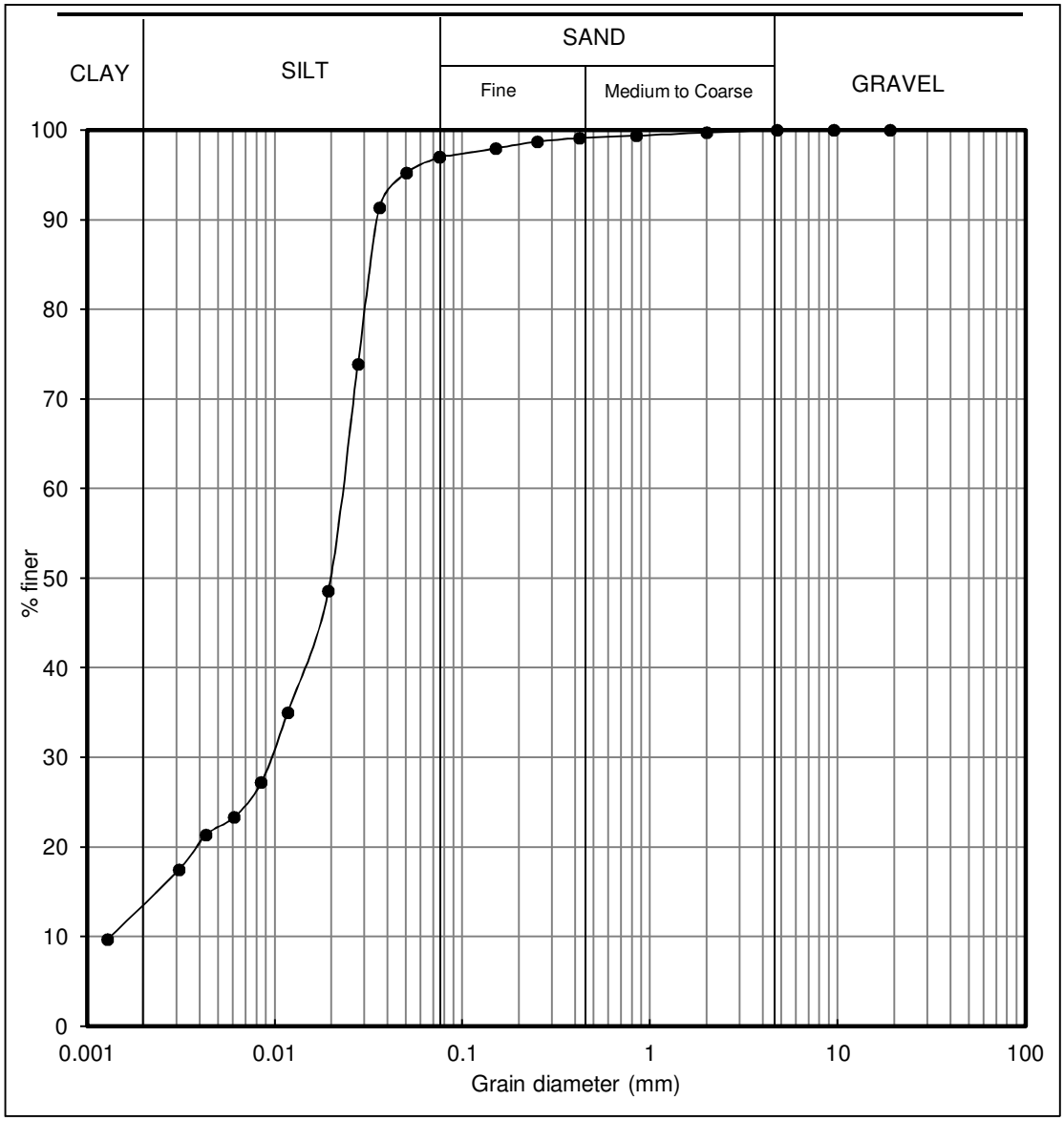
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	97.04	2.95	0.01

Visual soil description : Silty clay, with a trace of sand, grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 4.50-5.00m.		



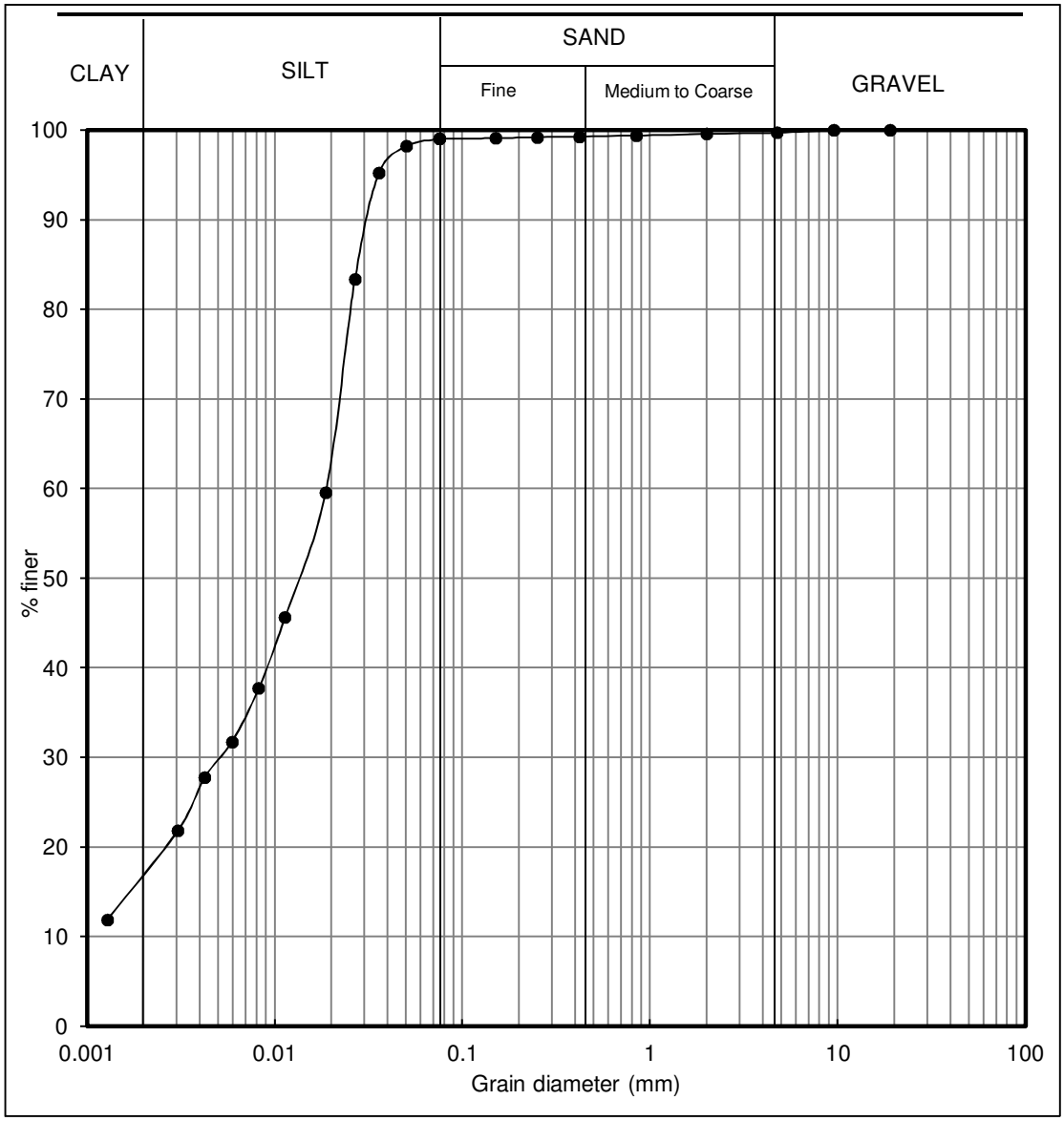
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	97.01	2.99	0.00

Visual soil description : Silty clay, with a trace of sand, dark grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 8.50-9.00m.		



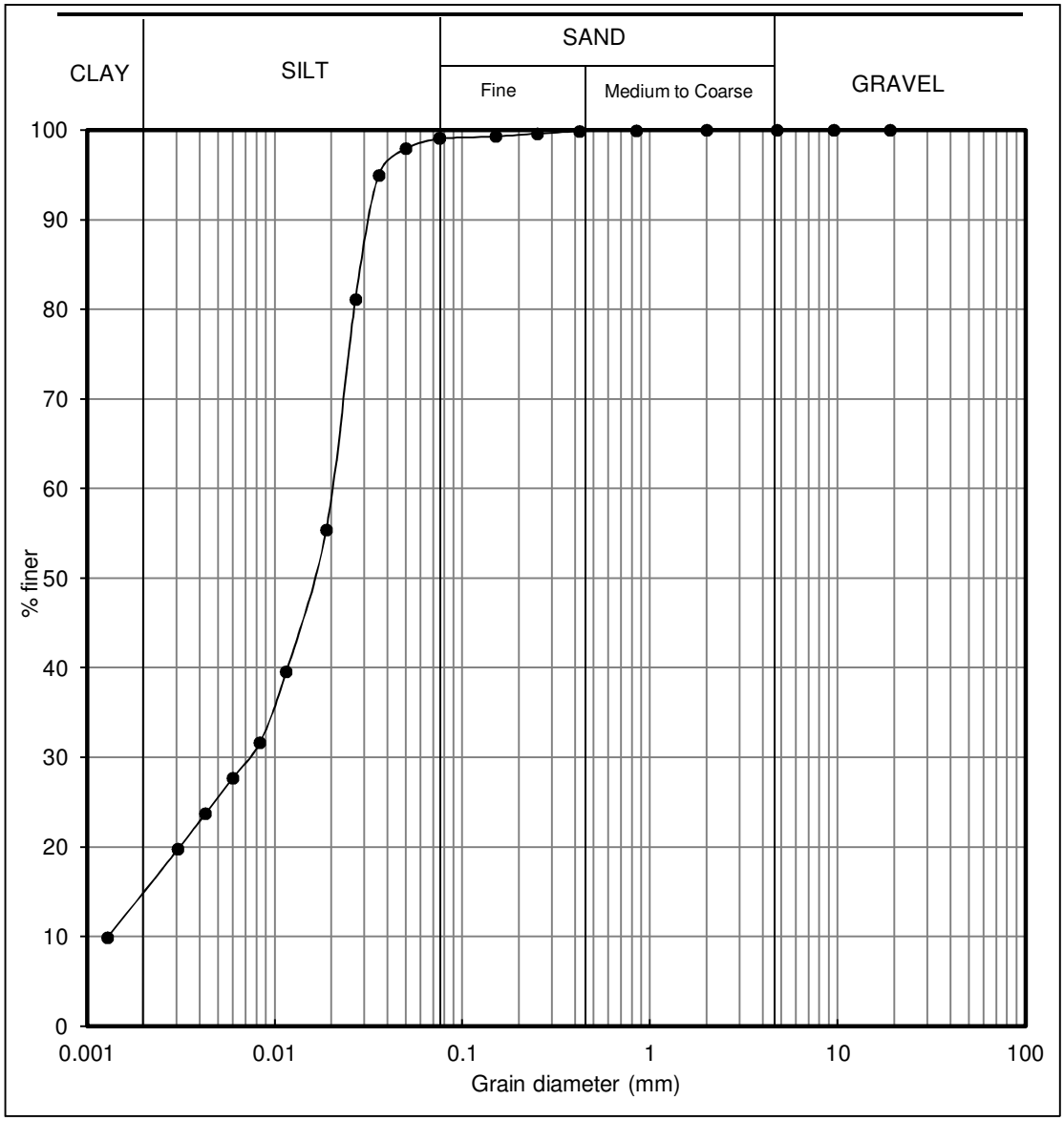
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.05	0.69	0.26

Visual soil description : Silty clay, dark grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 20.50-21.00m.		



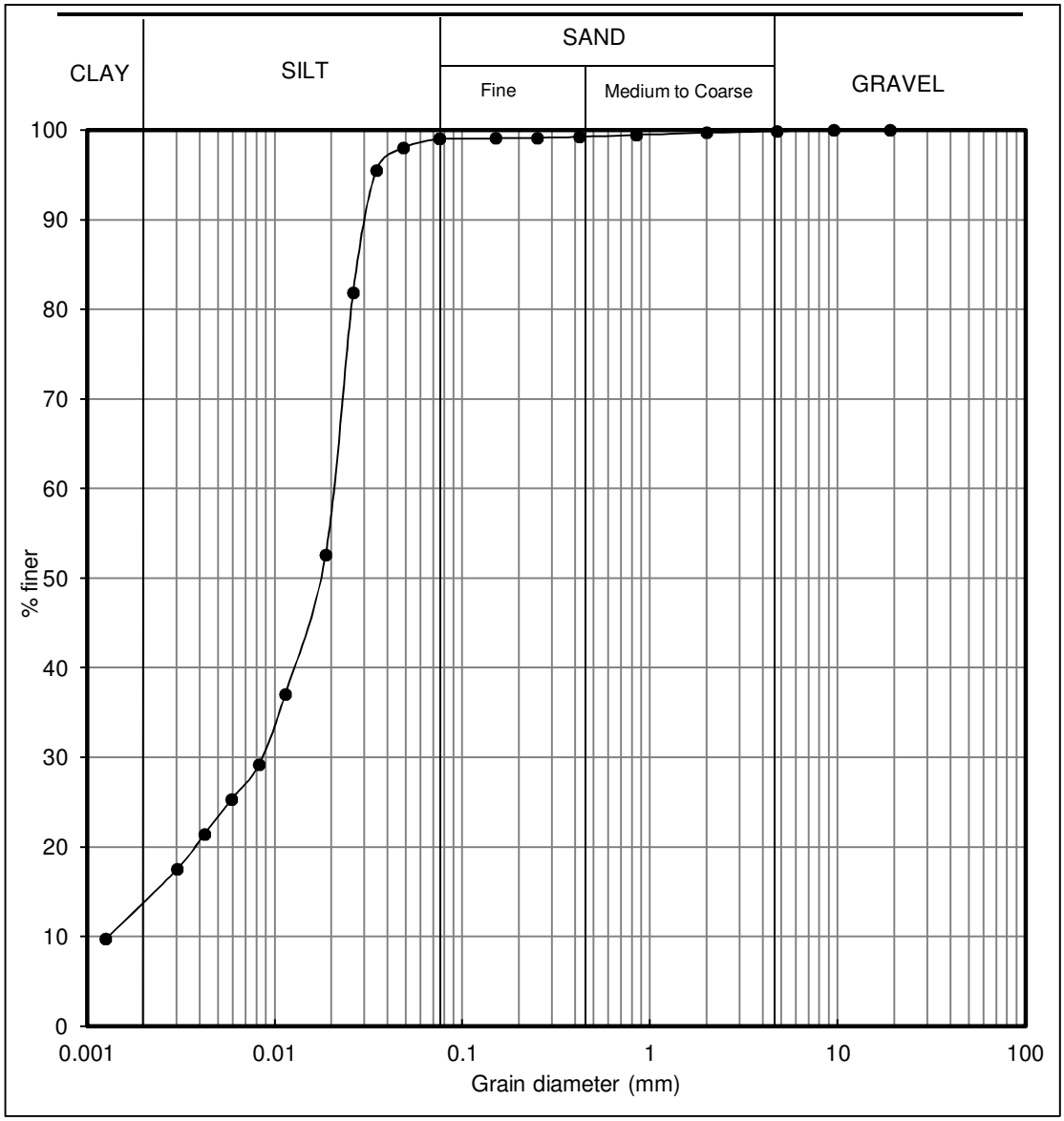
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.14	0.86	0.00

Visual soil description : Silty clay, grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 34.50-35.00m.		



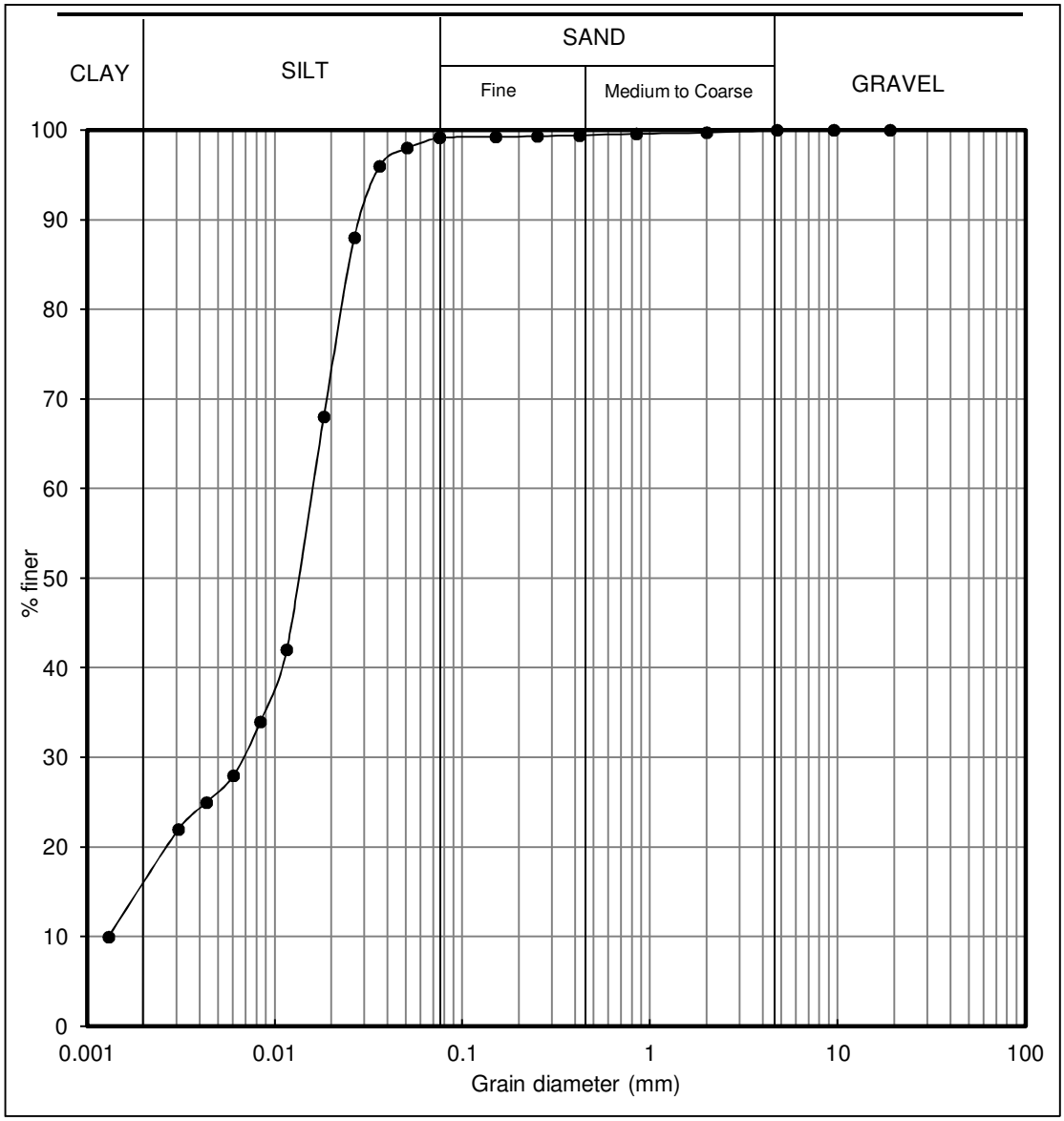
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.08	0.83	0.09

Visual soil description : Silty clay, grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 40.50-41.00m.		



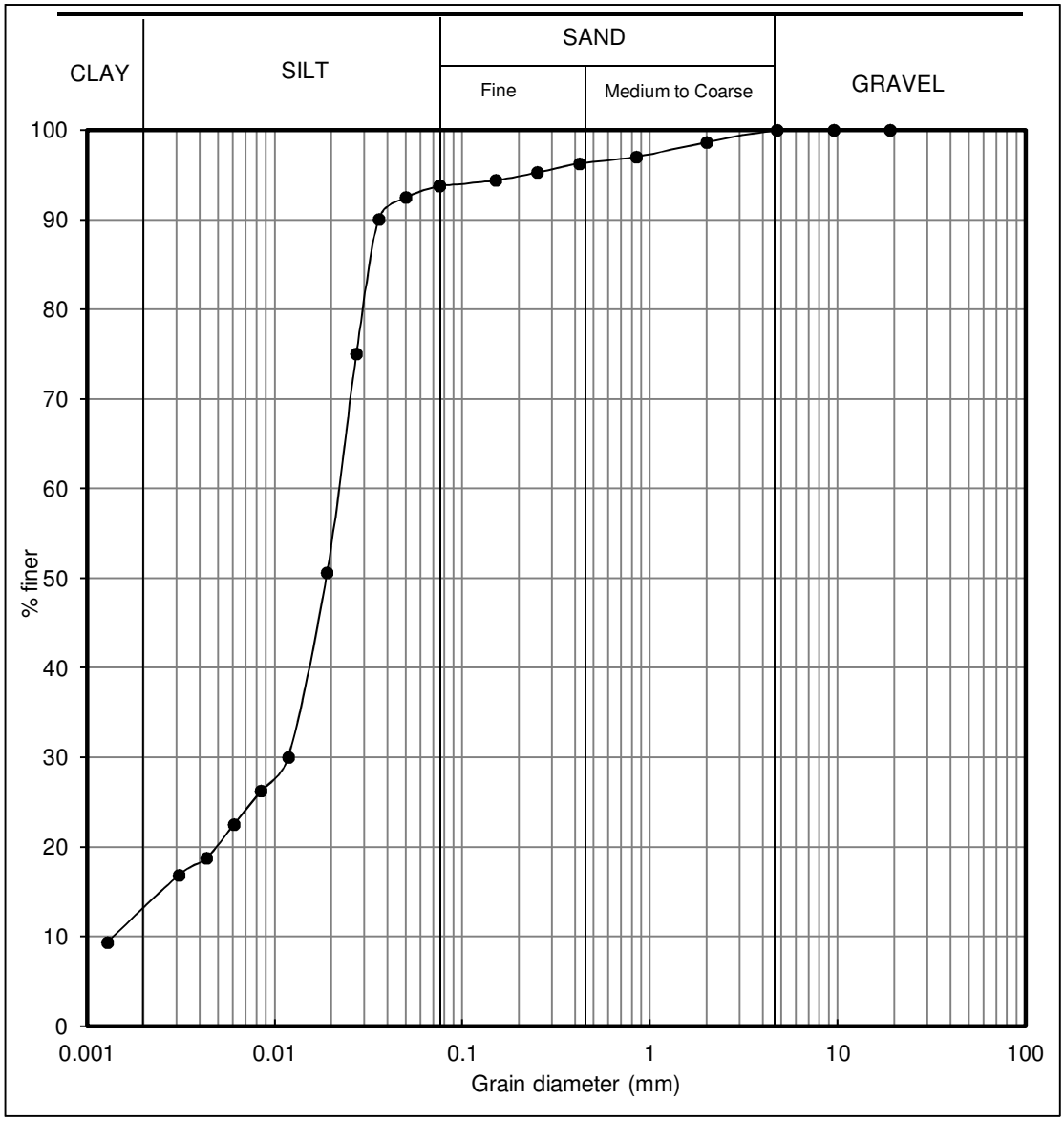
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.24	0.76	0.00

Visual soil description : Silty clay, light brownish grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 50.50-51.00m.		



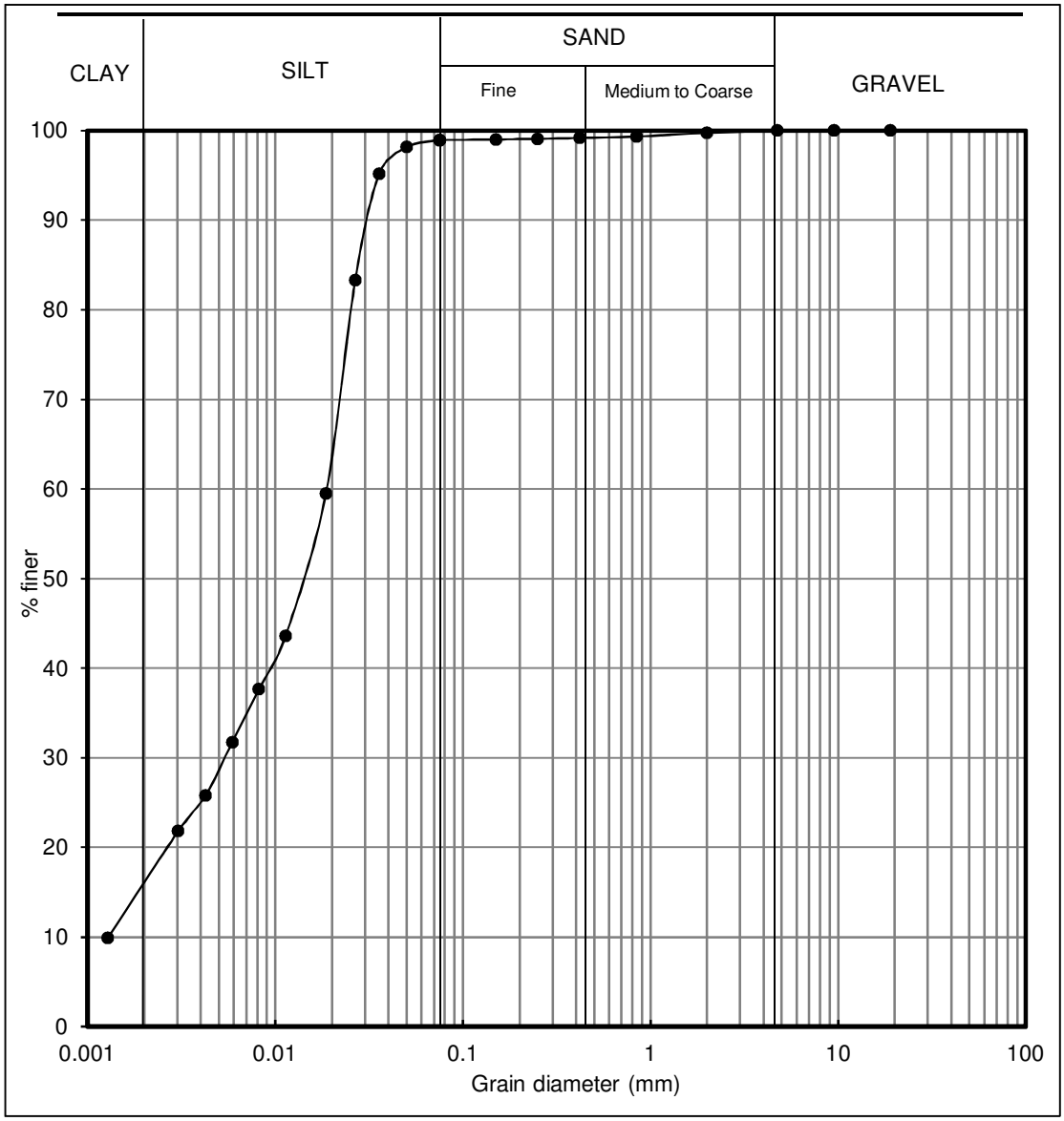
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	93.82	6.18	0.00

Visual soil description : Silty clay, with a trace of sand, brownish grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-6.	CHECKED BY	: Y.
DEPTH	: 58.50-59.00m.		



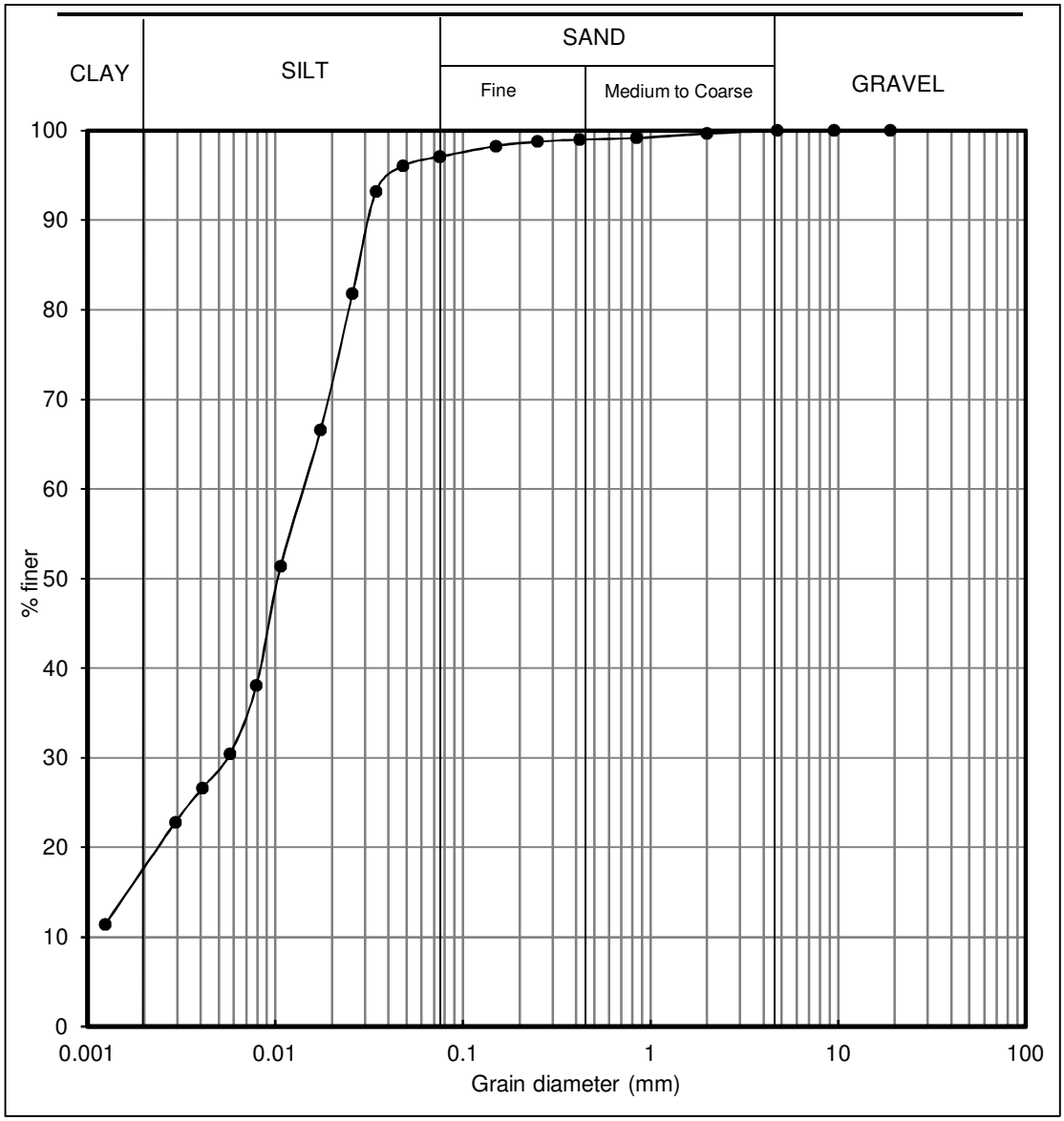
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.95	1.05	0.00

Visual soil description : Silty clay, with a trace of sand, brownish grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-7.	CHECKED BY	: Y.
DEPTH	: 2.50-3.00m.		



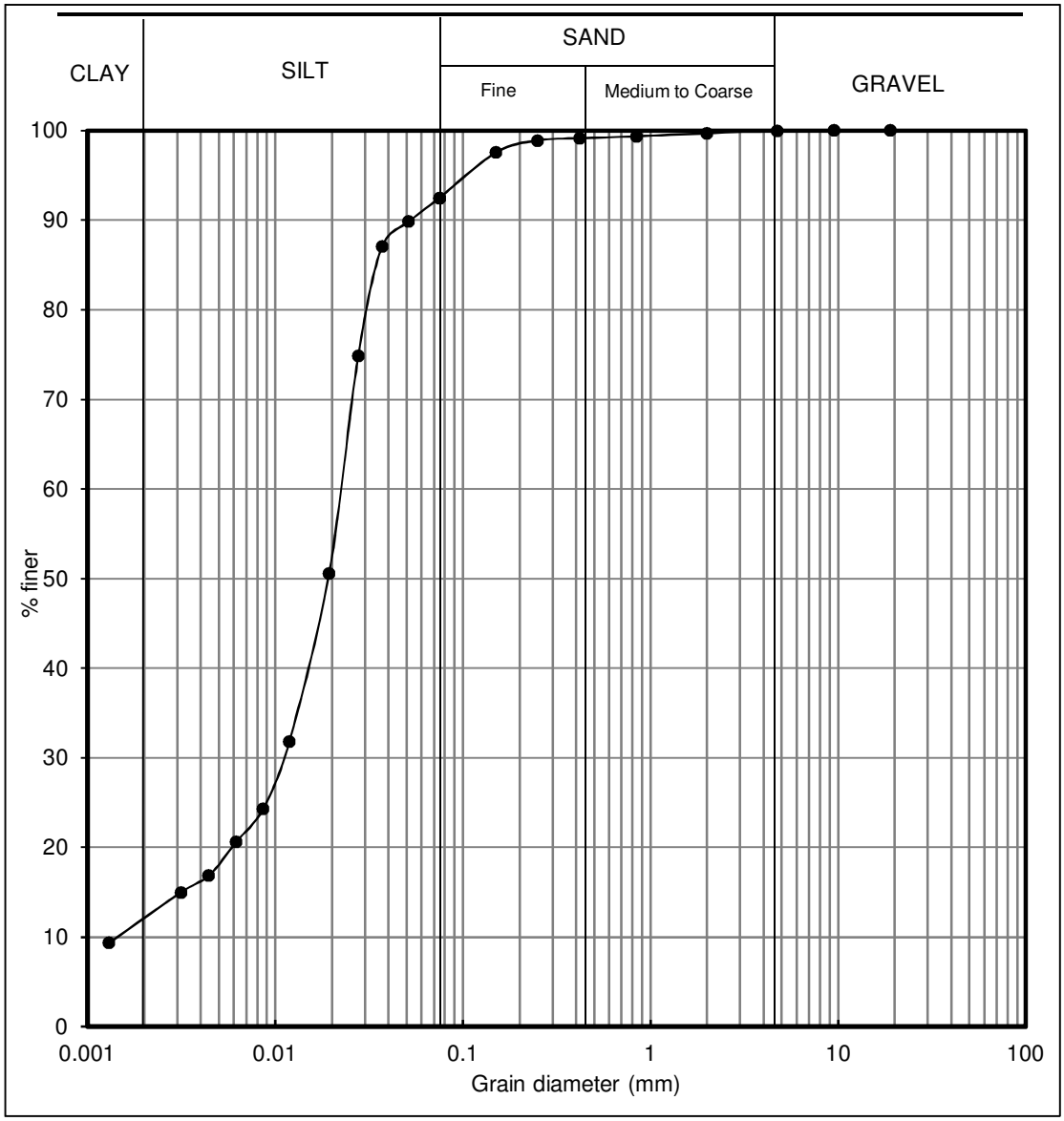
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	97.09	2.91	0.00

Visual soil description : Silty clay, with a trace of sand, light brownish grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-7.	CHECKED BY	: Y.
DEPTH	: 6.50-7.00m.		



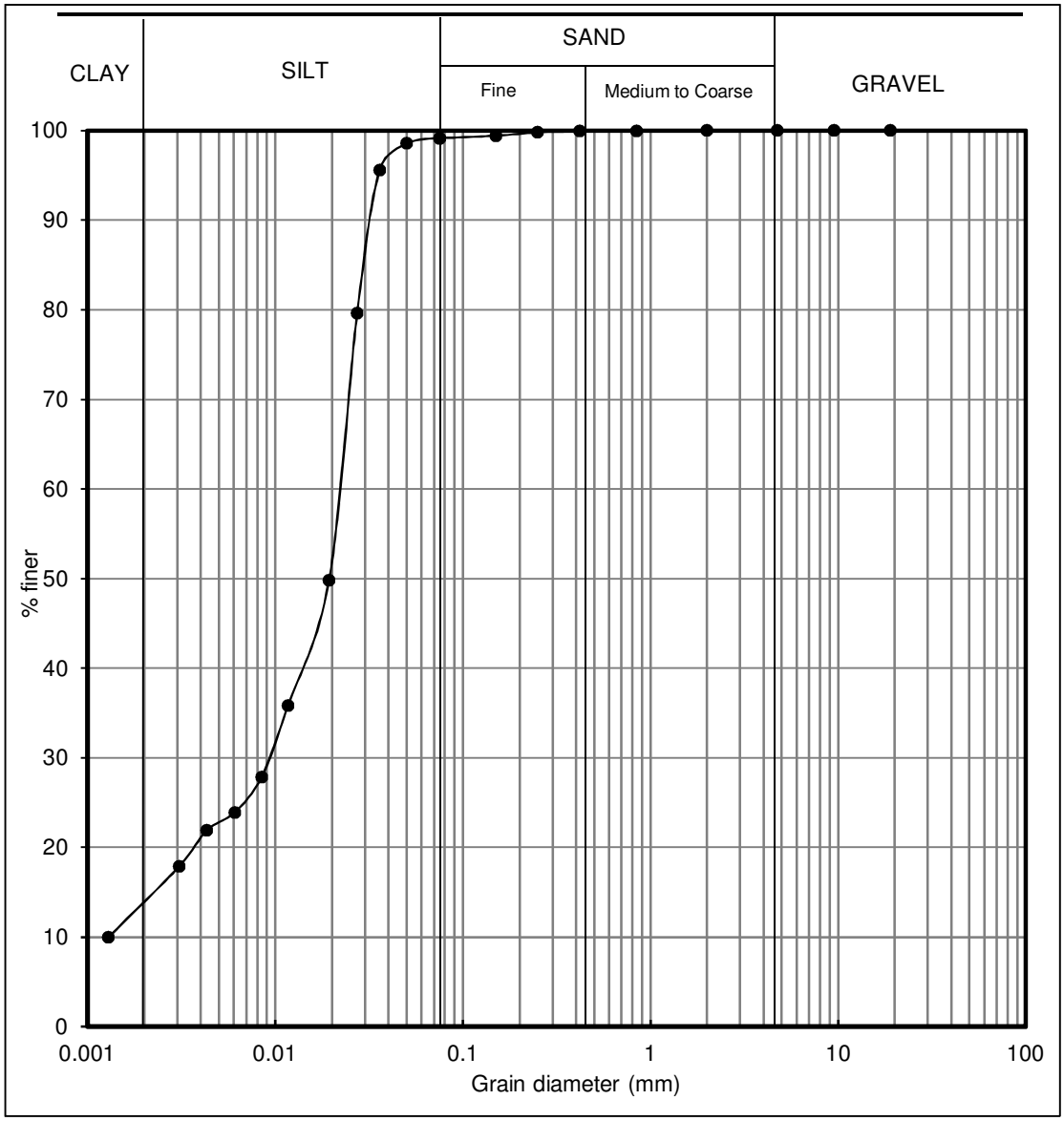
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	92.49	7.48	0.03

Visual soil description : Silty clay, with a trace of sand, dark grey.
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-7.	CHECKED BY	: Y.
DEPTH	: 14.50-15.00m.		



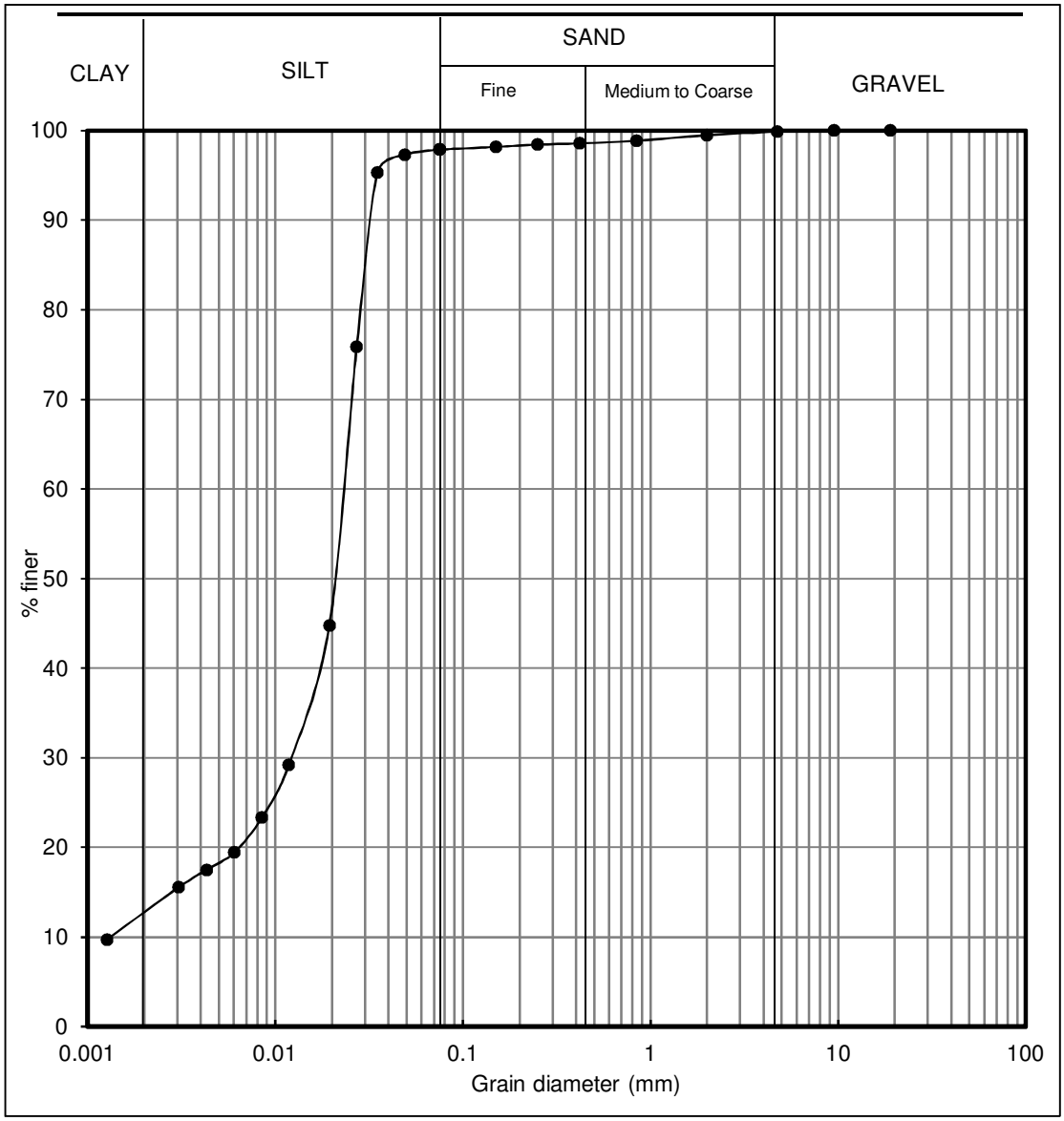
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.18	0.82	0.00

Visual soil description : Silty clay, brown
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-7.	CHECKED BY	: Y.
DEPTH	: 38.50-39.00m.		



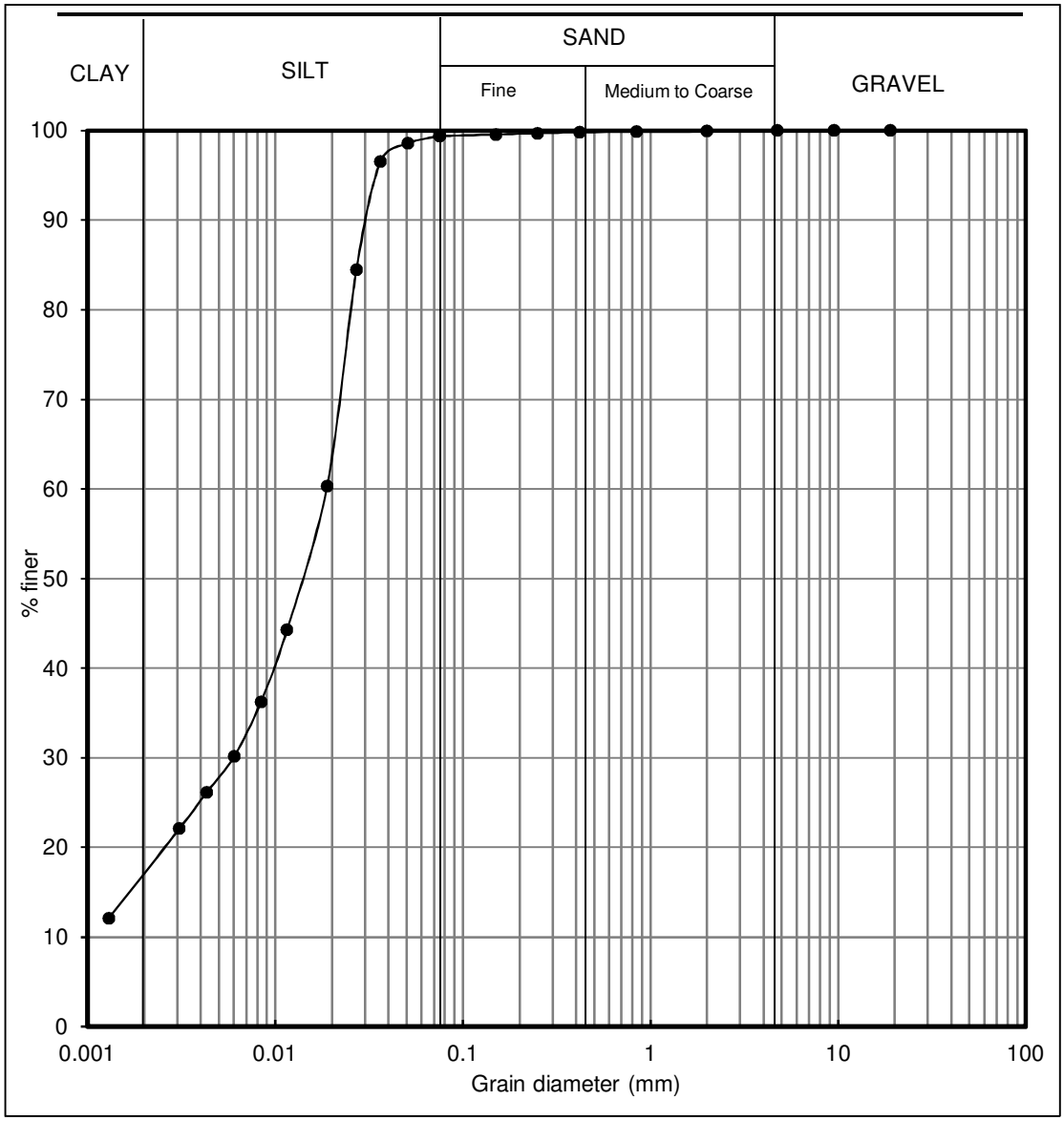
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	97.89	2.01	0.10

Visual soil description : Silty clay, with a trace of sand, light brownish grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-7.	CHECKED BY	: Y.
DEPTH	: 46.50-47.00m.		



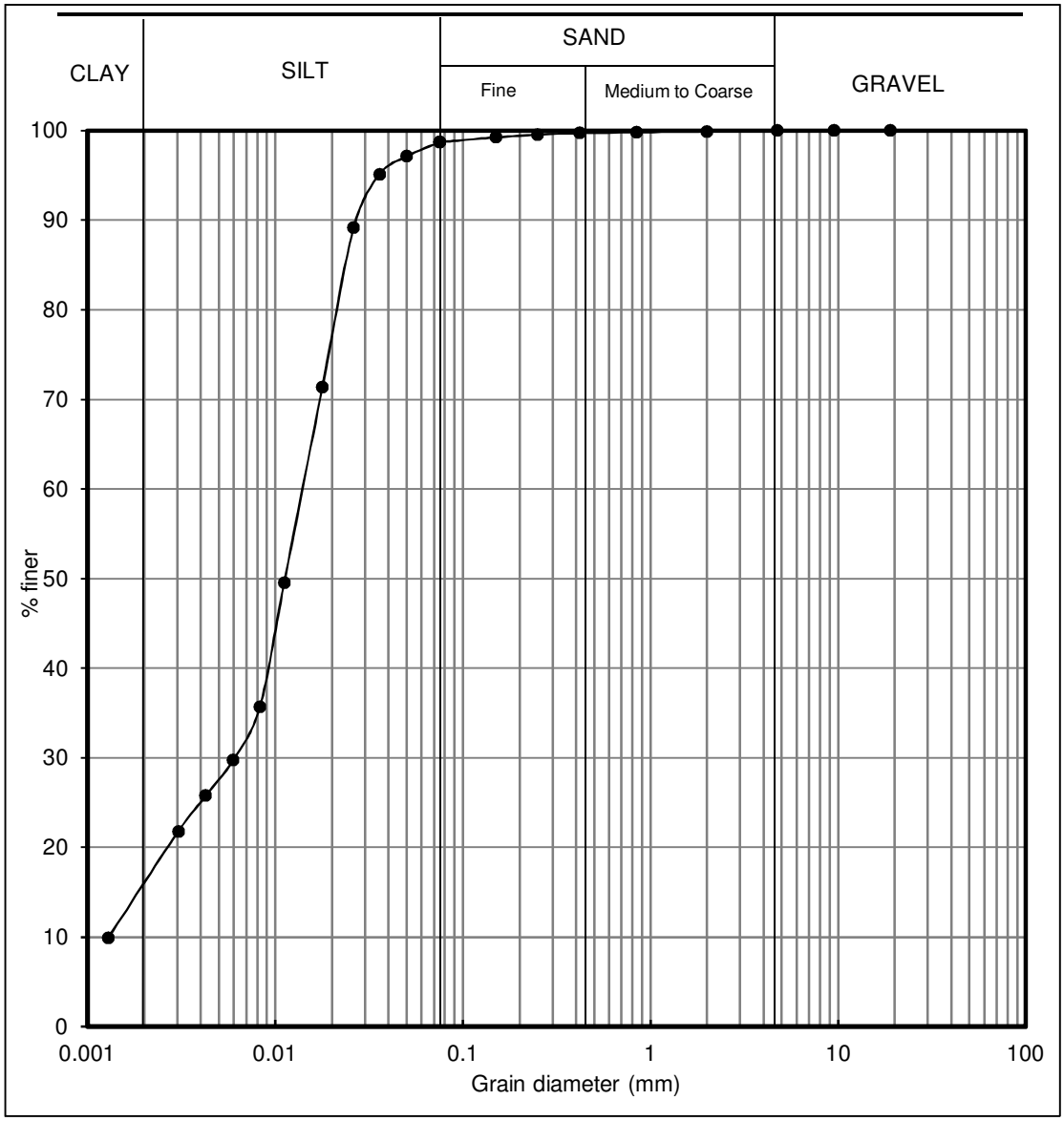
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.41	0.59	0.00

Visual soil description : Silty clay, with a trace of sand, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-7.	CHECKED BY	: Y.
DEPTH	: 58.00-58.50m.		



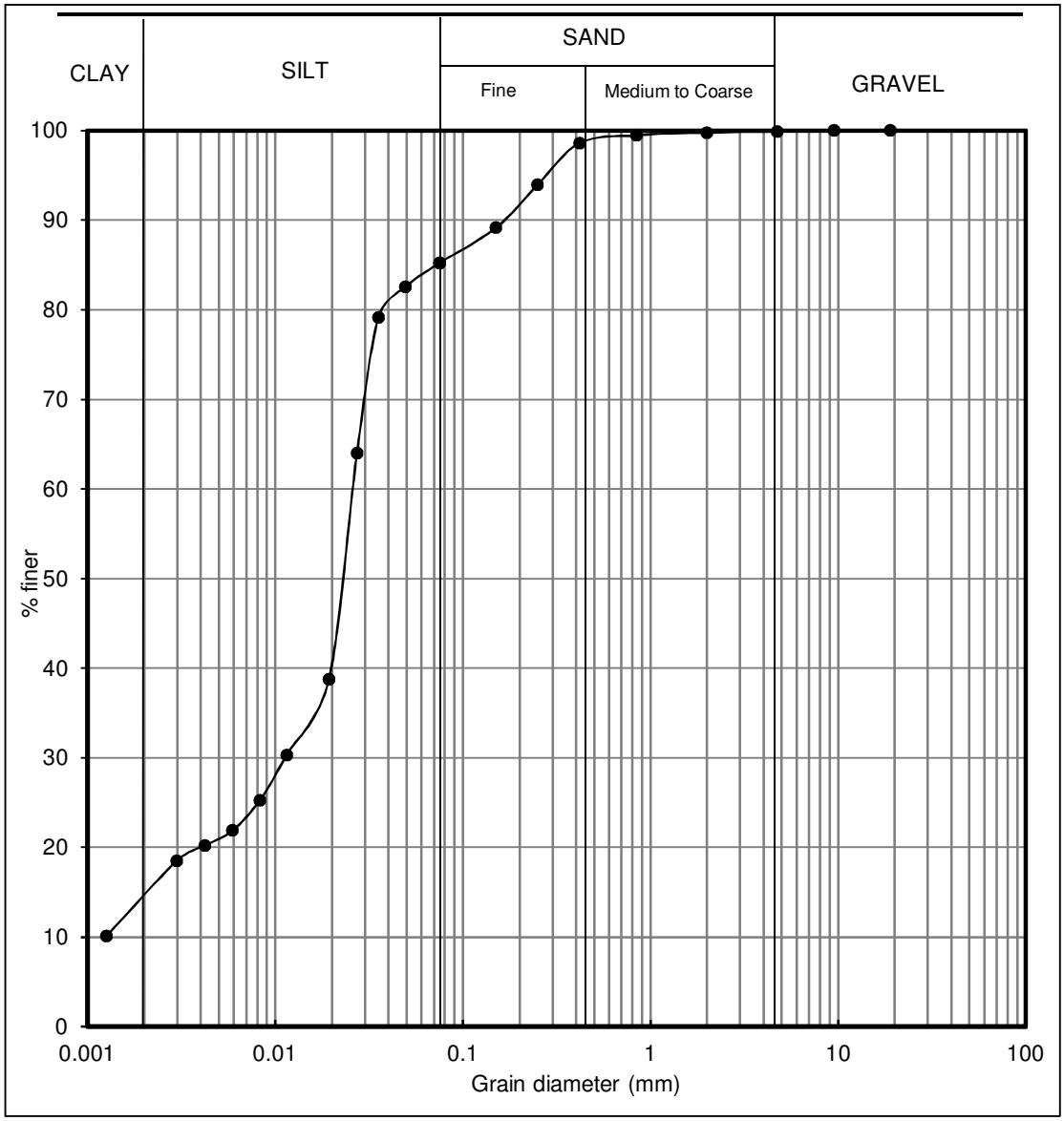
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.72	1.28	0.00

Visual soil description : Silty clay, with a trace of sand, grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-8.	CHECKED BY	: Y.
DEPTH	: 6.50-7.00m.		



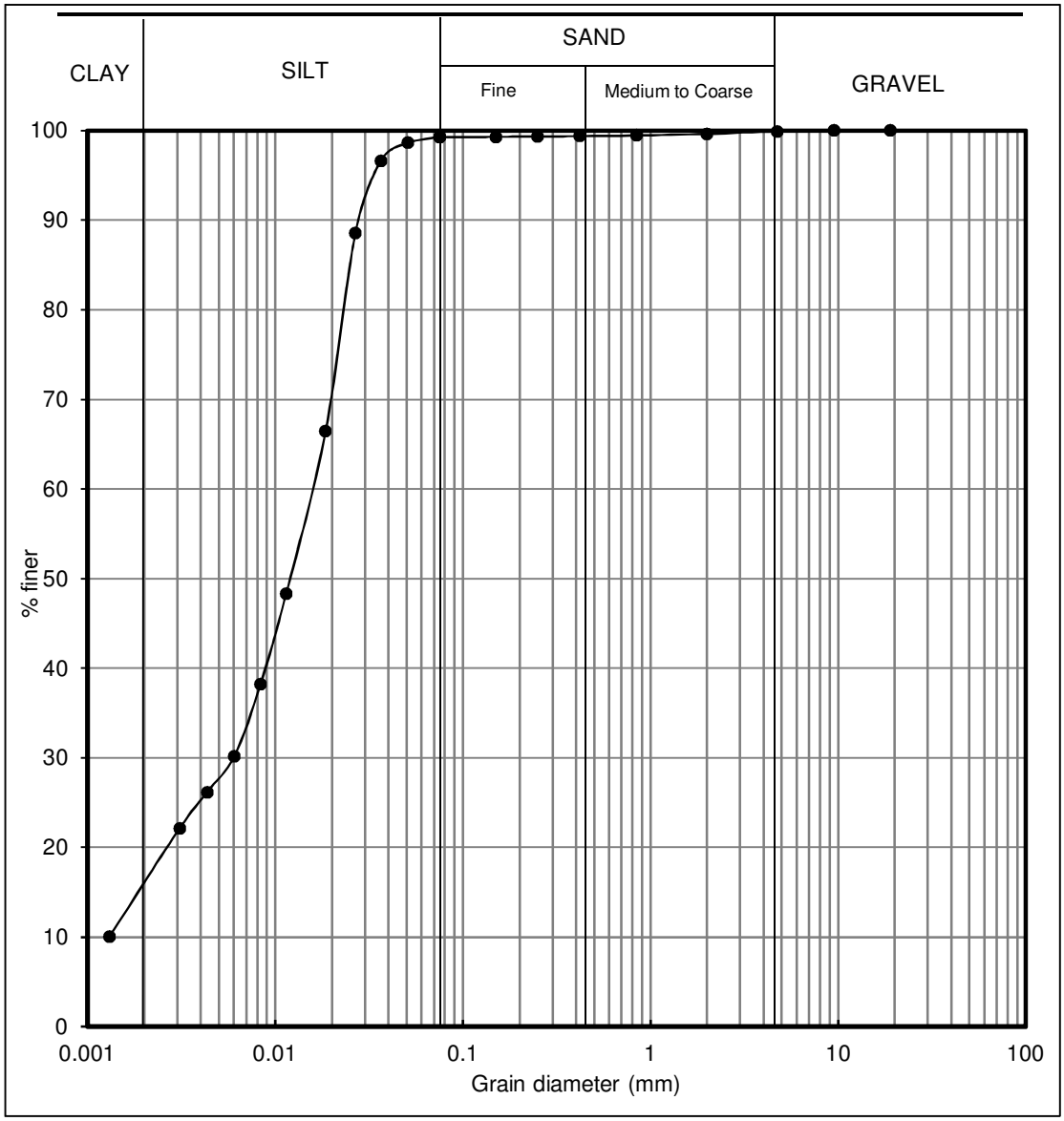
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	85.25	14.67	0.08

Visual soil description : Silty clay, with a little of sand, dark grey
Soil classification (System USCS) : CH/MH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-8.	CHECKED BY	: Y.
DEPTH	: 8.50-9.00m.		



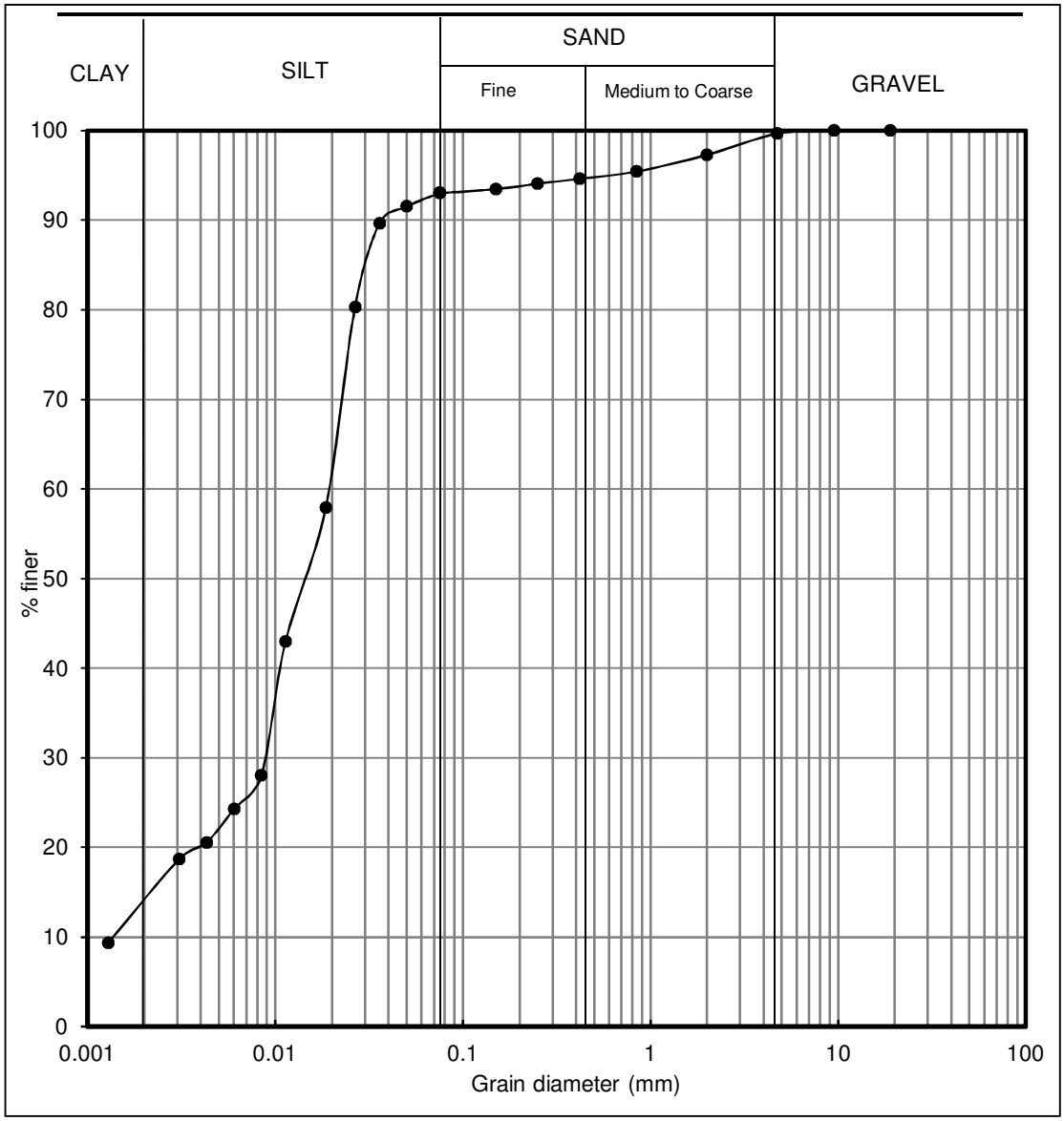
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.27	0.66	0.07

Visual soil description : Silty clay, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-8.	CHECKED BY	: Y.
DEPTH	: 16.50-17.00m.		



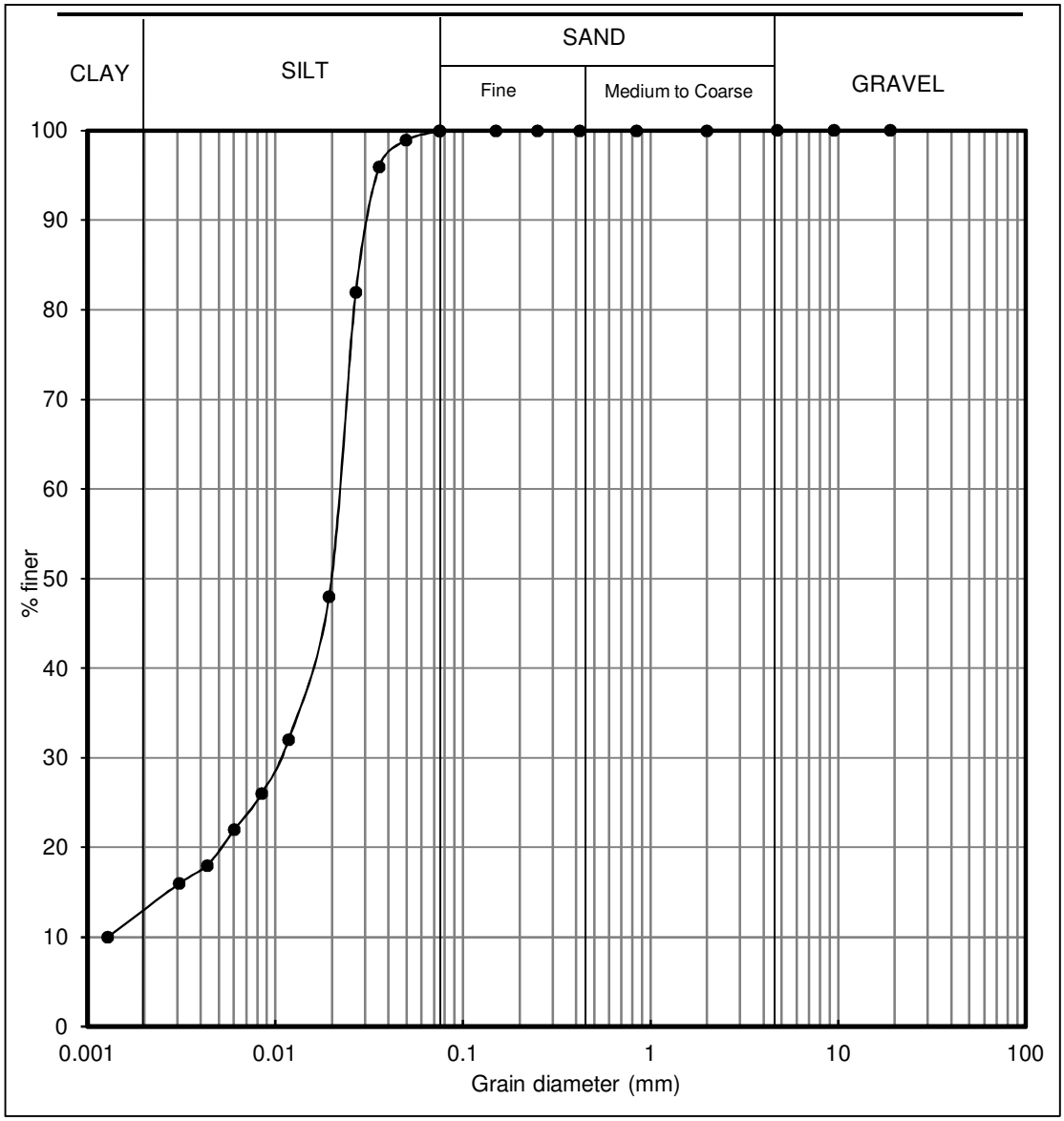
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	93.04	6.63	0.33

Visual soil description : Silty clay, with a trace of sand, brown
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-8.	CHECKED BY	: Y.
DEPTH	: 34.50-35.00m.		



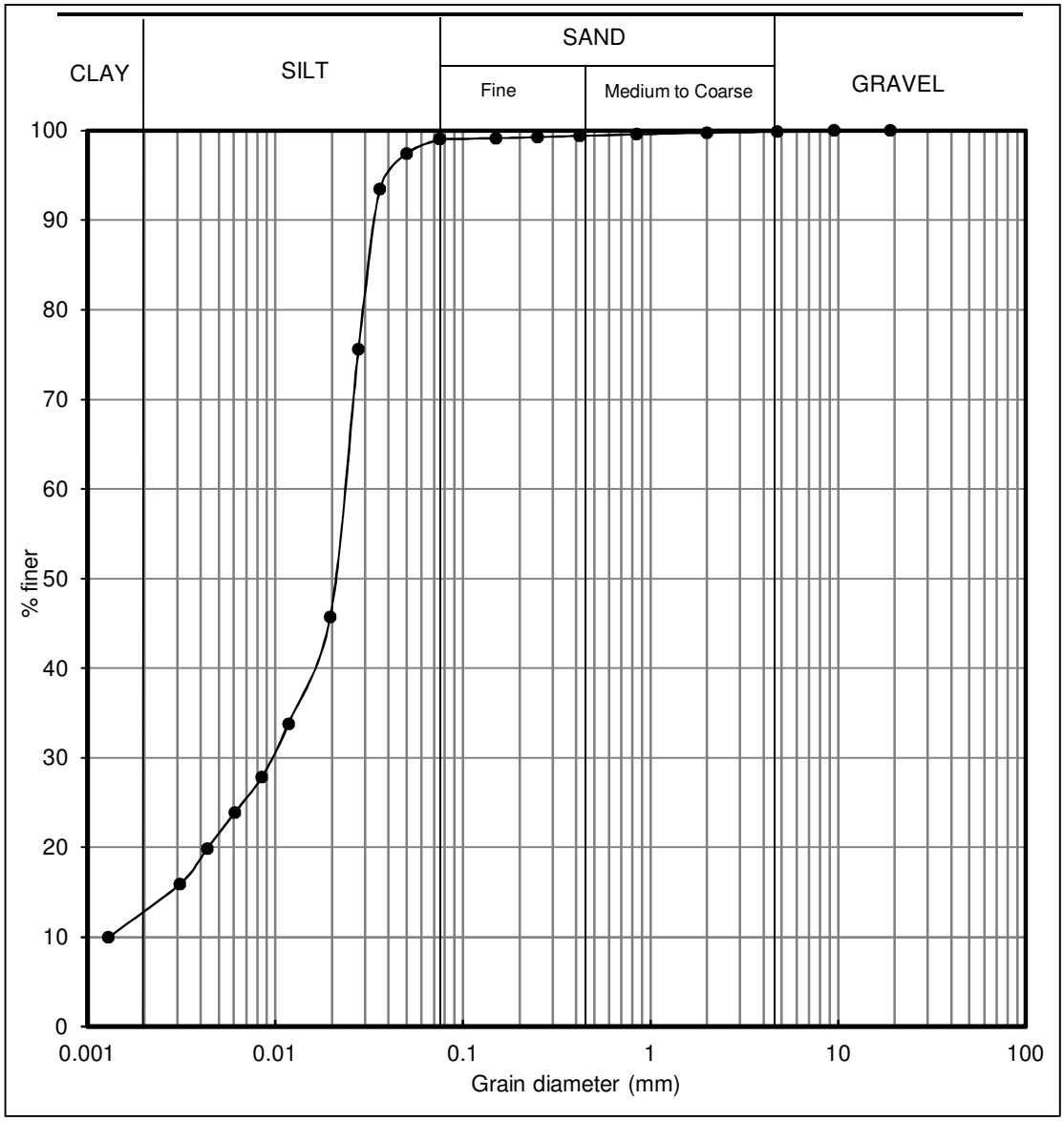
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.94	0.06	0.00

Visual soil description : Silty clay, grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-8.	CHECKED BY	: Y.
DEPTH	: 39.50-40.00m.		



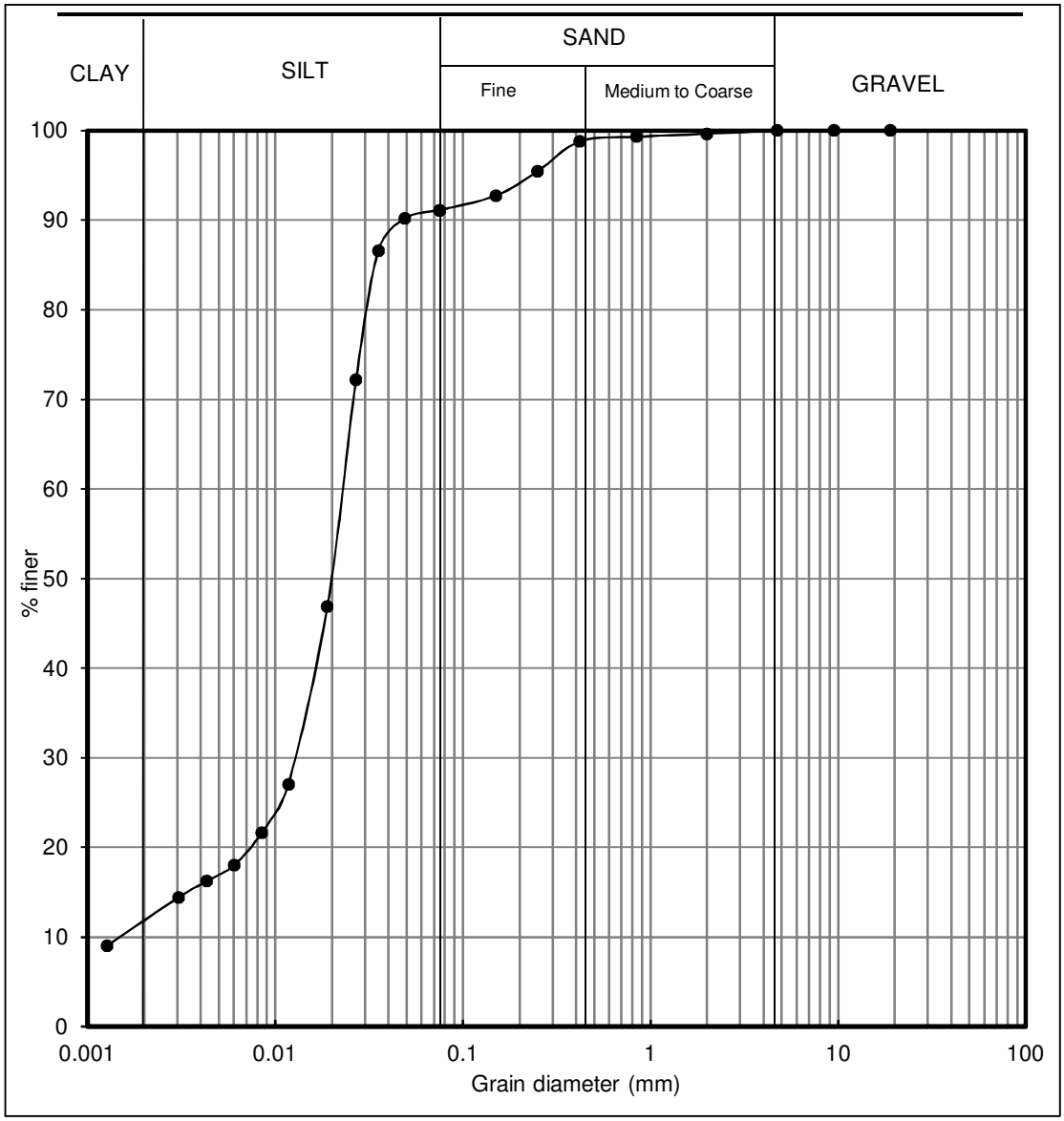
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.05	0.83	0.12

Visual soil description : Silty clay, light brownish grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-9.	CHECKED BY	: Y.
DEPTH	: 4.50-5.00m.		



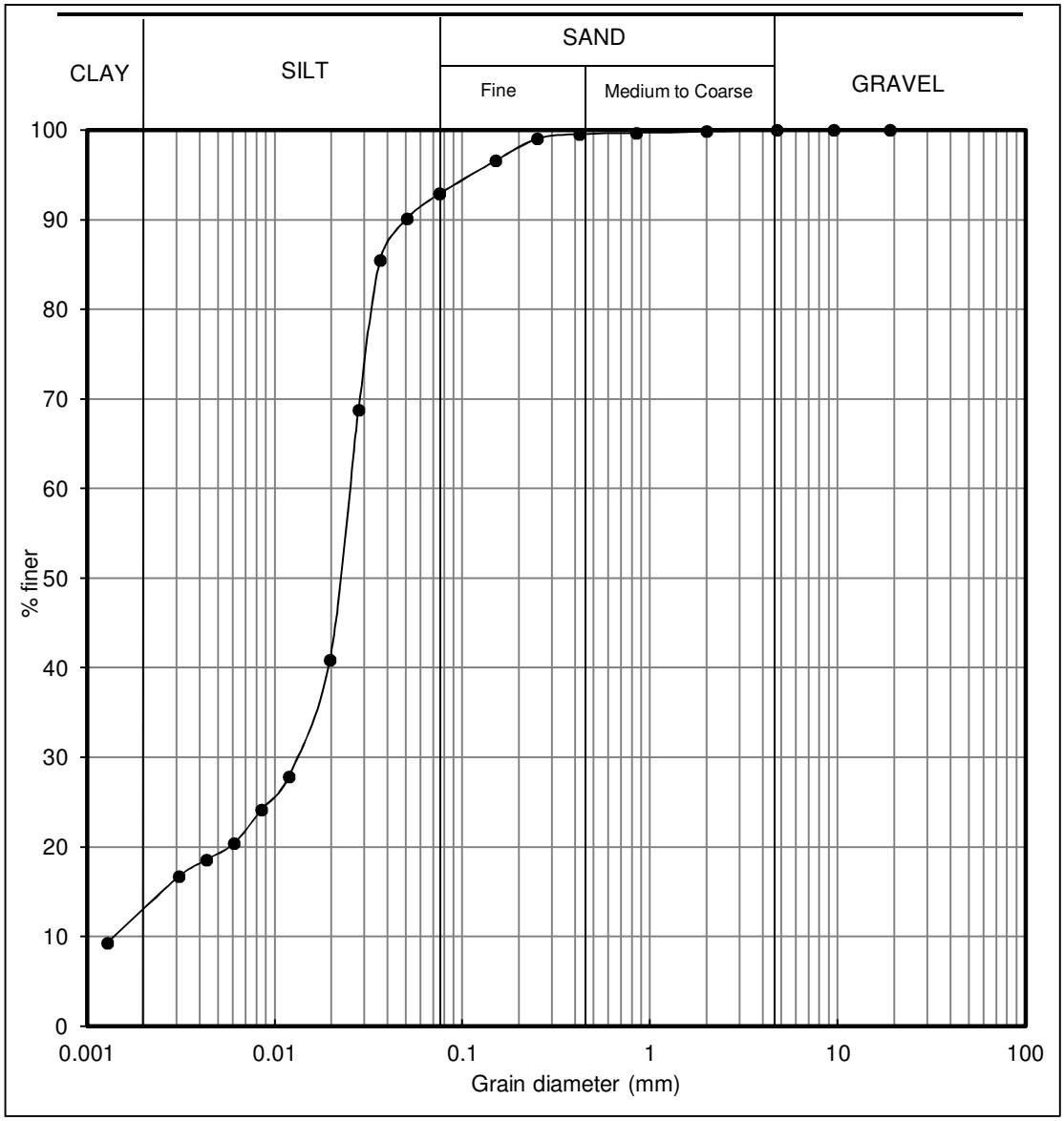
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	91.13	8.87	0.00

Visual soil description : Clayey silt, with a trace of sand, greyish brown
Soil classification (System USCS) : MH/ML

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-9.	CHECKED BY	: Y.
DEPTH	: 6.50-7.00m.		



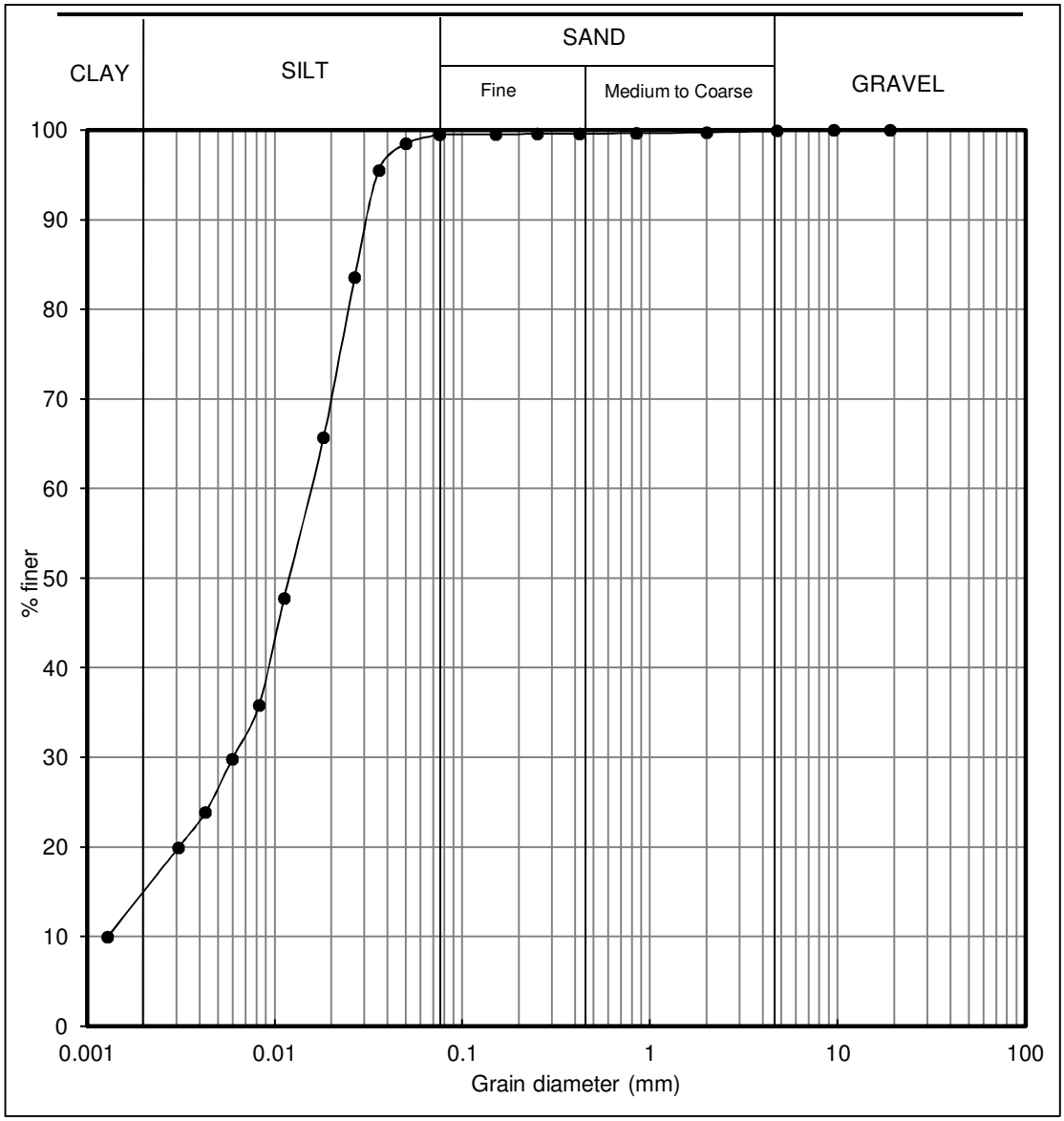
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	92.94	7.06	0.00

Visual soil description : Silty clay, with a trace of sand, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-9.	CHECKED BY	: Y.
DEPTH	: 10.50-11.00m.		



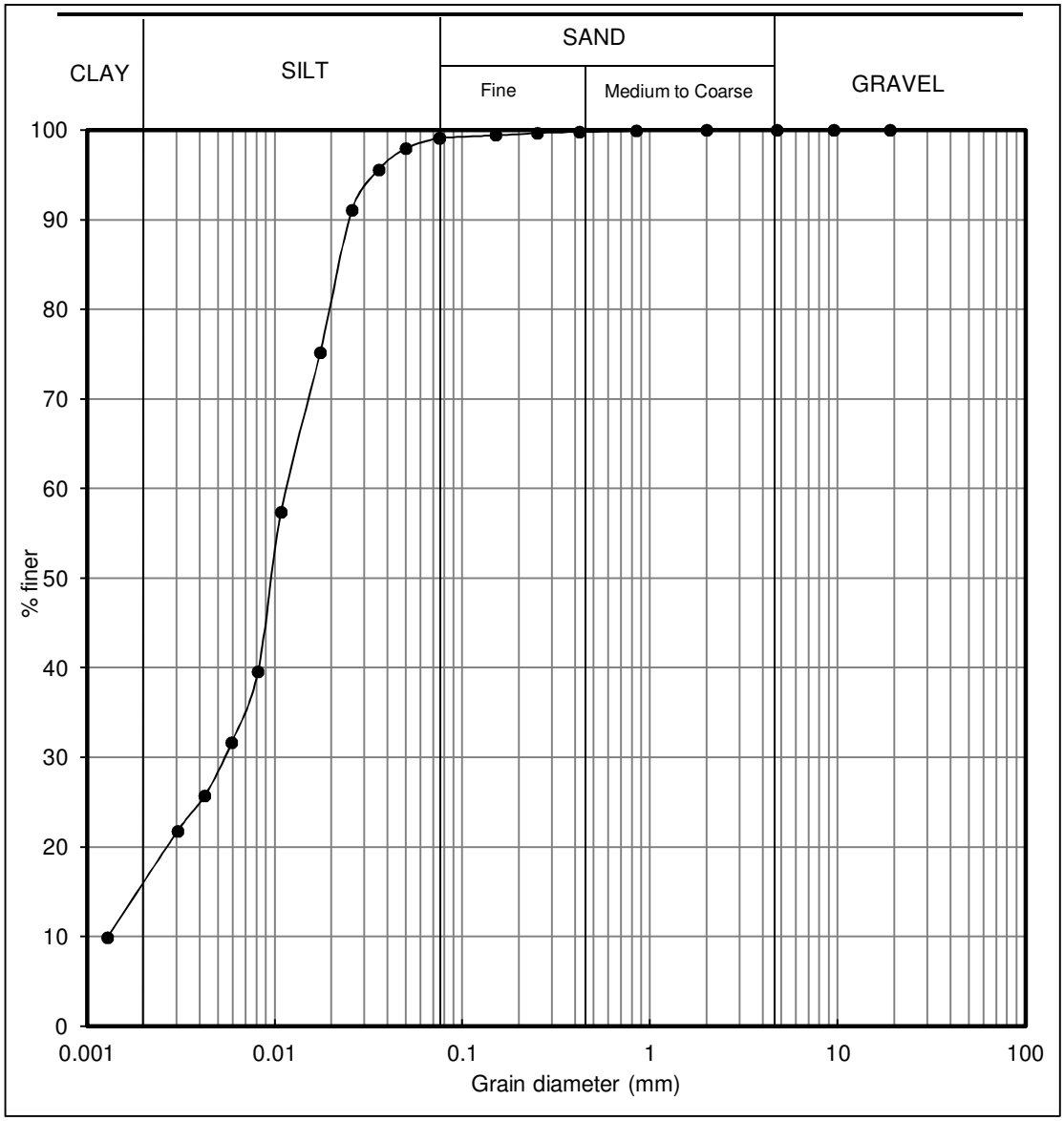
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.53	0.40	0.07

Visual soil description : Silty clay, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-9.	CHECKED BY	: Y.
DEPTH	: 14.50-15.00m.		



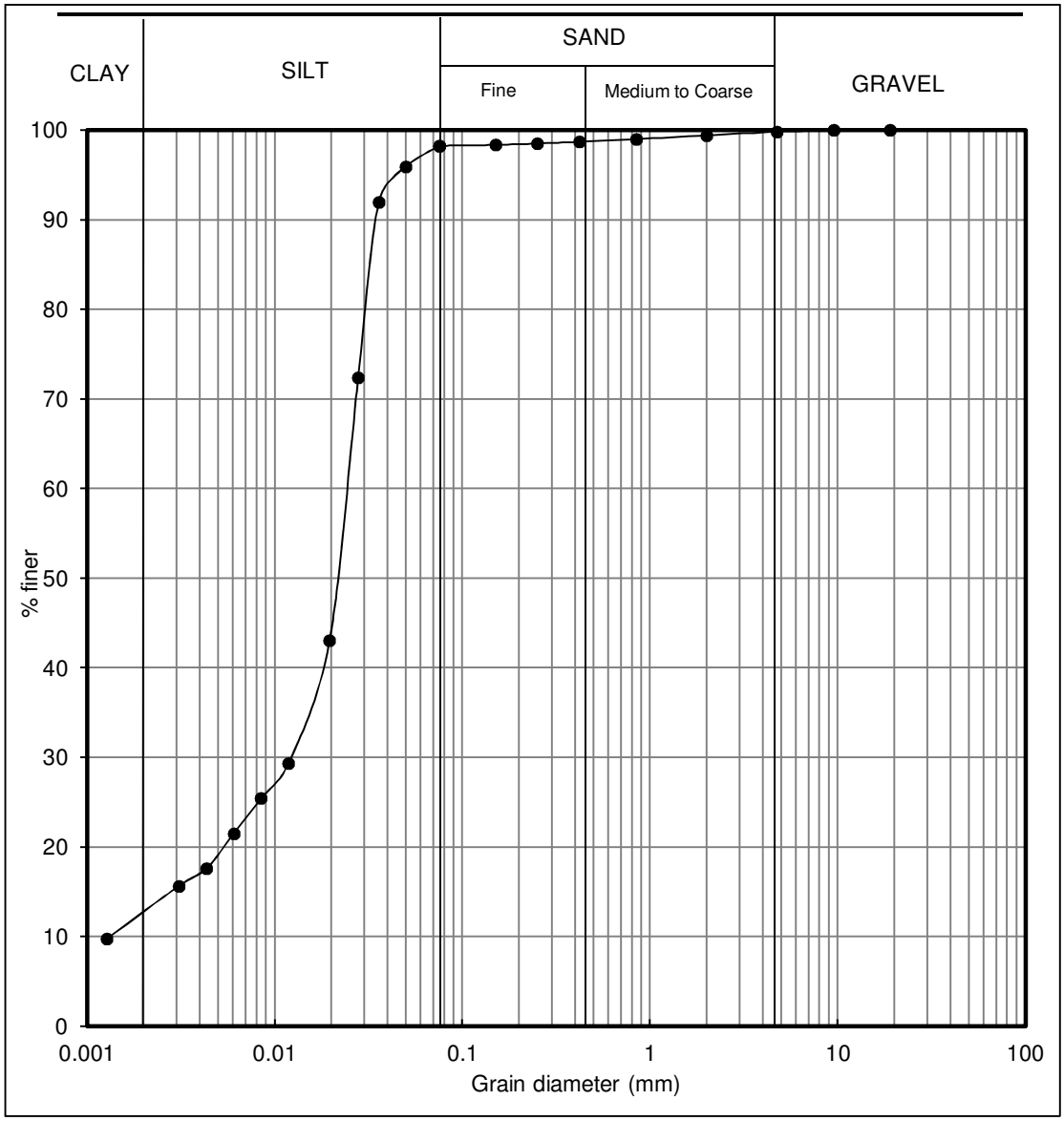
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.18	0.82	0.00

Visual soil description : Silty clay, greyish brown
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-9.	CHECKED BY	: Y.
DEPTH	: 34.50-35.00m.		



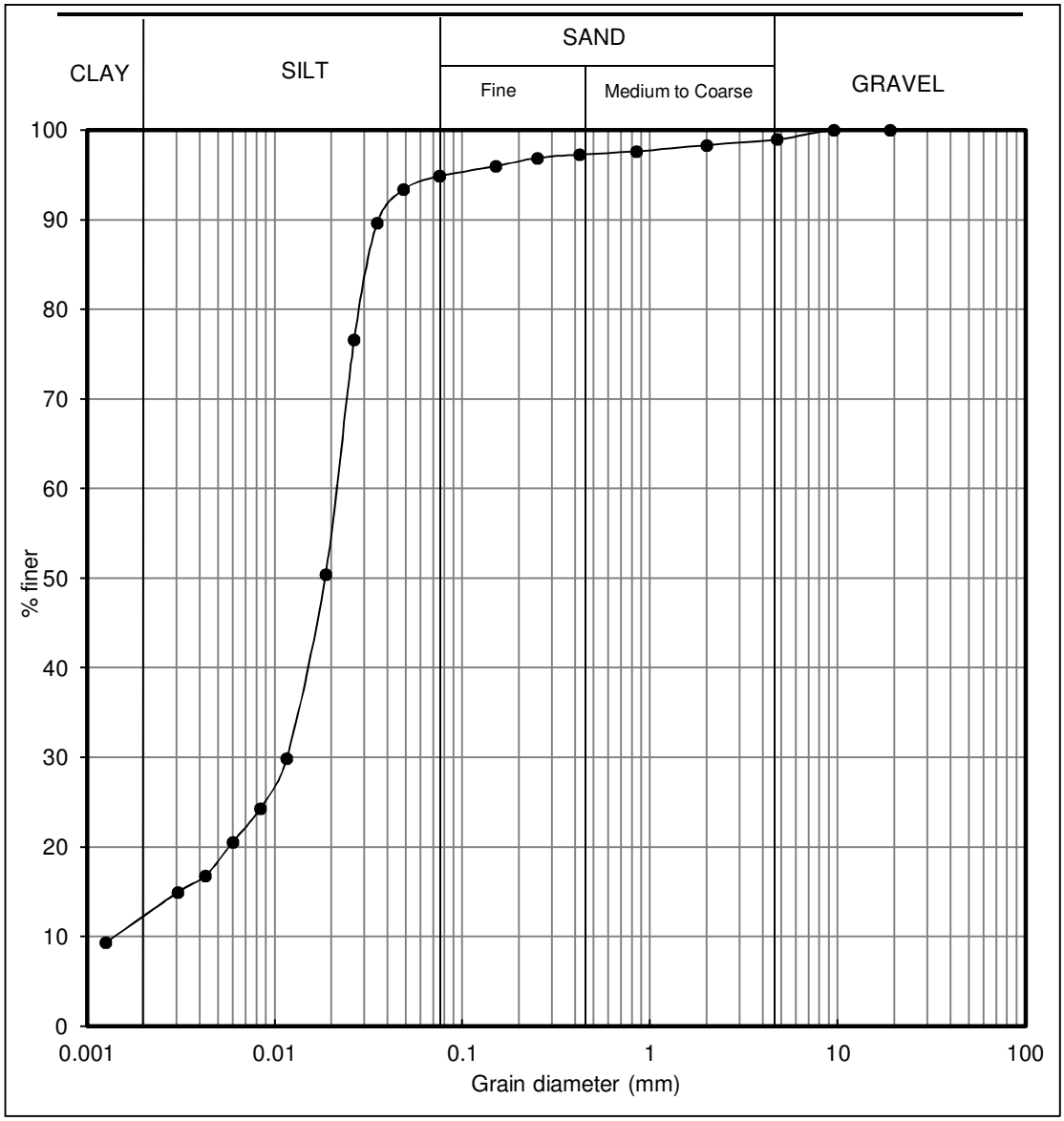
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.28	1.57	0.15

Visual soil description : Silty clay, with a trace of sand, grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-9.	CHECKED BY	: Y.
DEPTH	: 38.00-38.50m.		



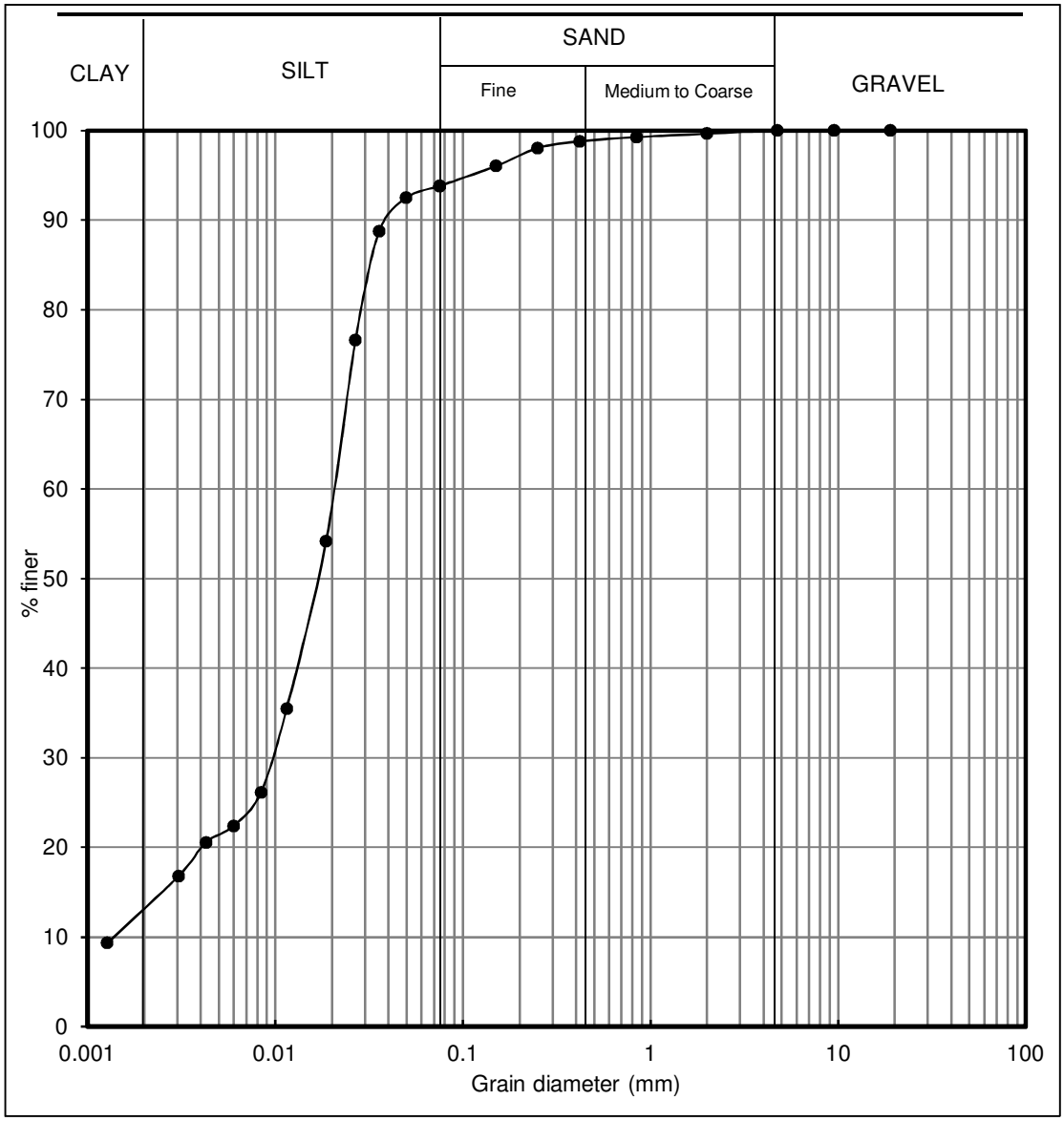
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	94.94	4.06	1.01

Visual soil description : Silty clay, with trace of sand and trace of gravel
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-10.	CHECKED BY	: Y.
DEPTH	: 2.50-3.00m.		



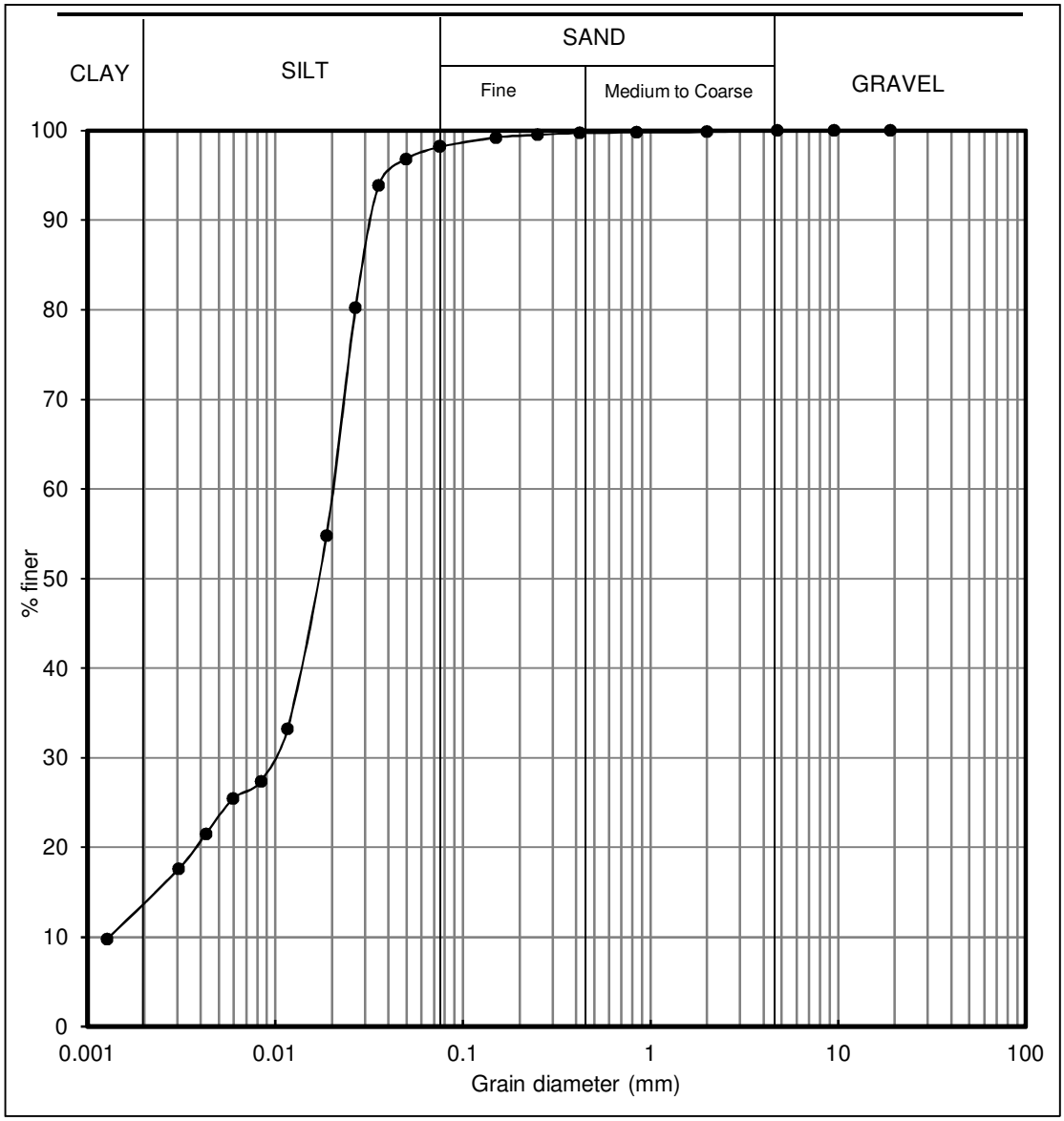
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	93.81	6.19	0.00

Visual soil description : Silty clay, with a trace of sand, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-10.	CHECKED BY	: Y.
DEPTH	: 6.50-7.00m.		



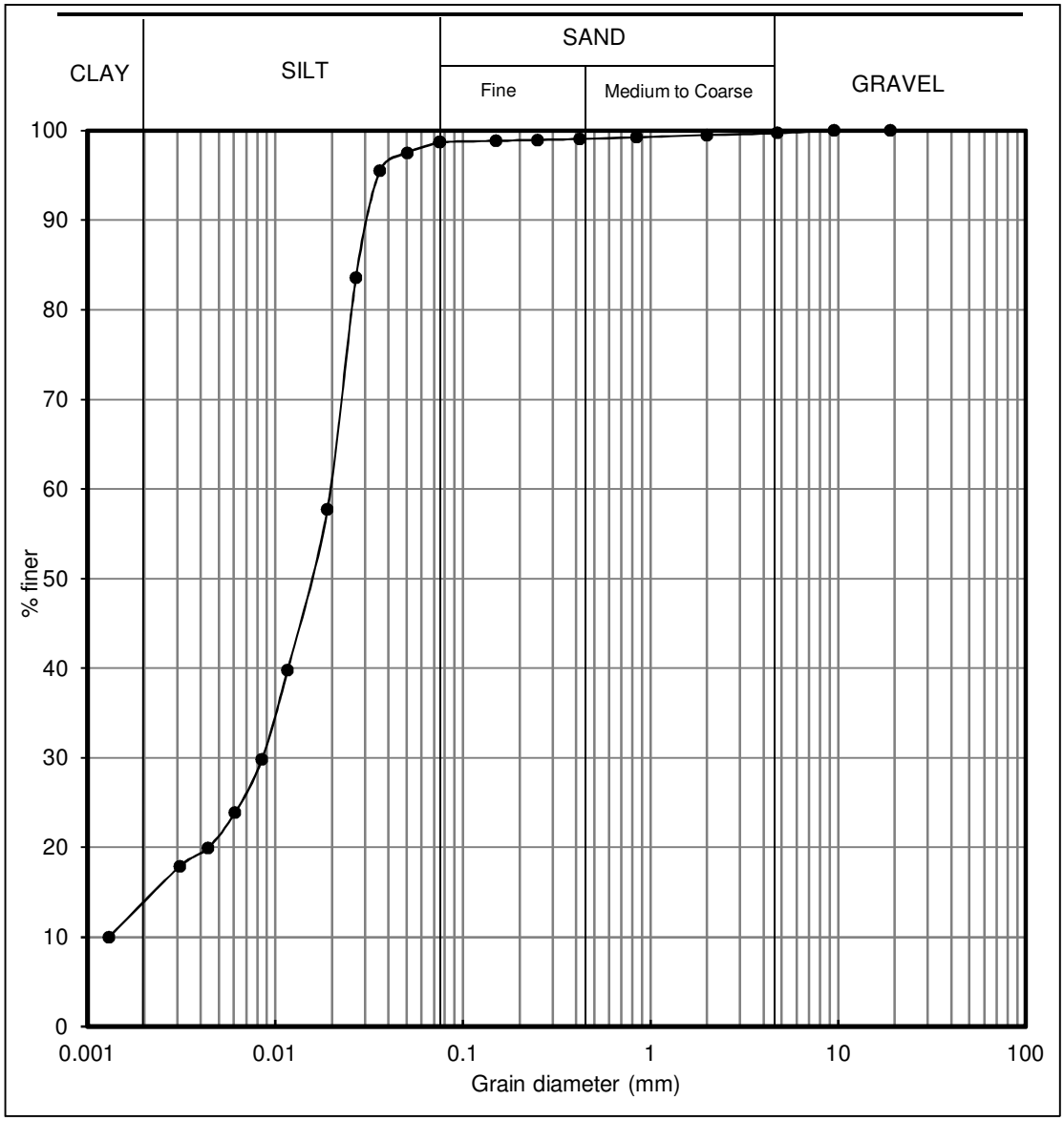
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.23	1.77	0.00

Visual soil description : Silty clay, with a trace of sand, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-10.	CHECKED BY	: Y.
DEPTH	: 8.50-9.00m.		



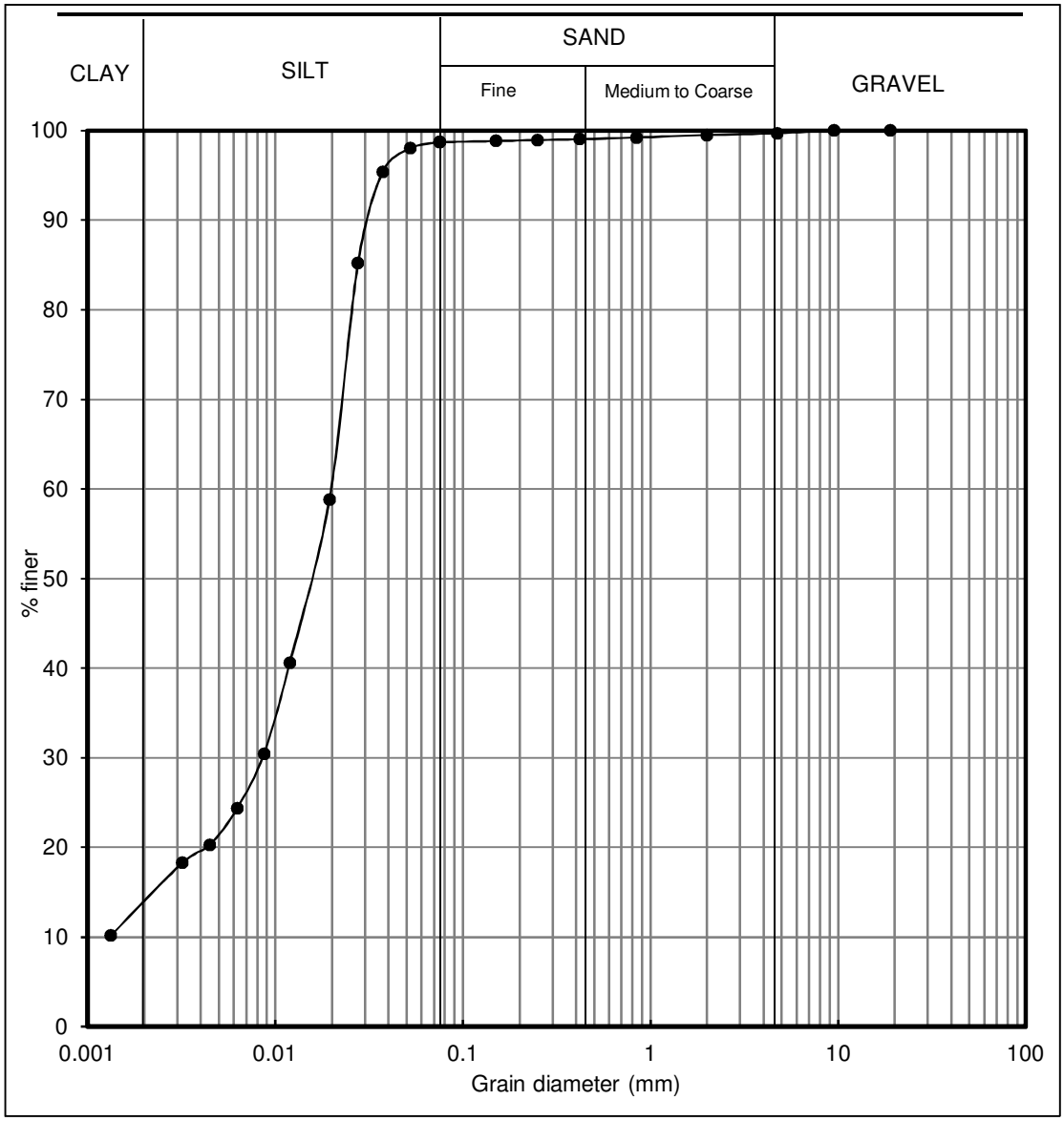
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.74	0.99	0.27

Visual soil description : Silty clay, with a trace of sand, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-10.	CHECKED BY	: Y.
DEPTH	: 20.50-21.00m.		



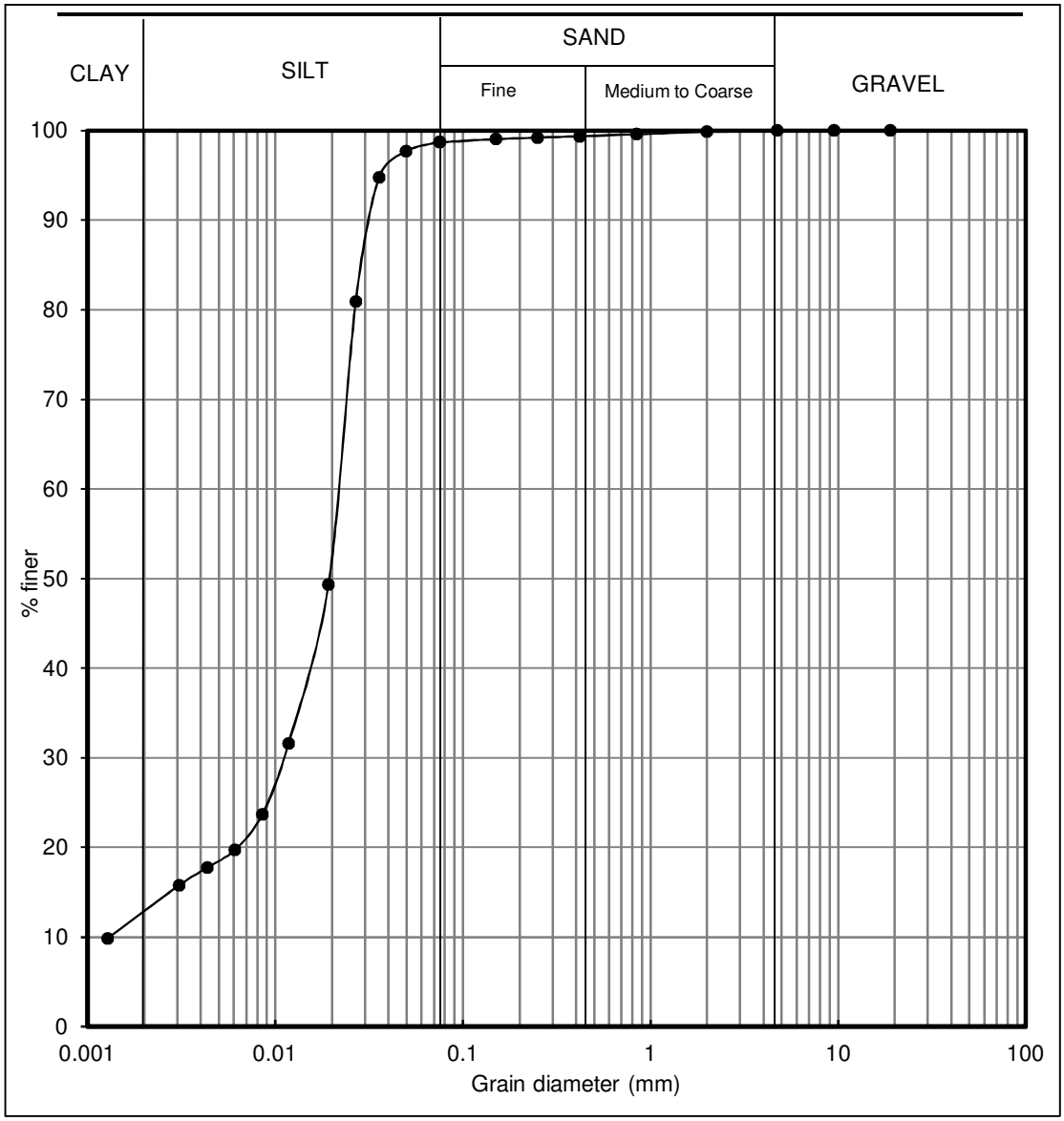
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.72	1.00	0.28

Visual soil description : Silty clay, with a trace of sand, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-10.	CHECKED BY	: Y.
DEPTH	: 34.50-35.00m.		



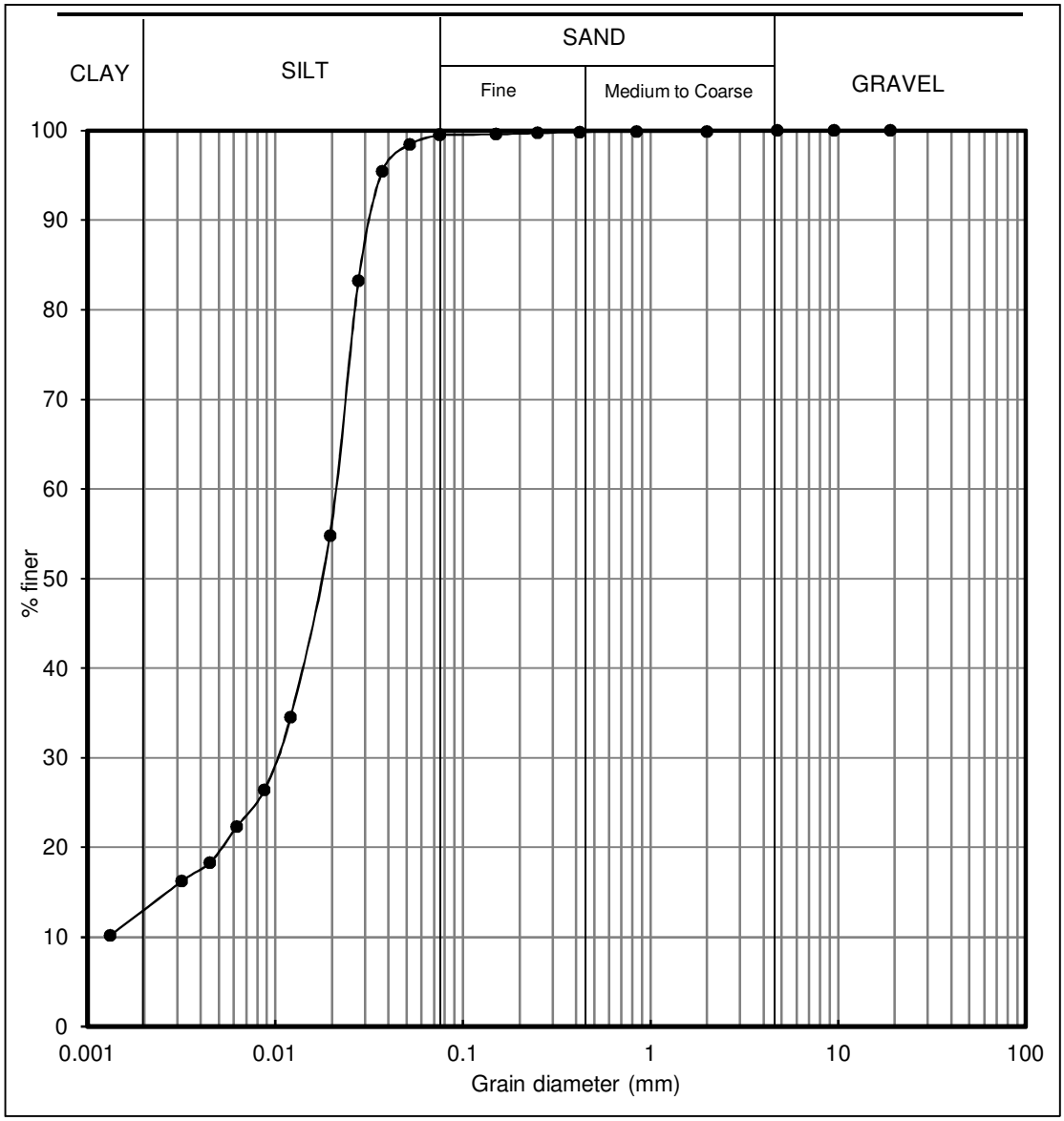
Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	98.71	1.29	0.00

Visual soil description : Silty clay, with a trace of sand, dark grey
Soil classification (System USCS) : CH.

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

GRAIN SIZE ANALYSIS

PROJECT	: Maritim Tower.	DATE	: January 2019.
LOCATION	: Jakarta	TESTED BY	: Dh.
BORING No.	: BH-10.	CHECKED BY	: Y.
DEPTH	: 39.00-39.50m.		



Soil Type	Silt & Clay	Sand	Gravel
Percantage (%)	99.53	0.47	0.00

Visual soil description : Silty clay, light brownish grey
Soil classification (System USCS) : CH.

Lampiran 5

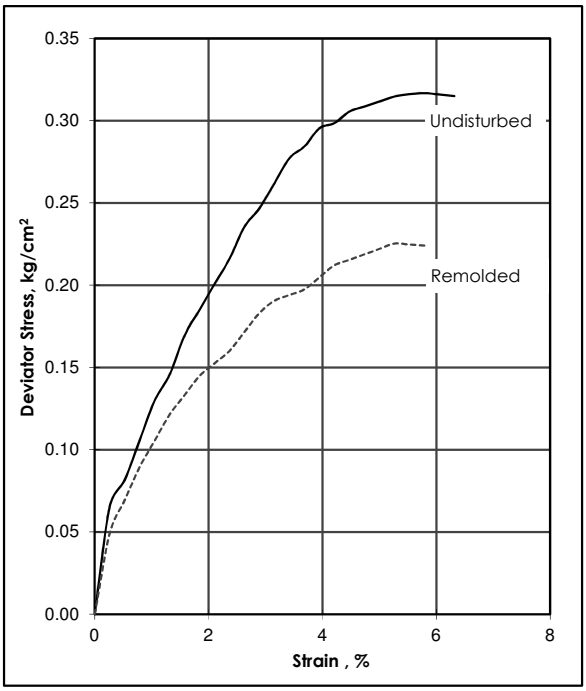
Uji Kuat Geser Tanah

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

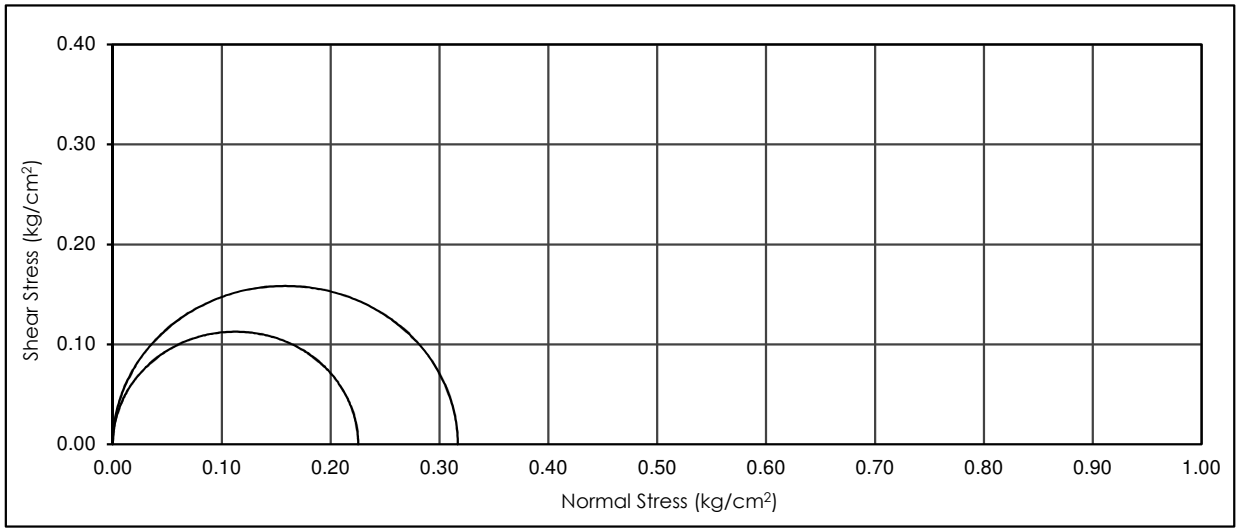
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, with a trace of sand, dark grey.	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		66	64
Specific Gravity, Gs		2.7	2.7
Density, t/m^3		1.51	1.51
Dry density, t/m^3		0.91	0.92
Void Ratio		1.96	1.94
Saturation, %		90.73	89.20
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.32	0.23
Strain at failure, %		5.79	5.26
Shear Strength parameters	c [kg/cm^2]	0.16	0.11
	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey.		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.44	1.51	1.55
	Moisture content, %	66.00	66.00	66.00
	Dry density, t/m^3	0.87	0.91	0.94
	Void Ratio	2.11	1.96	1.88
	Saturation, %	84.64	90.83	94.62
Final	Density, t/m^3	1.57	1.72	1.77
	Moisture content, %	79.78	66.05	61.27
	Dry density, t/m^3	0.87	1.03	1.10
	Void Ratio	2.09	1.61	1.45
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0322	0.0322	0.0322
Initial σ_3, kg/cm^2		0.15	0.30	0.60
Back pressure, kg/cm^2		1.90	1.40	1.40
Cell pressure, kg/cm^2		2.05	1.70	2.00
Strain at failure, %		6.51	7.39	7.71
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.32	0.44	0.62
u_f, kg/cm^2		0.05	0.10	0.25
$\sigma_3'_f$, kg/cm^2		0.10	0.20	0.35
$\sigma_1'_f$, kg/cm^2		0.42	0.64	0.97
Shear Strength parameters	c , kg/cm^2	0.10		
	c' , kg/cm^2	0.07		
	ϕ	13		
	ϕ'	22		

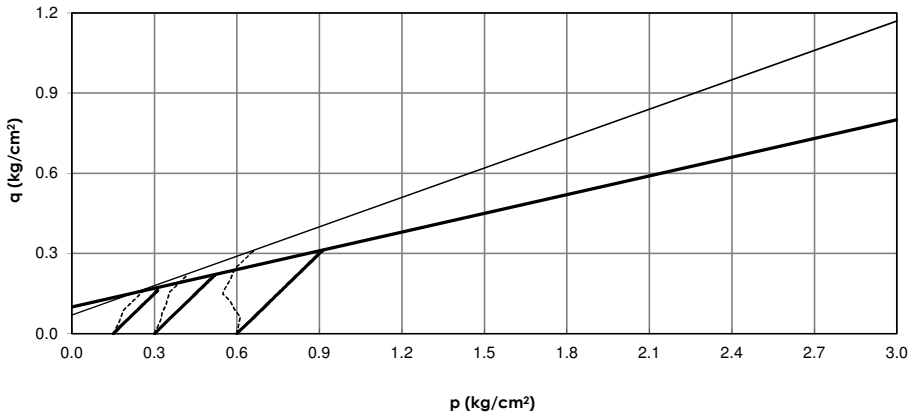
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

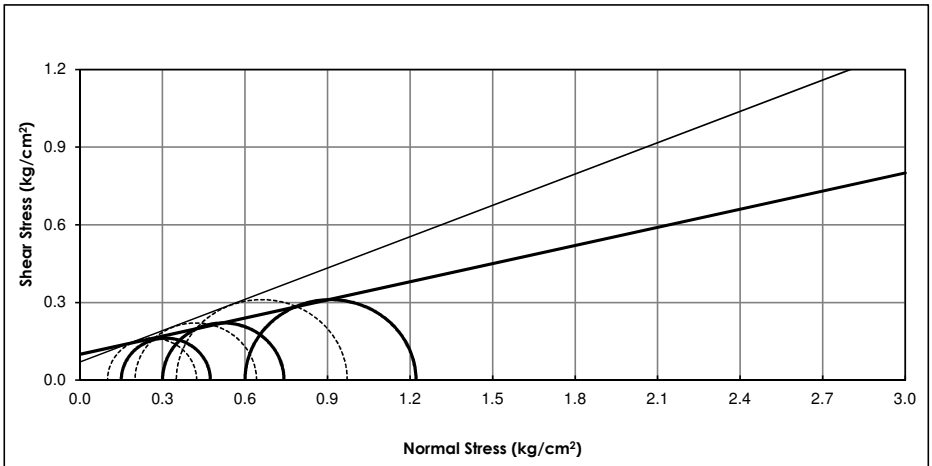
Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.10	0.07
α (°)	13	20

Mohr Circle



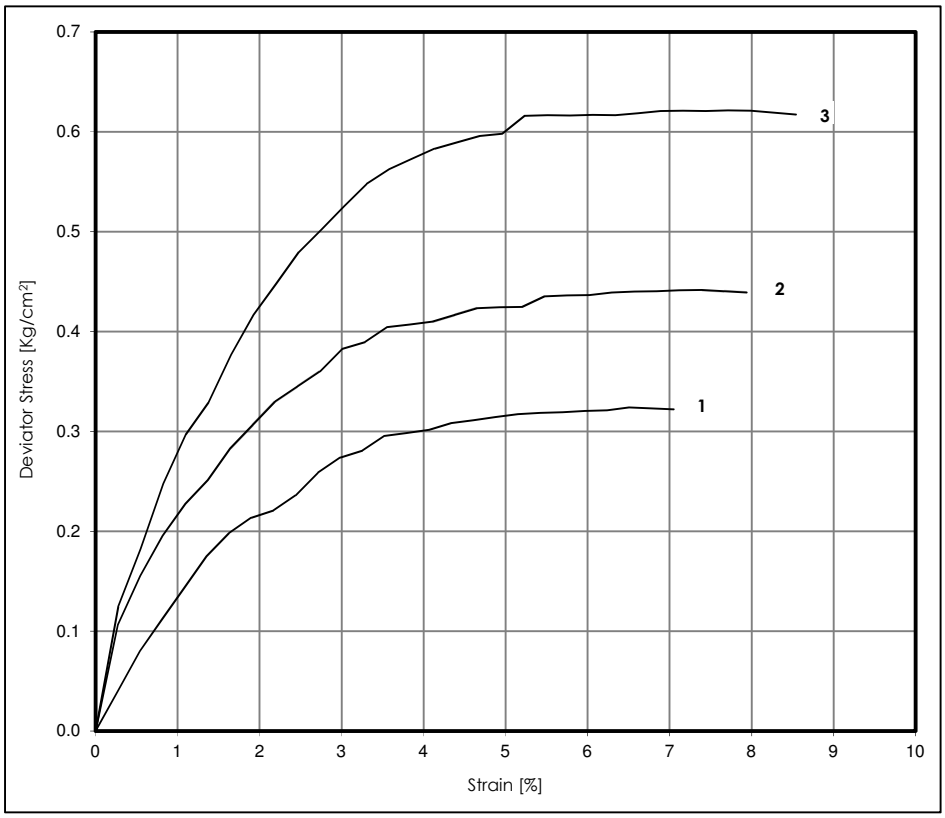
	Total	Effective
c (kg/cm²)	0.10	0.07
ϕ (°)	13	22

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

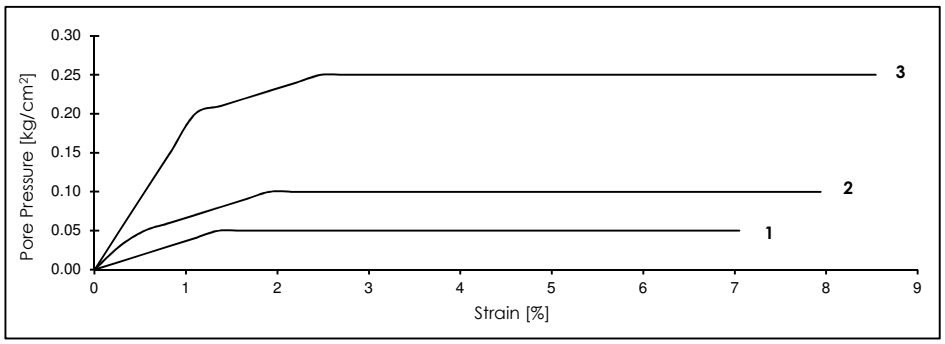
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.04	0.25
0.40	0.02	0.08	0.25
0.60	0.03	0.11	0.27
0.80	0.04	0.14	0.28
1.00	0.05	0.17	0.29
1.20	0.05	0.20	0.25
1.40	0.05	0.21	0.23
1.60	0.05	0.22	0.23
1.80	0.05	0.24	0.21
2.00	0.05	0.26	0.19
2.20	0.05	0.27	0.18
2.40	0.05	0.28	0.18
2.60	0.05	0.30	0.17
2.80	0.05	0.30	0.17
3.00	0.05	0.30	0.17
3.20	0.05	0.31	0.16
3.40	0.05	0.31	0.16
3.60	0.05	0.31	0.16
3.80	0.05	0.32	0.16
4.00	0.05	0.32	0.16
4.20	0.05	0.32	0.16
4.40	0.05	0.32	0.16
4.60	0.05	0.32	0.16
4.80	0.05	0.32	0.15
5.00	0.05	0.32	0.15
5.20	0.05	0.32	0.16
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.03	0.11	0.28
0.40	0.05	0.16	0.32
0.60	0.06	0.20	0.31
0.80	0.07	0.23	0.31
1.00	0.08	0.25	0.32
1.20	0.09	0.28	0.32
1.40	0.10	0.31	0.33
1.60	0.10	0.33	0.30
1.80	0.10	0.34	0.29
2.00	0.10	0.36	0.28
2.20	0.10	0.38	0.26
2.40	0.10	0.39	0.26
2.60	0.10	0.40	0.25
2.80	0.10	0.41	0.25
3.00	0.10	0.41	0.24
3.20	0.10	0.42	0.24
3.40	0.10	0.42	0.24
3.60	0.10	0.42	0.24
3.80	0.10	0.42	0.24
4.00	0.10	0.44	0.23
4.20	0.10	0.44	0.23
4.40	0.10	0.44	0.23
4.60	0.10	0.44	0.23
4.80	0.10	0.44	0.23
5.00	0.10	0.44	0.23
5.20	0.10	0.44	0.23
5.40	0.10	0.44	0.23
5.60	0.10	0.44	0.23
5.80	0.10	0.44	0.23
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.12	0.40
0.40	0.10	0.18	0.55
0.60	0.15	0.25	0.60
0.80	0.20	0.30	0.67
1.00	0.21	0.33	0.64
1.20	0.22	0.38	0.58
1.40	0.23	0.42	0.55
1.60	0.24	0.45	0.54
1.80	0.25	0.48	0.52
2.00	0.25	0.50	0.50
2.20	0.25	0.53	0.48
2.40	0.25	0.55	0.46
2.60	0.25	0.56	0.44
2.80	0.25	0.57	0.44
3.00	0.25	0.58	0.43
3.20	0.25	0.59	0.42
3.40	0.25	0.60	0.42
3.60	0.25	0.60	0.42
3.80	0.25	0.62	0.41
4.00	0.25	0.62	0.41
4.20	0.25	0.62	0.41
4.40	0.25	0.62	0.41
4.60	0.25	0.62	0.41
4.80	0.25	0.62	0.40
5.00	0.25	0.62	0.40
5.20	0.25	0.62	0.40
5.40	0.25	0.62	0.40
5.60	0.25	0.62	0.40
5.80	0.25	0.62	0.40
6.00	0.25	0.62	0.40
6.20	0.25	0.62	0.40
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						21.80	24.80	3.00	3.00	
	0.40	0.50			36.60	36.70	0.10					0.10
1.00		0.75	0.25	0.50				23.80	26.30	2.50	2.50	
	0.90	0.90			36.70	37.60	0.90					0.90
1.50		1.30	0.40	0.80				27.40	29.10	1.70	1.70	
	1.40	1.40			37.60	38.00	0.40					0.40
2.00		1.89	0.49	0.98				30.00	31.40	1.40	1.40	
	1.90	1.90			38.00	38.20	0.20					0.20
2.05		1.96						31.50	31.80	0.30	0.30	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.35						20.20	24.40	4.20	4.20	
	0.40	0.40			35.90	36.40	0.50					0.50
1.00		0.80	0.40	0.80				24.30	28.00	3.70	3.70	
	0.90	0.90			36.40	37.00	0.60					0.60
1.50		1.39	0.49	0.98				28.10	30.10	2.00	2.00	
	1.40	1.40			37.00	37.20	0.20					0.20
1.70		1.60						30.10	30.70	0.60	0.60	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.30						24.80	29.70	4.90	4.90	
	0.40	0.40			35.00	36.30	1.30					1.30
1.00		0.80	0.40	0.80				27.90	31.30	3.40	3.40	
	0.90	0.90			36.30	36.60	0.30					0.30
1.50		1.39	0.49	0.98				31.50	33.20	1.70	1.70	
	1.40	1.40			36.60	36.70	0.10					0.10
2.00		1.90						33.20	34.70	1.50	1.50	

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Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey.		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.48	1.51	1.62
	Moisture content, %	68.00	68.00	68.00
	Dry density, t/m^3	0.88	0.90	0.96
	Void Ratio	2.00	1.94	1.74
	Saturation, %	89.87	92.33	100.00
Final	Density, t/m^3	1.64	1.68	1.82
	Moisture content, %	66.89	63.74	43.36
	Dry density, t/m^3	0.98	1.03	1.27
	Void Ratio	1.69	1.57	1.08
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0300	0.0300	0.0300
Initial σ_3, kg/cm^2		0.20	0.40	0.80
Back pressure, kg/cm^2		0.90	0.90	0.90
Cell pressure, kg/cm^2		1.10	1.30	1.70
Strain at failure, %		3.02	6.59	7.21
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.45	0.59	0.73
u_f, kg/cm^2		0.05	0.15	0.35
$\sigma_3'_f$, kg/cm^2		0.15	0.25	0.45
$\sigma_1'_f$, kg/cm^2		0.60	0.84	1.18
Shear Strength parameters	c , kg/cm^2	0.19		
	c' , kg/cm^2	0.16		
	ϕ	9		
	ϕ'	15		

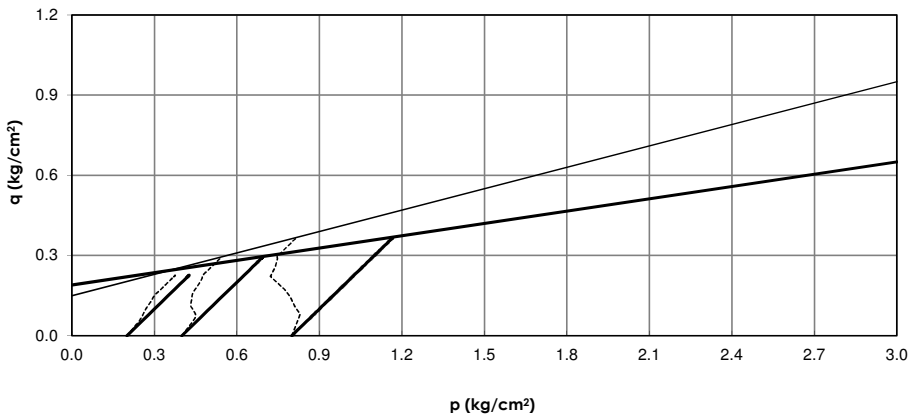
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

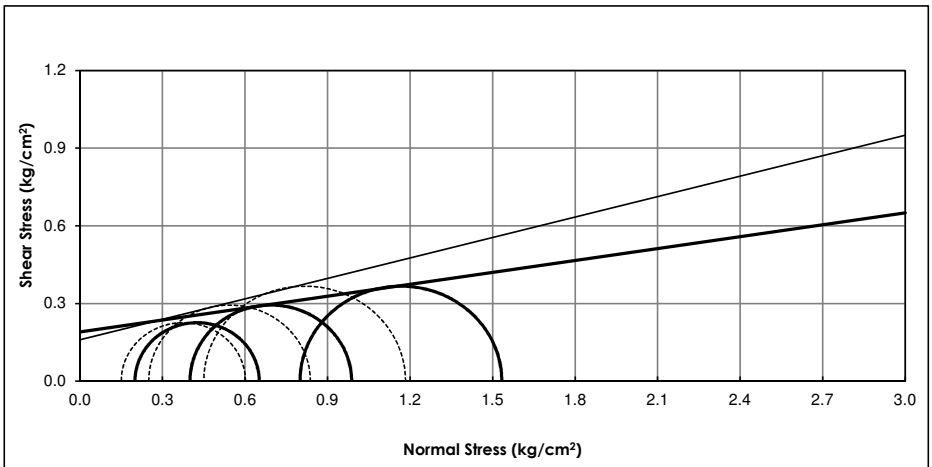
Hole No. : BH-5.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.19	0.15
α (°)	9	15

Mohr Circle



	Total	Effective
c (kg/cm²)	0.19	0.16
ϕ (°)	9	15

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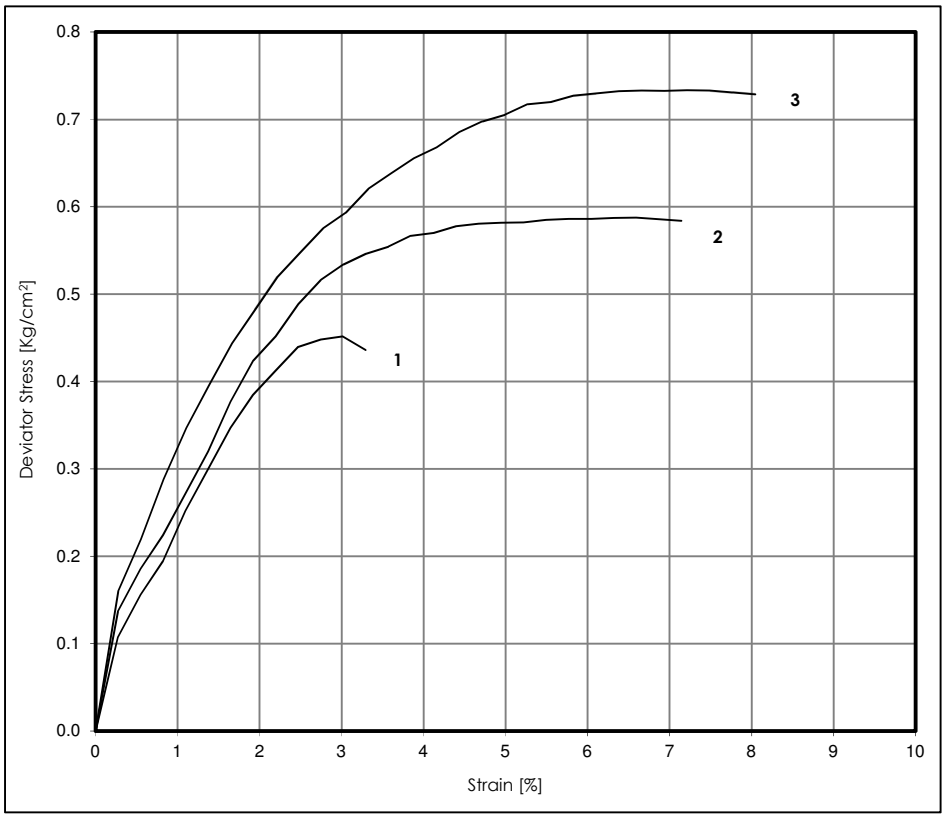
Soil Investigation and Foundation Engineering

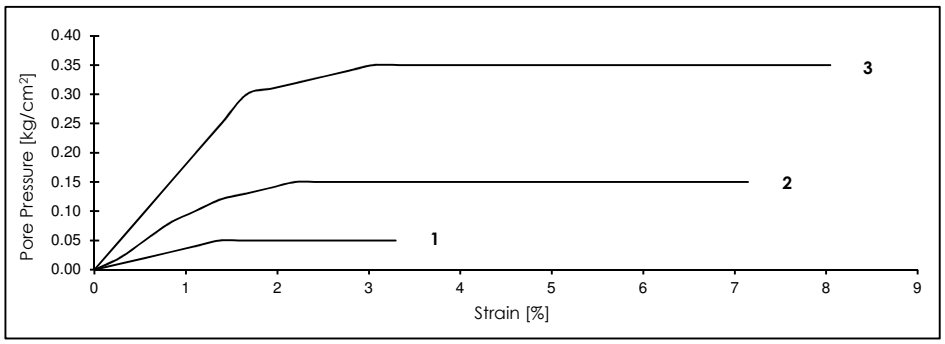
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.11	0.09
0.40	0.02	0.16	0.13
0.60	0.03	0.19	0.15
0.80	0.04	0.25	0.16
1.00	0.05	0.30	0.17
1.20	0.05	0.35	0.14
1.40	0.05	0.38	0.13
1.60	0.05	0.41	0.12
1.80	0.05	0.44	0.11
2.00	0.05	0.45	0.11
2.20	0.05	0.45	0.11
2.40	0.05	0.44	0.11
2.60			
2.80			
3.00			
3.20			
3.40			
3.60			
3.80			
4.00			
4.20			
4.40			
4.60			
4.80			
5.00			
5.20			
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.02	0.14	0.15
0.40	0.05	0.19	0.27
0.60	0.08	0.22	0.36
0.80	0.10	0.27	0.37
1.00	0.12	0.32	0.38
1.20	0.13	0.38	0.34
1.40	0.14	0.42	0.33
1.60	0.15	0.45	0.33
1.80	0.15	0.49	0.31
2.00	0.15	0.52	0.29
2.20	0.15	0.53	0.28
2.40	0.15	0.55	0.27
2.60	0.15	0.55	0.27
2.80	0.15	0.57	0.26
3.00	0.15	0.57	0.26
3.20	0.15	0.58	0.26
3.40	0.15	0.58	0.26
3.60	0.15	0.58	0.26
3.80	0.15	0.58	0.26
4.00	0.15	0.59	0.26
4.20	0.15	0.59	0.26
4.40	0.15	0.59	0.26
4.60	0.15	0.59	0.26
4.80	0.15	0.59	0.26
5.00	0.15	0.59	0.26
5.20	0.15	0.58	0.26
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.16	0.31
0.40	0.10	0.22	0.46
0.60	0.15	0.29	0.52
0.80	0.20	0.35	0.58
1.00	0.25	0.40	0.63
1.20	0.30	0.44	0.68
1.40	0.31	0.48	0.64
1.60	0.32	0.52	0.62
1.80	0.33	0.55	0.60
2.00	0.34	0.58	0.59
2.20	0.35	0.59	0.59
2.40	0.35	0.62	0.56
2.60	0.35	0.64	0.55
2.80	0.35	0.66	0.53
3.00	0.35	0.67	0.52
3.20	0.35	0.69	0.51
3.40	0.35	0.70	0.50
3.60	0.35	0.71	0.50
3.80	0.35	0.72	0.49
4.00	0.35	0.72	0.49
4.20	0.35	0.73	0.48
4.40	0.35	0.73	0.48
4.60	0.35	0.73	0.48
4.80	0.35	0.73	0.48
5.00	0.35	0.73	0.48
5.20	0.35	0.73	0.48
5.40	0.35	0.73	0.48
5.60	0.35	0.73	0.48
5.80	0.35	0.73	0.48
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.35						15.50	21.80	6.30	6.30	
	0.40	0.40			35.80	36.00	0.20					0.20
1.00		0.89	0.49	0.98				22.80	26.60	3.80	3.80	
	0.90	0.90			36.00	36.20	0.20					0.20
1.10		1.02						26.60	26.90	0.30	0.30	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.45						16.80	21.90	5.10	5.10	
	0.40	0.40			31.50	30.80	-0.70					-0.70
1.00		0.89	0.49	0.98				22.10	25.00	2.90	2.90	
	0.90	0.90			30.80	30.90	0.10					0.10
1.30		1.20						25.20	26.30	1.10	1.10	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-5.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

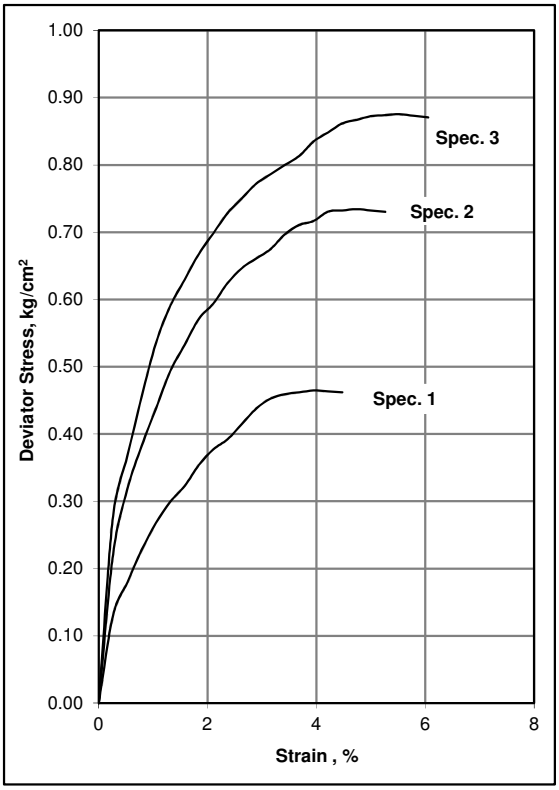
Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.45						15.20	19.00	3.80	3.80	
	0.40	0.40			35.00	34.70	-0.30					-0.30
1.00		0.89	0.49	0.98				19.00	22.90	3.90	3.90	
	0.90	0.90			34.70	34.90	0.20					0.20
1.70		1.60						23.00	25.90	2.90	2.90	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

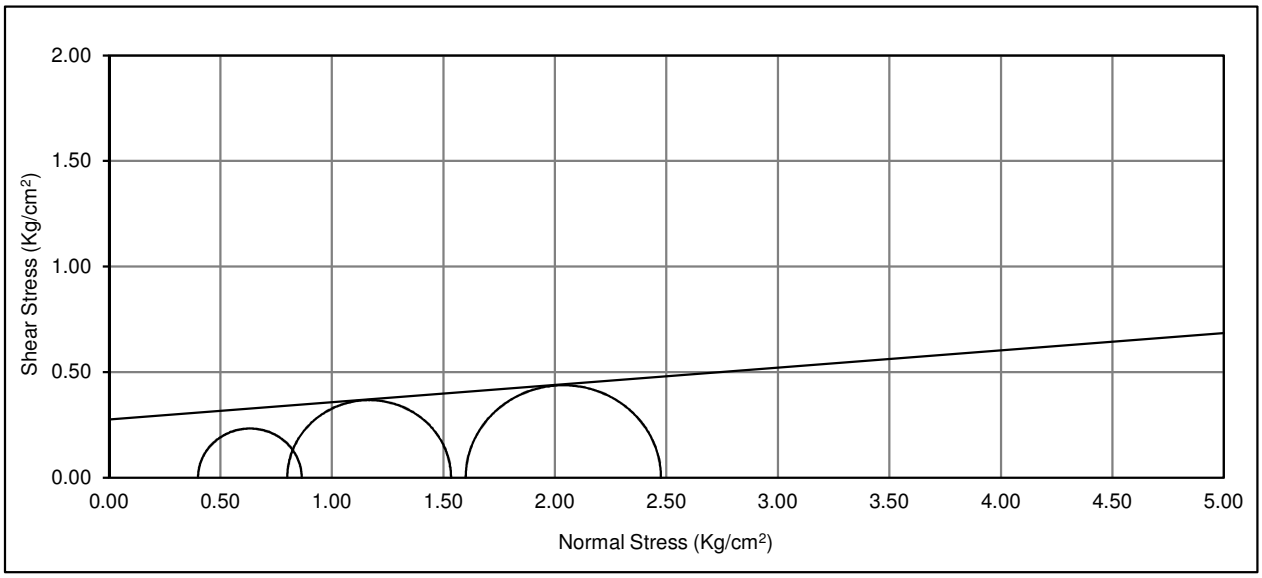
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-5.
Depth : 14.50-15.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, brown.			
SPECIMEN No.		1	2	3
Natural Moisture Content, %		92	87	86
Specific Gravity, Gs		2.61	2.61	2.61
Density, t/m^3		1.39	1.43	1.44
Dry density, t/m^3		0.73	0.77	0.77
Void Ratio		2.59	2.40	2.37
Saturation, %		92.33	94.22	94.88
Strain rate, mm/minute		0.66	0.66	0.66
Confining Pressure, kg/cm^2		0.40	0.80	1.60
Deviator Stress, kg/cm^2		0.46	0.73	0.88
Strain at Failure, %		3.95	4.74	5.53
Shear Strength Parameters	c [kg/cm^2]	0.28		
	ϕ [^{o}]	5		

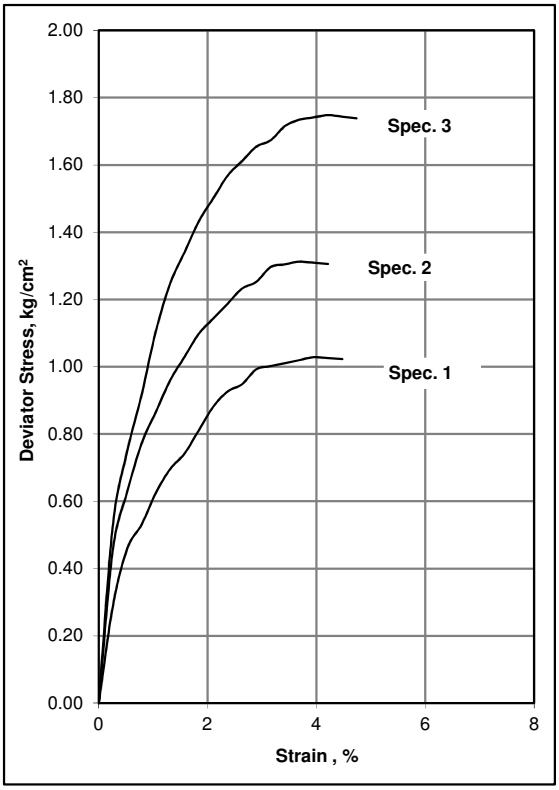


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

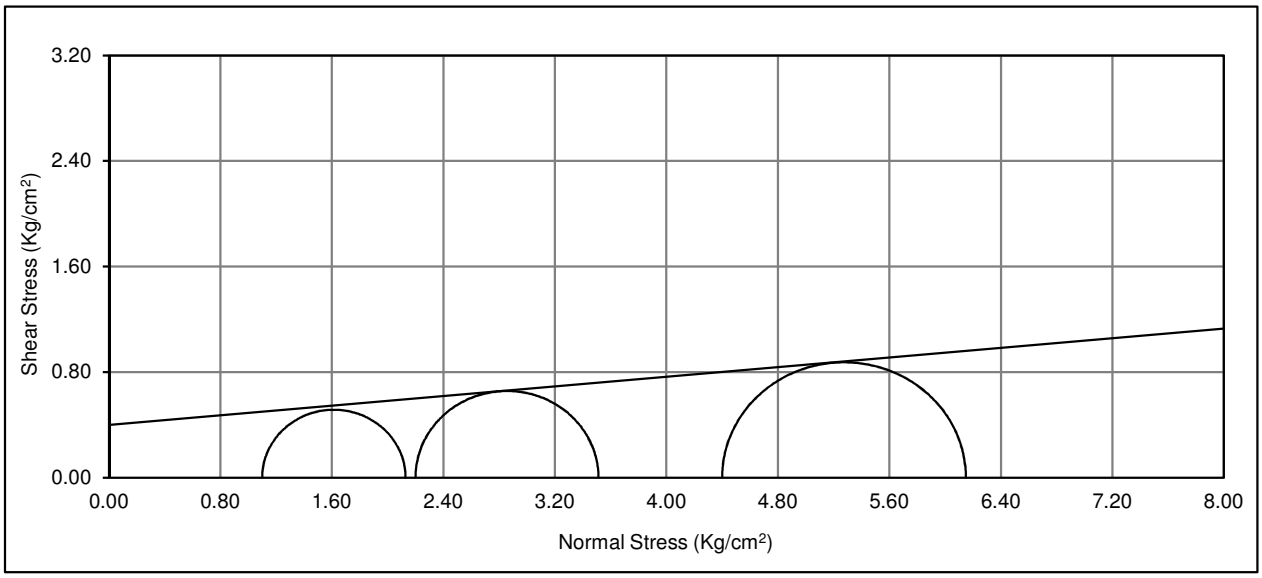
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-5.
Depth : 38.50-39.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, brownish grey.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	39	38	37
Specific Gravity, Gs	2.63	2.63	2.63
Density, t/m^3	1.81	1.82	1.83
Dry density, t/m^3	1.30	1.32	1.34
Void Ratio	1.02	0.99	0.96
Saturation, %	100.00	99.68	99.83
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.10	2.20	4.40
Deviator Stress, kg/cm^2	1.03	1.31	1.75
Strain at Failure, %	3.95	3.68	4.21
Shear Strength Parameters: c [kg/cm^2]	0.40		
Shear Strength Parameters: ϕ [^{o}]	5		

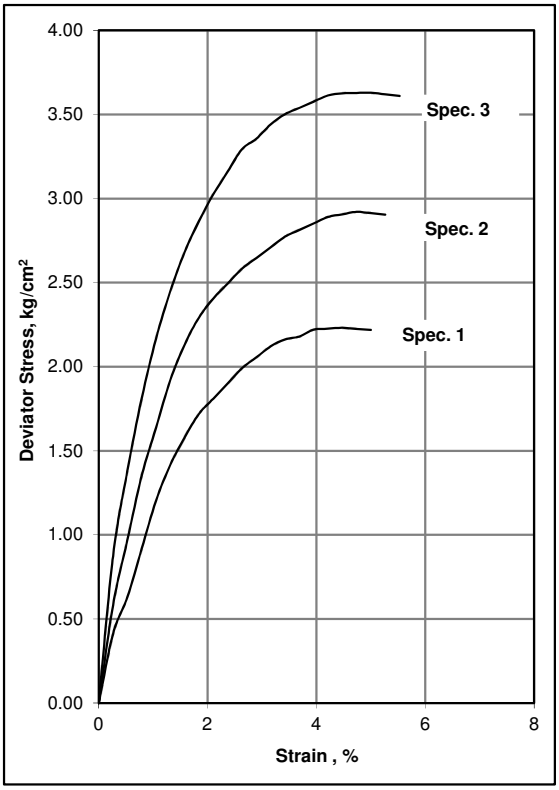


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

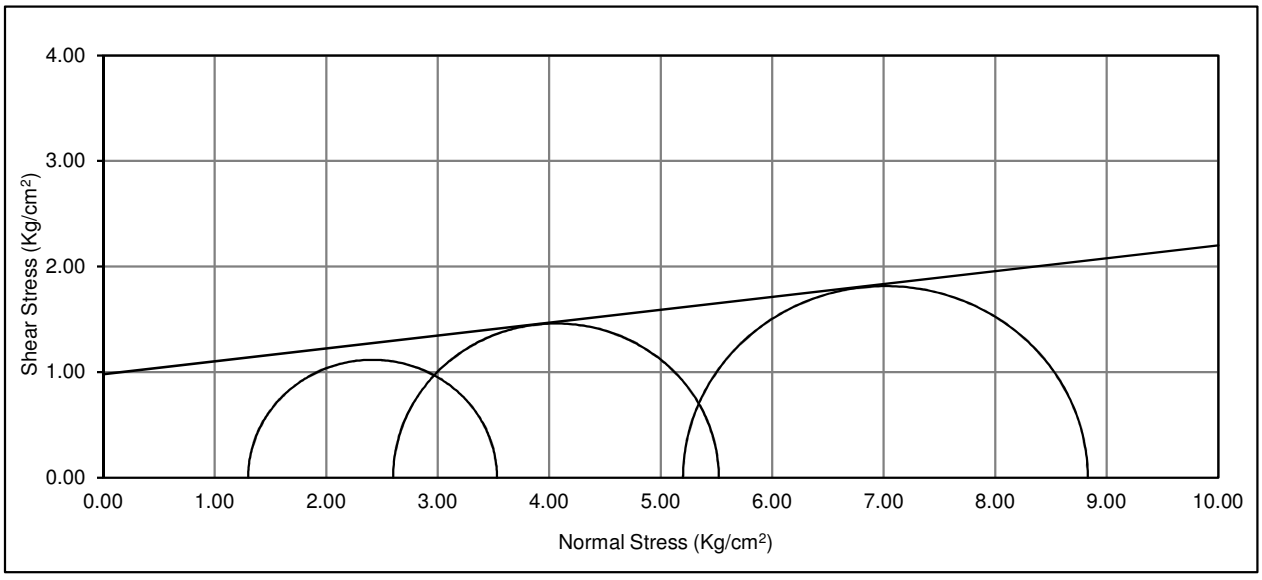
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-5.
Depth : 46.50-47.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, brownish grey.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	41	40	41
Specific Gravity, Gs	2.58	2.58	2.58
Density, t/m^3	1.77	1.79	1.80
Dry density, t/m^3	1.26	1.28	1.28
Void Ratio	1.05	1.02	1.02
Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.30	2.60	5.20
Deviator Stress, kg/cm^2	2.23	2.92	3.63
Strain at Failure, %	4.47	4.74	5.00
Shear Strength Parameters: c [kg/cm^2]	0.98		
Shear Strength Parameters: ϕ [^{o}]	7		

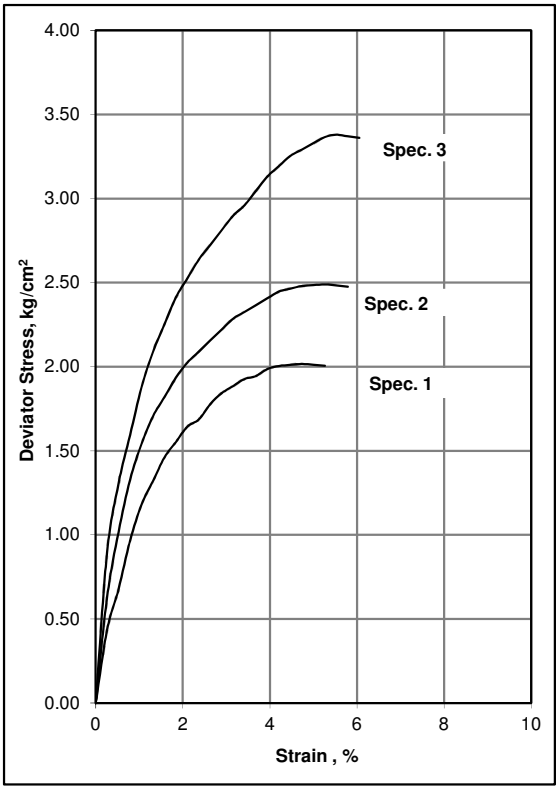


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

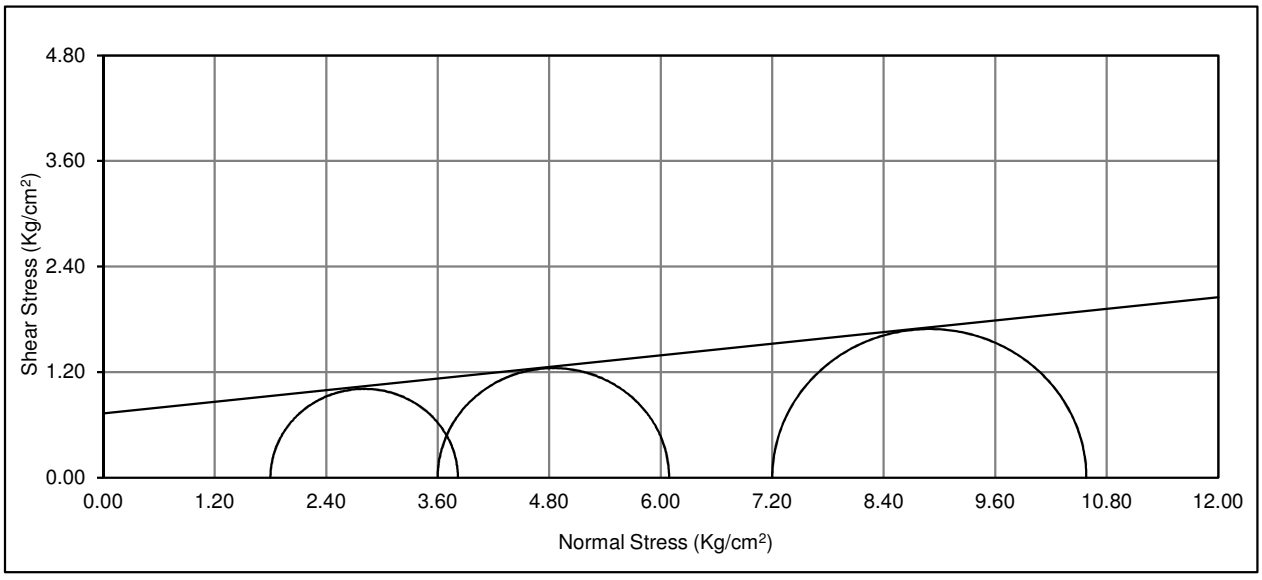
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-5.
Depth : 59.50-60.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, grey.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	50	50	49
Specific Gravity, Gs	2.65	2.65	2.65
Density, t/m^3	1.68	1.70	1.70
Dry density, t/m^3	1.12	1.13	1.14
Void Ratio	1.37	1.34	1.33
Saturation, %	97.15	98.37	98.14
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.80	3.60	7.20
Deviator Stress, kg/cm^2	2.02	2.49	3.38
Strain at Failure, %	4.74	5.26	5.53
Shear Strength Parameters: c [kg/cm^2]	0.73		
Shear Strength Parameters: ϕ [^{o}]	6		

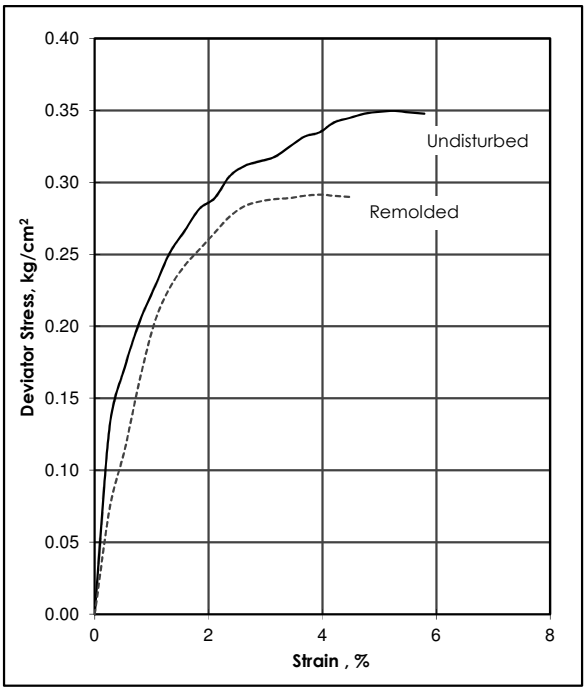


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

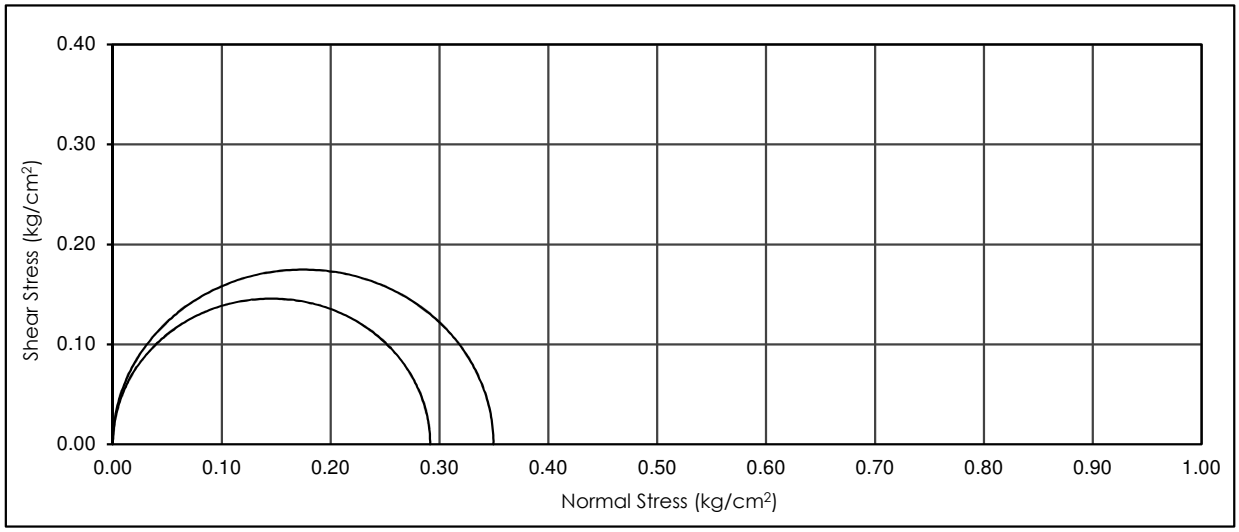
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, with a trace of sand, grey.	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		72	63
Specific Gravity, Gs		2.66	2.66
Density, t/m^3		1.52	1.51
Dry density, t/m^3		0.88	0.93
Void Ratio		2.02	1.87
Saturation, %		94.91	89.33
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.35	0.29
Strain at failure, %		5.26	3.95
Shear Strength parameters	c [kg/cm^2]	0.17	0.15
	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, grey.		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.48	1.56	1.60
	Moisture content, %	72.00	72.00	72.00
	Dry density, t/m^3	0.86	0.91	0.93
	Void Ratio	2.10	1.94	1.87
	Saturation, %	91.26	98.79	100.00
Final	Density, t/m^3	1.73	1.79	1.95
	Moisture content, %	72.69	60.97	52.55
	Dry density, t/m^3	1.00	1.11	1.28
	Void Ratio	1.65	1.40	1.09
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0290	0.0290	0.0290
Initial σ_3, kg/cm^2		0.15	0.30	0.60
Back pressure, kg/cm^2		2.40	1.40	1.40
Cell pressure, kg/cm^2		2.55	1.70	2.00
Strain at failure, %		6.63	7.45	7.85
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.42	0.72	0.80
u_f, kg/cm^2		0.05	0.12	0.20
$\sigma_3'_f$, kg/cm^2		0.10	0.18	0.40
$\sigma_1'_f$, kg/cm^2		0.52	0.90	1.20
Shear Strength parameters	c , kg/cm^2	0.28		
	c' , kg/cm^2	0.28		
	ϕ	7		
	ϕ'	9		

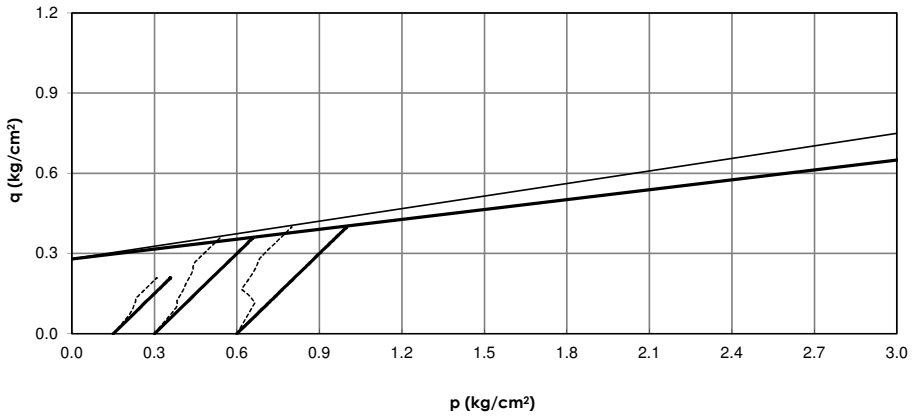
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

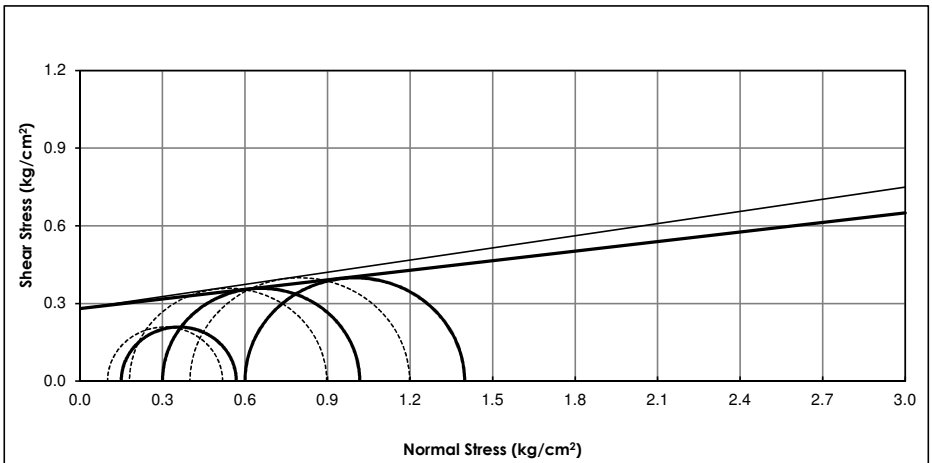
Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.28	0.28
α (°)	7	9

Mohr Circle



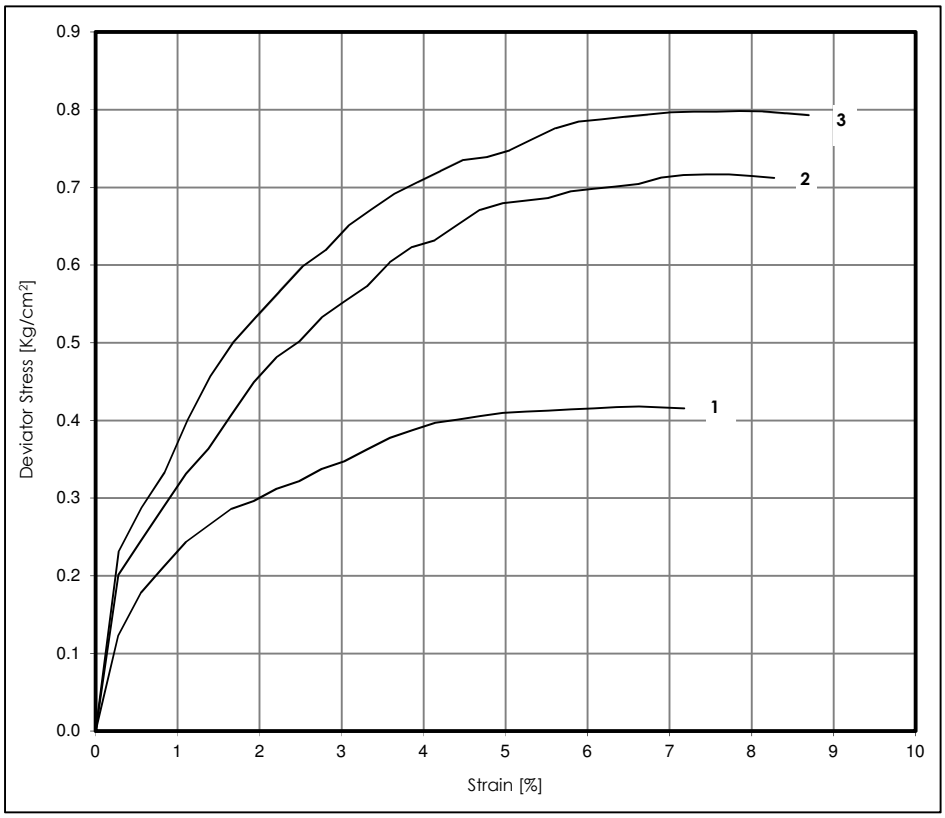
	Total	Effective
c (kg/cm²)	0.28	0.28
ϕ (°)	7	9

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

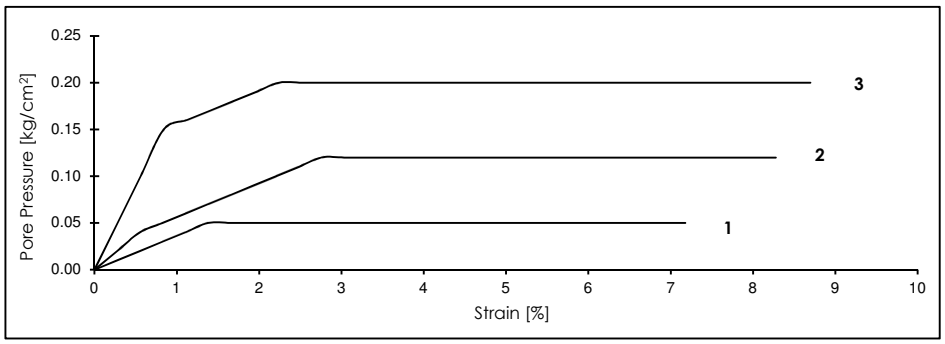
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.12	0.08
0.40	0.02	0.18	0.11
0.60	0.03	0.21	0.14
0.80	0.04	0.24	0.16
1.00	0.05	0.26	0.19
1.20	0.05	0.29	0.17
1.40	0.05	0.30	0.17
1.60	0.05	0.31	0.16
1.80	0.05	0.32	0.16
2.00	0.05	0.34	0.15
2.20	0.05	0.35	0.14
2.40	0.05	0.36	0.14
2.60	0.05	0.38	0.13
2.80	0.05	0.39	0.13
3.00	0.05	0.40	0.13
3.20	0.05	0.40	0.12
3.40	0.05	0.41	0.12
3.60	0.05	0.41	0.12
3.80	0.05	0.41	0.12
4.00	0.05	0.41	0.12
4.20	0.05	0.41	0.12
4.40	0.05	0.42	0.12
4.60	0.05	0.42	0.12
4.80	0.05	0.42	0.12
5.00	0.05	0.42	0.12
5.20	0.05	0.42	0.12
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.02	0.20	0.10
0.40	0.04	0.24	0.16
0.60	0.05	0.29	0.17
0.80	0.06	0.33	0.18
1.00	0.07	0.36	0.19
1.20	0.08	0.41	0.20
1.40	0.09	0.45	0.20
1.60	0.10	0.48	0.21
1.80	0.11	0.50	0.22
2.00	0.12	0.53	0.23
2.20	0.12	0.55	0.22
2.40	0.12	0.57	0.21
2.60	0.12	0.60	0.20
2.80	0.12	0.62	0.19
3.00	0.12	0.63	0.19
3.20	0.12	0.65	0.18
3.40	0.12	0.67	0.18
3.60	0.12	0.68	0.18
3.80	0.12	0.68	0.18
4.00	0.12	0.69	0.17
4.20	0.12	0.69	0.17
4.40	0.12	0.70	0.17
4.60	0.12	0.70	0.17
4.80	0.12	0.70	0.17
5.00	0.12	0.71	0.17
5.20	0.12	0.72	0.17
5.40	0.12	0.72	0.17
5.60	0.12	0.72	0.17
5.80	0.12	0.71	0.17
6.00	0.12	0.71	0.17
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.23	0.22
0.40	0.10	0.29	0.35
0.60	0.15	0.33	0.45
0.80	0.16	0.40	0.40
1.00	0.17	0.46	0.37
1.20	0.18	0.50	0.36
1.40	0.19	0.53	0.36
1.60	0.20	0.57	0.35
1.80	0.20	0.60	0.33
2.00	0.20	0.62	0.32
2.20	0.20	0.65	0.31
2.40	0.20	0.67	0.30
2.60	0.20	0.69	0.29
2.80	0.20	0.71	0.28
3.00	0.20	0.72	0.28
3.20	0.20	0.74	0.27
3.40	0.20	0.74	0.27
3.60	0.20	0.75	0.27
3.80	0.20	0.76	0.26
4.00	0.20	0.78	0.26
4.20	0.20	0.78	0.25
4.40	0.20	0.79	0.25
4.60	0.20	0.79	0.25
4.80	0.20	0.79	0.25
5.00	0.20	0.80	0.25
5.20	0.20	0.80	0.25
5.40	0.20	0.80	0.25
5.60	0.20	0.80	0.25
5.80	0.20	0.80	0.25
6.00	0.20	0.80	0.25
6.20	0.20	0.79	0.25
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.45						18.70	25.60	6.90	6.90	
	0.40	0.40			31.90	32.00	0.10					0.10
1.00		0.70	0.30	0.60				25.80	29.00	3.20	3.20	
	0.90	0.90			32.00	33.10	1.10					1.10
1.50		1.25	0.35	0.70				28.90	31.00	2.10	2.10	
	1.40	1.40			33.10	34.00	0.90					0.90
2.00		1.80	0.40	0.80				31.00	32.30	1.30	1.30	
	1.90	1.90			34.00	34.70	0.70					0.70
2.50		2.39	0.49	0.98				31.20	32.30	1.10	1.10	
	2.40	2.40			34.70	34.90	0.20					0.20
2.55		2.46						32.30	32.50	0.20	0.20	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						21.70	27.70	6.00	6.00	
	0.40	0.40			35.00	35.00	0.00					0.00
1.00		0.80	0.40	0.80				28.40	31.50	3.10	3.10	
	0.90	0.90			35.00	35.80	0.80					0.80
1.50		1.39	0.49	0.98				31.00	33.20	2.20	2.20	
	1.40	1.40			35.80	35.90	0.10					0.10
1.70		1.60						33.10	33.80	0.70	0.70	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						12.80	18.70	5.90	5.90	
	0.40	0.40			34.60	34.70	0.10					0.10
1.00		0.70	0.30	0.60				17.80	22.80	5.00	5.00	
	0.90	0.90			34.70	35.50	0.80					0.80
1.50		1.30	0.40	0.80				23.80	26.00	2.20	2.20	
	1.40	1.40			35.50	35.90	0.40					0.40
2.00		1.89	0.49	0.98				25.90	27.40	1.50	1.50	
	1.90	1.90			35.90	36.00	0.10					0.10
2.50		2.40						27.20	28.40	1.20	1.20	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey.		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.54	1.58	1.59
	Moisture content, %	57.00	57.00	57.00
	Dry density, t/m^3	0.98	1.01	1.01
	Void Ratio	1.70	1.62	1.60
	Saturation, %	88.66	93.03	93.82
Final	Density, t/m^3	1.75	1.79	1.81
	Moisture content, %	58.73	55.09	52.84
	Dry density, t/m^3	1.11	1.16	1.18
	Void Ratio	1.39	1.28	1.23
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0457	0.0457	0.0457
Initial σ_3, kg/cm^2		0.20	0.40	0.80
Back pressure, kg/cm^2		1.90	1.40	1.90
Cell pressure, kg/cm^2		2.10	1.80	2.70
Strain at failure, %		6.58	7.38	7.68
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.38	0.43	0.68
u_f, kg/cm^2		0.05	0.15	0.30
$\sigma_3'_f$, kg/cm^2		0.15	0.25	0.50
$\sigma_1'_f$, kg/cm^2		0.53	0.68	1.18
Shear Strength parameters	c , kg/cm^2	0.15		
	c' , kg/cm^2	0.12		
	ϕ	7		
	ϕ'	12		

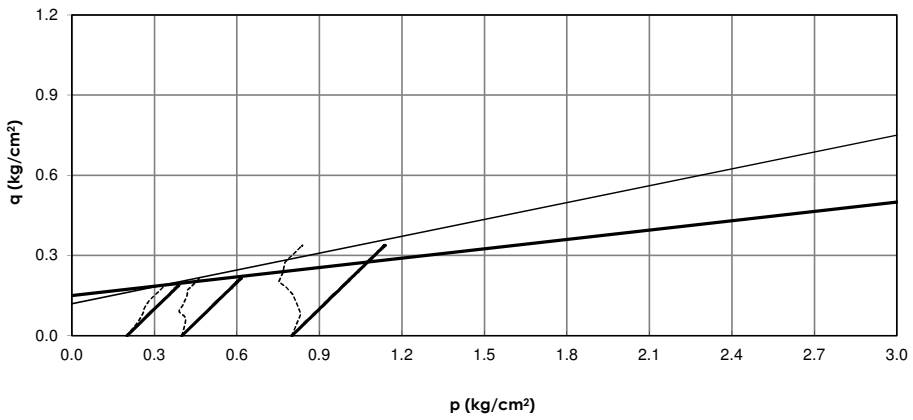
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

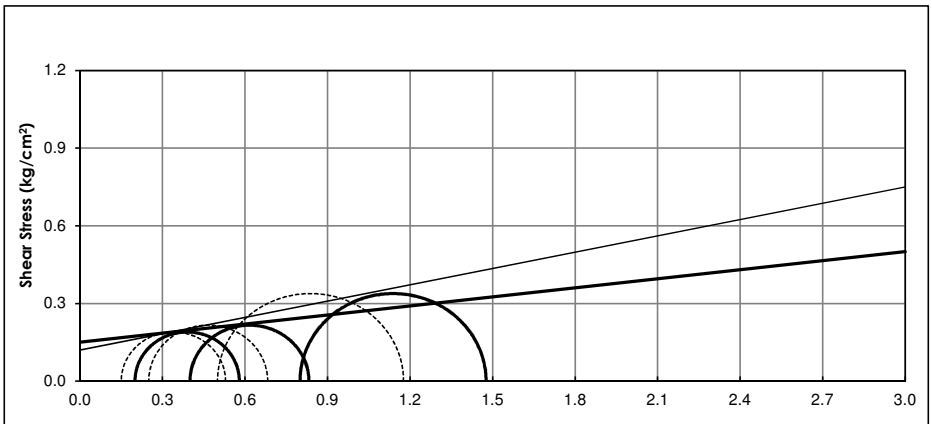
Hole No. : BH-6.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.15	0.12
α (°)	7	12

Mohr Circle



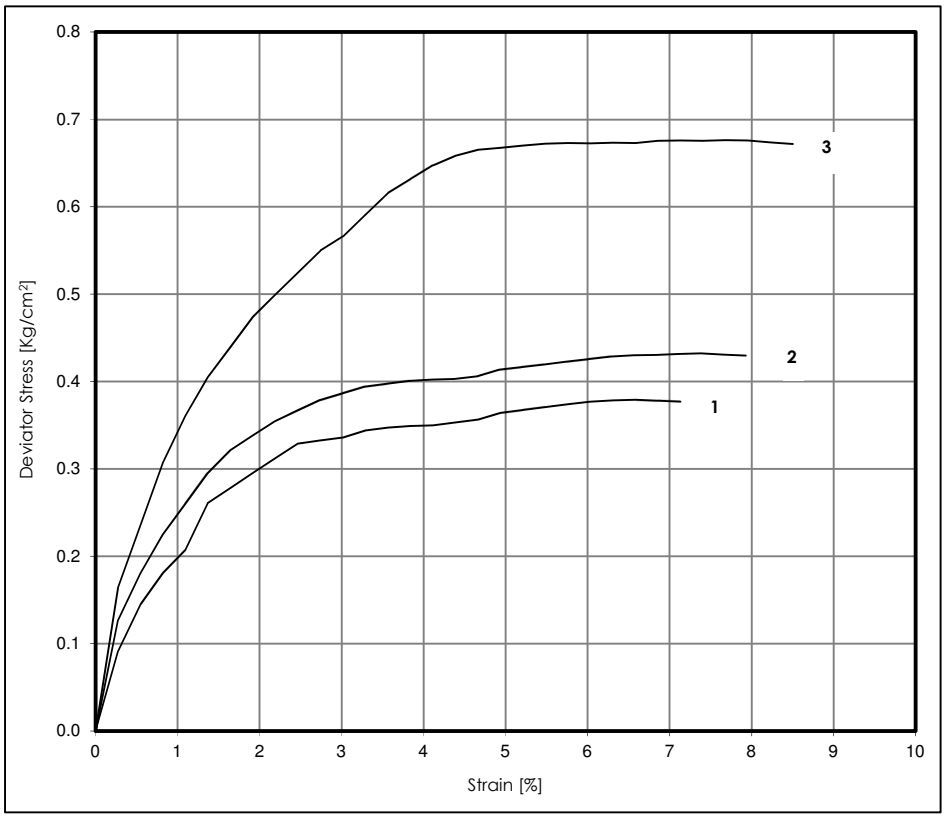
	Total	Effective
c (kg/cm²)	0.15	0.12
ϕ (°)	7	12

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

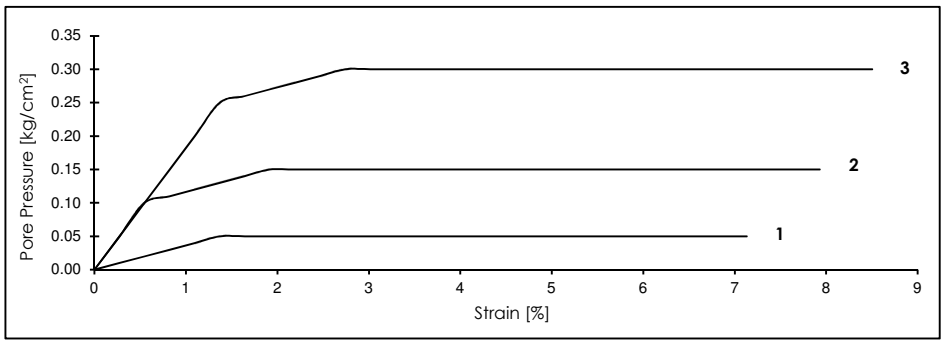
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.09	0.11
0.40	0.02	0.15	0.14
0.60	0.03	0.18	0.17
0.80	0.04	0.21	0.19
1.00	0.05	0.26	0.19
1.20	0.05	0.28	0.18
1.40	0.05	0.30	0.17
1.60	0.05	0.31	0.16
1.80	0.05	0.33	0.15
2.00	0.05	0.33	0.15
2.20	0.05	0.34	0.15
2.40	0.05	0.34	0.15
2.60	0.05	0.35	0.14
2.80	0.05	0.35	0.14
3.00	0.05	0.35	0.14
3.20	0.05	0.35	0.14
3.40	0.05	0.36	0.14
3.60	0.05	0.36	0.14
3.80	0.05	0.37	0.14
4.00	0.05	0.37	0.13
4.20	0.05	0.37	0.13
4.40	0.05	0.38	0.13
4.60	0.05	0.38	0.13
4.80	0.05	0.38	0.13
5.00	0.05	0.38	0.13
5.20	0.05	0.38	0.13
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.13	0.40
0.40	0.10	0.18	0.55
0.60	0.11	0.22	0.49
0.80	0.12	0.26	0.46
1.00	0.13	0.29	0.44
1.20	0.14	0.32	0.44
1.40	0.15	0.34	0.44
1.60	0.15	0.35	0.42
1.80	0.15	0.37	0.41
2.00	0.15	0.38	0.40
2.20	0.15	0.39	0.39
2.40	0.15	0.39	0.38
2.60	0.15	0.40	0.38
2.80	0.15	0.40	0.37
3.00	0.15	0.40	0.37
3.20	0.15	0.40	0.37
3.40	0.15	0.41	0.37
3.60	0.15	0.41	0.36
3.80	0.15	0.42	0.36
4.00	0.15	0.42	0.36
4.20	0.15	0.42	0.35
4.40	0.15	0.43	0.35
4.60	0.15	0.43	0.35
4.80	0.15	0.43	0.35
5.00	0.15	0.43	0.35
5.20	0.15	0.43	0.35
5.40	0.15	0.43	0.35
5.60	0.15	0.43	0.35
5.80	0.15	0.43	0.35
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.16	0.31
0.40	0.10	0.24	0.42
0.60	0.15	0.31	0.49
0.80	0.20	0.36	0.55
1.00	0.25	0.40	0.62
1.20	0.26	0.44	0.59
1.40	0.27	0.47	0.57
1.60	0.28	0.50	0.56
1.80	0.29	0.52	0.55
2.00	0.30	0.55	0.55
2.20	0.30	0.57	0.53
2.40	0.30	0.59	0.51
2.60	0.30	0.62	0.49
2.80	0.30	0.63	0.48
3.00	0.30	0.65	0.46
3.20	0.30	0.66	0.46
3.40	0.30	0.67	0.45
3.60	0.30	0.67	0.45
3.80	0.30	0.67	0.45
4.00	0.30	0.67	0.45
4.20	0.30	0.67	0.45
4.40	0.30	0.67	0.45
4.60	0.30	0.67	0.45
4.80	0.30	0.67	0.45
5.00	0.30	0.68	0.44
5.20	0.30	0.68	0.44
5.40	0.30	0.68	0.44
5.60	0.30	0.68	0.44
5.80	0.30	0.68	0.44
6.00	0.30	0.67	0.45
6.20	0.30	0.67	0.45
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 4.50-5.00m.
Tested / Checked b Fr / Y.

Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.40						20.90	24.50	3.60	3.60	
	0.40	0.40			36.80	36.70	-0.10					-0.10
1.00		0.65	0.25	0.50				21.80	24.80	3.00	3.00	
	0.90	0.90			36.70	37.90	1.20					1.20
1.50		1.30	0.40	0.80				24.80	26.80	2.00	2.00	
	1.40	1.40			37.90	38.20	0.30					0.30
2.00		1.89	0.49	0.98				27.80	30.00	2.20	2.20	
	1.90	1.90			38.20	38.20	0.00					0.00
2.10		2.00						30.00	30.50	0.50	0.50	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 4.50-5.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						13.50	17.80	4.30	4.30	
	0.40	0.40			38.10	37.90	-0.20					-0.20
1.00		0.80	0.40	0.80				17.90	20.60	2.70	2.70	
	0.90	0.90			37.90	38.80	0.90					0.90
1.50		1.39	0.49	0.98				20.40	22.30	1.90	1.90	
	1.40	1.40			38.80	39.00	0.20					0.20
1.80		1.70						22.60	23.30	0.70	0.70	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-6.
Depth : 4.50-5.00m.
Tested / Checked b Fr / Y.

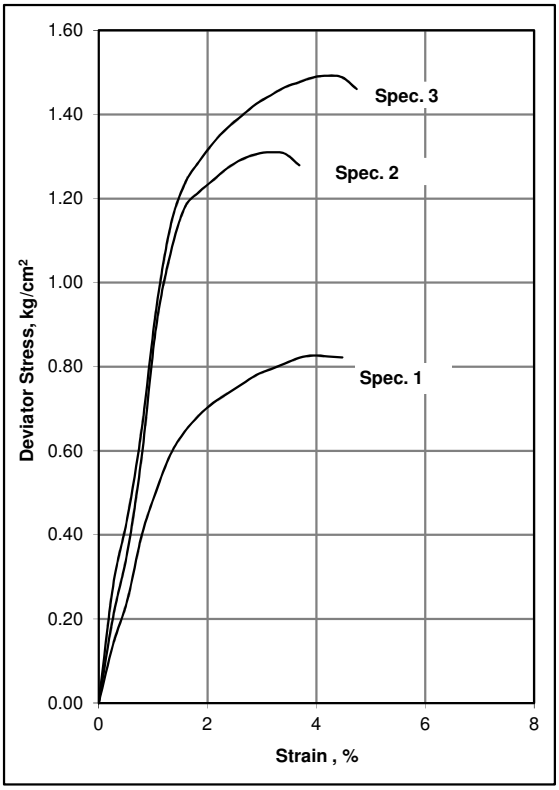
Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						20.00	23.60	3.60	3.60	
	0.40	0.40			38.70	38.80	0.10					0.10
1.00		0.65	0.25	0.50				21.90	24.30	2.40	2.40	
	0.90	0.90			38.80	39.90	1.10					1.10
1.50		1.30	0.40	0.80				24.50	26.30	1.80	1.80	
	1.40	1.40			39.90	40.60	0.70					0.70
2.00		1.89	0.49	0.98				26.60	27.90	1.30	1.30	
	1.90	1.90			40.60	40.80	0.20					0.20
2.70		2.60						28.00	29.80	1.80	1.80	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

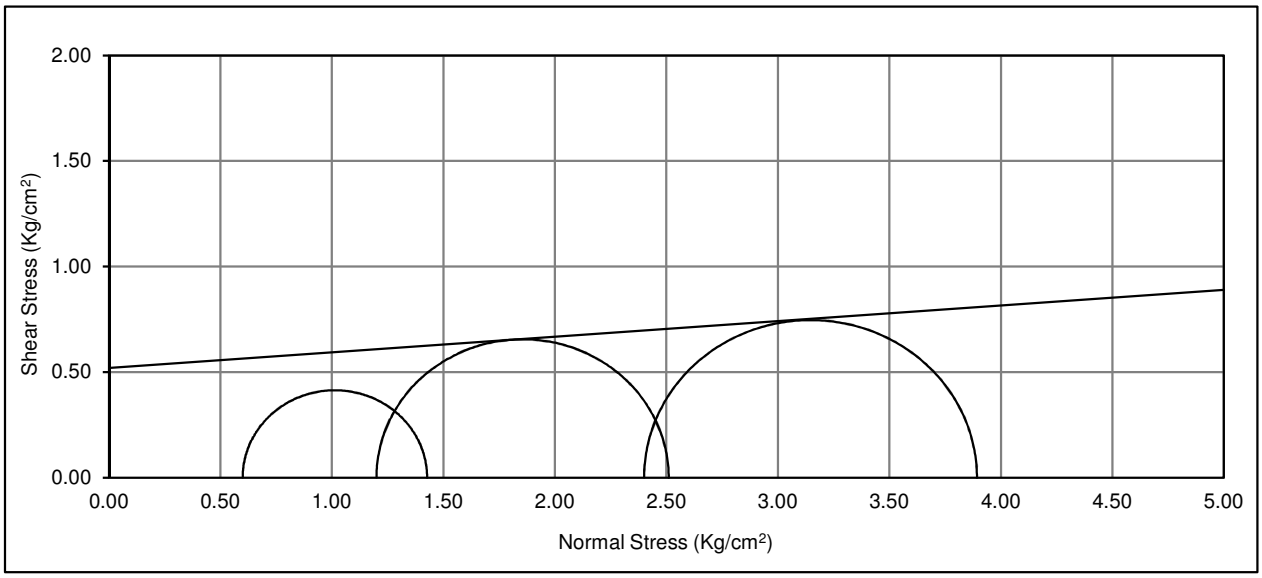
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-6.
Depth : 20.50-21.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, grey.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	70	69	67
Specific Gravity, Gs	2.66	2.66	2.66
Density, t/m^3	1.49	1.52	1.52
Dry density, t/m^3	0.87	0.90	0.91
Void Ratio	2.04	1.96	1.92
Saturation, %	91.20	93.94	92.87
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	0.60	1.20	2.40
Deviator Stress, kg/cm^2	0.83	1.31	1.49
Strain at Failure, %	3.95	3.16	4.21
Shear Strength Parameters: c [kg/cm^2]	0.52		
Shear Strength Parameters: ϕ [^{o}]	4		

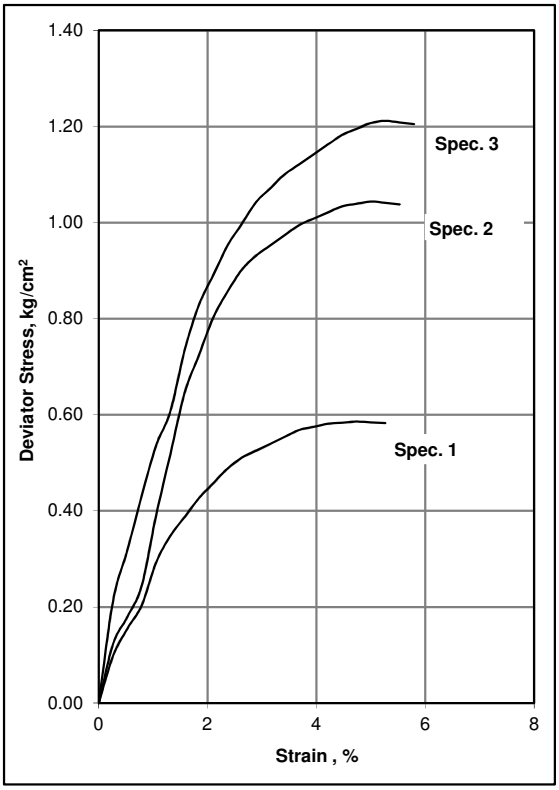


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

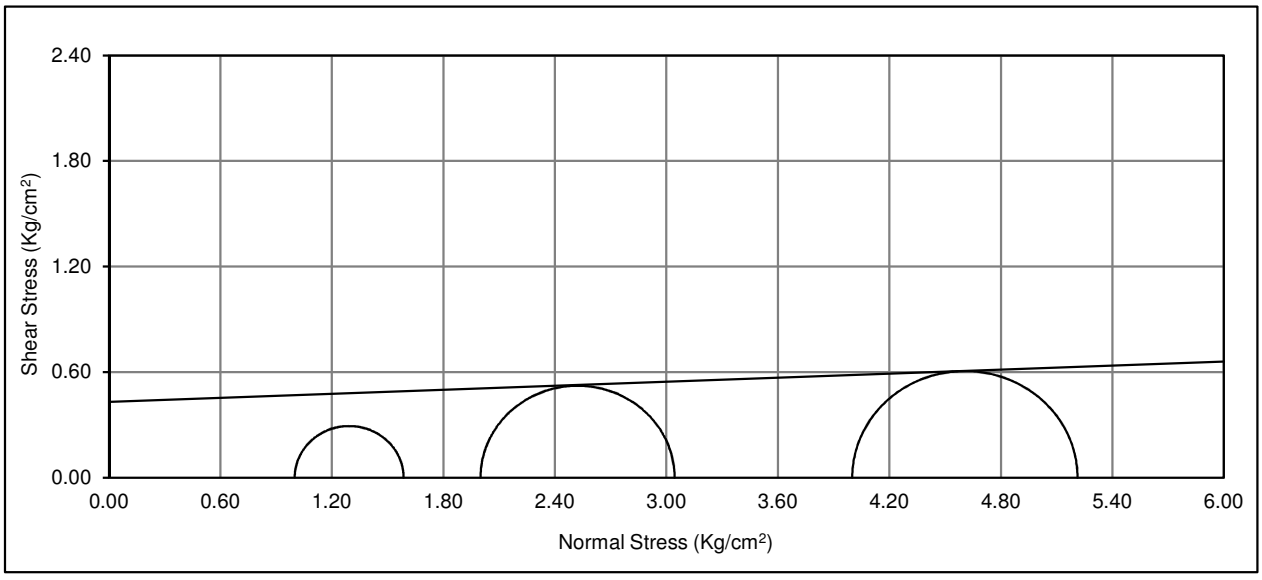
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-6.
Depth : 34.50-35.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	101	100	102
Specific Gravity, Gs	2.73	2.73	2.73
Density, t/m^3	1.65	1.65	1.65
Dry density, t/m^3	0.82	0.82	0.82
Void Ratio	2.32	2.32	2.34
Saturation, %	118.49	118.38	118.87
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.00	2.00	4.00
Deviator Stress, kg/cm^2	0.59	1.04	1.21
Strain at Failure, %	4.74	5.00	5.26
Shear Strength Parameters: c [kg/cm^2]	0.43		
Shear Strength Parameters: ϕ [^{o}]	2		

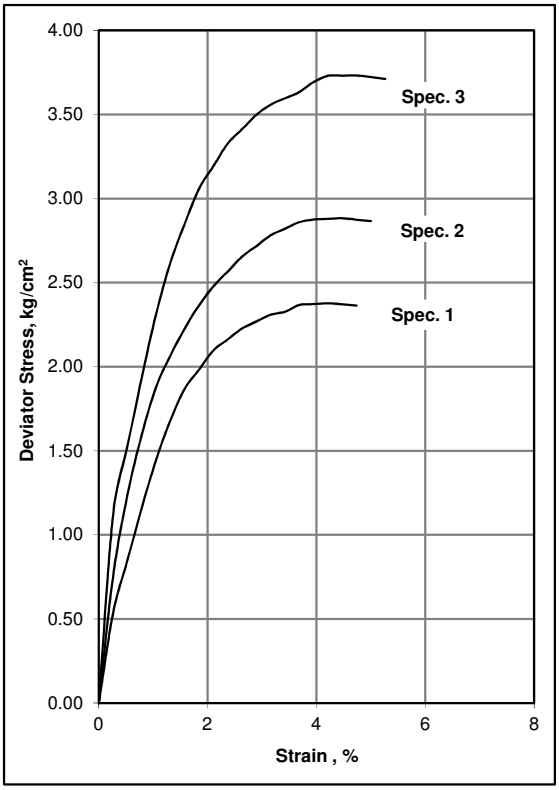


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

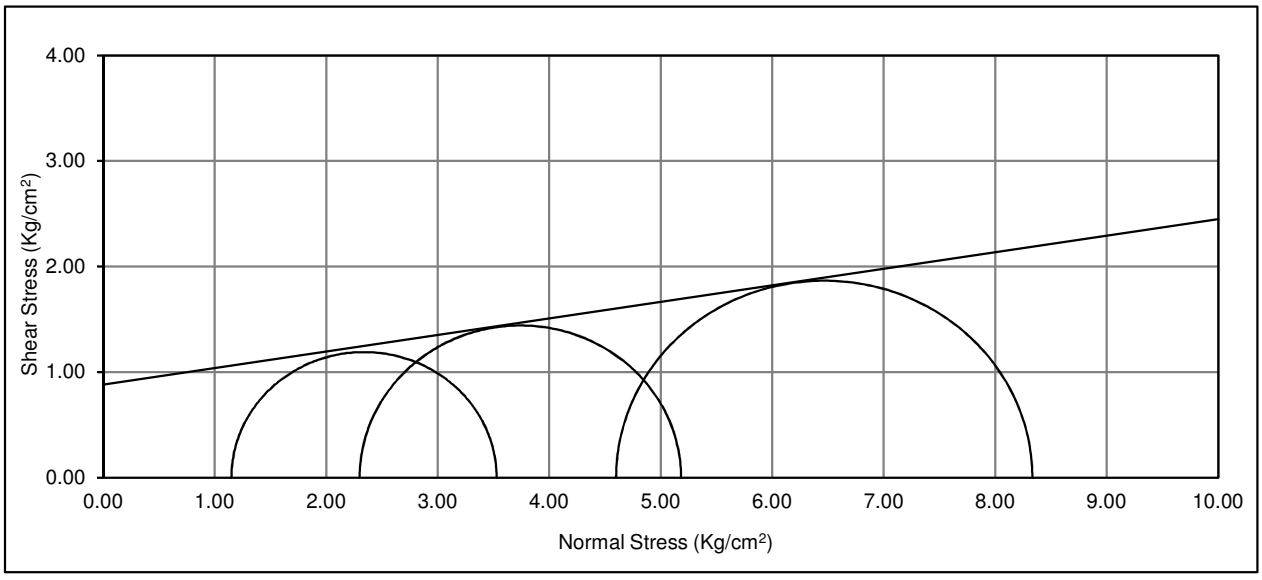
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-6.
Depth : 40.50-41.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, light brownish grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	40	39	39
Specific Gravity, Gs	2.61	2.61	2.61
Density, t/m^3	1.78	1.80	1.80
Dry density, t/m^3	1.27	1.30	1.30
Void Ratio	1.05	1.01	1.01
Saturation, %	99.74	100.00	100.00
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.15	2.30	4.60
Deviator Stress, kg/cm^2	2.38	2.88	3.73
Strain at Failure, %	4.21	4.47	4.74
Shear Strength Parameters: c [kg/cm^2]	0.88		
Shear Strength Parameters: ϕ [^{o}]	9		

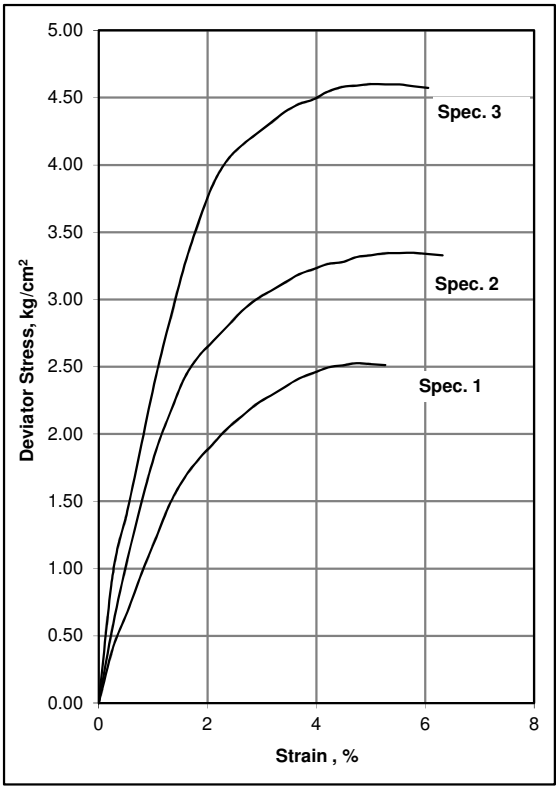


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

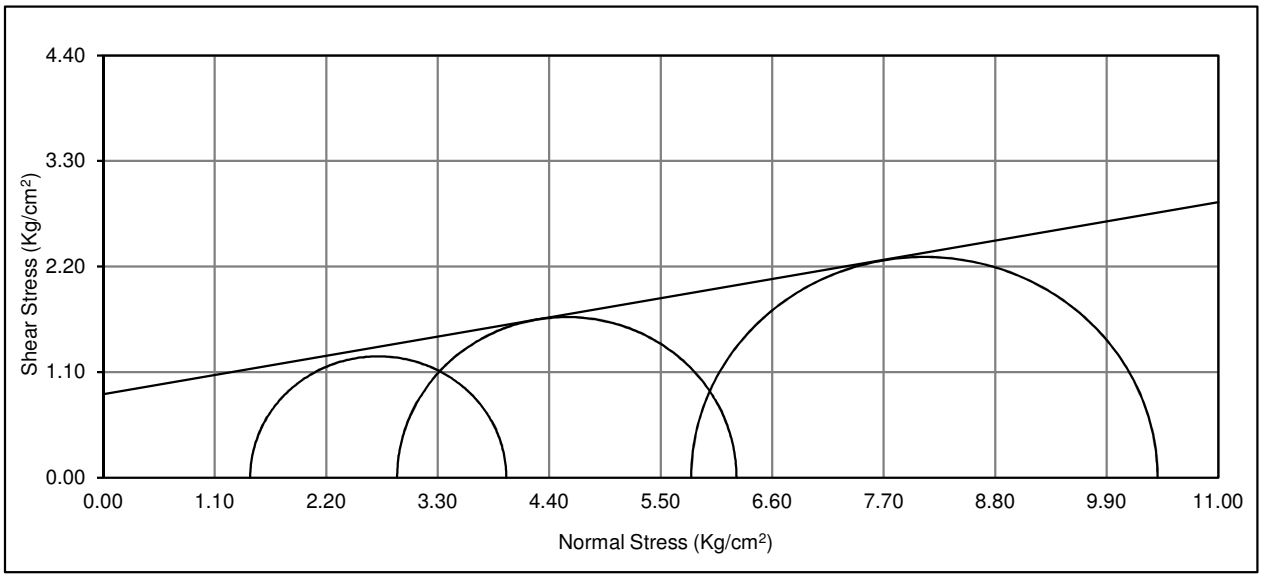
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-6.
Depth : 50.50-51.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, brownish grey.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	24	22	22
Specific Gravity, Gs	2.65	2.65	2.65
Density, t/m^3	1.98	2.01	2.03
Dry density, t/m^3	1.59	1.64	1.66
Void Ratio	0.66	0.62	0.60
Saturation, %	97.27	96.79	98.34
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.45	2.90	5.80
Deviator Stress, kg/cm^2	2.53	3.35	4.60
Strain at Failure, %	4.74	5.79	5.00
Shear Strength Parameters: c [kg/cm^2]	0.87		
Shear Strength Parameters: ϕ [^{o}]	10		

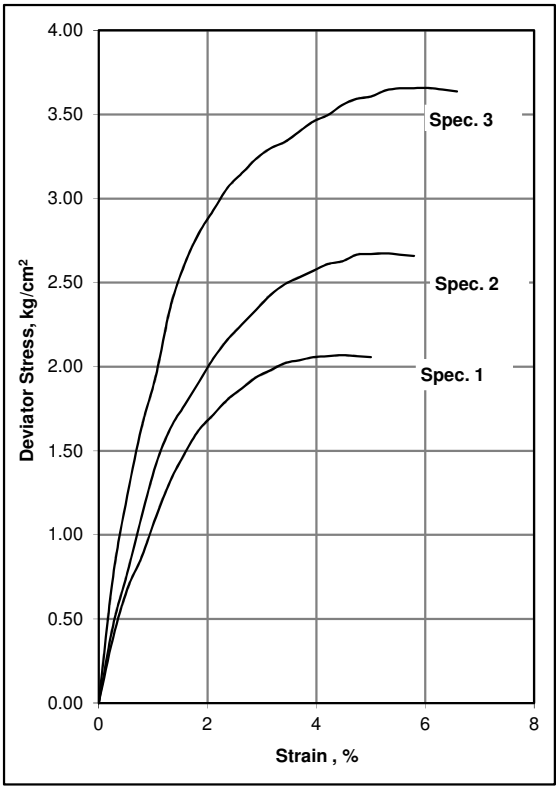


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

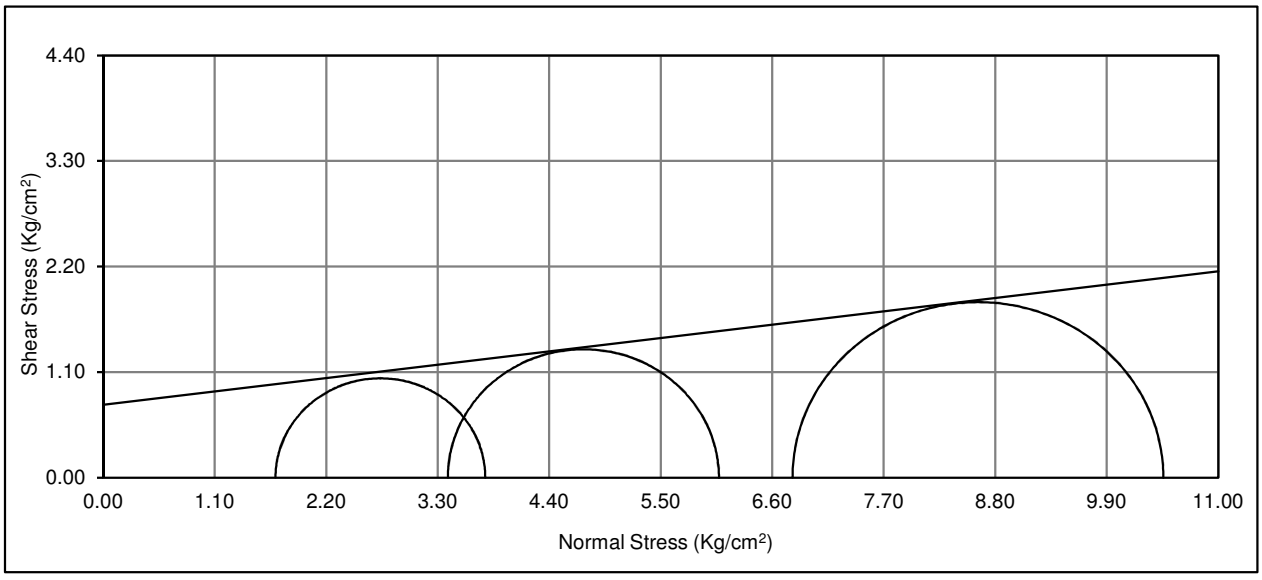
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-6.
Depth : 58.50-59.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, brownish grey.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	48	48	47
Specific Gravity, Gs	2.64	2.64	2.64
Density, t/m^3	1.70	1.71	1.71
Dry density, t/m^3	1.15	1.15	1.16
Void Ratio	1.30	1.29	1.27
Saturation, %	97.63	98.26	98.28
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.70	3.40	6.80
Deviator Stress, kg/cm^2	2.07	2.67	3.66
Strain at Failure, %	4.47	5.26	6.05
Shear Strength Parameters: c [kg/cm^2]	0.76		
Shear Strength Parameters: ϕ [^{o}]	7		

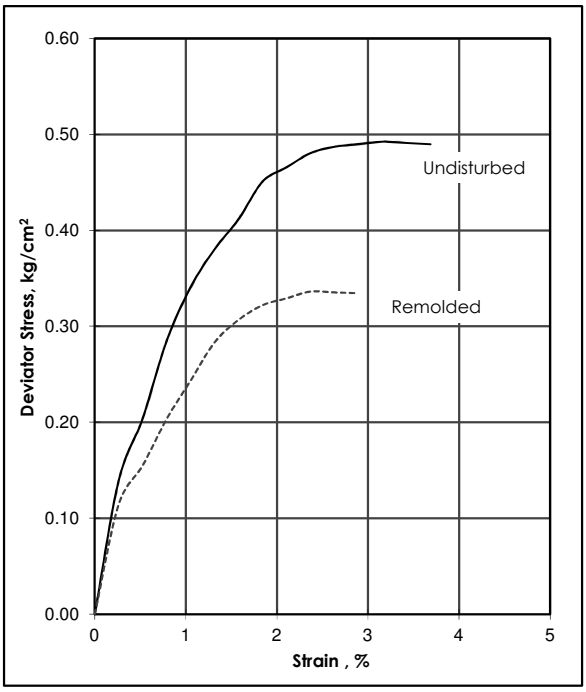


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

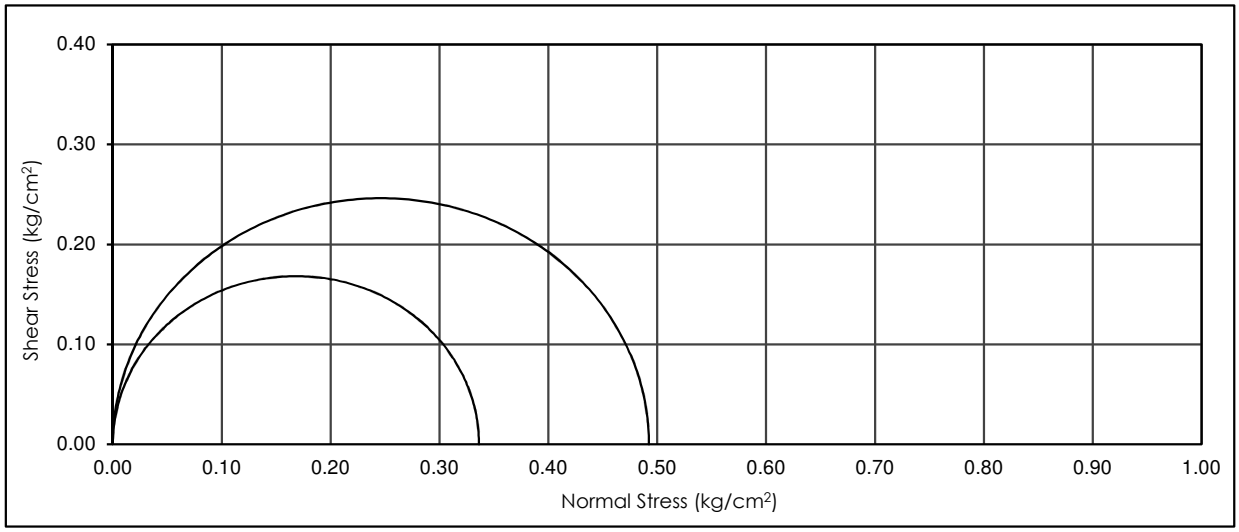
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-7.
Depth : 2.50-3.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, with a trace of sand, light brownish grey.	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		54	54
Specific Gravity, Gs		2.75	2.75
Density, t/m^3		1.59	1.59
Dry density, t/m^3		1.03	1.03
Void Ratio		1.66	1.67
Saturation, %		89.50	89.07
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.49	0.34
Strain at failure, %		3.16	2.37
Shear Strength parameters	c [kg/cm^2]	0.25	0.17
	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-7.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey.		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.40	1.48	1.53
	Moisture content, %	71.00	71.00	71.00
	Dry density, t/m^3	0.82	0.86	0.89
	Void Ratio	2.16	2.00	1.90
	Saturation, %	85.13	91.97	96.86
Final	Density, t/m^3	1.50	1.71	1.69
	Moisture content, %	86.80	48.68	54.49
	Dry density, t/m^3	0.80	1.15	1.10
	Void Ratio	2.23	1.26	1.36
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0448	0.0448	0.0448
Initial σ_3, kg/cm^2		0.20	0.40	0.80
Back pressure, kg/cm^2		0.90	0.90	0.90
Cell pressure, kg/cm^2		1.10	1.30	1.70
Strain at failure, %		5.98	6.58	6.67
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.36	0.53	0.72
u_f, kg/cm^2		0.10	0.20	0.35
$\sigma_3'_f$, kg/cm^2		0.10	0.20	0.45
$\sigma_1'_f$, kg/cm^2		0.46	0.73	1.17
Shear Strength parameters	c , kg/cm^2	0.15		
	c' , kg/cm^2	0.15		
	ϕ	11		
	ϕ'	16		

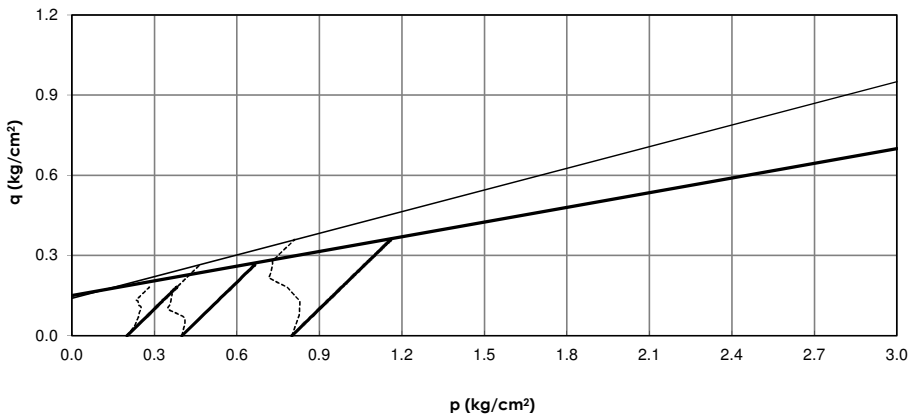
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

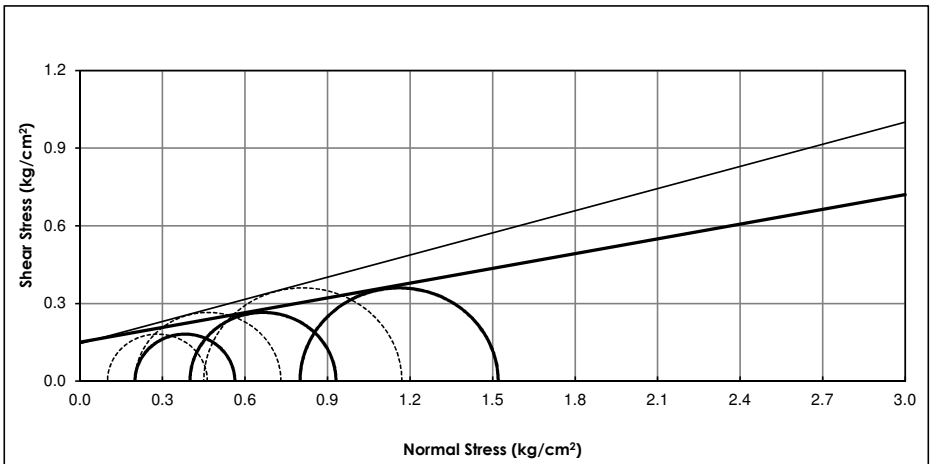
Hole No. : BH-7.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.15	0.14
α (°)	10	15

Mohr Circle



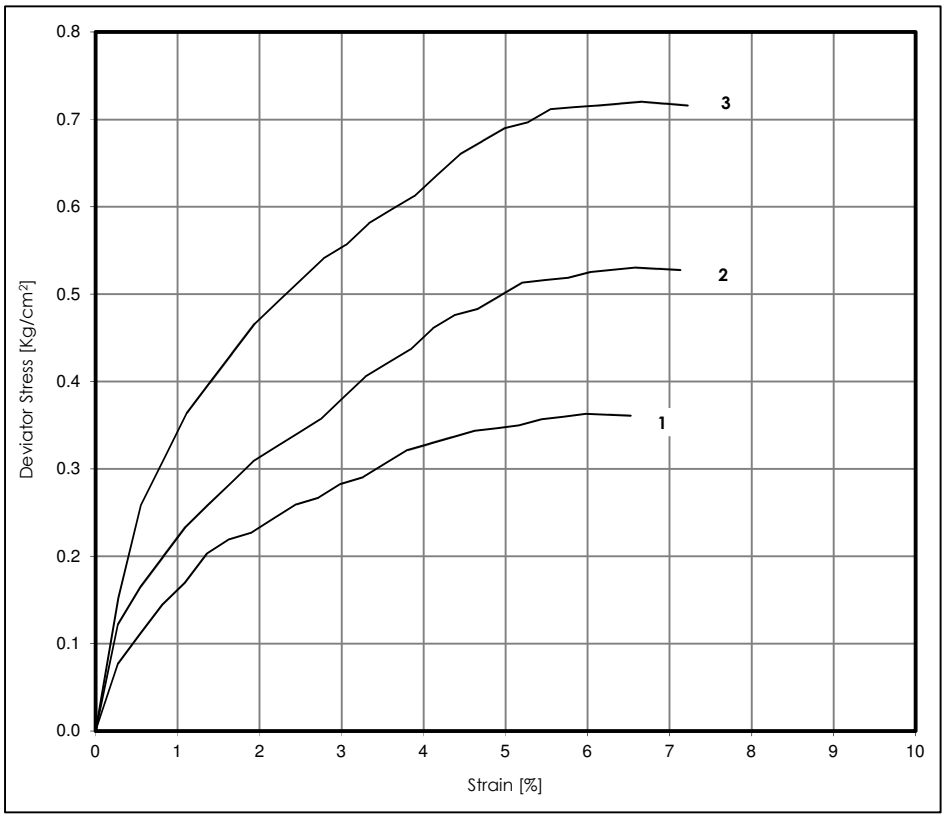
	Total	Effective
c (kg/cm²)	0.15	0.15
ϕ (°)	11	16

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

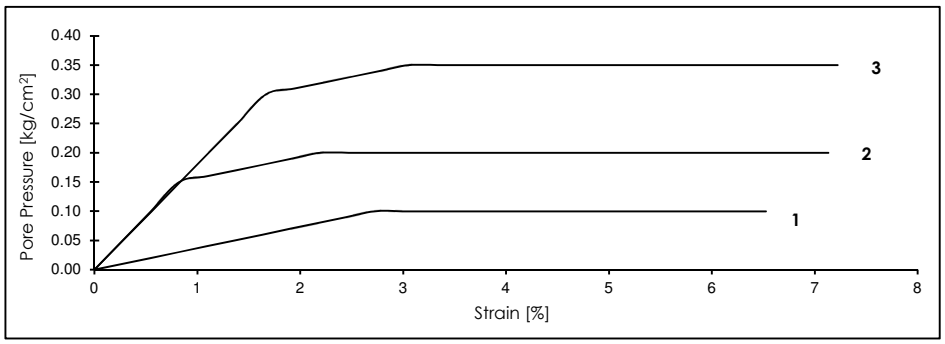
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-7.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-7.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.08	0.13
0.40	0.02	0.11	0.18
0.60	0.03	0.14	0.21
0.80	0.04	0.17	0.24
1.00	0.05	0.20	0.25
1.20	0.06	0.22	0.27
1.40	0.07	0.23	0.31
1.60	0.08	0.24	0.33
1.80	0.09	0.26	0.35
2.00	0.10	0.27	0.37
2.20	0.10	0.28	0.35
2.40	0.10	0.29	0.34
2.60	0.10	0.31	0.33
2.80	0.10	0.32	0.31
3.00	0.10	0.33	0.30
3.20	0.10	0.34	0.30
3.40	0.10	0.34	0.29
3.60	0.10	0.35	0.29
3.80	0.10	0.35	0.29
4.00	0.10	0.36	0.28
4.20	0.10	0.36	0.28
4.40	0.10	0.36	0.28
4.60	0.10	0.36	0.28
4.80	0.10	0.36	0.28
5.00			
5.20			
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.12	0.41
0.40	0.10	0.17	0.61
0.60	0.15	0.20	0.75
0.80	0.16	0.23	0.69
1.00	0.17	0.26	0.66
1.20	0.18	0.28	0.63
1.40	0.19	0.31	0.62
1.60	0.20	0.32	0.62
1.80	0.20	0.34	0.59
2.00	0.20	0.36	0.56
2.20	0.20	0.38	0.52
2.40	0.20	0.41	0.49
2.60	0.20	0.42	0.47
2.80	0.20	0.44	0.46
3.00	0.20	0.46	0.43
3.20	0.20	0.48	0.42
3.40	0.20	0.48	0.41
3.60	0.20	0.50	0.40
3.80	0.20	0.51	0.39
4.00	0.20	0.52	0.39
4.20	0.20	0.52	0.39
4.40	0.20	0.53	0.38
4.60	0.20	0.53	0.38
4.80	0.20	0.53	0.38
5.00	0.20	0.53	0.38
5.20	0.20	0.53	0.38
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.15	0.33
0.40	0.10	0.26	0.39
0.60	0.15	0.31	0.48
0.80	0.20	0.36	0.55
1.00	0.25	0.40	0.63
1.20	0.30	0.43	0.69
1.40	0.31	0.47	0.66
1.60	0.32	0.49	0.65
1.80	0.33	0.52	0.64
2.00	0.34	0.54	0.63
2.20	0.35	0.56	0.63
2.40	0.35	0.58	0.60
2.60	0.35	0.60	0.59
2.80	0.35	0.61	0.57
3.00	0.35	0.64	0.55
3.20	0.35	0.66	0.53
3.40	0.35	0.68	0.52
3.60	0.35	0.69	0.51
3.80	0.35	0.70	0.50
4.00	0.35	0.71	0.49
4.20	0.35	0.71	0.49
4.40	0.35	0.72	0.49
4.60	0.35	0.72	0.49
4.80	0.35	0.72	0.49
5.00	0.35	0.72	0.49
5.20	0.35	0.72	0.49
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-7.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						18.90	23.40	4.50	4.50	
	0.40	0.40			36.70	36.80	0.10					0.10
1.00		0.89	0.49	0.98				23.50	26.30	2.80	2.80	
	0.90	0.90			36.80	37.00	0.20					0.20
1.10		1.02						26.30	26.80	0.50	0.50	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-7.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.50						20.90	25.50	4.60	4.60	
	0.40	0.40			35.20	34.30	-0.90					-0.90
1.00		0.89	0.49	0.98				26.60	29.20	2.60	2.60	
	0.90	0.90			34.30	34.50	0.20					0.20
1.30		1.20						29.40	30.40	1.00	1.00	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-7.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

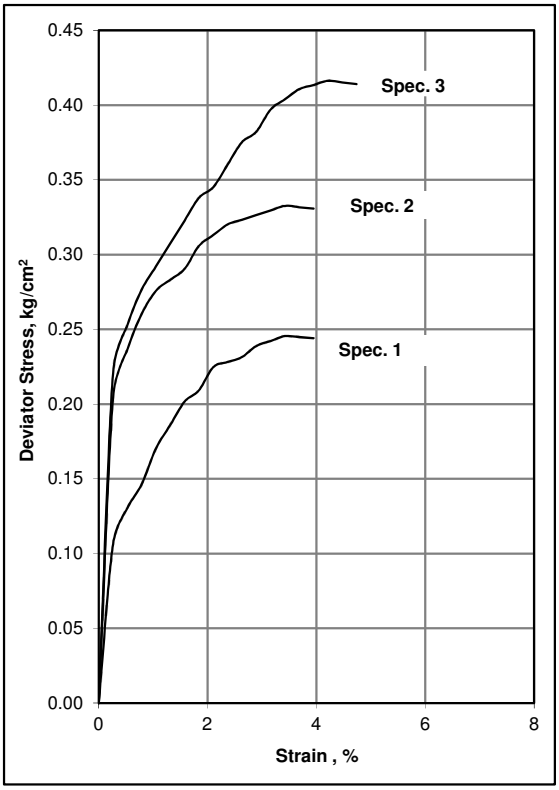
Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.50						17.00	21.90	4.90	4.90	
	0.40	0.40			32.20	31.40	-0.80					-0.80
1.00		0.89	0.49	0.98				22.90	26.40	3.50	3.50	
	0.90	0.90			31.40	31.80	0.40					0.40
1.70		1.60						26.60	28.80	2.20	2.20	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

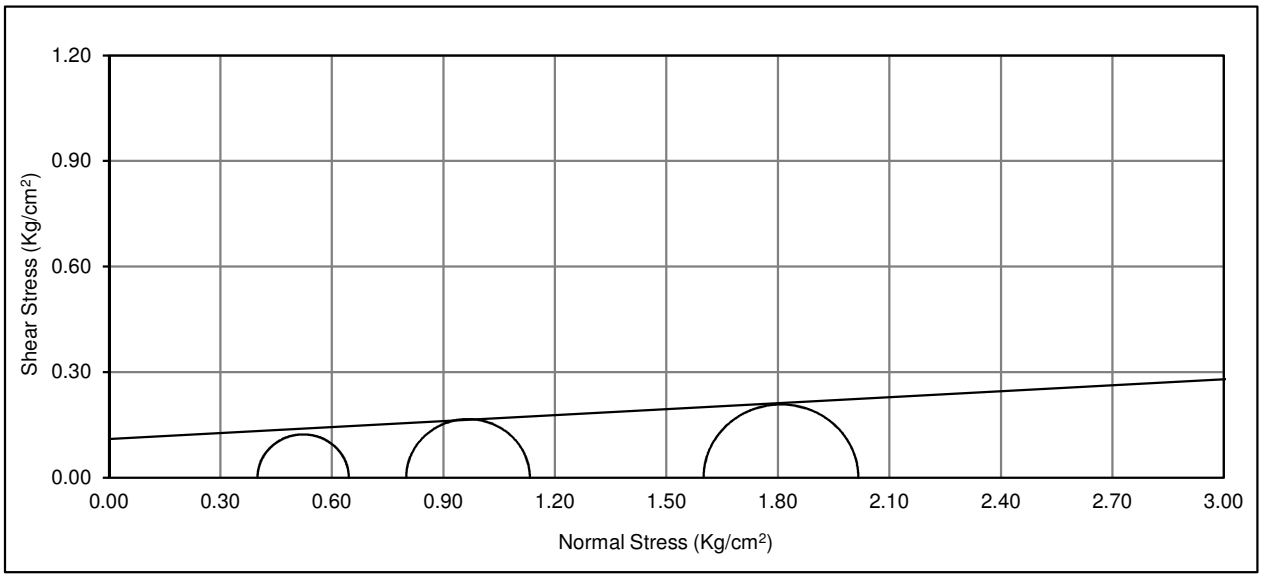
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-7.
Depth : 14.50-15.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, brown.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	91	91	87
Specific Gravity, Gs	2.63	2.63	2.63
Density, t/m^3	1.40	1.40	1.45
Dry density, t/m^3	0.73	0.73	0.78
Void Ratio	2.59	2.59	2.38
Saturation, %	92.74	92.79	95.68
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	0.40	0.80	1.60
Deviator Stress, kg/cm^2	0.25	0.33	0.42
Strain at Failure, %	3.42	3.42	4.21
Shear Strength Parameters: c [kg/cm^2]	0.11		
Shear Strength Parameters: ϕ [^{o}]	3		

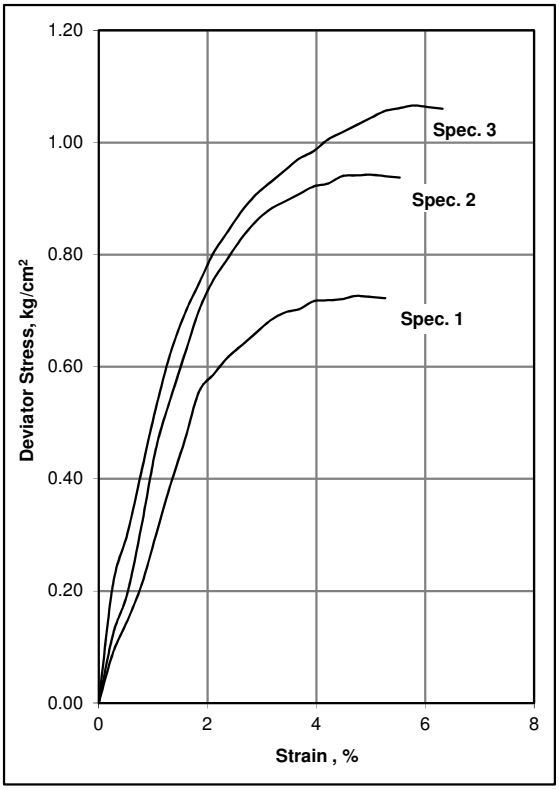


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

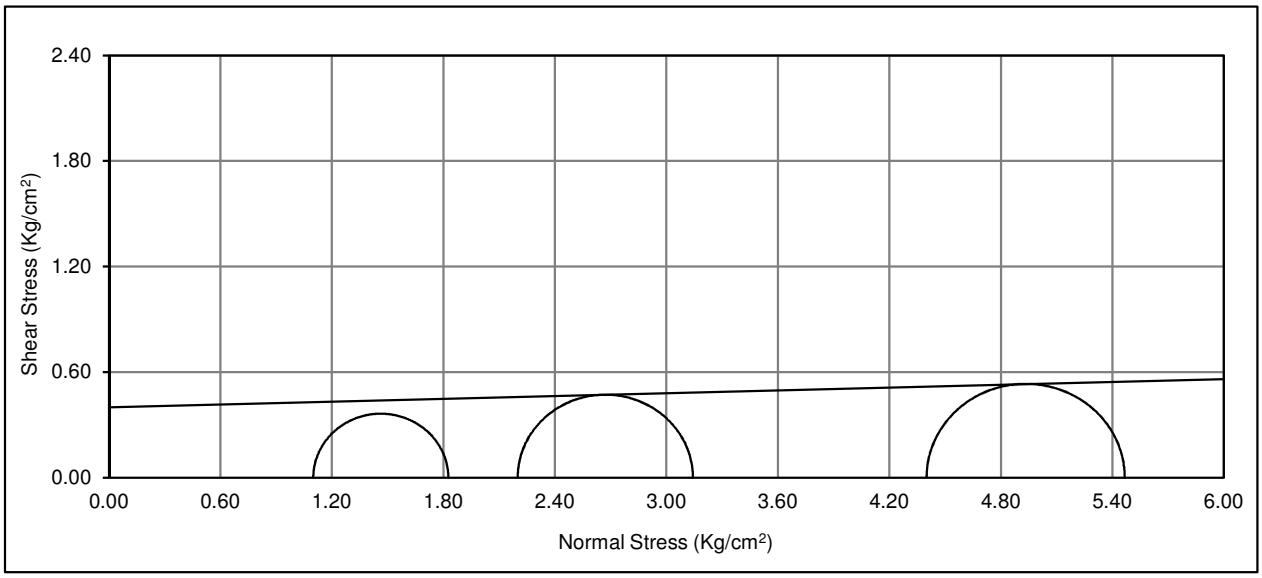
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-7.
Depth : 38.50-39.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, light brownish grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	91	87	86
Specific Gravity, Gs	2.68	2.68	2.68
Density, t/m^3	1.68	1.68	1.68
Dry density, t/m^3	0.88	0.90	0.90
Void Ratio	2.04	1.98	1.96
Saturation, %	119.03	117.40	117.03
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.10	2.20	4.40
Deviator Stress, kg/cm^2	0.73	0.94	1.07
Strain at Failure, %	4.74	5.00	5.79
Shear Strength Parameters: c [kg/cm^2]	0.40		
Shear Strength Parameters: ϕ [^{o}]	2		

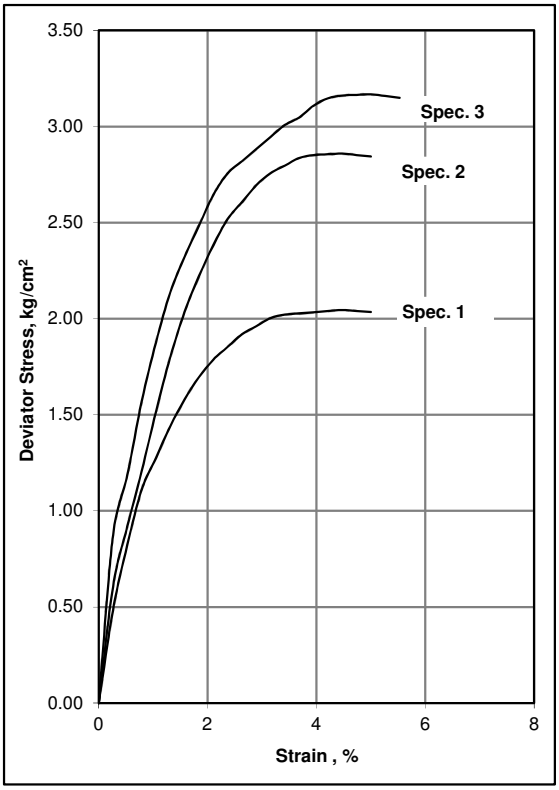


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

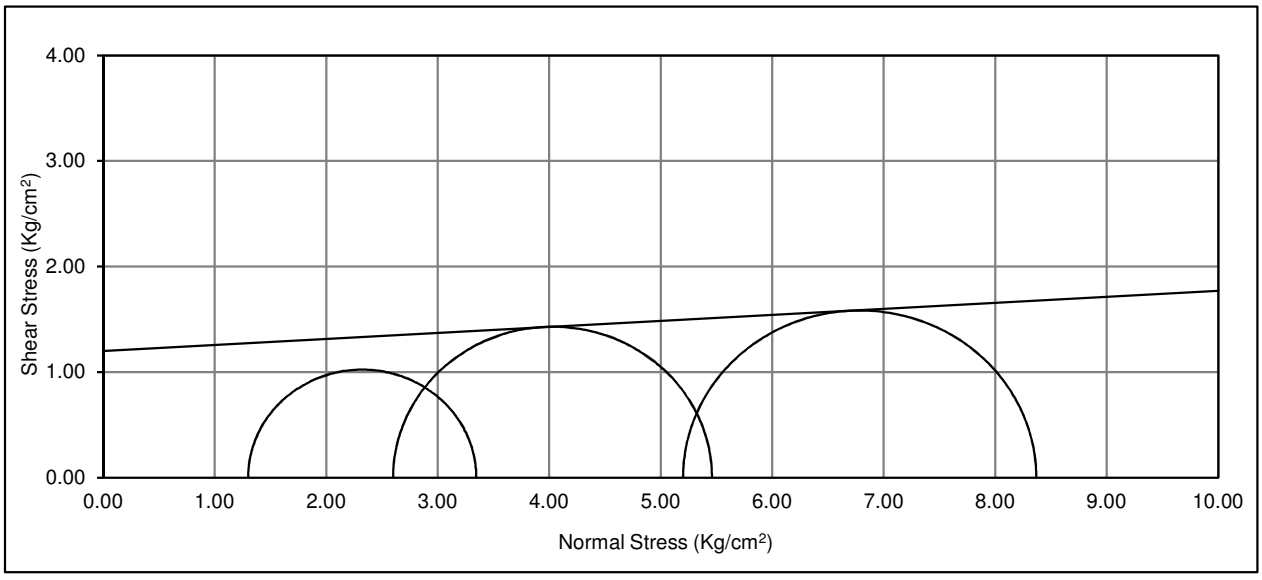
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-7.
Depth : 46.50-47.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, dark grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	38	33	35
Specific Gravity, Gs	2.59	2.59	2.59
Density, t/m^3	1.82	1.81	1.85
Dry density, t/m^3	1.32	1.36	1.37
Void Ratio	0.97	0.91	0.89
Saturation, %	100.00	95.84	100.00
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.30	2.60	5.20
Deviator Stress, kg/cm^2	2.05	2.86	3.17
Strain at Failure, %	4.47	4.47	5.00
Shear Strength Parameters: c [kg/cm^2]	1.20		
Shear Strength Parameters: ϕ [^{o}]	3		

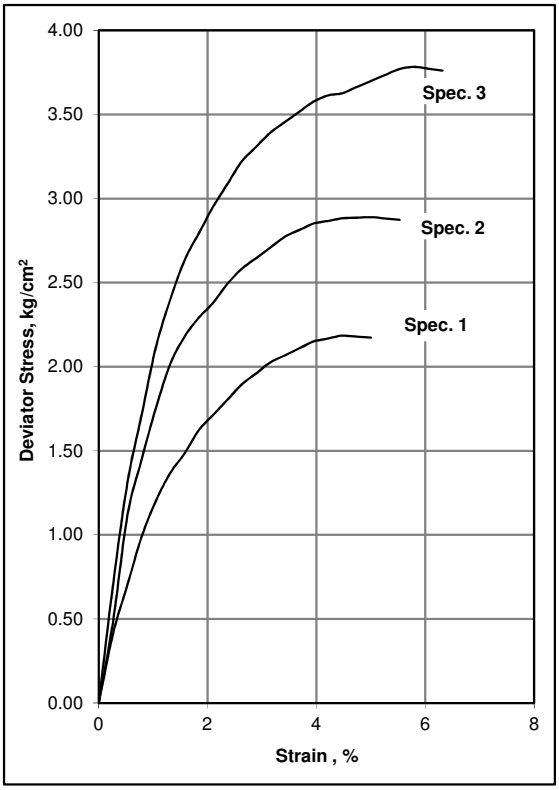


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

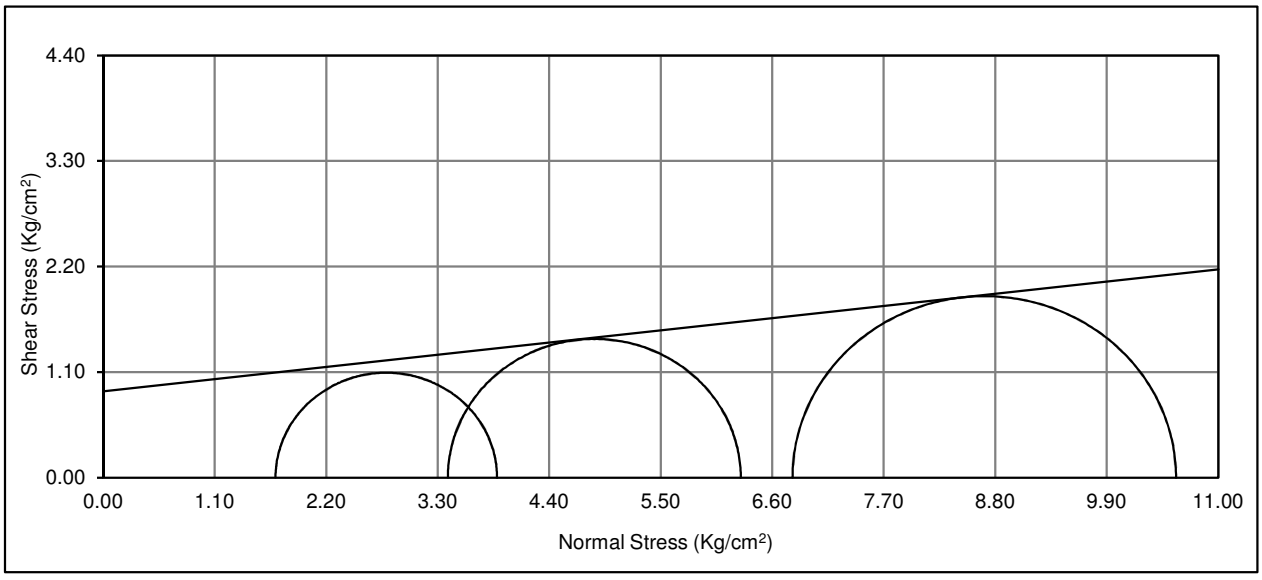
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-7.
Depth : 58.00-58.50m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	43	43	42
Specific Gravity, Gs	2.63	2.63	2.63
Density, t/m^3	1.77	1.77	1.77
Dry density, t/m^3	1.24	1.24	1.24
Void Ratio	1.13	1.12	1.12
Saturation, %	99.92	99.92	99.83
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.70	3.40	6.80
Deviator Stress, kg/cm^2	2.19	2.89	3.78
Strain at Failure, %	4.47	5.00	5.79
Shear Strength Parameters: c [kg/cm^2]	0.90		
Shear Strength Parameters: ϕ [^{o}]	7		



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a little of sand, dark grey		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.67	1.68	1.69
	Moisture content, %	42.00	42.00	42.00
	Dry density, t/m^3	1.18	1.18	1.19
	Void Ratio	1.30	1.29	1.28
	Saturation, %	87.39	88.16	89.02
Final	Density, t/m^3	1.84	1.87	1.90
	Moisture content, %	41.15	35.77	36.42
	Dry density, t/m^3	1.30	1.38	1.39
	Void Ratio	1.08	0.97	0.94
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.4110	0.4110	0.4110
Initial σ_3, kg/cm^2		0.20	0.40	0.80
Back pressure, kg/cm^2		0.90	0.90	0.90
Cell pressure, kg/cm^2		1.10	1.30	1.70
Strain at failure, %		5.78	6.92	7.77
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.50	0.82	0.91
u_f, kg/cm^2		0.05	0.18	0.45
$\sigma_3'_f$, kg/cm^2		0.15	0.22	0.35
$\sigma_1'_f$, kg/cm^2		0.65	1.04	1.26
Shear Strength parameters	c , kg/cm^2	0.33		
	c' , kg/cm^2	0.27		
	ϕ	6		
	ϕ'	14		

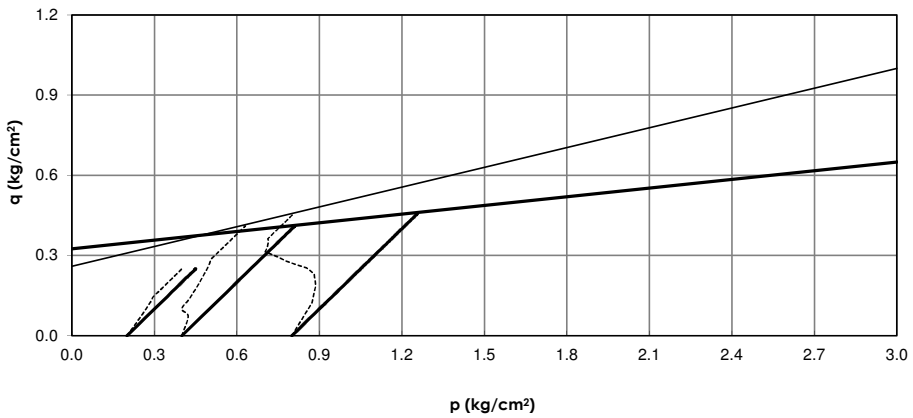
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

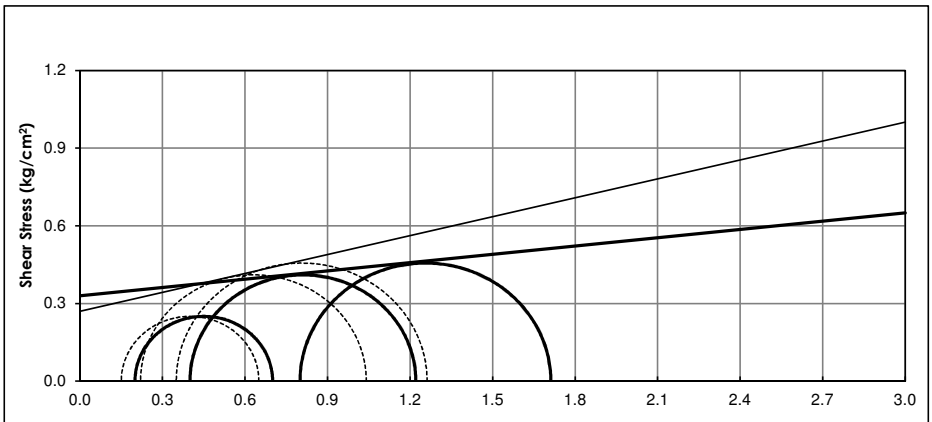
Hole No. : BH-8.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.33	0.26
α (°)	6	14

Mohr Circle



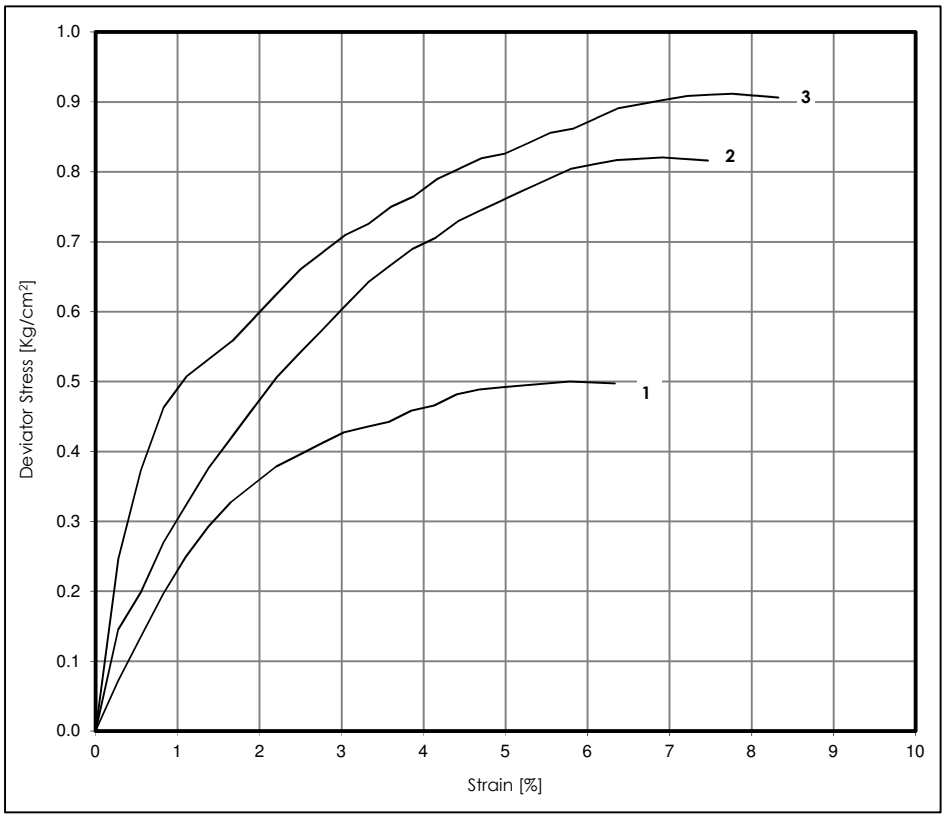
	Total	Effective
c (kg/cm²)	0.33	0.27
ϕ (°)	6	14

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

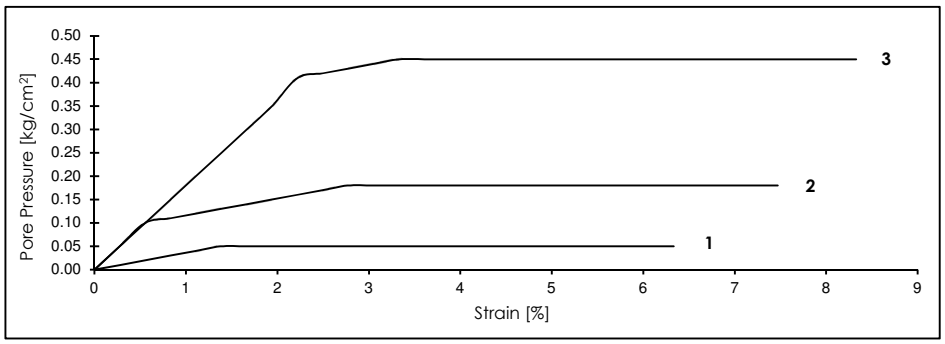
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.07	0.14
0.40	0.02	0.13	0.15
0.60	0.03	0.20	0.15
0.80	0.04	0.25	0.16
1.00	0.05	0.29	0.17
1.20	0.05	0.33	0.15
1.40	0.05	0.35	0.14
1.60	0.05	0.38	0.13
1.80	0.05	0.39	0.13
2.00	0.05	0.41	0.12
2.20	0.05	0.43	0.12
2.40	0.05	0.44	0.11
2.60	0.05	0.44	0.11
2.80	0.05	0.46	0.11
3.00	0.05	0.47	0.11
3.20	0.05	0.48	0.10
3.40	0.05	0.49	0.10
3.60	0.05	0.49	0.10
3.80	0.05	0.49	0.10
4.00	0.05	0.50	0.10
4.20	0.05	0.50	0.10
4.40	0.05	0.50	0.10
4.60	0.05	0.50	0.10
4.80			
5.00			
5.20			
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.15	0.34
0.40	0.10	0.20	0.50
0.60	0.11	0.27	0.41
0.80	0.12	0.32	0.37
1.00	0.13	0.38	0.35
1.20	0.14	0.42	0.33
1.40	0.15	0.46	0.32
1.60	0.16	0.51	0.32
1.80	0.17	0.54	0.31
2.00	0.18	0.57	0.31
2.20	0.18	0.61	0.30
2.40	0.18	0.64	0.28
2.60	0.18	0.67	0.27
2.80	0.18	0.69	0.26
3.00	0.18	0.71	0.26
3.20	0.18	0.73	0.25
3.40	0.18	0.75	0.24
3.60	0.18	0.76	0.24
3.80	0.18	0.78	0.23
4.00	0.18	0.79	0.23
4.20	0.18	0.80	0.22
4.40	0.18	0.81	0.22
4.60	0.18	0.82	0.22
4.80	0.18	0.82	0.22
5.00	0.18	0.82	0.22
5.20	0.18	0.82	0.22
5.40	0.18	0.82	0.22
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.25	0.20
0.40	0.10	0.37	0.27
0.60	0.15	0.46	0.32
0.80	0.20	0.51	0.39
1.00	0.25	0.53	0.47
1.20	0.30	0.56	0.54
1.40	0.35	0.59	0.59
1.60	0.41	0.63	0.65
1.80	0.42	0.66	0.64
2.00	0.43	0.69	0.63
2.20	0.44	0.71	0.62
2.40	0.45	0.73	0.62
2.60	0.45	0.75	0.60
2.80	0.45	0.77	0.59
3.00	0.45	0.79	0.57
3.20	0.45	0.80	0.56
3.40	0.45	0.82	0.55
3.60	0.45	0.83	0.54
3.80	0.45	0.84	0.54
4.00	0.45	0.86	0.53
4.20	0.45	0.86	0.52
4.40	0.45	0.88	0.51
4.60	0.45	0.89	0.50
4.80	0.45	0.90	0.50
5.00	0.45	0.90	0.50
5.20	0.45	0.91	0.50
5.40	0.45	0.91	0.49
5.60	0.45	0.91	0.49
5.80	0.45	0.91	0.50
6.00	0.45	0.91	0.50
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.50						19.30	26.70	7.40	7.40	
	0.40	0.40			37.90	37.10	-0.80					-0.80
1.00		0.89	0.49	0.98				26.60	28.70	2.10	2.10	
	0.90	0.90			37.10	37.10	0.00					0.00
1.10		1.02						28.70	29.10	0.40	0.40	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.55						21.80	27.10	5.30	5.30	
	0.40	0.40			35.20	33.00	-2.20					-2.20
1.00		0.89	0.49	0.98				27.50	30.10	2.60	2.60	
	0.90	0.90			33.00	33.20	0.20					0.20
1.30		1.20						30.10	31.30	1.20	1.20	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

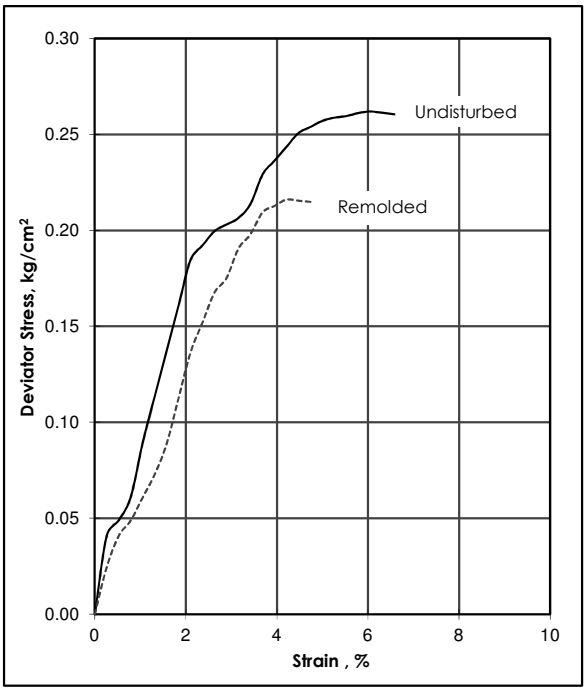
Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.50						21.30	25.70	4.40	4.40	
	0.40	0.40			37.50	36.30	-1.20					-1.20
1.00		0.89	0.49	0.98				26.90	29.90	3.00	3.00	
	0.90	0.90			36.30	36.40	0.10					0.10
1.70		1.60						29.80	31.90	2.10	2.10	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

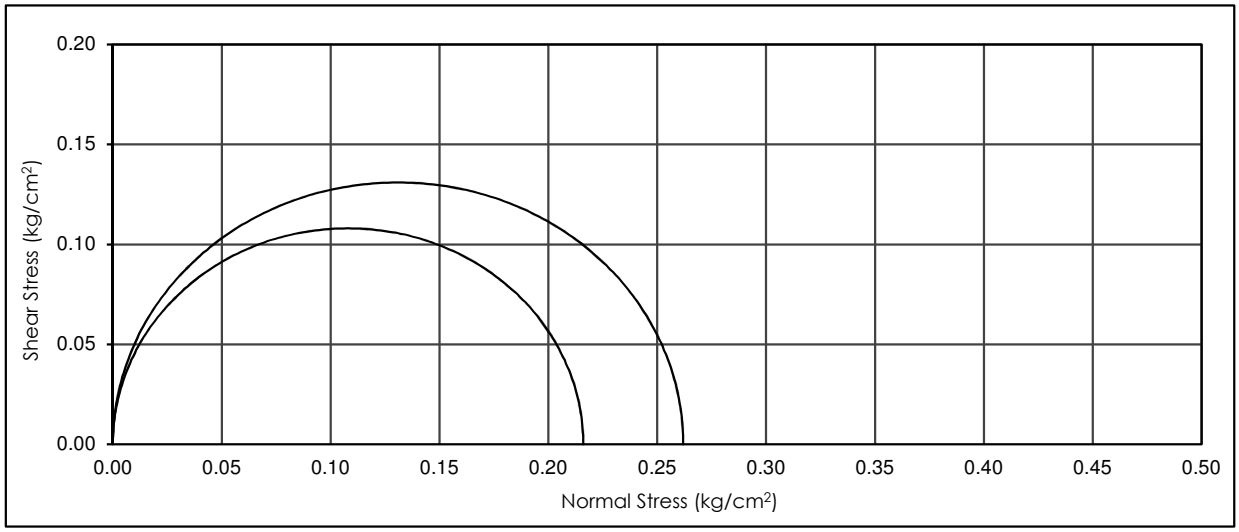
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, dark grey.	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		98	86
Specific Gravity, Gs		2.58	2.58
Density, t/m^3		1.37	1.36
Dry density, t/m^3		0.69	0.73
Void Ratio		2.72	2.53
Saturation, %		92.89	88.09
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.26	0.22
Strain at failure, %		6.05	4.21
Shear Strength parameters	c [kg/cm^2]	0.13	0.11
	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, dark grey		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.36	1.37	1.37
	Moisture content, %	98.00	98.00	98.00
	Dry density, t/m^3	0.69	0.69	0.69
	Void Ratio	2.75	2.74	2.73
	Saturation, %	92.10	92.28	92.61
Final	Density, t/m^3	1.56	1.58	1.59
	Moisture content, %	86.01	95.71	92.43
	Dry density, t/m^3	0.84	0.81	0.83
	Void Ratio	2.07	2.20	2.12
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0290	0.0290	0.0290
Initial σ_3, kg/cm^2		0.20	0.40	0.80
Back pressure, kg/cm^2		1.40	1.90	1.90
Cell pressure, kg/cm^2		1.60	2.30	2.70
Strain at failure, %		7.71	6.63	8.03
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.60	0.82	1.23
u_f, kg/cm^2		0.08	0.15	0.35
$\sigma_3'_f$, kg/cm^2		0.12	0.25	0.45
$\sigma_1'_f$, kg/cm^2		0.72	1.07	1.68
Shear Strength parameters	c , kg/cm^2	0.15		
	c' , kg/cm^2	0.08		
	ϕ	20		
	ϕ'	31		

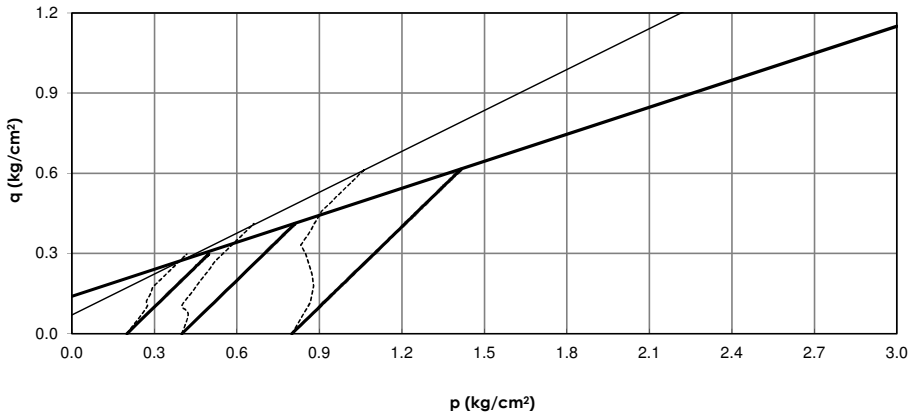
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

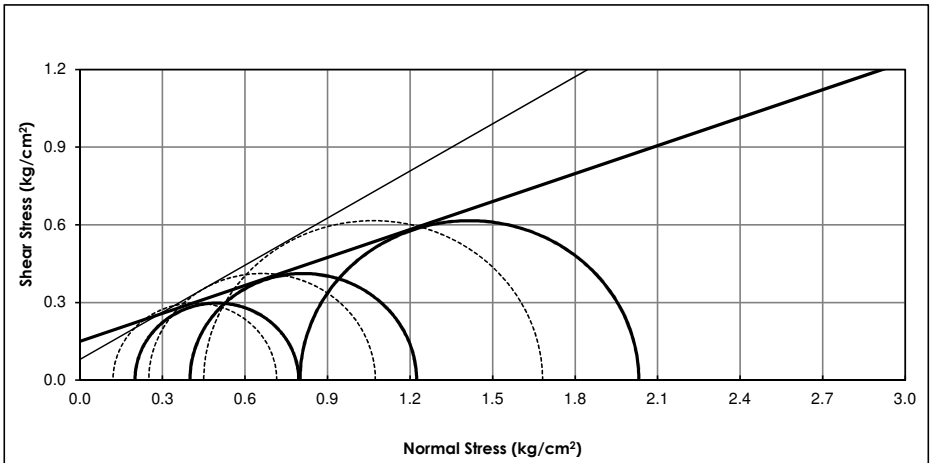
Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.14	0.07
α (°)	19	27

Mohr Circle



	Total	Effective
c (kg/cm²)	0.15	0.08
ϕ (°)	20	31

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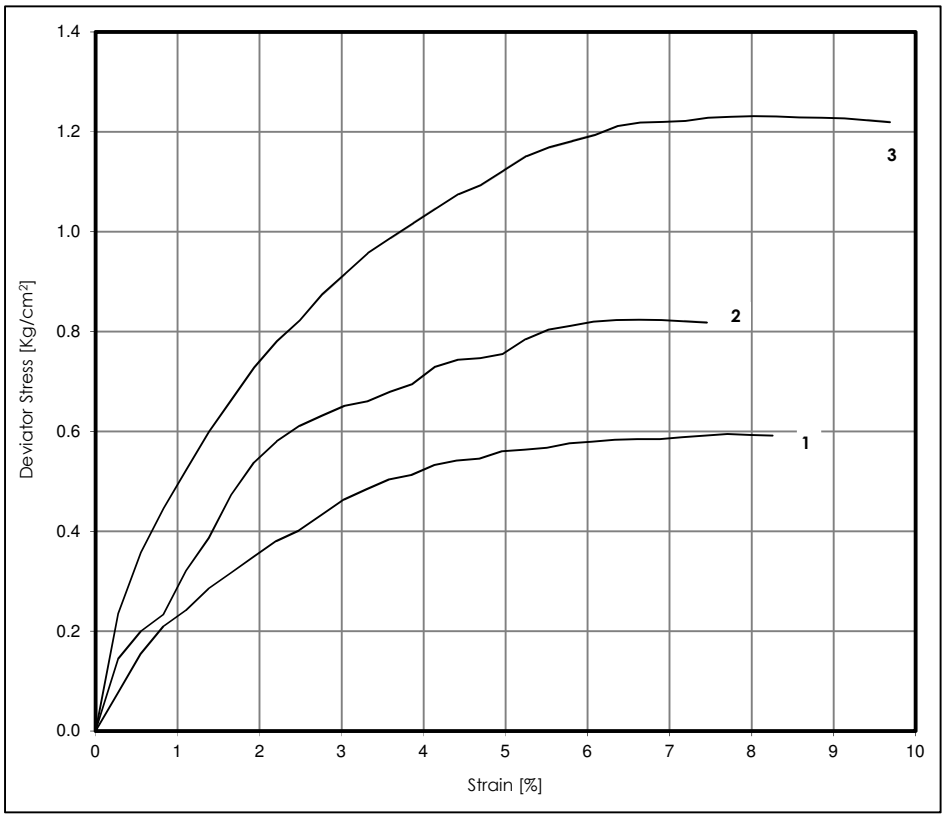
Soil Investigation and Foundation Engineering

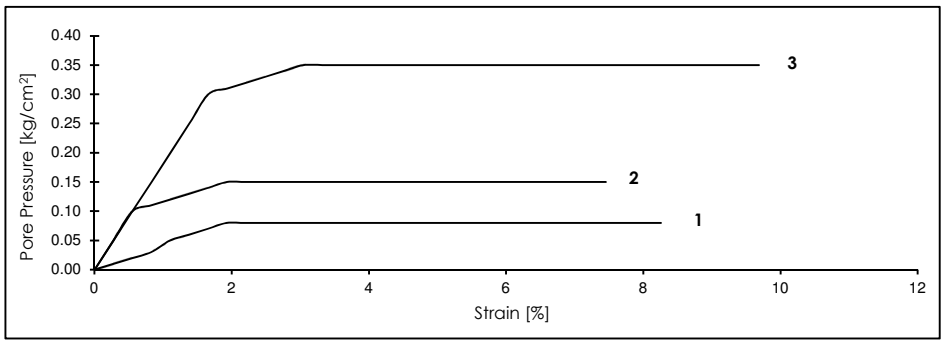
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.08	0.13
0.40	0.02	0.15	0.13
0.60	0.03	0.21	0.14
0.80	0.05	0.24	0.21
1.00	0.06	0.29	0.21
1.20	0.07	0.32	0.22
1.40	0.08	0.35	0.23
1.60	0.08	0.38	0.21
1.80	0.08	0.40	0.20
2.00	0.08	0.43	0.18
2.20	0.08	0.46	0.17
2.40	0.08	0.48	0.17
2.60	0.08	0.50	0.16
2.80	0.08	0.51	0.16
3.00	0.08	0.53	0.15
3.20	0.08	0.54	0.15
3.40	0.08	0.55	0.15
3.60	0.08	0.56	0.14
3.80	0.08	0.56	0.14
4.00	0.08	0.57	0.14
4.20	0.08	0.58	0.14
4.40	0.08	0.58	0.14
4.60	0.08	0.58	0.14
4.80	0.08	0.58	0.14
5.00	0.08	0.59	0.14
5.20	0.08	0.59	0.14
5.40	0.08	0.59	0.14
5.60	0.08	0.60	0.13
5.80	0.08	0.59	0.13
6.00	0.08	0.59	0.14
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.15	0.34
0.40	0.10	0.20	0.50
0.60	0.11	0.23	0.47
0.80	0.12	0.32	0.37
1.00	0.13	0.39	0.34
1.20	0.14	0.47	0.30
1.40	0.15	0.54	0.28
1.60	0.15	0.58	0.26
1.80	0.15	0.61	0.25
2.00	0.15	0.63	0.24
2.20	0.15	0.65	0.23
2.40	0.15	0.66	0.23
2.60	0.15	0.68	0.22
2.80	0.15	0.69	0.22
3.00	0.15	0.73	0.21
3.20	0.15	0.74	0.20
3.40	0.15	0.75	0.20
3.60	0.15	0.76	0.20
3.80	0.15	0.78	0.19
4.00	0.15	0.80	0.19
4.20	0.15	0.81	0.18
4.40	0.15	0.82	0.18
4.60	0.15	0.82	0.18
4.80	0.15	0.82	0.18
5.00	0.15	0.82	0.18
5.20	0.15	0.82	0.18
5.40	0.15	0.82	0.18
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.24	0.21
0.40	0.10	0.36	0.28
0.60	0.15	0.45	0.34
0.80	0.20	0.52	0.38
1.00	0.25	0.60	0.42
1.20	0.30	0.66	0.45
1.40	0.31	0.73	0.43
1.60	0.32	0.78	0.41
1.80	0.33	0.82	0.40
2.00	0.34	0.88	0.39
2.20	0.35	0.92	0.38
2.40	0.35	0.96	0.37
2.60	0.35	0.99	0.35
2.80	0.35	1.02	0.34
3.00	0.35	1.05	0.33
3.20	0.35	1.08	0.33
3.40	0.35	1.09	0.32
3.60	0.35	1.12	0.31
3.80	0.35	1.15	0.30
4.00	0.35	1.17	0.30
4.20	0.35	1.18	0.30
4.40	0.35	1.19	0.29
4.60	0.35	1.21	0.29
4.80	0.35	1.22	0.29
5.00	0.35	1.22	0.29
5.20	0.35	1.22	0.29
5.40	0.35	1.23	0.28
5.60	0.35	1.23	0.28
5.80	0.35	1.23	0.28
6.00	0.35	1.23	0.28
6.20	0.35	1.23	0.28
6.40	0.35	1.23	0.28
6.60	0.35	1.23	0.29
6.80	0.35	1.22	0.29
7.00	0.35	1.22	0.29
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.30						20.30	27.80	7.50	7.50	
	0.40	0.40			30.60	32.10	1.50					1.50
1.00		0.75	0.35	0.70				28.00	31.50	3.50	3.50	
	0.90	0.90			32.10	33.20	1.10					1.10
1.50		1.39	0.49	0.98				30.80	32.70	1.90	1.90	
	1.40	1.40			33.20	33.40	0.20					0.20
1.60		1.52						32.50	32.90	0.40	0.40	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.25						20.60	27.00	6.40	6.40	
	0.40	0.40			34.60	35.90	1.30					1.30
1.00		0.65	0.25	0.50				28.10	31.30	3.20	3.20	
	0.90	0.90			35.90	37.60	1.70					1.70
1.50		1.30	0.40	0.80				31.10	33.90	2.80	2.80	
	1.40	1.40			37.60	38.50	0.90					0.90
2.00		1.89	0.49	0.98				33.80	35.50	1.70	1.70	
	1.90	1.90			38.50	38.80	0.30					0.30
2.30		2.20						35.50	36.50	1.00	1.00	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-8.
Depth : 8.50-9.00m.
Tested / Checked b Fr / Y.

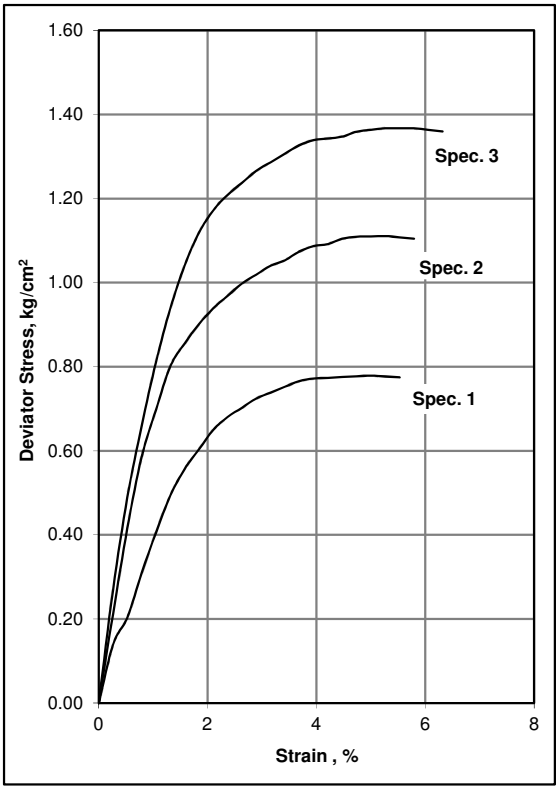
Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.30						18.80	23.00	4.20	4.20	
	0.40	0.40			29.70	30.50	0.80					0.80
1.00		0.65	0.25	0.50				23.20	25.50	2.30	2.30	
	0.90	0.90			30.50	31.10	0.60					0.60
1.50		1.30	0.40	0.80				25.20	27.20	2.00	2.00	
	1.40	1.40			31.10	31.40	0.30					0.30
2.00		1.89	0.49	0.98				26.90	28.30	1.40	1.40	
	1.90	1.90			31.40	31.50	0.10					0.10
2.70		2.60						28.20	30.30	2.10	2.10	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

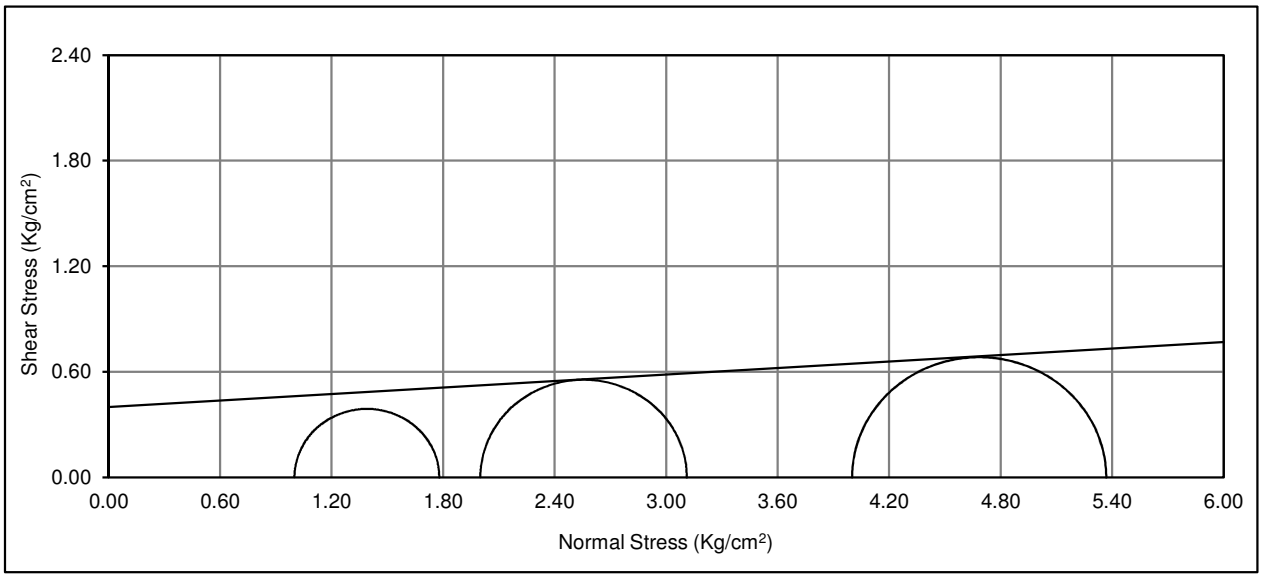
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-8.
Depth : 34.50-35.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	104	103	101
Specific Gravity, Gs	2.65	2.65	2.65
Density, t/m^3	1.70	1.70	1.70
Dry density, t/m^3	0.83	0.84	0.85
Void Ratio	2.18	2.17	2.13
Saturation, %	126.38	126.23	125.44
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.00	2.00	4.00
Deviator Stress, kg/cm^2	0.78	1.11	1.37
Strain at Failure, %	5.00	5.26	5.79
Shear Strength Parameters: c [kg/cm^2]	0.40		
Shear Strength Parameters: ϕ [^{o}]	4		

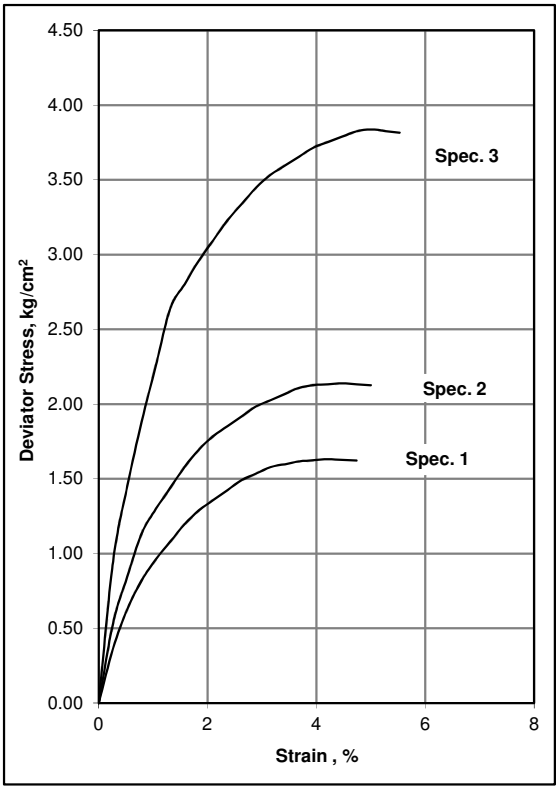


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

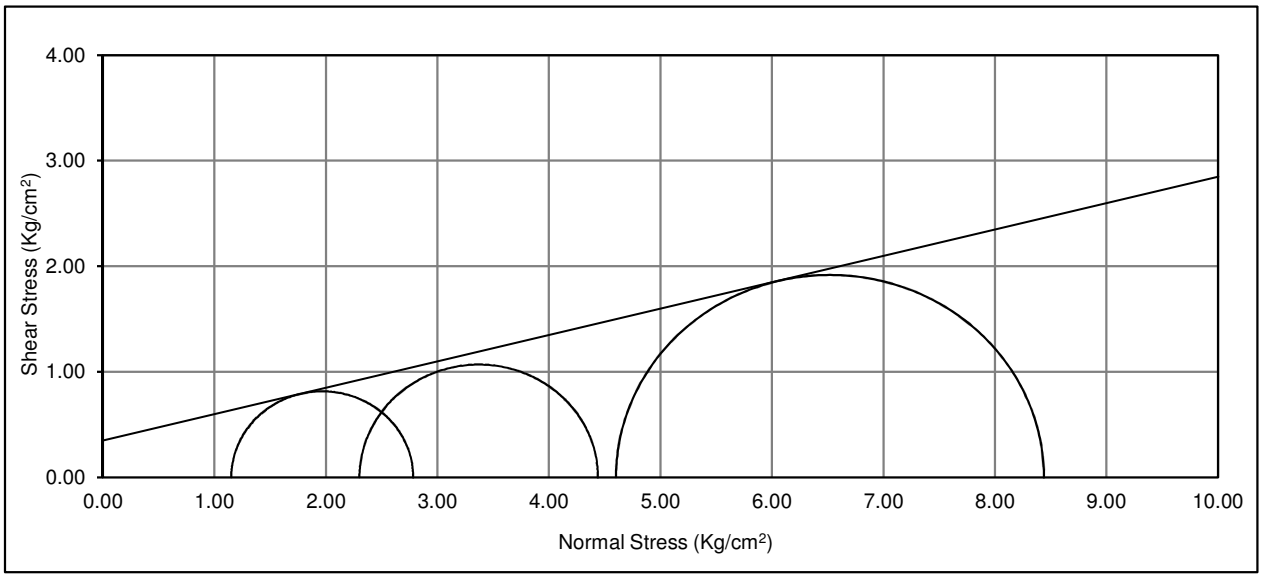
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-8.
Depth : 39.50-40.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, light brownish grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	32	30	28
Specific Gravity, Gs	2.63	2.63	2.63
Density, t/m^3	1.89	1.91	1.93
Dry density, t/m^3	1.43	1.46	1.51
Void Ratio	0.83	0.80	0.75
Saturation, %	99.95	100.00	99.13
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.15	2.30	4.60
Deviator Stress, kg/cm^2	1.63	2.14	3.84
Strain at Failure, %	4.21	4.47	5.00
Shear Strength Parameters: c [kg/cm^2]	0.35		
Shear Strength Parameters: ϕ [^{o}]	14		

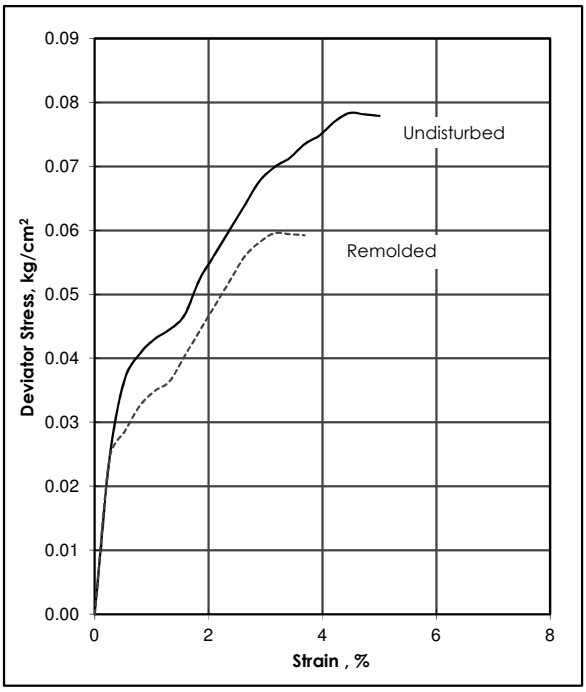


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

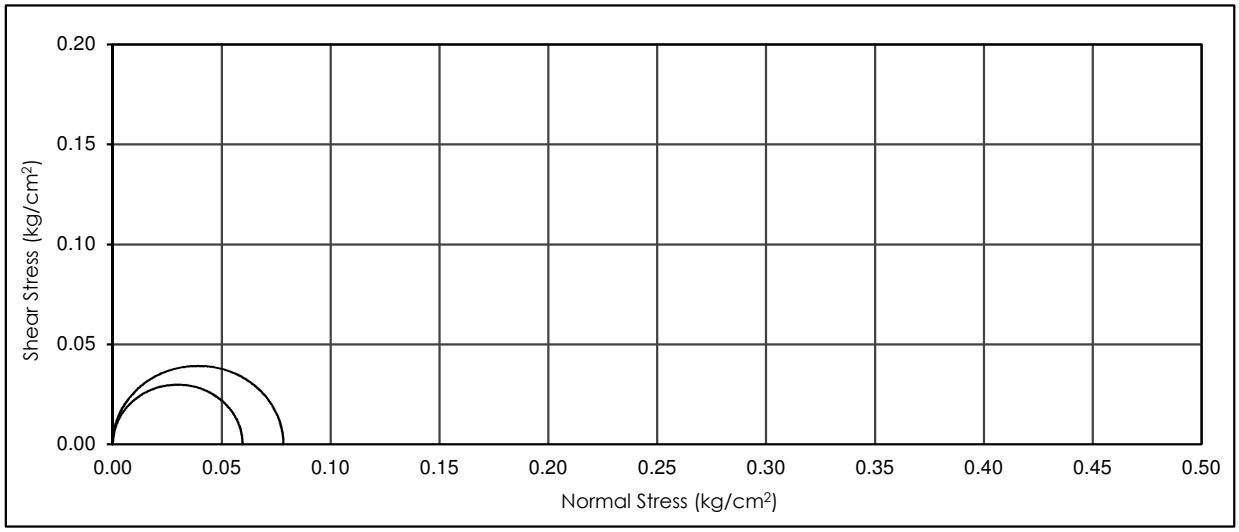
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked by : AI / Y.



Soil Description		Clayey silt, with a trace of sand, greyish brown	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		42	42
Specific Gravity, Gs		2.7	2.7
Density, t/m^3		1.67	1.66
Dry density, t/m^3		1.17	1.17
Void Ratio		1.30	1.31
Saturation, %		87.36	86.43
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.08	0.06
Strain at failure, %		4.47	3.16
Shear Strength parameters	c [kg/cm^2]	0.04	0.03
	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Clayey silt, with a trace of sand, greyish brown		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.67	1.68	1.72
	Moisture content, %	42.00	42.00	42.00
	Dry density, t/m^3	1.18	1.18	1.21
	Void Ratio	1.29	1.29	1.22
	Saturation, %	87.62	88.24	92.59
Final	Density, t/m^3	1.84	1.82	1.89
	Moisture content, %	42.32	40.19	37.23
	Dry density, t/m^3	1.29	1.30	1.38
	Void Ratio	1.09	1.08	0.96
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0448	0.0448	0.0448
Initial σ_3, kg/cm^2		0.15	0.30	0.60
Back pressure, kg/cm^2		0.90	0.90	0.90
Cell pressure, kg/cm^2		1.05	1.20	1.50
Strain at failure, %		7.36	8.17	9.04
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.59	0.64	0.84
u_f, kg/cm^2		0.08	0.15	0.30
$\sigma_3'_f$, kg/cm^2		0.07	0.15	0.30
$\sigma_1'_f$, kg/cm^2		0.66	0.79	1.14
Shear Strength parameters	c , kg/cm^2	0.23		
	c' , kg/cm^2	0.22		
	ϕ	9		
	ϕ'	14		

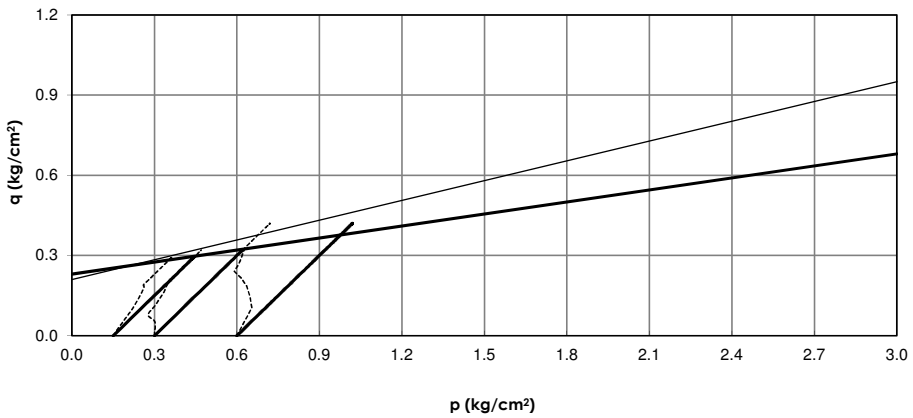
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

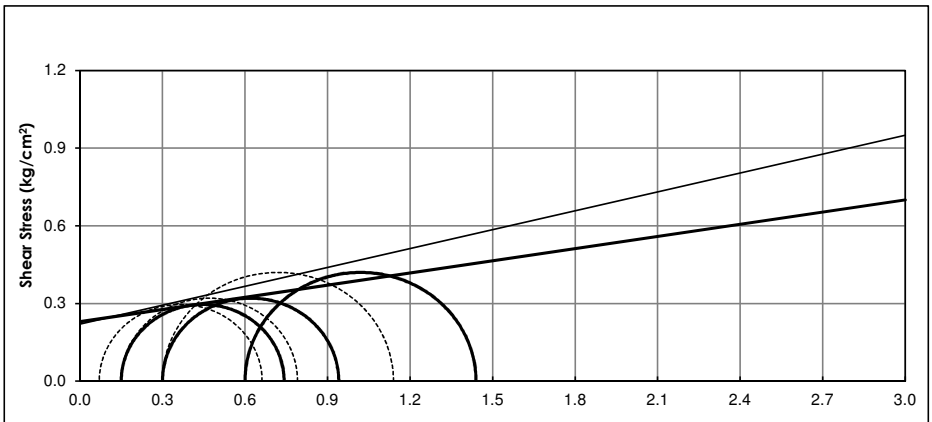
Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.23	0.21
α (°)	9	14

Mohr Circle



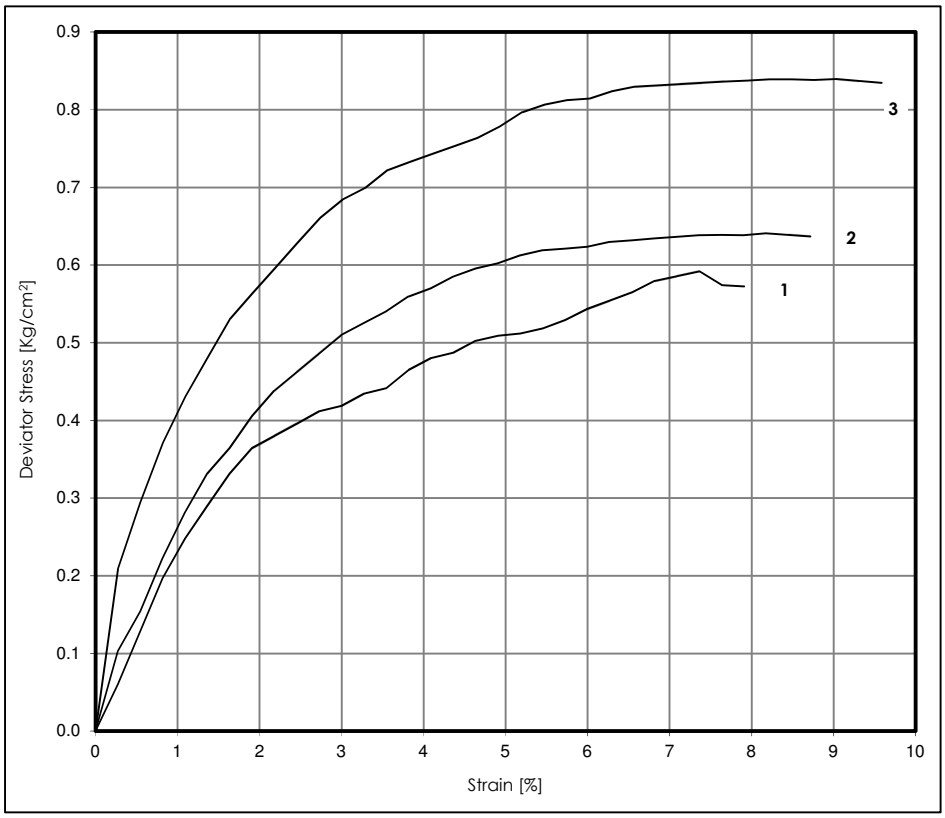
	Total	Effective
c (kg/cm²)	0.23	0.22
ϕ (°)	9	14

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

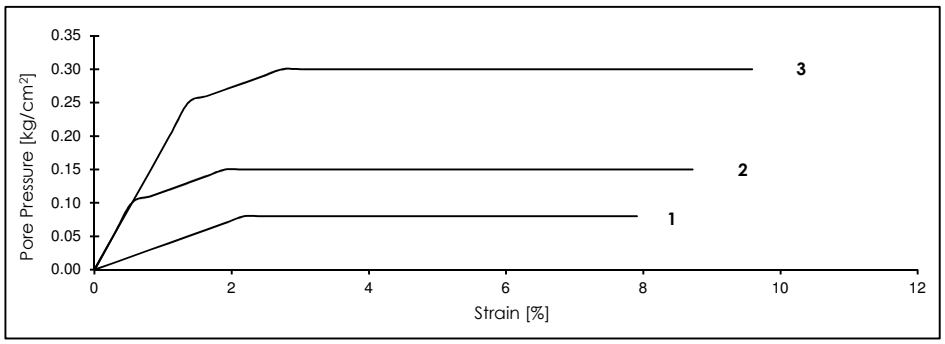
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.06	0.17
0.40	0.02	0.13	0.16
0.60	0.03	0.20	0.15
0.80	0.04	0.25	0.16
1.00	0.05	0.29	0.17
1.20	0.06	0.33	0.18
1.40	0.07	0.36	0.19
1.60	0.08	0.38	0.21
1.80	0.08	0.40	0.20
2.00	0.08	0.41	0.19
2.20	0.08	0.42	0.19
2.40	0.08	0.43	0.18
2.60	0.08	0.44	0.18
2.80	0.08	0.47	0.17
3.00	0.08	0.48	0.17
3.20	0.08	0.49	0.16
3.40	0.08	0.50	0.16
3.60	0.08	0.51	0.16
3.80	0.08	0.51	0.16
4.00	0.08	0.52	0.15
4.20	0.08	0.53	0.15
4.40	0.08	0.54	0.15
4.60	0.08	0.55	0.14
4.80	0.08	0.56	0.14
5.00	0.08	0.58	0.14
5.20	0.08	0.59	0.14
5.40	0.08	0.59	0.14
5.60	0.08	0.57	0.14
5.80	0.08	0.57	0.14
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.10	0.48
0.40	0.10	0.15	0.65
0.60	0.11	0.22	0.50
0.80	0.12	0.28	0.43
1.00	0.13	0.33	0.39
1.20	0.14	0.36	0.38
1.40	0.15	0.41	0.37
1.60	0.15	0.44	0.34
1.80	0.15	0.46	0.32
2.00	0.15	0.49	0.31
2.20	0.15	0.51	0.29
2.40	0.15	0.52	0.29
2.60	0.15	0.54	0.28
2.80	0.15	0.56	0.27
3.00	0.15	0.57	0.26
3.20	0.15	0.58	0.26
3.40	0.15	0.60	0.25
3.60	0.15	0.60	0.25
3.80	0.15	0.61	0.24
4.00	0.15	0.62	0.24
4.20	0.15	0.62	0.24
4.40	0.15	0.62	0.24
4.60	0.15	0.63	0.24
4.80	0.15	0.63	0.24
5.00	0.15	0.63	0.24
5.20	0.15	0.64	0.24
5.40	0.15	0.64	0.23
5.60	0.15	0.64	0.23
5.80	0.15	0.64	0.23
6.00	0.15	0.64	0.23
6.20	0.15	0.64	0.23
6.40	0.15	0.64	0.24
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.21	0.24
0.40	0.10	0.29	0.34
0.60	0.15	0.37	0.40
0.80	0.20	0.43	0.46
1.00	0.25	0.48	0.52
1.20	0.26	0.53	0.49
1.40	0.27	0.56	0.48
1.60	0.28	0.60	0.47
1.80	0.29	0.63	0.46
2.00	0.30	0.66	0.45
2.20	0.30	0.68	0.44
2.40	0.30	0.70	0.43
2.60	0.30	0.72	0.42
2.80	0.30	0.73	0.41
3.00	0.30	0.74	0.40
3.20	0.30	0.75	0.40
3.40	0.30	0.76	0.39
3.60	0.30	0.78	0.39
3.80	0.30	0.80	0.38
4.00	0.30	0.81	0.37
4.20	0.30	0.81	0.37
4.40	0.30	0.81	0.37
4.60	0.30	0.82	0.36
4.80	0.30	0.83	0.36
5.00	0.30	0.83	0.36
5.20	0.30	0.83	0.36
5.40	0.30	0.83	0.36
5.60	0.30	0.84	0.36
5.80	0.30	0.84	0.36
6.00	0.30	0.84	0.36
6.20	0.30	0.84	0.36
6.40	0.30	0.84	0.36
6.60	0.30	0.84	0.36
6.80	0.30	0.84	0.36
7.00	0.30	0.83	0.36
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked b Fr / Y.

Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.50						24.70	29.00	4.30	4.30	
	0.40	0.40			35.40	33.50	-1.90					-1.90
1.00		0.89	0.49	0.98				31.50	34.00	2.50	2.50	
	0.90	0.90			33.50	33.70	0.20					0.20
1.05		0.96						34.00	34.30	0.30	0.30	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked b Fr / Y.

Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.50						20.00	23.70	3.70	3.70	
	0.40	0.40			36.60	36.00	-0.60					-0.60
1.00		0.89	0.49	0.98				24.40	27.50	3.10	3.10	
	0.90	0.90			36.00	36.30	0.30					0.30
1.50		1.10						27.30	28.00	0.70	0.70	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 4.50-5.00m.
Tested / Checked b Fr / Y.

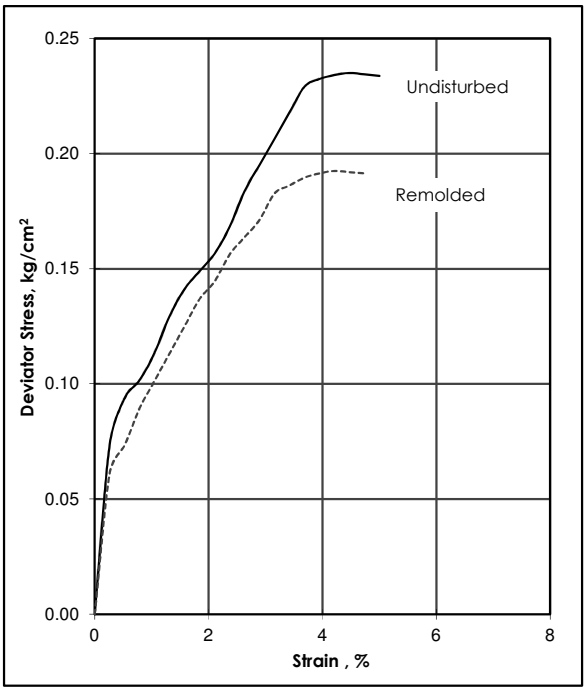
Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.50						21.00	25.10	4.10	4.10	
	0.40	0.40			34.60	34.00	-0.60					-0.60
1.00		0.89	0.49	0.98				25.20	27.30	2.10	2.10	
	0.90	0.90			34.00	34.10	0.10					0.10
1.50		1.40						27.50	29.00	1.50	1.50	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

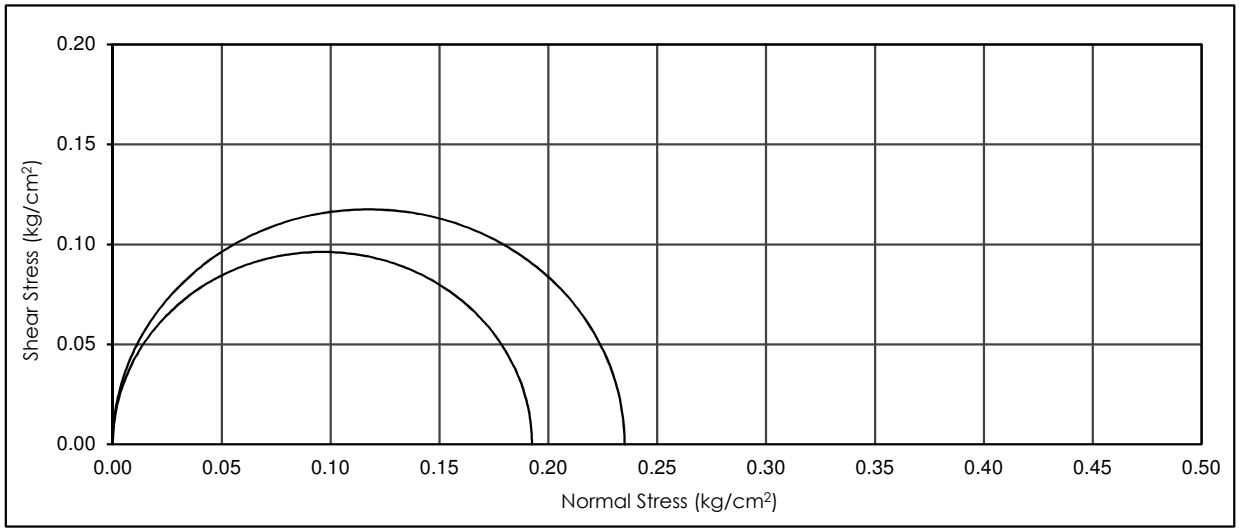
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, with a trace of sand, dark grey	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		49	49
Specific Gravity, Gs		2.65	2.65
Density, t/m^3		1.64	1.63
Dry density, t/m^3		1.10	1.09
Void Ratio		1.41	1.42
Saturation, %		92.08	91.42
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.24	0.19
Strain at failure, %		4.47	4.21
Shear Strength	c [kg/cm^2]	0.12	0.10
parameters	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.60	1.63	1.67
	Moisture content, %	49.00	49.00	49.00
	Dry density, t/m^3	1.08	1.09	1.12
	Void Ratio	1.46	1.42	1.36
	Saturation, %	88.70	91.32	95.46
Final	Density, t/m^3	1.80	1.77	1.83
	Moisture content, %	51.69	45.00	38.93
	Dry density, t/m^3	1.19	1.22	1.32
	Void Ratio	1.23	1.17	1.01
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.4110	0.4110	0.4110
Initial σ_3, kg/cm^2		0.20	0.40	0.80
Back pressure, kg/cm^2		0.90	0.90	0.90
Cell pressure, kg/cm^2		1.10	1.30	1.70
Strain at failure, %		6.60	7.63	6.86
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.39	0.46	0.81
u_f, kg/cm^2		0.08	0.20	0.40
$\sigma_3'_f$, kg/cm^2		0.12	0.20	0.40
$\sigma_1'_f$, kg/cm^2		0.51	0.66	1.21
Shear Strength parameters	c , kg/cm^2	0.15		
	c' , kg/cm^2	0.11		
	ϕ	8		
	ϕ'	16		

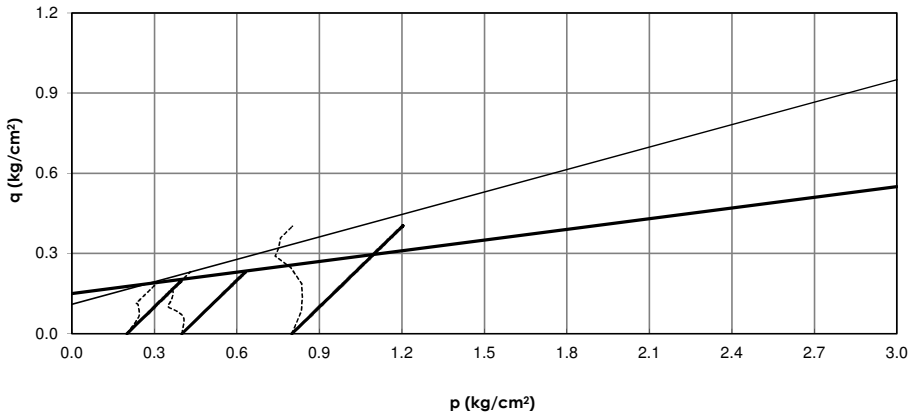
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

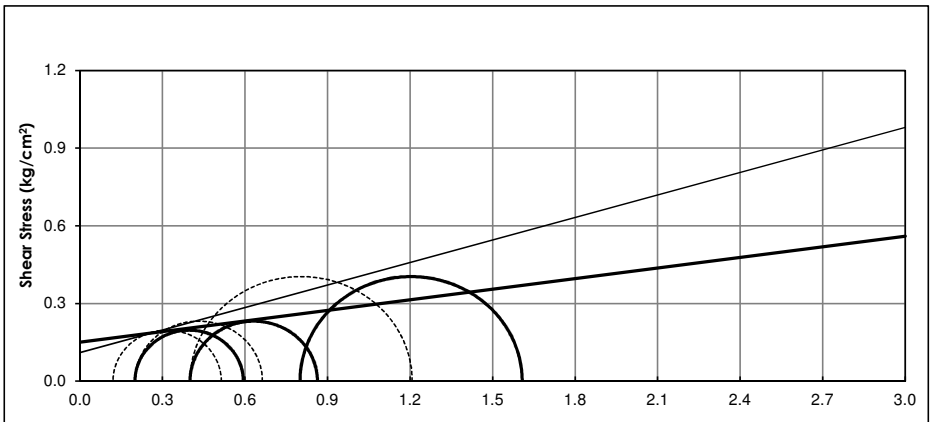
Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.15	0.11
α (°)	8	16

Mohr Circle



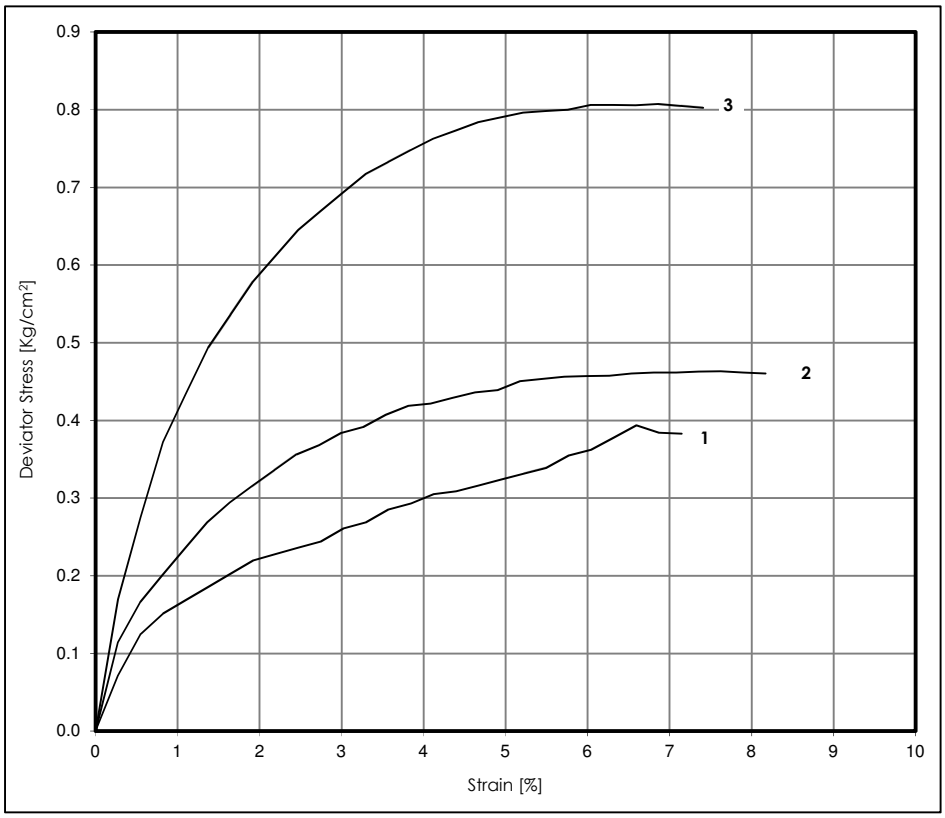
	Total	Effective
c (kg/cm²)	0.15	0.11
ϕ (°)	8	16

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

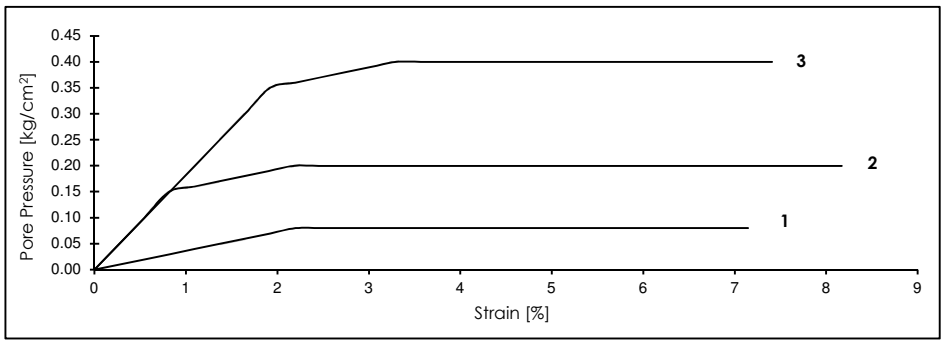
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.07	0.14
0.40	0.02	0.12	0.16
0.60	0.03	0.15	0.20
0.80	0.04	0.17	0.24
1.00	0.05	0.19	0.27
1.20	0.06	0.20	0.30
1.40	0.07	0.22	0.32
1.60	0.08	0.23	0.35
1.80	0.08	0.24	0.34
2.00	0.08	0.24	0.33
2.20	0.08	0.26	0.31
2.40	0.08	0.27	0.30
2.60	0.08	0.29	0.28
2.80	0.08	0.29	0.27
3.00	0.08	0.31	0.26
3.20	0.08	0.31	0.26
3.40	0.08	0.32	0.25
3.60	0.08	0.32	0.25
3.80	0.08	0.33	0.24
4.00	0.08	0.34	0.24
4.20	0.08	0.35	0.23
4.40	0.08	0.36	0.22
4.60	0.08	0.38	0.21
4.80	0.08	0.39	0.20
5.00	0.08	0.38	0.21
5.20	0.08	0.38	0.21
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.11	0.44
0.40	0.10	0.17	0.60
0.60	0.15	0.20	0.75
0.80	0.16	0.23	0.68
1.00	0.17	0.27	0.63
1.20	0.18	0.29	0.61
1.40	0.19	0.31	0.60
1.60	0.20	0.34	0.60
1.80	0.20	0.36	0.56
2.00	0.20	0.37	0.54
2.20	0.20	0.38	0.52
2.40	0.20	0.39	0.51
2.60	0.20	0.41	0.49
2.80	0.20	0.42	0.48
3.00	0.20	0.42	0.47
3.20	0.20	0.43	0.47
3.40	0.20	0.44	0.46
3.60	0.20	0.44	0.46
3.80	0.20	0.45	0.44
4.00	0.20	0.45	0.44
4.20	0.20	0.46	0.44
4.40	0.20	0.46	0.44
4.60	0.20	0.46	0.44
4.80	0.20	0.46	0.43
5.00	0.20	0.46	0.43
5.20	0.20	0.46	0.43
5.40	0.20	0.46	0.43
5.60	0.20	0.46	0.43
5.80	0.20	0.46	0.43
6.00	0.20	0.46	0.43
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.17	0.30
0.40	0.10	0.28	0.36
0.60	0.15	0.37	0.40
0.80	0.20	0.43	0.46
1.00	0.25	0.49	0.51
1.20	0.30	0.54	0.56
1.40	0.35	0.58	0.60
1.60	0.36	0.61	0.59
1.80	0.37	0.65	0.57
2.00	0.38	0.67	0.57
2.20	0.39	0.69	0.56
2.40	0.40	0.72	0.56
2.60	0.40	0.73	0.55
2.80	0.40	0.75	0.53
3.00	0.40	0.76	0.52
3.20	0.40	0.77	0.52
3.40	0.40	0.78	0.51
3.60	0.40	0.79	0.51
3.80	0.40	0.80	0.50
4.00	0.40	0.80	0.50
4.20	0.40	0.80	0.50
4.40	0.40	0.81	0.50
4.60	0.40	0.81	0.50
4.80	0.40	0.81	0.50
5.00	0.40	0.81	0.50
5.20	0.40	0.81	0.50
5.40	0.40	0.80	0.50
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.50						22.30	27.40	5.10	5.10	
	0.40	0.40			38.50	37.00	-1.50					-1.50
1.00		0.89	0.49	0.98				26.80	29.90	3.10	3.10	
	0.90	0.90			37.00	37.00	0.00					0.00
1.10		1.02						30.00	30.60	0.60	0.60	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.45						21.80	24.50	2.70	2.70	
	0.40	0.40			33.50	33.00	-0.50					-0.50
1.00		0.89	0.49	0.98				25.20	28.60	3.40	3.40	
	0.90	0.90			33.00	33.00	0.00					0.00
1.30		1.20						28.60	29.50	0.90	0.90	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-9.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

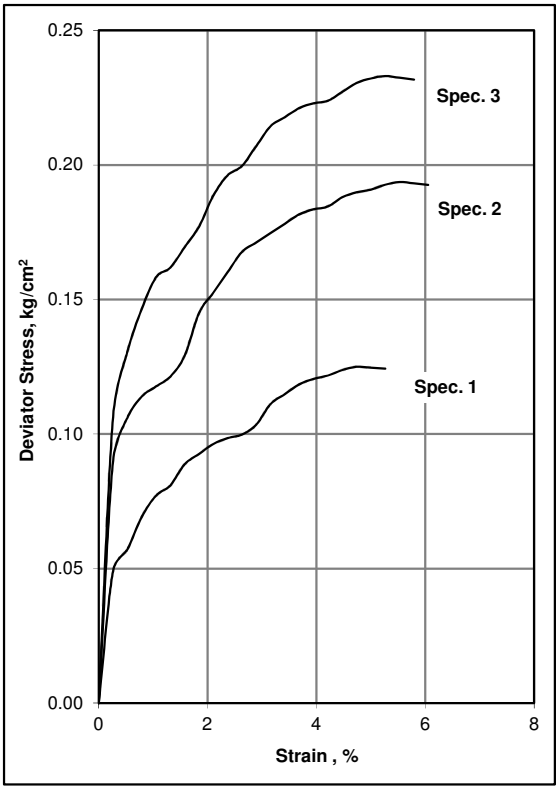
Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.50						22.10	25.80	3.70	3.70	
	0.40	0.40			38.30	37.60	-0.70					-0.70
1.00		0.89	0.49	0.98				26.00	28.40	2.40	2.40	
	0.90	0.90			37.60	37.80	0.20					0.20
1.70		1.60						28.50	30.70	2.20	2.20	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

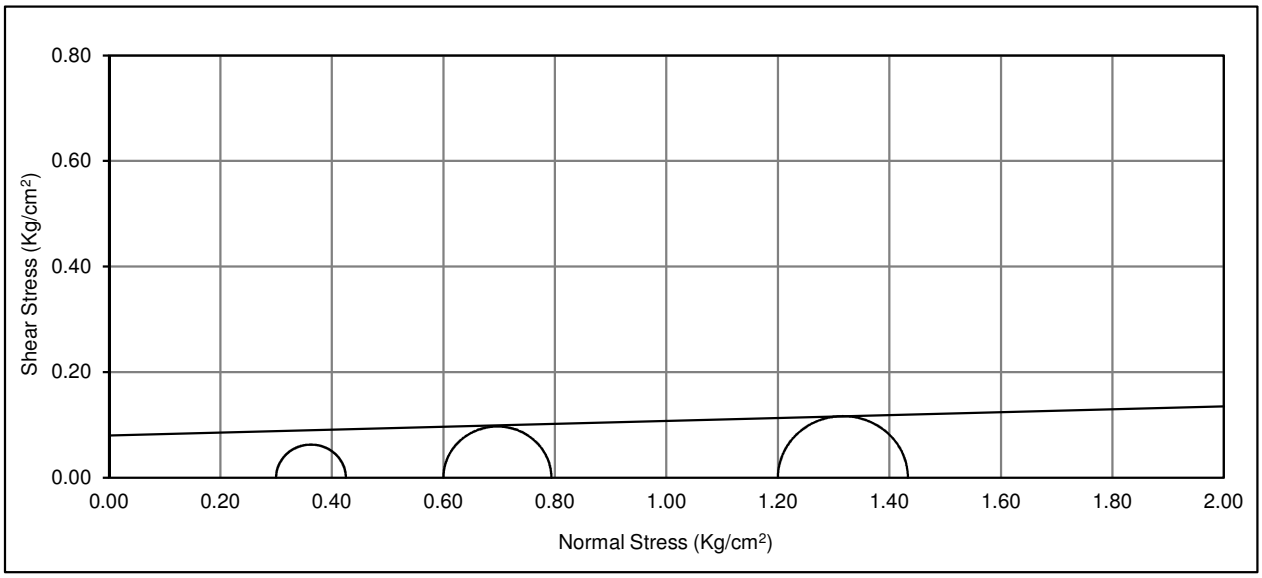
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-9.
Depth : 10.50-11.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, dark grey.		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	95	88	78
Specific Gravity, Gs	2.65	2.65	2.65
Density, t/m^3	1.36	1.39	1.44
Dry density, t/m^3	0.70	0.74	0.81
Void Ratio	2.78	2.58	2.27
Saturation, %	90.18	90.10	91.04
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	0.30	0.60	1.20
Deviator Stress, kg/cm^2	0.12	0.19	0.23
Strain at Failure, %	4.74	5.53	5.26
Shear Strength Parameters: c [kg/cm^2]	0.08		
Shear Strength Parameters: ϕ [^{o}]	2		



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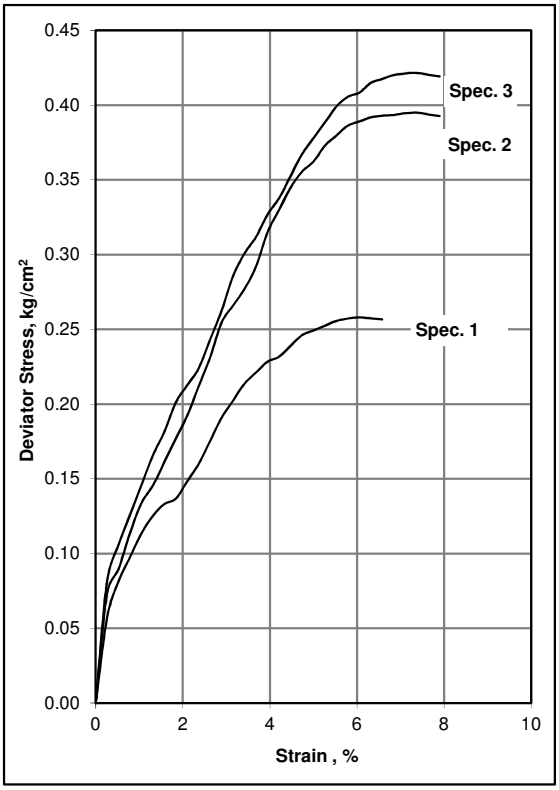
Soil Investigation and Foundation Engineering

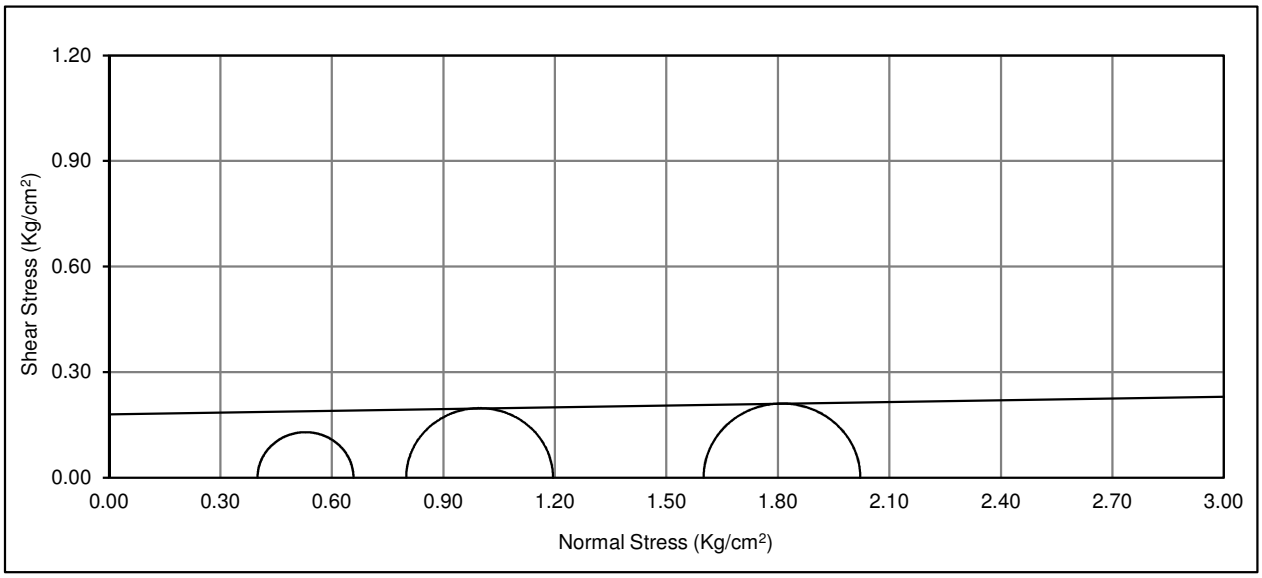
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-9.
Depth : 14.50-15.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, greyish brown		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	73	71	71
Specific Gravity, Gs	2.66	2.66	2.66
Density, t/m^3	1.49	1.51	1.51
Dry density, t/m^3	0.87	0.88	0.88
Void Ratio	2.07	2.02	2.02
Saturation, %	93.23	93.51	93.77
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	0.40	0.80	1.60
Deviator Stress, kg/cm^2	0.26	0.39	0.42
Strain at Failure, %	6.05	7.37	7.37
Shear Strength Parameters: c [kg/cm^2]	0.18		
Shear Strength Parameters: ϕ [^{o}]	1		



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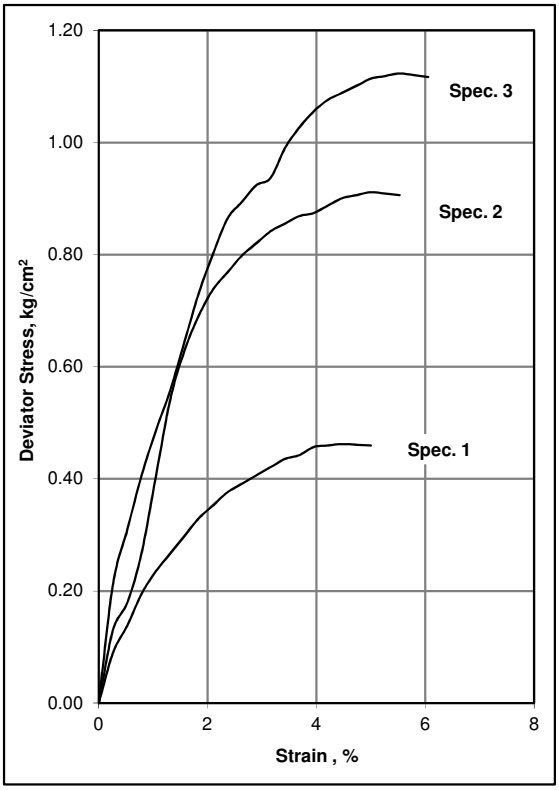
Soil Investigation and Foundation Engineering

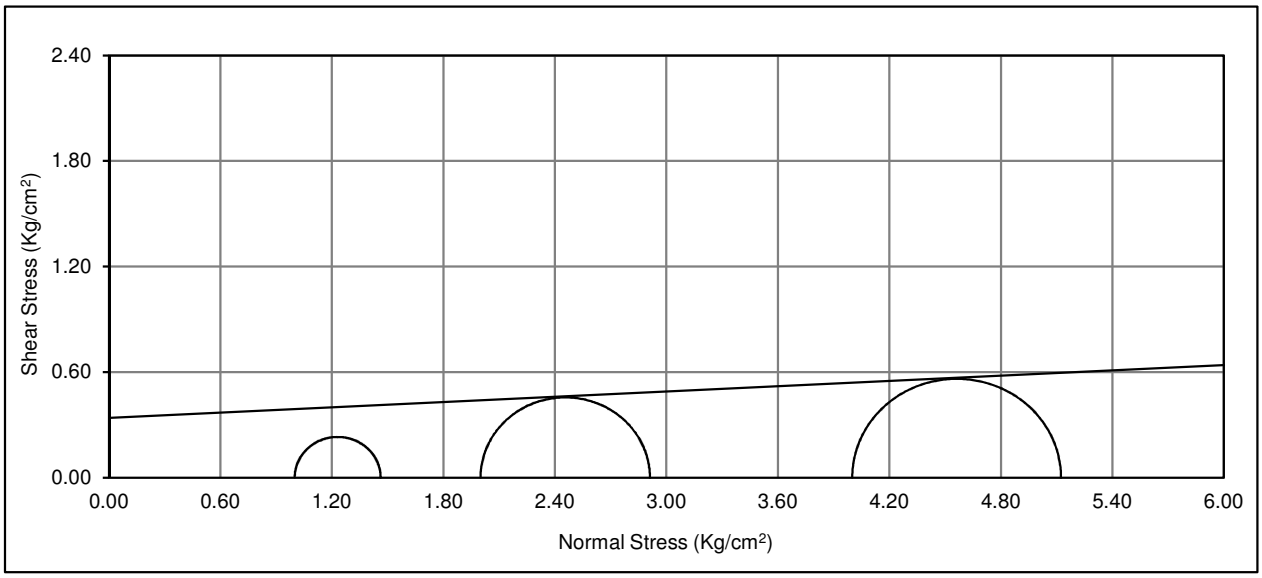
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-9.
Depth : 34.50-35.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	106	102	101
Specific Gravity, Gs	2.67	2.67	2.67
Density, t/m^3	1.60	1.60	1.60
Dry density, t/m^3	0.78	0.79	0.79
Void Ratio	2.43	2.37	2.36
Saturation, %	116.01	114.88	114.66
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.00	2.00	4.00
Deviator Stress, kg/cm^2	0.46	0.91	1.12
Strain at Failure, %	4.47	5.00	5.53
Shear Strength Parameters: c [kg/cm^2]	0.34		
Shear Strength Parameters: ϕ [^{o}]	3		



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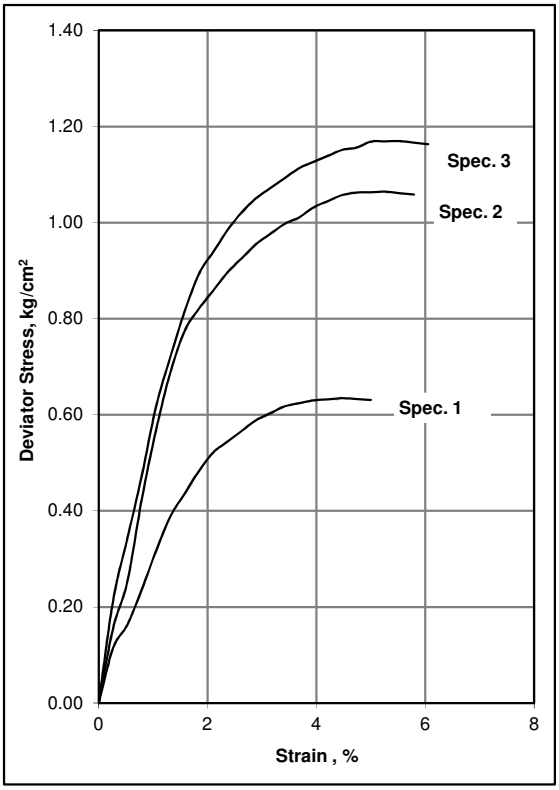
Soil Investigation and Foundation Engineering

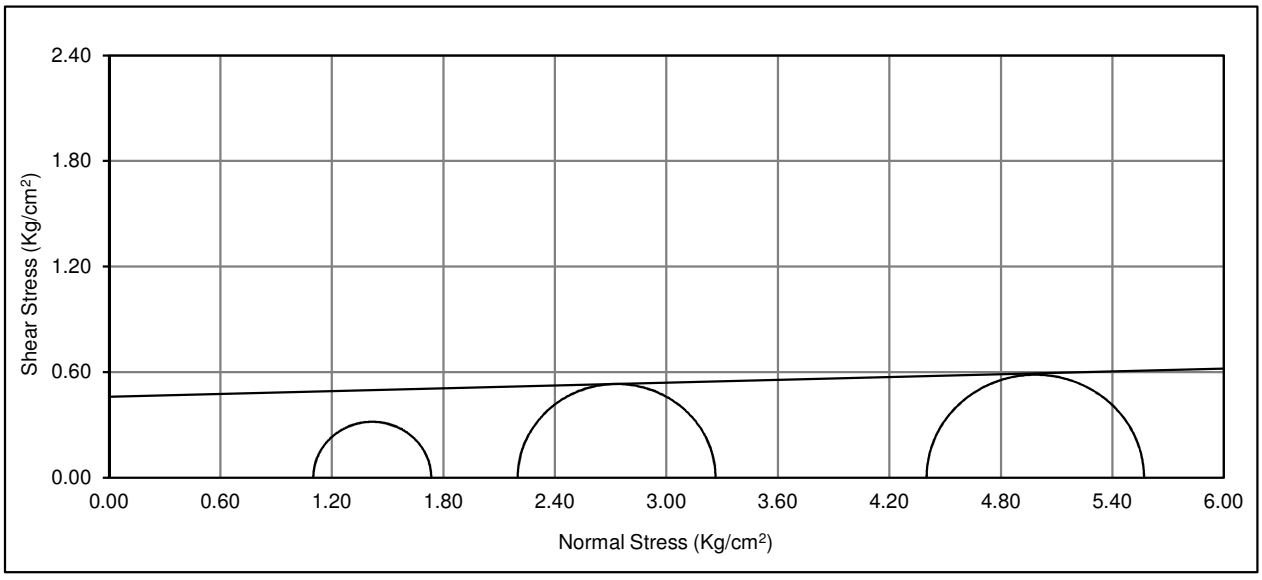
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-9.
Depth : 38.00-38.50m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with trace of sand and trace of gravel		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	96	96	82
Specific Gravity, Gs	2.73	2.73	2.73
Density, t/m^3	1.65	1.65	1.65
Dry density, t/m^3	0.84	0.84	0.91
Void Ratio	2.24	2.24	2.01
Saturation, %	116.72	116.68	111.18
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.10	2.20	4.40
Deviator Stress, kg/cm^2	0.63	1.06	1.17
Strain at Failure, %	4.47	5.26	5.53
Shear Strength Parameters: c $[kg/cm^2]$	0.46		
Shear Strength Parameters: ϕ [°]	2		

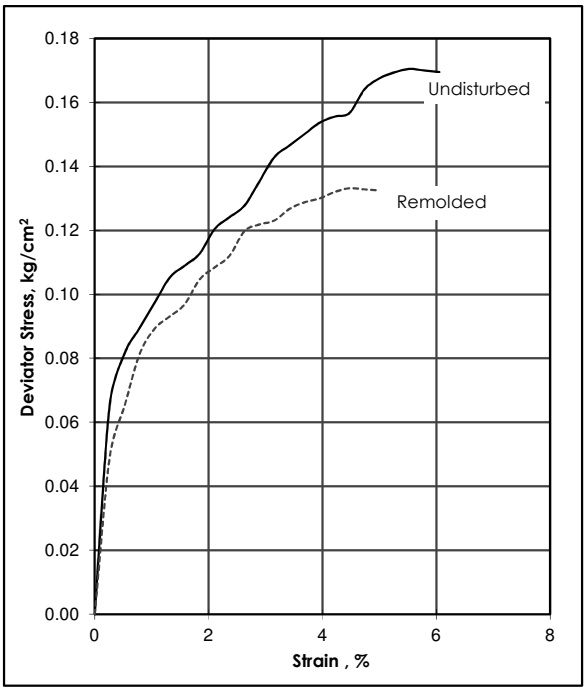


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

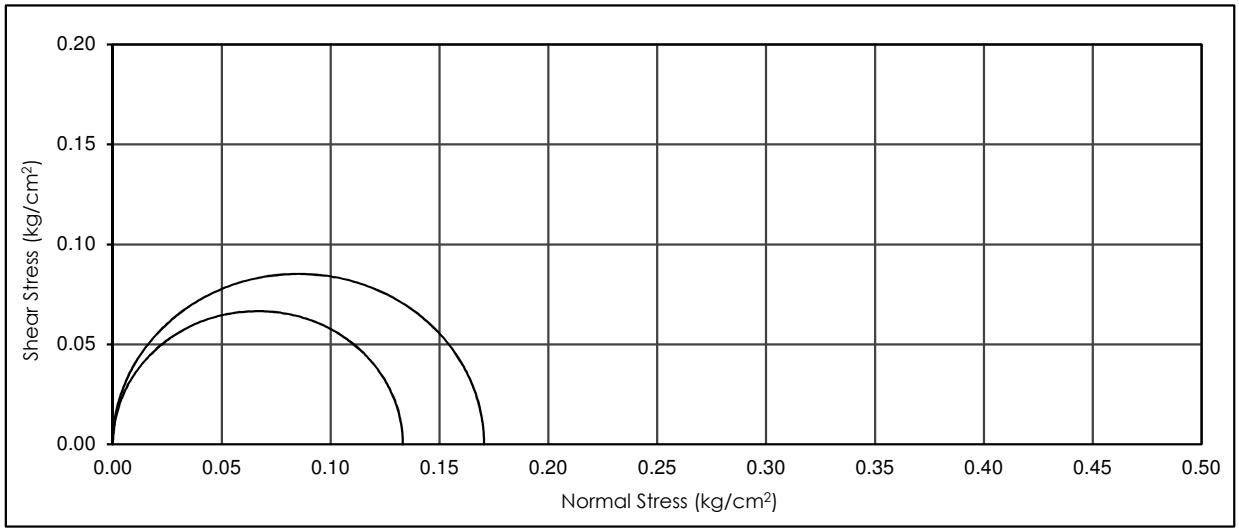
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, with a trace of sand, dark grey.	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		72	50
Specific Gravity, Gs		2.67	2.67
Density, t/m^3		1.62	1.61
Dry density, t/m^3		0.94	1.08
Void Ratio		1.83	1.48
Saturation, %		100.00	89.57
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.17	0.13
Strain at failure, %		5.53	4.47
Shear Strength	c [kg/cm^2]	0.09	0.07
parameters	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.42	1.42	1.49
	Moisture content, %	72.00	72.00	72.00
	Dry density, t/m^3	0.82	0.83	0.87
	Void Ratio	2.24	2.24	2.09
	Saturation, %	85.92	86.00	92.18
Final	Density, t/m^3	1.52	1.52	1.65
	Moisture content, %	87.85	86.37	58.89
	Dry density, t/m^3	0.81	0.82	1.04
	Void Ratio	2.30	2.27	1.57
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0448	0.0448	0.0448
Initial σ_3, kg/cm^2		0.15	0.30	0.60
Back pressure, kg/cm^2		0.90	0.90	1.40
Cell pressure, kg/cm^2		1.05	1.20	2.00
Strain at failure, %		6.46	6.76	8.25
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.31	0.38	0.60
u_f, kg/cm^2		0.05	0.10	0.30
$\sigma_3'_f$, kg/cm^2		0.10	0.20	0.30
$\sigma_1'_f$, kg/cm^2		0.41	0.58	0.90
Shear Strength parameters	c , kg/cm^2	0.10		
	c' , kg/cm^2	0.09		
	ϕ	11		
	ϕ'	16		

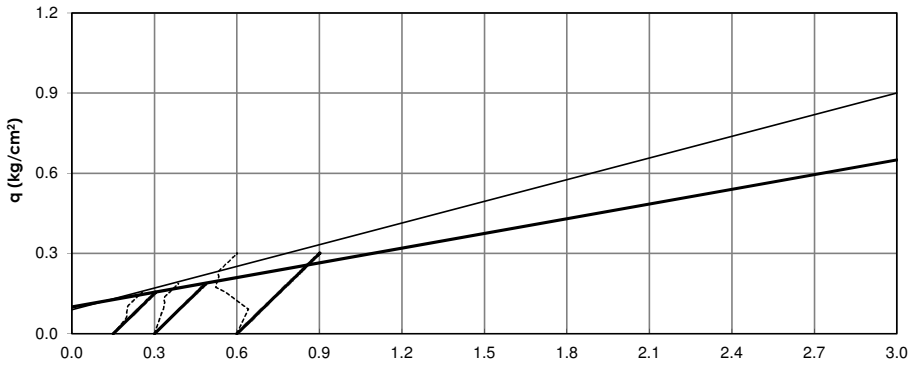
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

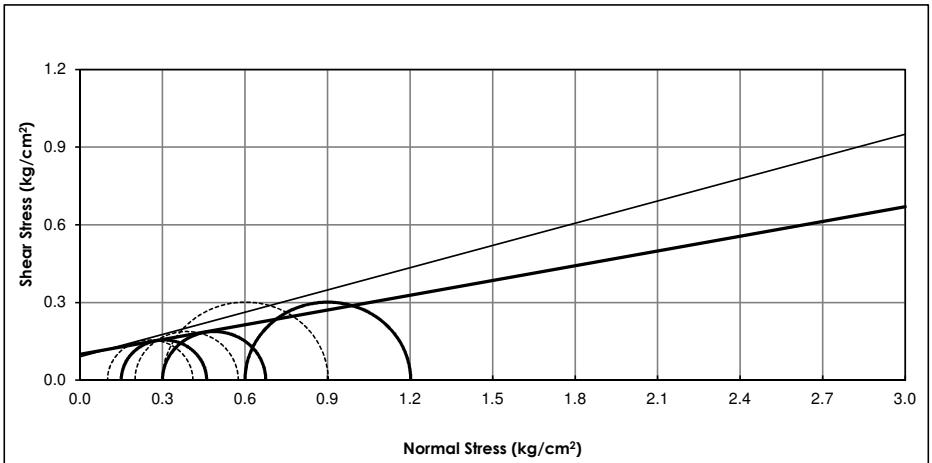
Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.10	0.09
α (°)	10	15

Mohr Circle



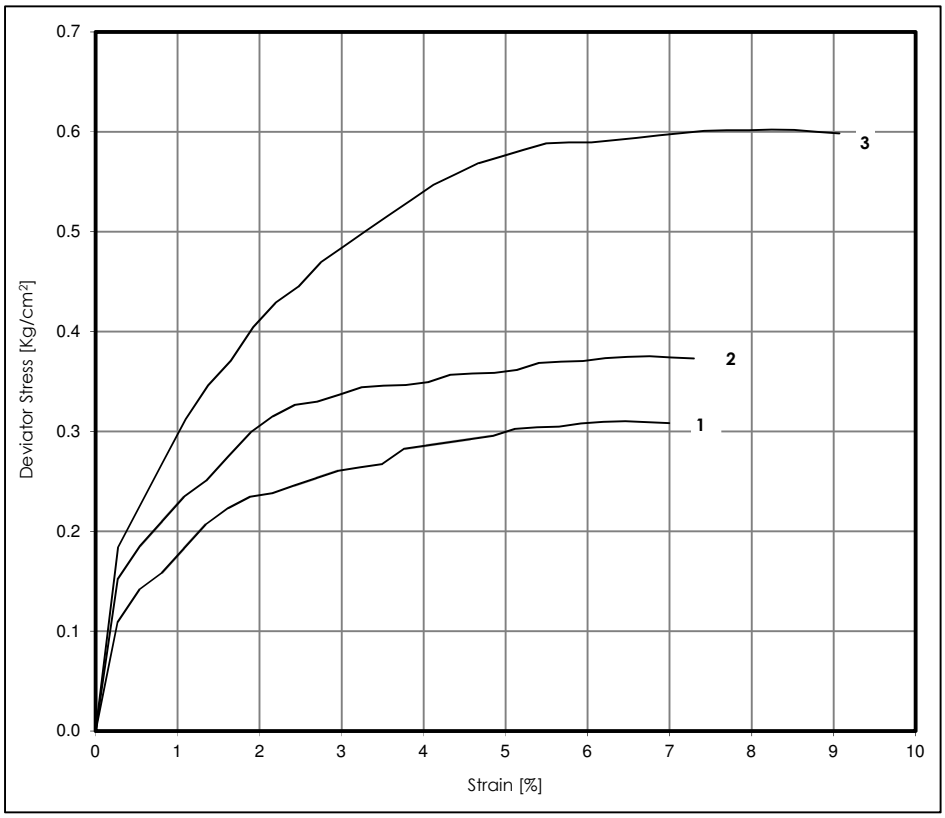
	Total	Effective
c (kg/cm²)	0.10	0.09
ϕ (°)	11	16

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

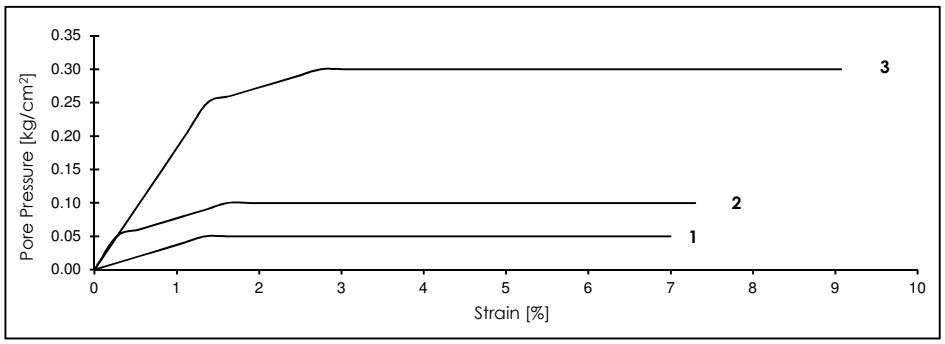
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.11	0.09
0.40	0.02	0.14	0.14
0.60	0.03	0.16	0.19
0.80	0.04	0.18	0.22
1.00	0.05	0.21	0.24
1.20	0.05	0.22	0.22
1.40	0.05	0.23	0.21
1.60	0.05	0.24	0.21
1.80	0.05	0.25	0.20
2.00	0.05	0.25	0.20
2.20	0.05	0.26	0.19
2.40	0.05	0.26	0.19
2.60	0.05	0.27	0.19
2.80	0.05	0.28	0.18
3.00	0.05	0.29	0.17
3.20	0.05	0.29	0.17
3.40	0.05	0.29	0.17
3.60	0.05	0.30	0.17
3.80	0.05	0.30	0.17
4.00	0.05	0.30	0.16
4.20	0.05	0.31	0.16
4.40	0.05	0.31	0.16
4.60	0.05	0.31	0.16
4.80	0.05	0.31	0.16
5.00	0.05	0.31	0.16
5.20	0.05	0.31	0.16
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.15	0.33
0.40	0.06	0.19	0.32
0.60	0.07	0.21	0.33
0.80	0.08	0.23	0.34
1.00	0.09	0.25	0.36
1.20	0.10	0.28	0.36
1.40	0.10	0.30	0.33
1.60	0.10	0.32	0.32
1.80	0.10	0.33	0.31
2.00	0.10	0.33	0.30
2.20	0.10	0.34	0.30
2.40	0.10	0.34	0.29
2.60	0.10	0.35	0.29
2.80	0.10	0.35	0.29
3.00	0.10	0.35	0.29
3.20	0.10	0.36	0.28
3.40	0.10	0.36	0.28
3.60	0.10	0.36	0.28
3.80	0.10	0.36	0.28
4.00	0.10	0.37	0.27
4.20	0.10	0.37	0.27
4.40	0.10	0.37	0.27
4.60	0.10	0.37	0.27
4.80	0.10	0.37	0.27
5.00	0.10	0.38	0.27
5.20	0.10	0.37	0.27
5.40	0.10	0.37	0.27
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.18	0.27
0.40	0.10	0.23	0.44
0.60	0.15	0.27	0.56
0.80	0.20	0.31	0.64
1.00	0.25	0.35	0.72
1.20	0.26	0.37	0.70
1.40	0.27	0.40	0.67
1.60	0.28	0.43	0.65
1.80	0.29	0.45	0.65
2.00	0.30	0.47	0.64
2.20	0.30	0.49	0.62
2.40	0.30	0.50	0.60
2.60	0.30	0.52	0.58
2.80	0.30	0.53	0.56
3.00	0.30	0.55	0.55
3.20	0.30	0.56	0.54
3.40	0.30	0.57	0.53
3.60	0.30	0.58	0.52
3.80	0.30	0.58	0.52
4.00	0.30	0.59	0.51
4.20	0.30	0.59	0.51
4.40	0.30	0.59	0.51
4.60	0.30	0.59	0.51
4.80	0.30	0.59	0.50
5.00	0.30	0.60	0.50
5.20	0.30	0.60	0.50
5.40	0.30	0.60	0.50
5.60	0.30	0.60	0.50
5.80	0.30	0.60	0.50
6.00	0.30	0.60	0.50
6.20	0.30	0.60	0.50
6.40	0.30	0.60	0.50
6.60	0.30	0.60	0.50
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.45						19.50	22.70	3.20	3.20	
	0.40	0.50			37.50	37.30	-0.20					-0.20
1.00		0.89	0.39	0.78				22.80	24.70	1.90	1.90	
	0.90	0.90			37.30	37.50	0.20					0.20
1.05		0.96						24.80	25.10	0.30	0.30	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.40						21.20	24.30	3.10	3.10	
	0.40	0.40			36.50	36.50	0.00					0.00
1.00		0.89	0.49	0.98				24.30	27.10	2.80	2.80	
	0.90	0.90			36.50	36.90	0.40					0.40
1.20		1.10						27.30	28.00	0.70	0.70	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 2.50-3.00m.
Tested / Checked b Fr / Y.

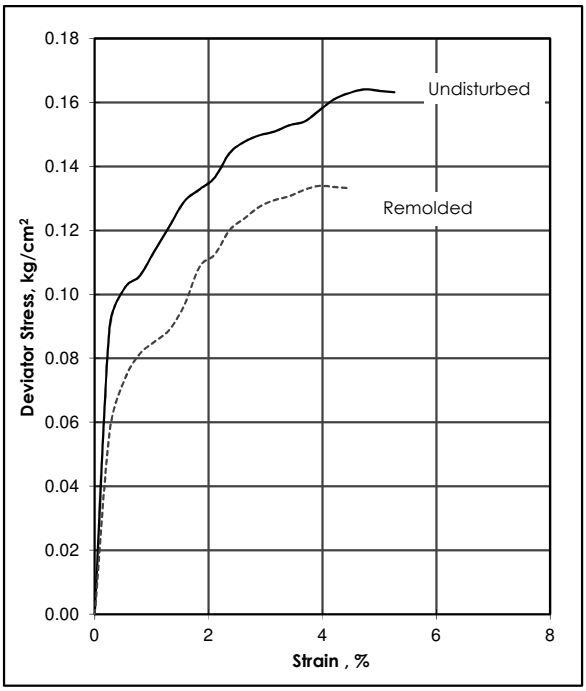
Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.40						23.10	26.50	3.40	3.40	
	0.40	0.40			36.60	36.50	-0.10					-0.10
1.00		0.80	0.40	0.80				26.90	29.80	2.90	2.90	
	0.90	0.90			36.50	37.00	0.50					0.50
1.50		1.39	0.49	0.98				30.00	32.40	2.40	2.40	
	1.40	1.40			37.00	37.20	0.20					0.20
2.00		1.90						32.20	33.50	1.30	1.30	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

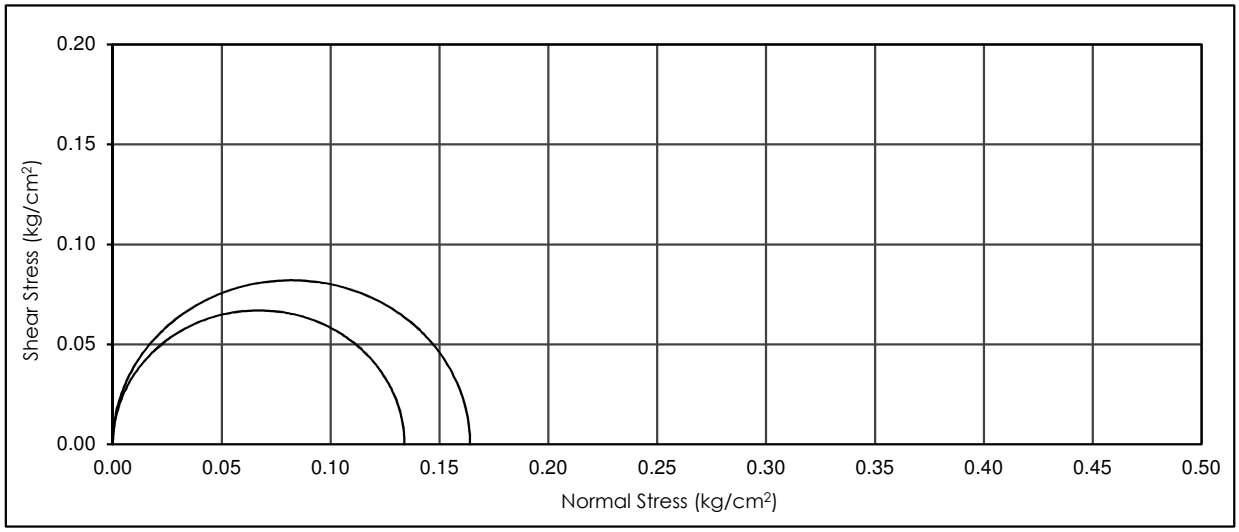
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, with a trace of sand, dark grey	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		62	57
Specific Gravity, Gs		2.67	2.67
Density, t/m^3		1.57	1.56
Dry density, t/m^3		0.97	1.00
Void Ratio		1.76	1.68
Saturation, %		94.04	90.51
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.16	0.13
Strain at failure, %		4.74	3.95
Shear Strength parameters	c [kg/cm^2]	0.08	0.07
	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.49	1.54	1.60
	Moisture content, %	62.00	62.00	62.00
	Dry density, t/m^3	0.92	0.95	0.99
	Void Ratio	1.91	1.81	1.70
	Saturation, %	86.65	91.54	97.45
Final	Density, t/m^3	1.69	1.70	1.76
	Moisture content, %	67.40	53.89	48.18
	Dry density, t/m^3	1.01	1.10	1.19
	Void Ratio	1.65	1.42	1.25
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.0300	0.0300	0.0300
Initial σ_3, kg/cm^2		0.25	0.50	1.00
Back pressure, kg/cm^2		0.90	0.90	0.90
Cell pressure, kg/cm^2		1.15	1.40	1.90
Strain at failure, %		7.16	7.70	8.25
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.24	0.35	0.49
u_f, kg/cm^2		0.10	0.25	0.40
$\sigma_3'_f$, kg/cm^2		0.15	0.25	0.60
$\sigma_1'_f$, kg/cm^2		0.39	0.60	1.09
Shear Strength parameters	c , kg/cm^2	0.10		
	c' , kg/cm^2	0.10		
	ϕ	7		
	ϕ'	10		

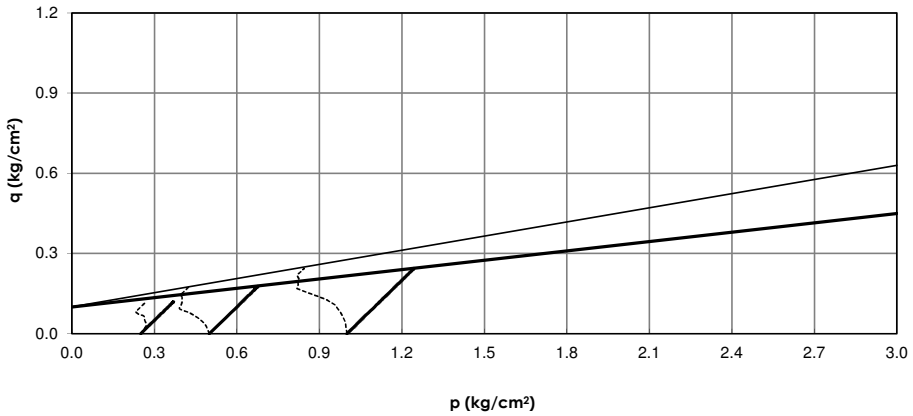
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

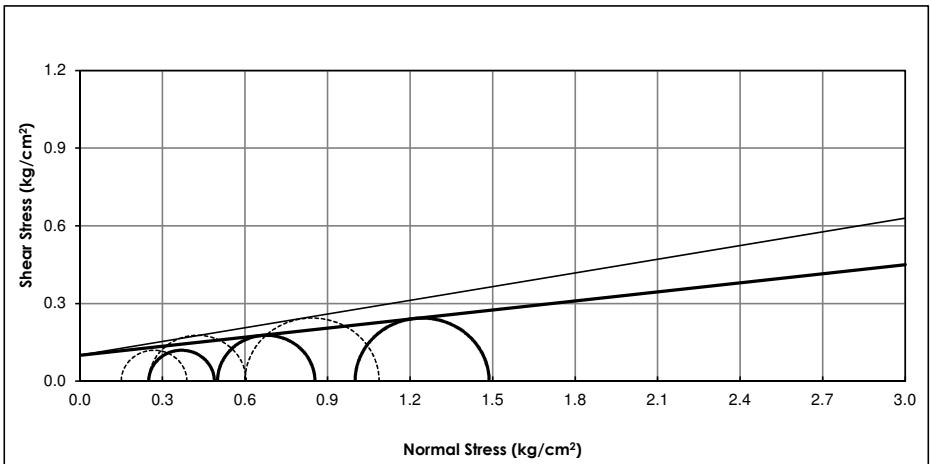
Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.10	0.10
α (°)	7	10

Mohr Circle



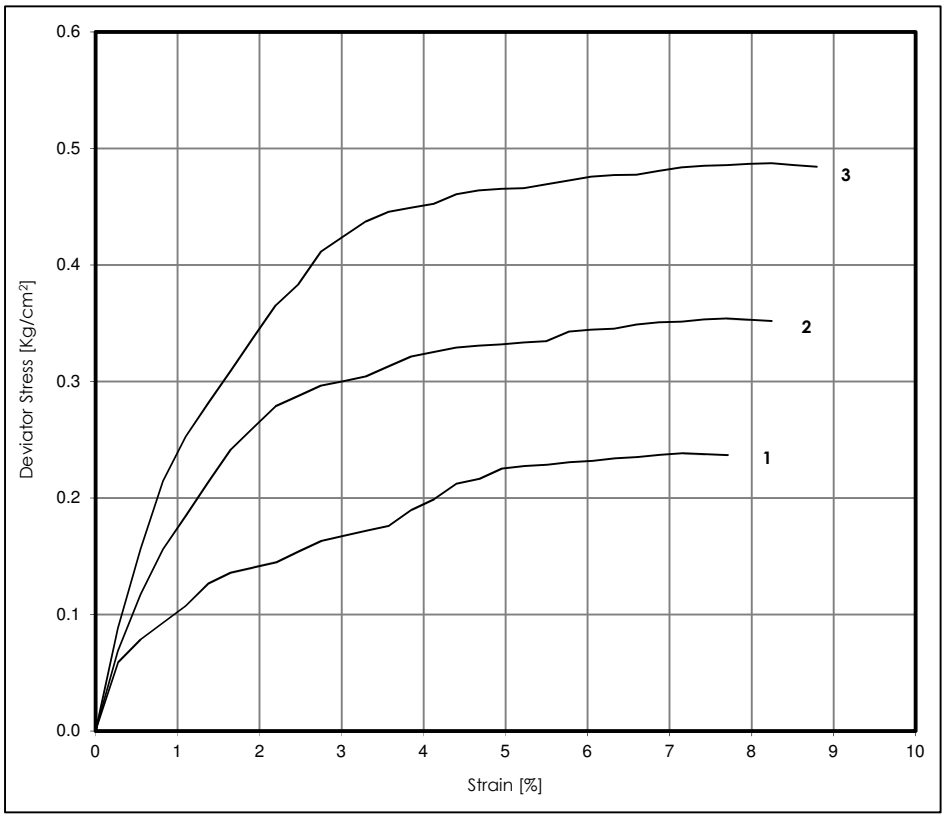
	Total	Effective
c (kg/cm²)	0.10	0.10
ϕ (°)	7	10

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

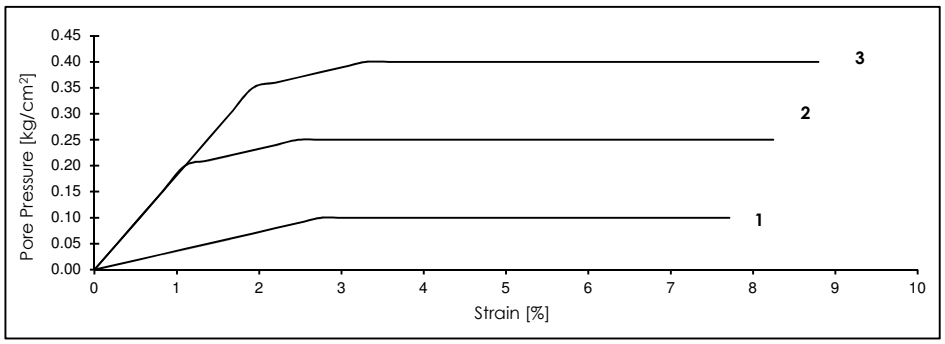
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.06	0.17
0.40	0.02	0.08	0.25
0.60	0.03	0.09	0.32
0.80	0.04	0.11	0.37
1.00	0.05	0.13	0.39
1.20	0.06	0.14	0.44
1.40	0.07	0.14	0.50
1.60	0.08	0.14	0.55
1.80	0.09	0.15	0.58
2.00	0.10	0.16	0.61
2.20	0.10	0.17	0.60
2.40	0.10	0.17	0.58
2.60	0.10	0.18	0.57
2.80	0.10	0.19	0.53
3.00	0.10	0.20	0.50
3.20	0.10	0.21	0.47
3.40	0.10	0.22	0.46
3.60	0.10	0.23	0.44
3.80	0.10	0.23	0.44
4.00	0.10	0.23	0.44
4.20	0.10	0.23	0.43
4.40	0.10	0.23	0.43
4.60	0.10	0.23	0.43
4.80	0.10	0.24	0.43
5.00	0.10	0.24	0.42
5.20	0.10	0.24	0.42
5.40	0.10	0.24	0.42
5.60	0.10	0.24	0.42
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.07	0.73
0.40	0.10	0.12	0.85
0.60	0.15	0.16	0.96
0.80	0.20	0.18	1.08
1.00	0.21	0.21	0.98
1.20	0.22	0.24	0.91
1.40	0.23	0.26	0.88
1.60	0.24	0.28	0.86
1.80	0.25	0.29	0.87
2.00	0.25	0.30	0.84
2.20	0.25	0.30	0.83
2.40	0.25	0.30	0.82
2.60	0.25	0.31	0.80
2.80	0.25	0.32	0.78
3.00	0.25	0.33	0.77
3.20	0.25	0.33	0.76
3.40	0.25	0.33	0.76
3.60	0.25	0.33	0.75
3.80	0.25	0.33	0.75
4.00	0.25	0.33	0.75
4.20	0.25	0.34	0.73
4.40	0.25	0.34	0.73
4.60	0.25	0.35	0.72
4.80	0.25	0.35	0.72
5.00	0.25	0.35	0.71
5.20	0.25	0.35	0.71
5.40	0.25	0.35	0.71
5.60	0.25	0.35	0.71
5.80	0.25	0.35	0.71
6.00	0.25	0.35	0.71
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.09	0.57
0.40	0.10	0.16	0.64
0.60	0.15	0.21	0.70
0.80	0.20	0.25	0.79
1.00	0.25	0.28	0.89
1.20	0.30	0.31	0.97
1.40	0.35	0.34	1.04
1.60	0.36	0.37	0.98
1.80	0.37	0.38	0.96
2.00	0.38	0.41	0.92
2.20	0.39	0.42	0.92
2.40	0.40	0.44	0.91
2.60	0.40	0.45	0.90
2.80	0.40	0.45	0.89
3.00	0.40	0.45	0.88
3.20	0.40	0.46	0.87
3.40	0.40	0.46	0.86
3.60	0.40	0.47	0.86
3.80	0.40	0.47	0.86
4.00	0.40	0.47	0.85
4.20	0.40	0.47	0.85
4.40	0.40	0.48	0.84
4.60	0.40	0.48	0.84
4.80	0.40	0.48	0.84
5.00	0.40	0.48	0.83
5.20	0.40	0.48	0.83
5.40	0.40	0.49	0.82
5.60	0.40	0.49	0.82
5.80	0.40	0.49	0.82
6.00	0.40	0.49	0.82
6.20	0.40	0.49	0.82
6.40	0.40	0.48	0.83
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.45						17.20	23.20	6.00	6.00	
	0.40	0.40			35.90	35.50	-0.40					-0.40
1.00		0.89	0.49	0.98				23.50	27.60	4.10	4.10	
	0.90	0.90			35.50	35.70	0.20					0.20
1.15		1.06						27.70	28.30	0.60	0.60	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						19.50	23.90	4.40	4.40	
	0.40	0.40			37.40	37.20	-0.20					-0.20
1.00		0.89	0.49	0.98				24.10	27.60	3.50	3.50	
	0.90	0.90			37.20	37.20	0.00					0.00
1.40		1.30						27.80	29.20	1.40	1.40	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 6.50-7.00m.
Tested / Checked b Fr / Y.

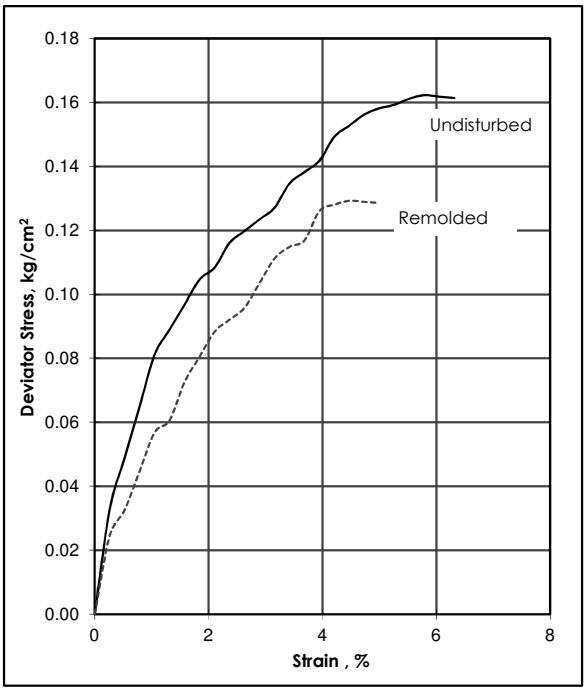
Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						23.10	26.50	3.40	3.40	
	0.40	0.40			36.60	36.50	-0.10					-0.10
1.00		0.80	0.40	0.80				26.90	29.80	2.90	2.90	
	0.90	0.90			36.50	37.00	0.50					0.50
1.50		1.39	0.49	0.98				30.00	32.40	2.40	2.40	
	1.40	1.40			37.00	37.20	0.20					0.20
2.00		1.90						32.20	33.50	1.30	1.30	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

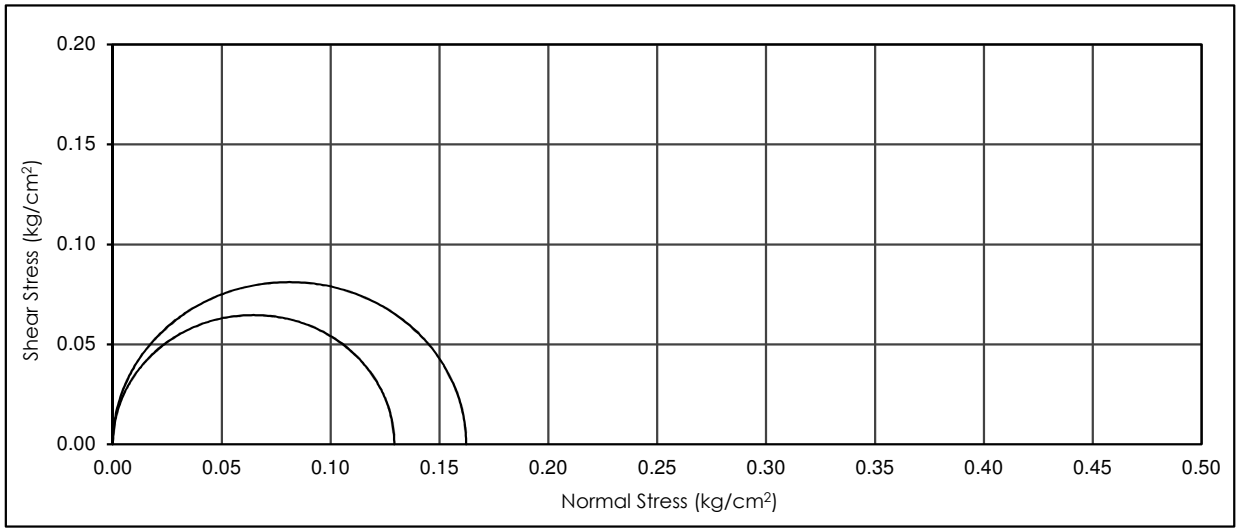
UNCONFINED COMPRESSION TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked by : AI / Y.



Soil Description		Silty clay, with a trace of sand, dark grey	
S P E C I M E N No.		Undisturbed	Remolded
Moisture content, %		90	83
Specific Gravity, Gs		2.61	2.61
Density, t/m^3		1.39	1.33
Dry density, t/m^3		0.73	0.72
Void Ratio		2.56	2.60
Saturation, %		91.87	83.24
Strain rate, mm/minute		0.66	0.66
q_u, kg/cm^2		0.16	0.13
Strain at failure, %		5.79	4.47
Shear Strength parameters	c [kg/cm^2]	0.08	0.06
	ϕ [ ]	-	-



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.

SOIL DESCRIPTION :		Silty clay, with a trace of sand, dark grey		
SPECIMEN No.		1	2	3
Initial	Density, t/m^3	1.39	1.40	1.43
	Moisture content, %	62.00	62.00	62.00
	Dry density, t/m^3	0.86	0.86	0.88
	Void Ratio	2.11	2.10	2.03
	Saturation, %	78.50	78.98	81.42
Final	Density, t/m^3	1.50	1.51	1.58
	Moisture content, %	90.17	86.27	74.90
	Dry density, t/m^3	0.79	0.81	0.90
	Void Ratio	2.39	2.30	1.96
	Saturation, %	100.00	100.00	100.00
Strain rate, mm/minute		0.4110	0.4110	0.4110
Initial σ_3, kg/cm^2		0.30	0.60	1.20
Back pressure, kg/cm^2		0.90	0.90	1.40
Cell pressure, kg/cm^2		1.20	1.50	2.60
Strain at failure, %		5.93	6.26	7.46
$(\sigma_1 - \sigma_3)_f$, kg/cm^2		0.34	0.44	0.64
u_f, kg/cm^2		0.05	0.20	0.50
$\sigma_3'_f$, kg/cm^2		0.25	0.40	0.70
$\sigma_1'_f$, kg/cm^2		0.59	0.84	1.34
Shear Strength parameters	c , kg/cm^2	0.11		
	c' , kg/cm^2	0.08		
	ϕ	8		
	ϕ'	13		

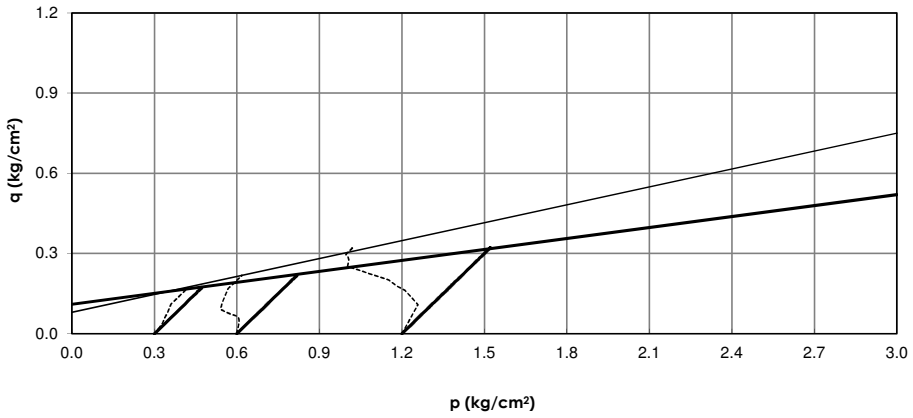
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. : **182729.**
Project : **Maritim Tower.**
Location : Jakarta.
Date : January 2019.

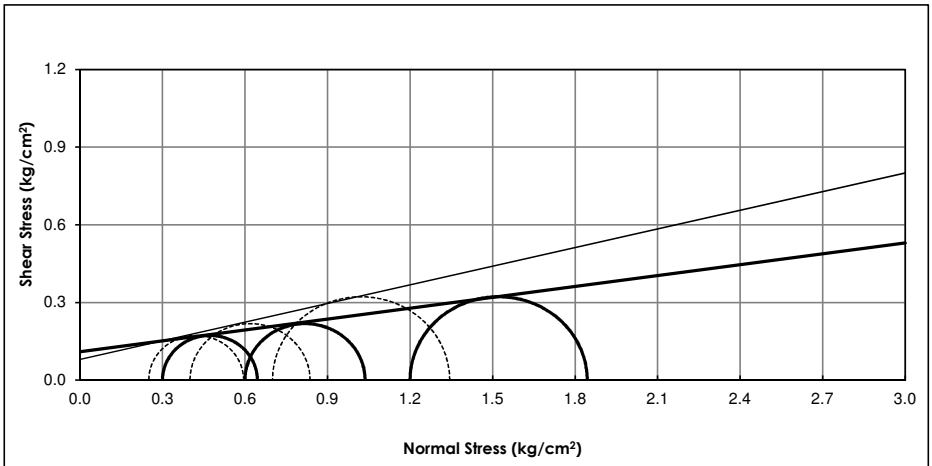
Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.

Stress Path (p-q plot)



	Total	Effective
a (kg/cm²)	0.11	0.08
α (°)	8	13

Mohr Circle



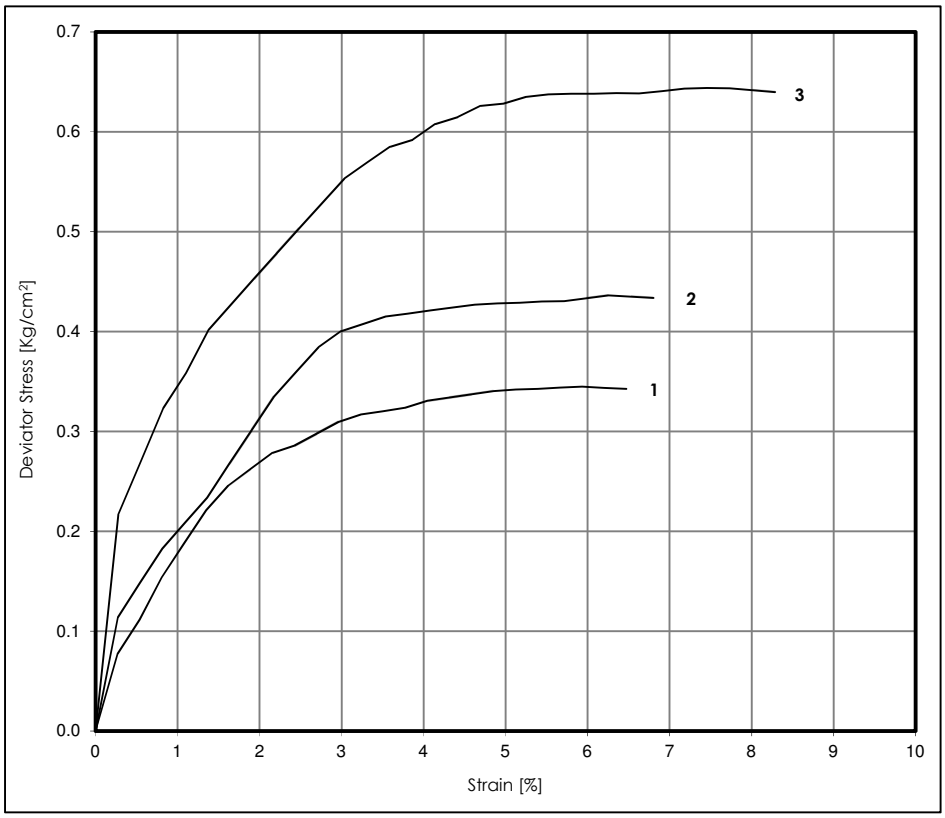
	Total	Effective
c (kg/cm²)	0.11	0.08
ϕ (°)	8	13

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

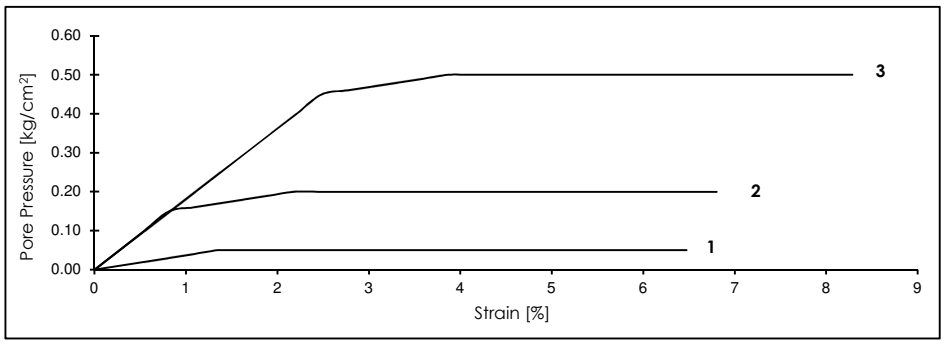
CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.



Pore Pressure vs. Strain



TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST
(with pore pressure measurement)

Project : Maritim Tower.
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked by : Fr / Y.

Specimen 1

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.01	0.08	0.13
0.40	0.02	0.11	0.18
0.60	0.03	0.15	0.19
0.80	0.04	0.19	0.21
1.00	0.05	0.22	0.23
1.20	0.05	0.25	0.20
1.40	0.05	0.26	0.19
1.60	0.05	0.28	0.18
1.80	0.05	0.29	0.17
2.00	0.05	0.30	0.17
2.20	0.05	0.31	0.16
2.40	0.05	0.32	0.16
2.60	0.05	0.32	0.16
2.80	0.05	0.32	0.15
3.00	0.05	0.33	0.15
3.20	0.05	0.33	0.15
3.40	0.05	0.34	0.15
3.60	0.05	0.34	0.15
3.80	0.05	0.34	0.15
4.00	0.05	0.34	0.15
4.20	0.05	0.34	0.15
4.40	0.05	0.34	0.15
4.60	0.05	0.34	0.15
4.80	0.05	0.34	0.15
5.00			
5.20			
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 2

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.11	0.44
0.40	0.10	0.15	0.67
0.60	0.15	0.18	0.82
0.80	0.16	0.21	0.77
1.00	0.17	0.23	0.73
1.20	0.18	0.27	0.67
1.40	0.19	0.30	0.63
1.60	0.20	0.34	0.60
1.80	0.20	0.36	0.56
2.00	0.20	0.38	0.52
2.20	0.20	0.40	0.50
2.40	0.20	0.41	0.49
2.60	0.20	0.42	0.48
2.80	0.20	0.42	0.48
3.00	0.20	0.42	0.47
3.20	0.20	0.42	0.47
3.40	0.20	0.43	0.47
3.60	0.20	0.43	0.47
3.80	0.20	0.43	0.47
4.00	0.20	0.43	0.46
4.20	0.20	0.43	0.46
4.40	0.20	0.43	0.46
4.60	0.20	0.44	0.46
4.80	0.20	0.44	0.46
5.00	0.20	0.43	0.46
5.20			
5.40			
5.60			
5.80			
6.00			
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

Specimen 3

Deform. mm	ΔU kg/cm²	$\sigma_1-\sigma_3$ kg/cm²	A
0.00	0.00	0.00	0.00
0.20	0.05	0.22	0.23
0.40	0.10	0.27	0.37
0.60	0.15	0.32	0.46
0.80	0.20	0.36	0.56
1.00	0.25	0.40	0.62
1.20	0.30	0.43	0.70
1.40	0.35	0.45	0.77
1.60	0.40	0.48	0.84
1.80	0.45	0.50	0.89
2.00	0.46	0.53	0.87
2.20	0.47	0.55	0.85
2.40	0.48	0.57	0.84
2.60	0.49	0.59	0.84
2.80	0.50	0.59	0.84
3.00	0.50	0.61	0.82
3.20	0.50	0.61	0.81
3.40	0.50	0.63	0.80
3.60	0.50	0.63	0.80
3.80	0.50	0.64	0.79
4.00	0.50	0.64	0.78
4.20	0.50	0.64	0.78
4.40	0.50	0.64	0.78
4.60	0.50	0.64	0.78
4.80	0.50	0.64	0.78
5.00	0.50	0.64	0.78
5.20	0.50	0.64	0.78
5.40	0.50	0.64	0.78
5.60	0.50	0.64	0.78
5.80	0.50	0.64	0.78
6.00	0.50	0.64	0.78
6.20			
6.40			
6.60			
6.80			
7.00			
7.20			
7.40			
7.60			
7.80			
8.00			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 1

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked b Fr / Y.

Cell Pressure (kg/cm^2)	Back Pressure (kg/cm^2)	Pore Pressure (kg/cm^2)	PWP diff (kg/cm^2)	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol cm^3	(-)exp. cm^3
0.50		0.42						20.80	23.90	3.10	3.10	
	0.40	0.40			40.20	40.00	-0.20					-0.20
1.00		0.89	0.49	0.98				24.00	25.80	1.80	1.80	
	0.90	0.90			40.00	40.00	0.00					0.00
1.20		1.10						25.70	26.20	0.50	0.50	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 2

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked b Fr / Y.

Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.40						22.40	26.00	3.60	3.60	
	0.40	0.40			38.60	38.70	0.10					0.10
1.00		0.89	0.49	0.98				26.00	28.30	2.30	2.30	
	0.90	0.90			38.70	38.70	0.00					0.00
1.50		1.40						28.30	29.70	1.40	1.40	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST

(with pore pressure measurement)

Sample 3

Project No. **: 182729.**
Project **: Maritim Tower.**
Location : Jakarta.
Date : January 2019.

Hole No. : BH-10.
Depth : 8.50-9.00m.
Tested / Checked b Fr / Y.

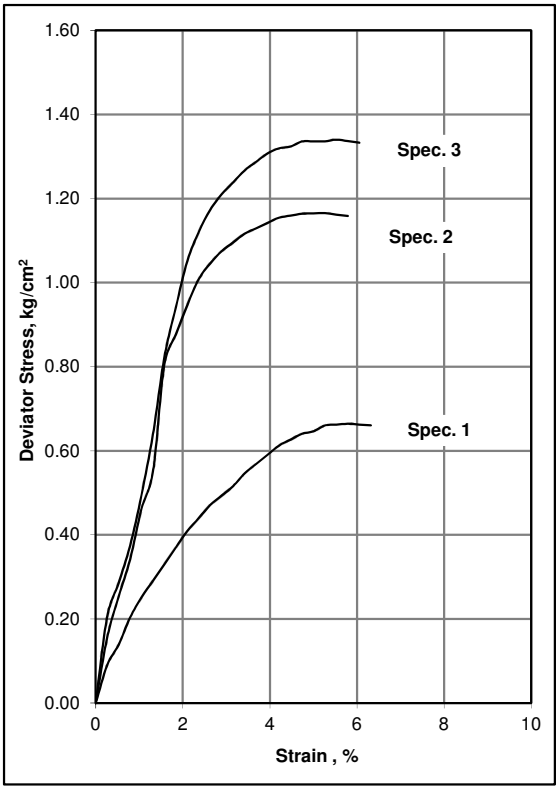
Cell Pressure	Back Pressure	Pore Pressure	PWP diff	B value	Back Pressure Volume Change			Cell Pressure Volume Change LHS/RHS				
					before	after	differential	before	after	differential	(+) consol	(-)exp.
(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)								cm^3	cm^3
0.50		0.45						23.40	26.50	3.10	3.10	
	0.40	0.40			39.50	39.30	-0.20					-0.20
1.00		0.85	0.45	0.90				27.00	29.00	2.00	2.00	
	0.90	0.90			39.30	39.50	0.20					0.20
1.50		1.39	0.49	0.98				29.20	30.60	1.40	1.40	
	1.40	1.40			39.50	39.50	0.00					0.00
2.60		2.50						30.70	33.80	3.10	3.10	

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

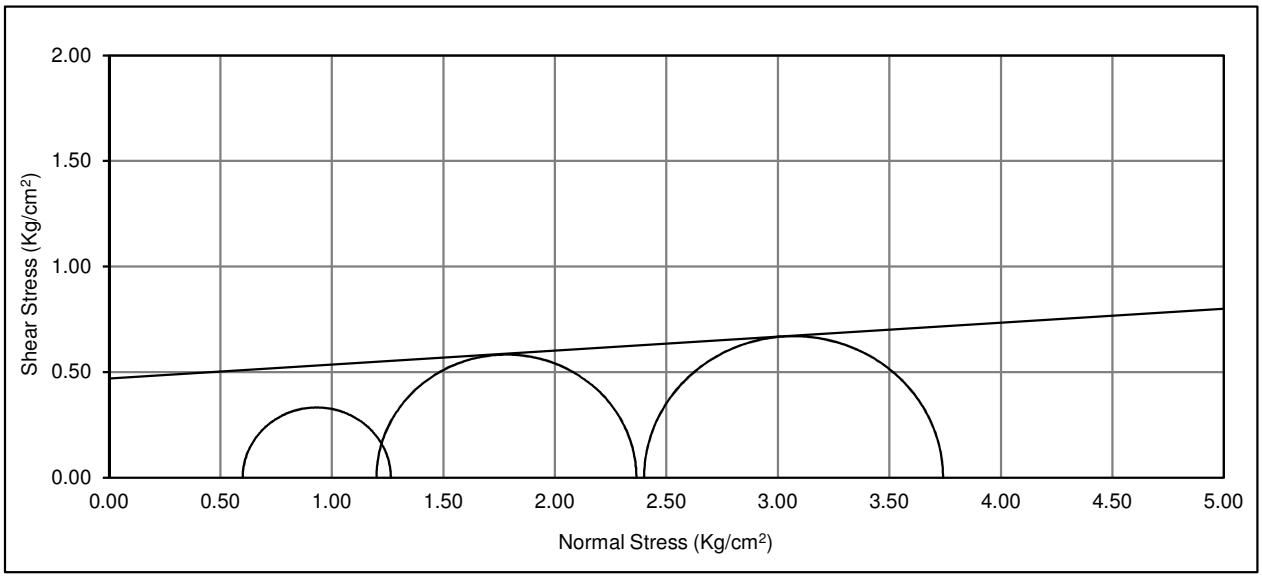
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-10.
Depth : 20.50-21.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, dark grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	72	72	70
Specific Gravity, Gs	2.66	2.66	2.66
Density, t/m^3	1.51	1.53	1.55
Dry density, t/m^3	0.88	0.89	0.91
Void Ratio	2.04	1.99	1.91
Saturation, %	94.23	96.67	97.73
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	0.60	1.20	2.40
Deviator Stress, kg/cm^2	0.66	1.17	1.34
Strain at Failure, %	5.79	5.26	5.53
Shear Strength Parameters: c [kg/cm^2]	0.47		
Shear Strength Parameters: ϕ [^{o}]	4		

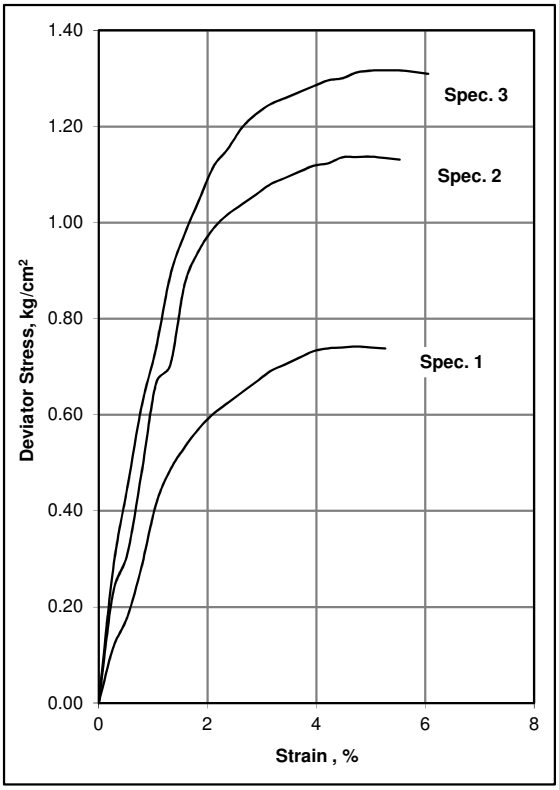


TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

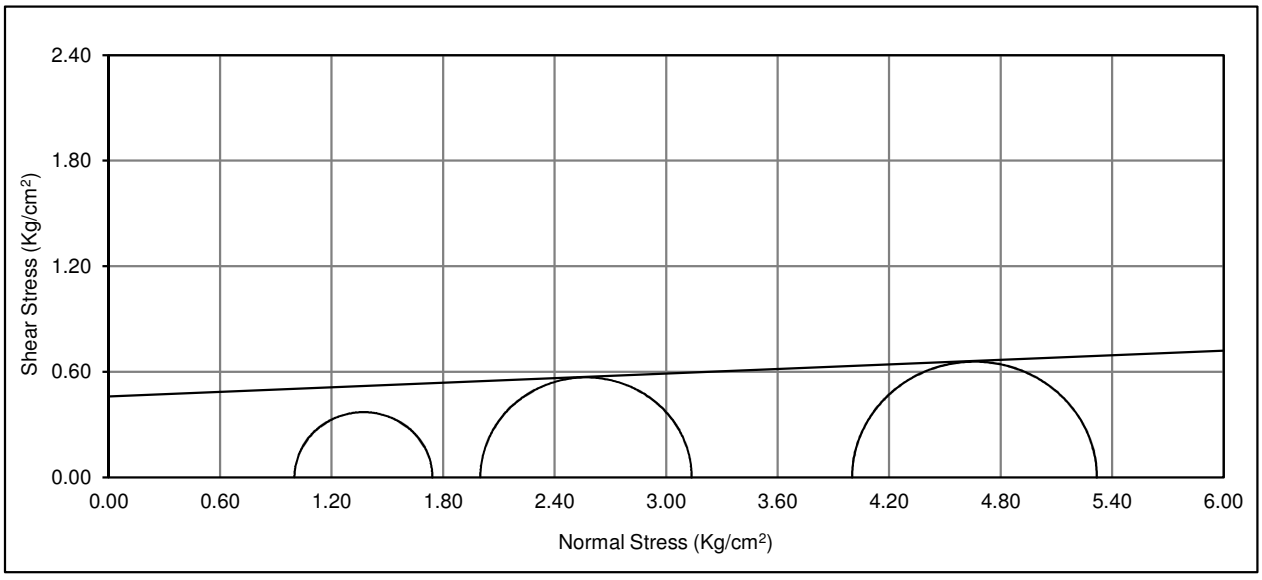
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

Project No. : 182729.
Project : Maritim Tower.
Location : Jakarta.

Date : January 2019.
Hole No. : BH-10.
Depth : 34.50-35.00m.
Tested / Checked by : AL / Y.



Soil Description	Silty clay, with a trace of sand, dark grey		
SPECIMEN No.	1	2	3
Natural Moisture Content, %	109	110	105
Specific Gravity, Gs	2.65	2.65	2.65
Density, t/m^3	1.66	1.64	1.66
Dry density, t/m^3	0.80	0.78	0.81
Void Ratio	2.33	2.39	2.27
Saturation, %	124.01	121.71	122.93
Strain rate, mm/minute	0.66	0.66	0.66
Confining Pressure, kg/cm^2	1.00	2.00	4.00
Deviator Stress, kg/cm^2	0.74	1.14	1.32
Strain at Failure, %	4.74	5.00	5.53
Shear Strength Parameters: c [kg/cm^2]	0.46		
Shear Strength Parameters: ϕ [^{o}]	2		



Lampiran 6

Uji Konsolidasi

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	F2
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-5.	TESTED BY	: Dh.
DEPTH	: 14.50-15.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.98	weight, gr =	60.72	w_3 = solid weight, gr =	35.19
diameter, cm =	5.00	Gs =	2.61	Hs = solid height, cm =	0.69
A area, cm^2 =	19.63	void ratio, e_i =	1.884		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.000			1.884						
		0.003	0.005		1.978					
0.2500	0.997			1.879						
		0.035	0.050		1.961	51.894		1.57E-02		
0.5000	0.966			1.833						
		0.063	0.092		1.931	92.256		8.57E-03		
1.0000	0.937			1.792						
		0.099	0.143		1.899	89.304		8.56E-03		
2.0000	0.902			1.740						
		0.148	0.215		1.857	114.26		6.40E-03		
4.0000	0.853			1.669						
		0.243	0.353		1.785	198.74		3.40E-03		
8.0000	0.758			1.530						
		0.359	0.522		1.680	133.21		4.49E-03		0.561
16.0000	0.642			1.362						
		0.351	0.510		1.626					
8.0000	0.650			1.373						
		0.343	0.499		1.634					
4.0000	0.6575			1.385						
		0.321	0.467		1.649					
1.0000	0.6795			1.417						
		0.291	0.423		0.845					
0.2500	0.7095			1.461						

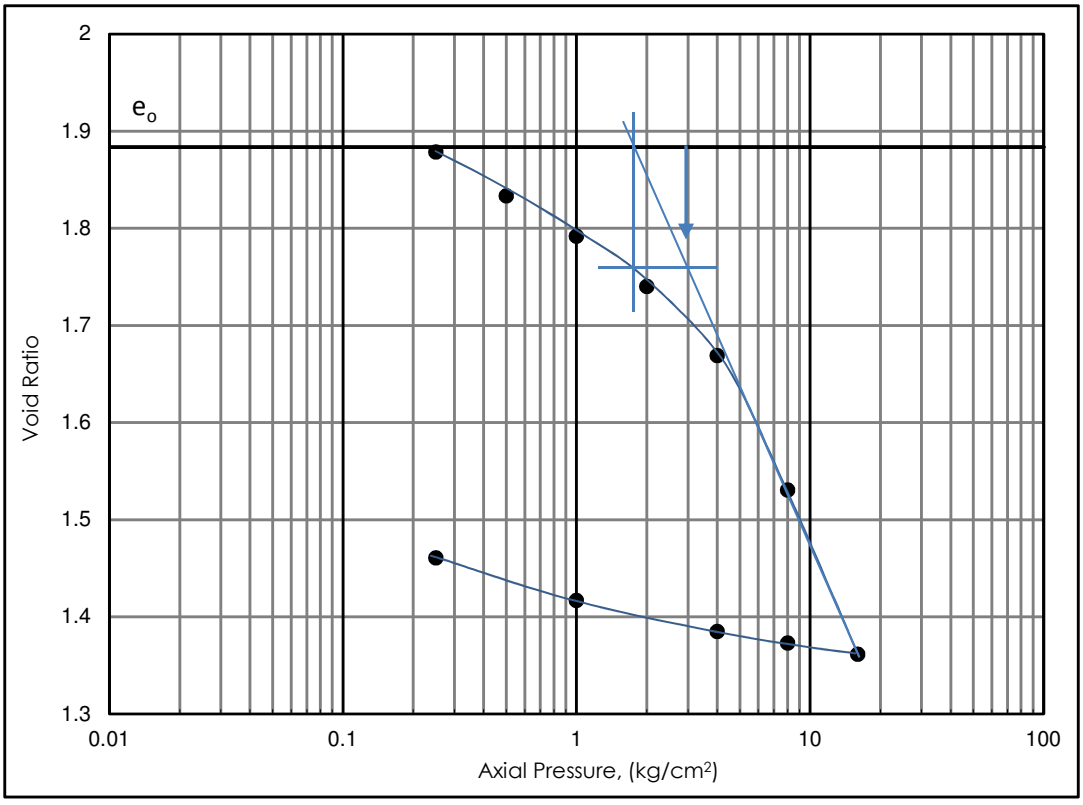
		Condition	Initial	Final
Liquid limit (%)	81	Sample height (cm)	1.98	1.69
Plastic Index (%)	51	Water content (%)	72.6	69.9
Specific gravity	2.61	Dry unit weight (gr/cm^3)	0.91	0.99
Preconsolidation pressure (kg/cm^2)	3.0	Void ratio	1.88	1.46
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, with a trace of sand, brown.			

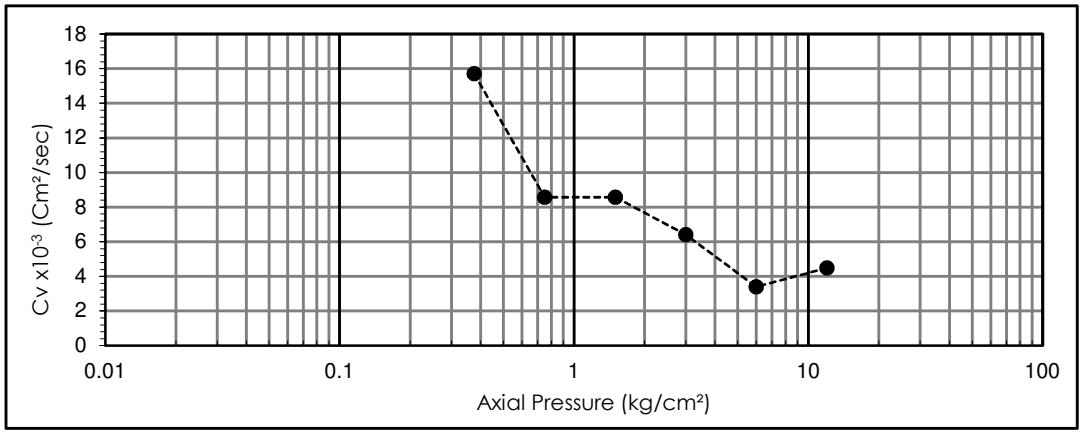
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-5.
DEPTH : 14.50-15.00m.

TEST NO. F2
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	F1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-5.	TESTED BY	: Dh.
DEPTH	: 38.50-39.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.93	weight, gr =	73.86	W_3 = solid weight, gr =	54.56
diameter, cm =	5.12	Gs =	2.63	Hs = solid height, cm =	1.01
A area, cm^2 =	20.59	void ratio, e_i =	0.916		

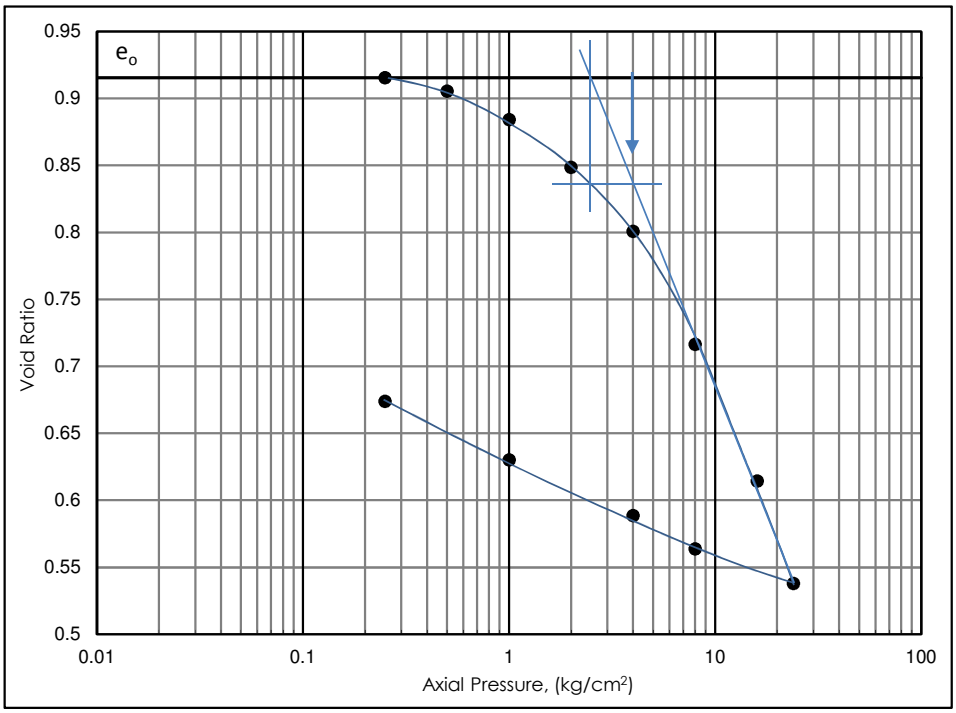
Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Hs (Δ e = ----)	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.000			0.916						
		0.000	0.000		1.930					
0.2500	1.000			0.916						
		0.010	0.010		1.925	49.686		1.58E-02		
0.5000	0.990			0.906						
		0.032	0.031		1.909	72.6		1.06E-02		
1.0000	0.969			0.884						
		0.068	0.067		1.881	96.774		7.75E-03		
2.0000	0.933			0.849						
		0.116	0.115		1.839	102.97		6.96E-03		
4.0000	0.885			0.801						
		0.201	0.199		1.772	161.38		4.13E-03		
8.0000	0.800			0.717						
		0.304	0.301		1.678	136.81		4.36E-03		
16.0000	0.697			0.614						
		0.381	0.378		1.588	72.6		7.36E-03		0.434
24.0000	0.620			0.538						
		0.355	0.352		1.563					
8.0000	0.646			0.564						
		0.330	0.327		1.588					
4.0000	0.671			0.588						
		0.288	0.285		1.622					
1.0000	0.7125			0.630						
		0.244	0.242		1.665					
0.2500	0.7565			0.674						

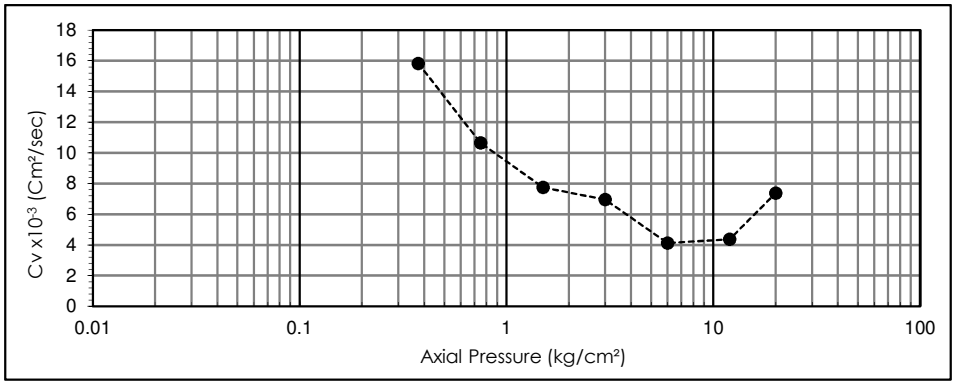
		Condition	Initial	Final
Liquid limit (%)	69	Sample height (cm)	1.93	1.69
Plastic Index (%)	41	Water content (%)	35.4	34.3
Specific gravity	2.63	Dry unit weight (gr/cm^3)	1.37	1.56
Preconsolidation pressure (kg/cm^2)	4.0	Void ratio	0.92	0.67
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, brownish grey.			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	F1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-5.	TESTED BY	: Dh.
DEPTH	: 38.50-39.00m.	CHECKED BY	: Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	H1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-5.	TESTED BY	: Dh.
DEPTH	: 59.50-60.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.96	weight, gr =	67.46	W_3 = solid weight, gr =	45.46
diameter, cm =	5.00	Gs =	2.65	Hs = solid height, cm =	0.87
A area, cm^2 =	19.63	void ratio, e_i =	1.244		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.034			1.244						
		0.000	0.000		1.960					
0.2500	1.034			1.244						
		0.011	0.012		1.955	71.286		1.14E-02		
0.5000	1.023			1.232						
		0.036	0.041		1.937	96.774		8.22E-03		
1.0000	0.998			1.202						
		0.085	0.097		1.900	110.98		6.89E-03		
2.0000	0.949			1.146						
		0.148	0.169		1.844	110.98		6.49E-03		
4.0000	0.886			1.074						
		0.254	0.291		1.759	190.1		3.45E-03		
8.0000	0.780			0.953						
		0.397	0.454		1.635	240		2.36E-03		
16.0000	0.637			0.789						
		0.536	0.614		1.494	290.4		1.63E-03		
24.0000	0.498			0.630						
		0.625	0.715		1.380	144.15		2.80E-03		
32.0000	0.409			0.528						
		0.686	0.785		1.305	144.15		2.50E-03		0.715
40.0000	0.348			0.459						
		0.665	0.761		1.285					
24.0000	0.369			0.482						
		0.605	0.693		1.325					
8.0000	0.429			0.551						
		0.549	0.628		1.383					
4.0000	0.4845			0.615						
		0.449	0.514		1.461					
1.0000	0.585			0.730						
		0.262	0.300		1.605					
0.2500	0.772			0.944						

		Condition	Initial	Final
Liquid limit (%)	105	Sample height (cm)	1.96	1.70
Plastic Index (%)	75	Water content (%)	48.4	51.4
Specific gravity	2.65	Dry unit weight (gr/cm^3)	1.18	1.29
Preconsolidation pressure (kg/cm^2)	7.0	Void ratio	1.24	0.94
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, grey.			

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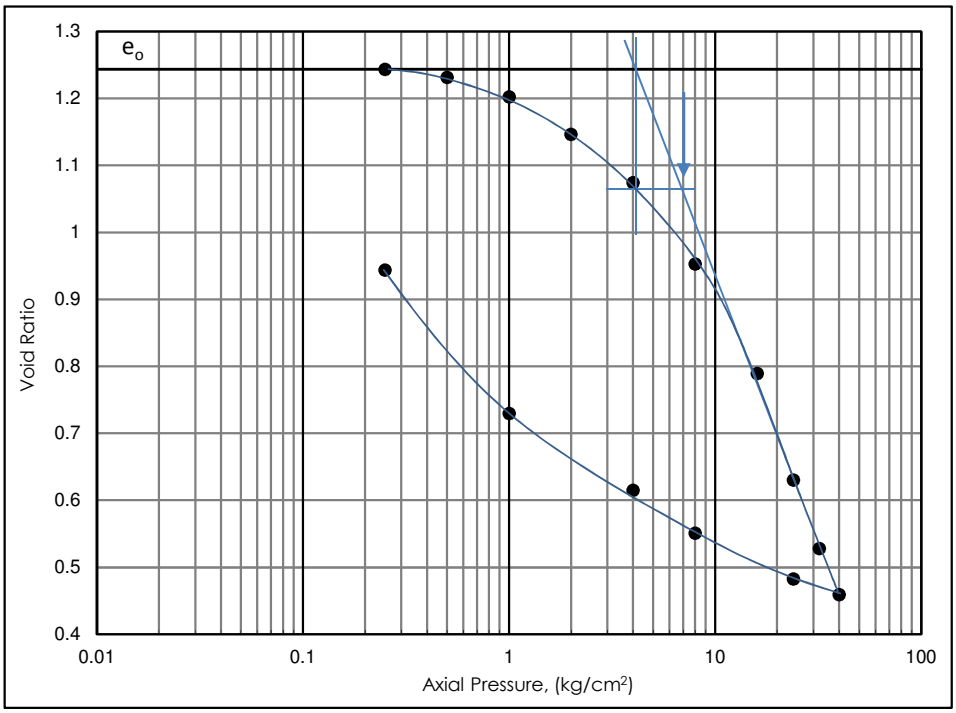
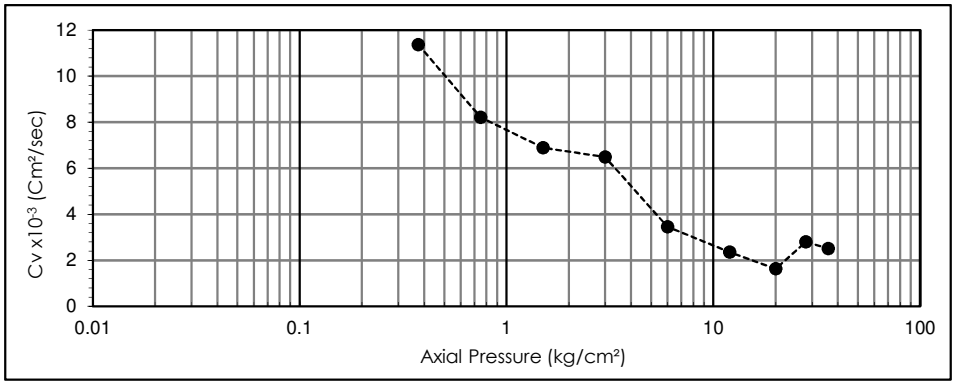
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. : **182729.**
PROJECT : **Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-5.
DEPTH : 59.50-60.00m.

TEST NO. H1
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	C1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-6.	TESTED BY	: Dh.
DEPTH	: 40.50-41.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.92	weight, gr =	72.55	W_3 = solid weight, gr =	52.78
diameter, cm =	5.10	Gs =	2.61	Hs = solid height, cm =	0.99
A area, cm^2 =	20.43	void ratio, e_i =	0.939		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.024			0.939						
		0.000	0.000		1.920					
0.2500	1.024			0.939						
		0.002	0.002		1.919	49.686		1.57E-02		
0.5000	1.022			0.937						
		0.013	0.013		1.913	83.544		9.28E-03		
1.0000	1.011			0.926						
		0.044	0.044		1.892	92.256		8.22E-03		
2.0000	0.980			0.895						
		0.084	0.085		1.856	179.57		4.07E-03		
4.0000	0.940			0.855						
		0.160	0.162		1.798	153.6		4.46E-03		
8.0000	0.864			0.778						
		0.269	0.271		1.706	120.98		5.10E-03		
16.0000	0.756			0.668						
		0.339	0.342		1.616	163.35		3.39E-03		0.404
24.0000	0.685			0.597						
		0.317	0.320		1.592					
8.0000	0.708			0.620						
		0.294	0.297		1.615					
4.0000	0.730			0.642						
		0.244	0.246		1.651					
1.0000	0.78			0.693						
		0.145	0.146		1.726					
0.2500	0.8795			0.793						

		Condition	Initial	Final
Liquid limit (%)	92	Sample height (cm)	1.92	1.78
Plastic Index (%)	62	Water content (%)	37.4	38.0
Specific gravity	2.61	Dry unit weight (gr/cm^3)	1.35	1.43
Preconsolidation pressure (kg/cm^2)	4.5	Void ratio	0.94	0.79
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, light brownish grey.			

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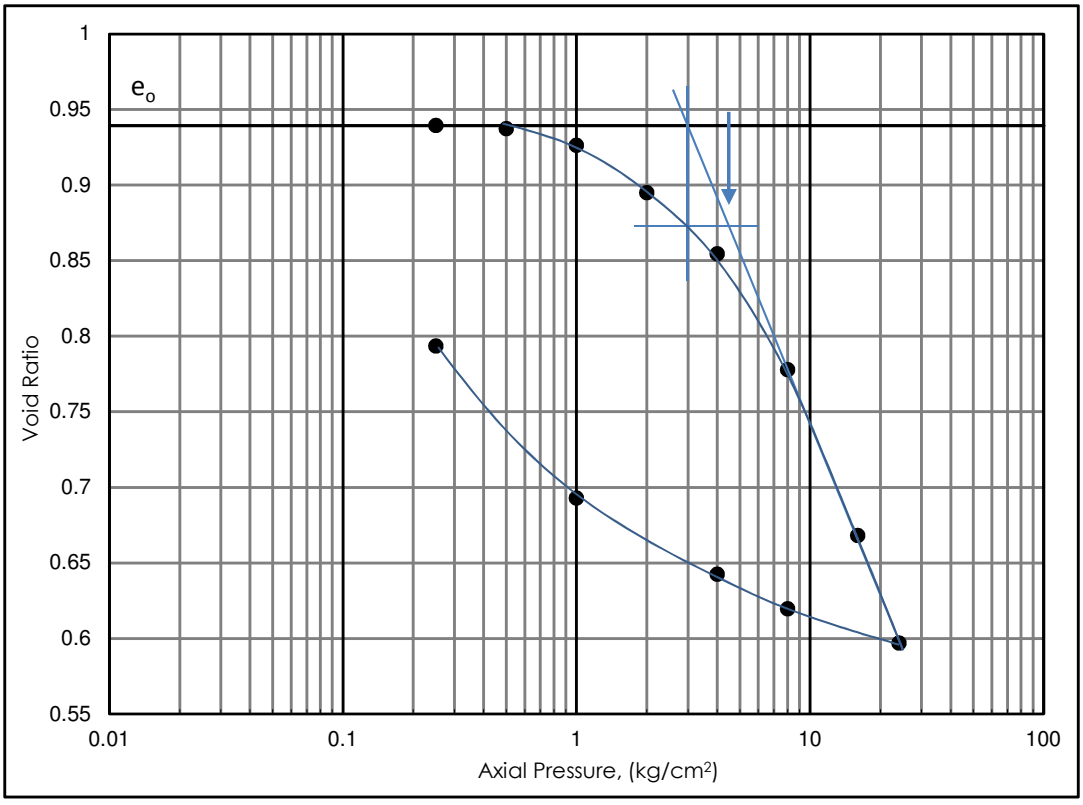
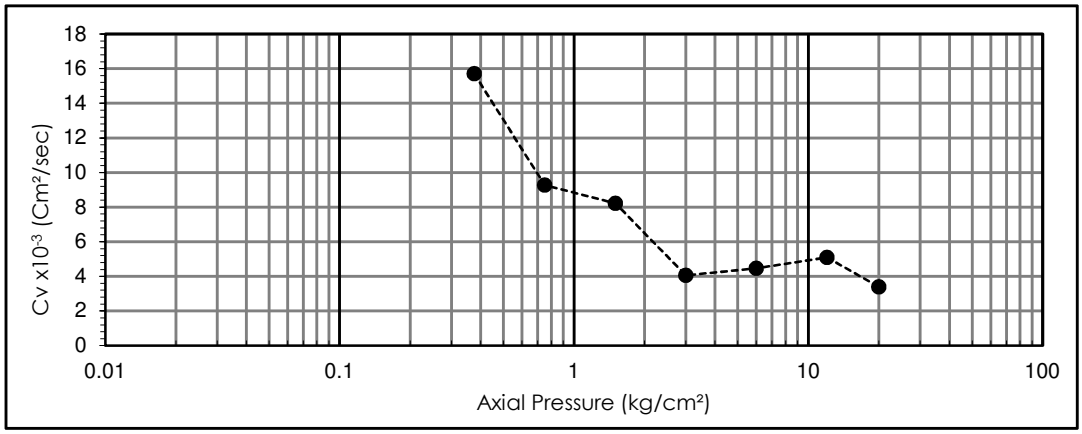
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-6.
DEPTH : 40.50-41.00m.

TEST NO. C1
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	E2
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-6.	TESTED BY	: Dh.
DEPTH	: 50.50-51.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2.05	weight, gr =	77.90	W_3 = solid weight, gr =	62.66
diameter, cm =	5.13	Gs =	2.65	Hs = solid height, cm =	1.14
A area, cm^2 =	20.67	void ratio, e_i =	0.792		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.014			0.792						
		0.000	0.000		2.050					
0.2500	1.014			0.792						
		0.004	0.003		2.048	60		1.48E-02		
0.5000	1.010			0.789						
		0.014	0.012		2.042	96.774		9.13E-03		
1.0000	1.000			0.780						
		0.051	0.045		2.018	92.256		9.36E-03		
2.0000	0.963			0.747						
		0.091	0.079		1.979	92.256		9.00E-03		
4.0000	0.923			0.713						
		0.167	0.146		1.922	126.15		6.20E-03		
8.0000	0.847			0.646						
		0.239	0.209		1.847	290.4		2.49E-03		
16.0000	0.775			0.583						
		0.311	0.271		1.775	240		2.78E-03		
24.0000	0.703			0.521						
		0.354	0.309		1.718	102.97		6.08E-03		0.301
32.0000	0.660			0.483						
		0.336	0.293		1.706					
16.0000	0.678			0.499						
		0.291	0.254		1.737					
4.0000	0.723			0.538						
		0.234	0.204		1.788					
1.0000	0.780			0.588						
		0.119	0.104		1.874					
0.2500	0.895			0.688						

		Condition	Initial	Final
Liquid limit (%)	61	Sample height (cm)	2.05	1.93
Plastic Index (%)	31	Water content (%)	24.3	26.1
Specific gravity	2.65	Dry unit weight (gr/cm^3)	1.48	1.55
Preconsolidated pressure (kg/cm^2)	5.0	Void ratio	0.79	0.69
Effective overburden pressure (kg/cm^2)		Saturation (%)	81.4	100.0
Sample description :	Silty clay, with a trace of sand, brownish grey.			

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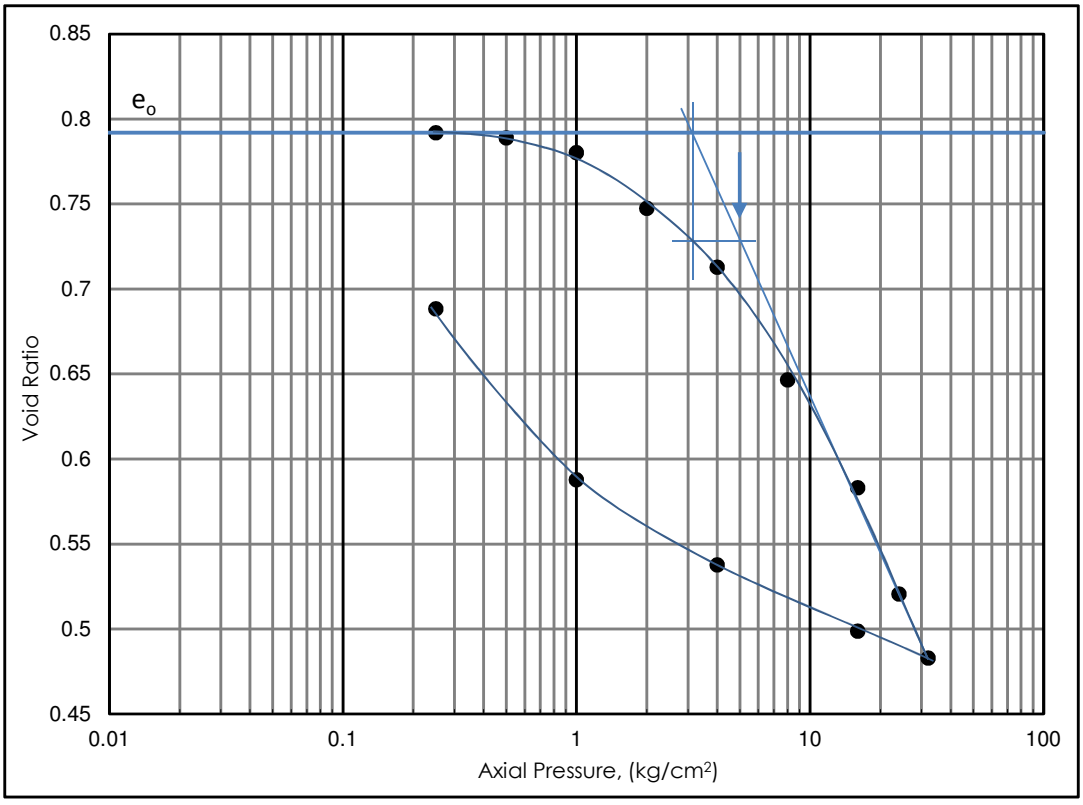
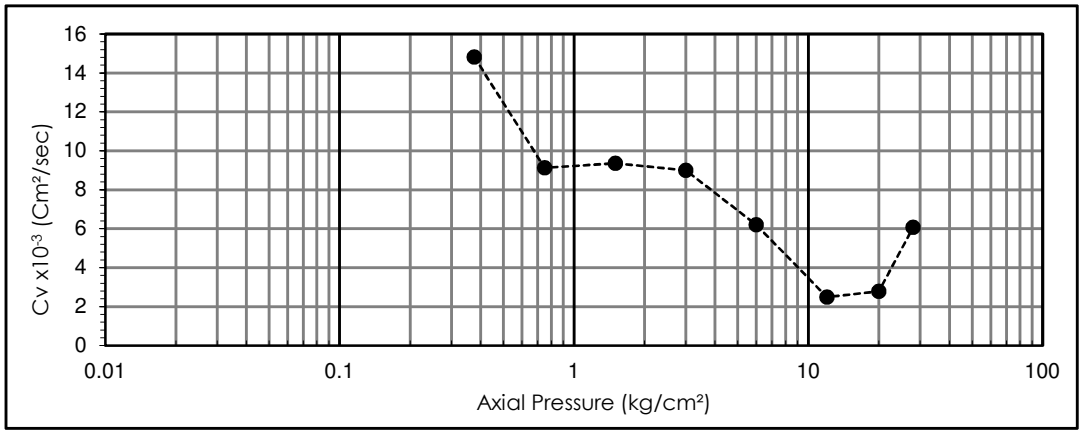
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-6.
DEPTH : 50.50-51.00m.

TEST NO. E2
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





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Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	E3
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-6.	TESTED BY	: Dh.
DEPTH	: 58.50-59.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2	weight, gr =	67.78	W_3 = solid weight, gr =	45.93
diameter, cm =	5.13	Gs =	2.64	Hs = solid height, cm =	0.84
A area, cm^2 =	20.67	void ratio, e_i =	1.376		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.049			1.376						
		0.000	0.000		2.000					
0.2500	1.049			1.376						
		0.011	0.013		1.995	45.414		1.86E-02		
0.5000	1.038			1.363						
		0.034	0.040		1.978	92.256		8.99E-03		
1.0000	1.015			1.336						
		0.069	0.081		1.949	102.97		7.82E-03		
2.0000	0.980			1.295						
		0.142	0.168		1.895	114.26		6.66E-03		
4.0000	0.907			1.208						
		0.276	0.327		1.792	185.86		3.66E-03		
8.0000	0.773			1.049						
		0.414	0.491		1.656	240		2.42E-03		
16.0000	0.635			0.885						
		0.554	0.658		1.517	144.15		3.38E-03		
24.0000	0.495			0.719						
		0.642	0.762		1.403	240		1.74E-03		
32.0000	0.407			0.614						
		0.708	0.841		1.326	540		6.90E-04		0.809
40.0000	0.341			0.536						
		0.689	0.819		1.302					
24.0000	0.360			0.558						
		0.610	0.724		1.351					
8.0000	0.439			0.652						
		0.550	0.653		1.421					
4.0000	0.499			0.723						
		0.440	0.522		1.506					
1.0000	0.609			0.854						
		0.270	0.320		1.646					
0.2500	0.779			1.056						

		Condition	Initial	Final
Liquid limit (%)	101	Sample height (cm)	2.00	1.73
Plastic Index (%)	72	Water content (%)	47.6	47.6
Specific gravity	2.64	Dry unit weight (gr/cm^3)	1.11	1.25
Preconsolidation pressure (kg/cm^2)	6.5	Void ratio	1.38	1.06
Effective overburden pressure (kg/cm^2)		Saturation (%)	91.3	100.0
Sample description :	Silty clay, with a trace of sand, brownish grey.			

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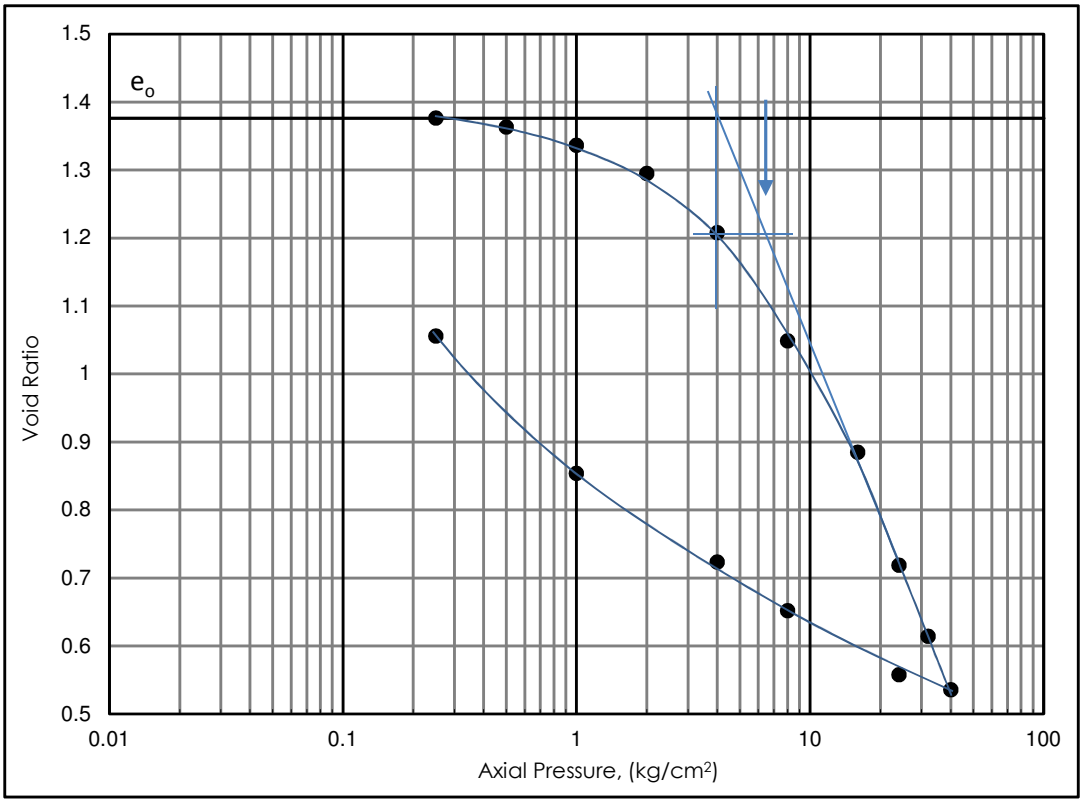
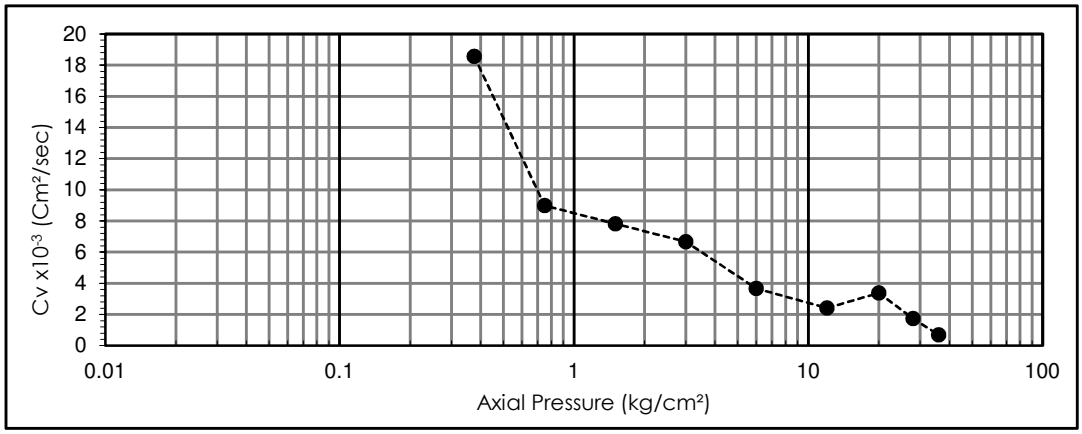
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-6.
DEPTH : 58.50-59.00m.

TEST NO. E3
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	D2
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-7.	TESTED BY	: Dh.
DEPTH	: 14.50-15.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2	weight, gr =	53.46	w_3 = solid weight, gr =	28.76
diameter, cm =	5.12	Gs =	2.63	Hs = solid height, cm =	0.53
A area, cm^2 =	20.59	void ratio, e_i =	2.765		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.000			2.765						
		0.007	0.014		1.996					
0.2500	0.993			2.751						
		0.054	0.101		1.970	72.6		1.13E-02		
0.5000	0.947			2.664						
		0.105	0.198		1.921	96.774		8.08E-03		
1.0000	0.895			2.567						
		0.207	0.390		1.844	101.4		7.11E-03		
2.0000	0.793			2.375						
		0.319	0.601		1.737	86.4		7.40E-03		
4.0000	0.681			2.164						
		0.462	0.870		1.610	161.38		3.40E-03		
8.0000	0.538			1.895						
		0.613	1.154		1.463	110.98		4.09E-03		0.944
16.0000	0.387			1.611						
		0.607	1.142		1.390					
8.0000	0.394			1.623						
		0.597	1.124		1.398					
4.0000	0.403			1.641						
		0.575	1.082		1.414					
1.0000	0.425			1.683						
		0.552	1.038		0.724					
0.2500	0.4485			1.727						

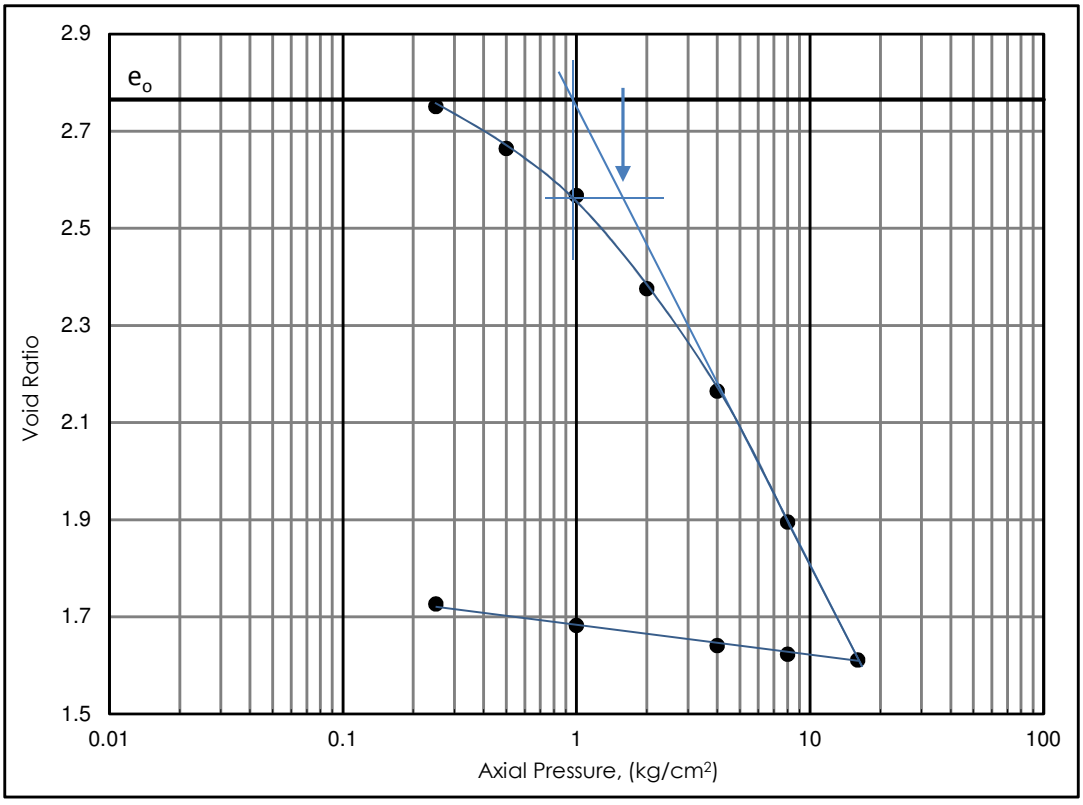
		Condition	Initial	Final
Liquid limit (%)	88	Sample height (cm)	2.00	1.45
Plastic Index (%)	59	Water content (%)	85.9	56.7
Specific gravity	2.63	Dry unit weight (gr/cm^3)	0.70	0.93
Preconsolidation pressure (kg/cm^2)	1.7	Void ratio	2.76	1.73
Effective overburden pressure (kg/cm^2)		Saturation (%)	81.7	86.3
Sample description :	Silty clay, brown			

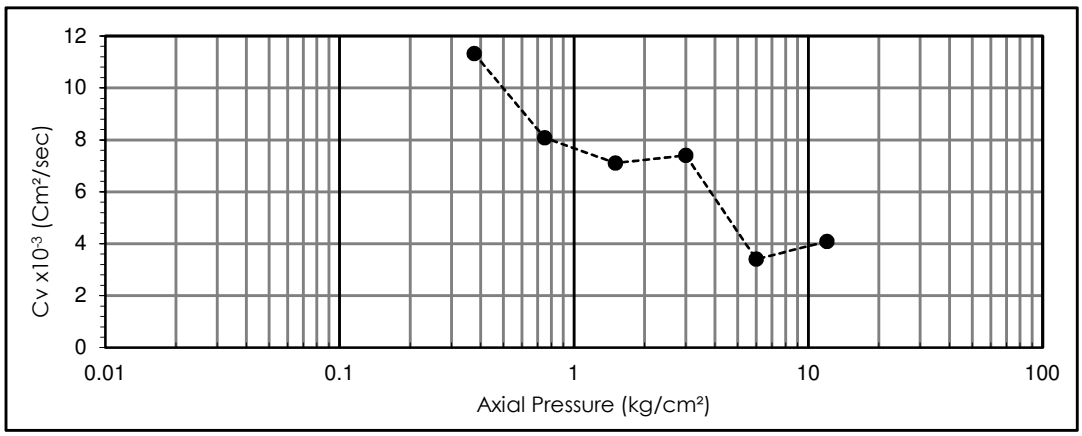
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-7.
DEPTH : 14.50-15.00m.

TEST NO. D2
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	I1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-7.	TESTED BY	: Dh.
DEPTH	: 38.50-39.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.96	weight, gr =	58.44	W_3 = solid weight, gr =	35.96
diameter, cm =	5.02	Gs =	2.68	Hs = solid height, cm =	0.68
A area, cm^2 =	19.79	void ratio, e_i =	1.891		

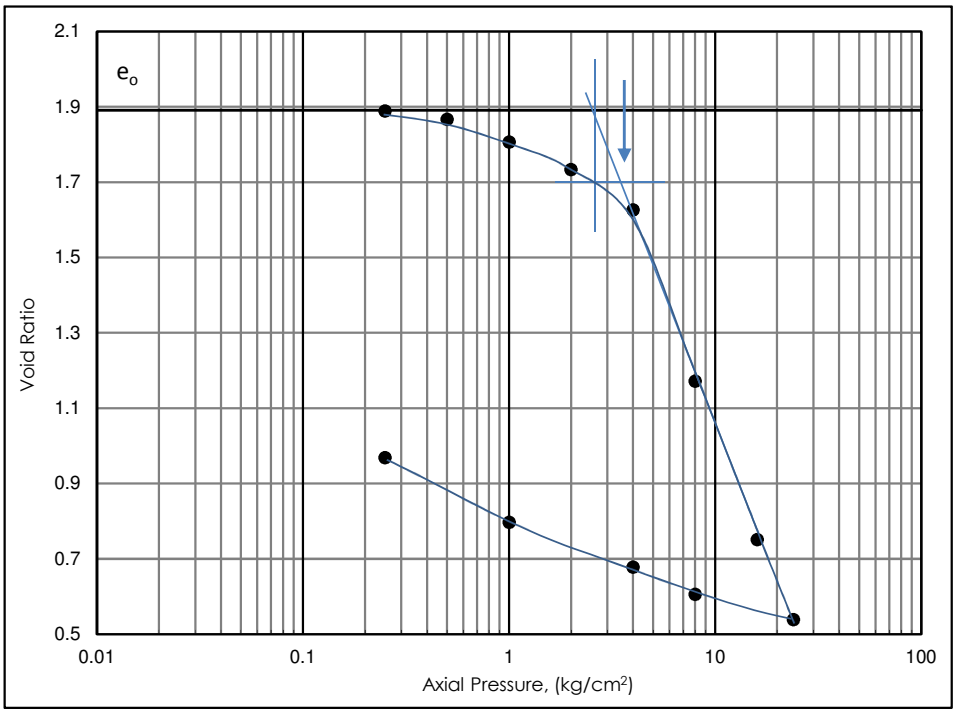
Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.000			1.891						
		0.001	0.002		1.959					
0.2500	0.999			1.889						
		0.017	0.024		1.951	54.15		1.49E-02		
0.5000	0.984			1.867						
		0.058	0.085		1.923	92.256		8.50E-03		
1.0000	0.943			1.806						
		0.107	0.158		1.878	157.46		4.75E-03		
2.0000	0.893			1.733						
		0.180	0.265		1.817	126.15		5.55E-03		
4.0000	0.821			1.626						
		0.488	0.719		1.627	198.74		2.82E-03		
8.0000	0.513			1.172						
		0.773	1.139		1.330	317.4		1.18E-03		
16.0000	0.228			0.752						
		0.917	1.352		1.116	240		1.10E-03		1.206
24.0000	0.084			0.539						
		0.872	1.285		1.066					
8.0000	0.129			0.606						
		0.823	1.213		1.113					
4.0000	0.178			0.678						
		0.742	1.094		1.178					
1.0000	0.2585			0.797						
		0.626	0.923		1.277					
0.2500	0.3745			0.968						

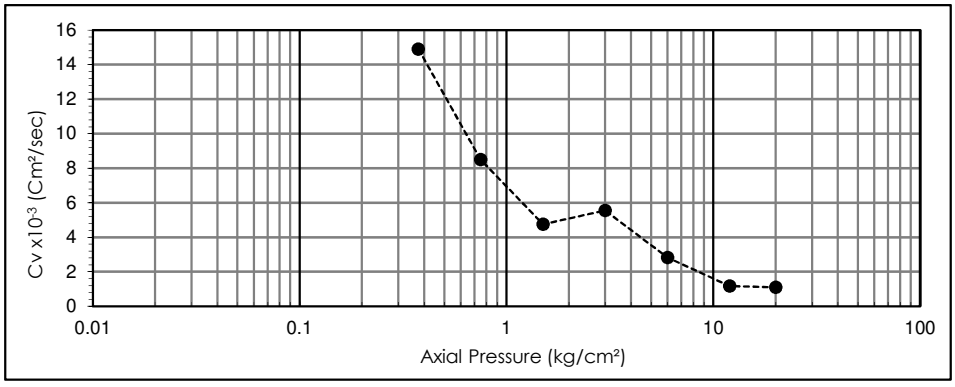
		Condition	Initial	Final
Liquid limit (%)	140	Sample height (cm)	1.96	1.33
Plastic Index (%)	110	Water content (%)	81.4	60.2
Specific gravity	2.68	Dry unit weight (gr/cm^3)	0.93	1.14
Preconsolidation pressure (kg/cm^2)	3.5	Void ratio	1.89	0.97
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, with a trace of sand, light brownish grey			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	I1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-7.	TESTED BY	: Dh.
DEPTH	: 38.50-39.00m.	CHECKED BY	: Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	C4
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-7.	TESTED BY	: Dh.
DEPTH	: 46.50-47.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.92	weight, gr =	69.72	W_3 = solid weight, gr =	50.55
diameter, cm =	5.10	Gs =	2.59	Hs = solid height, cm =	0.96
A area, cm^2 =	20.43	void ratio, e_i =	1.010		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.026			1.010						
		0.000	0.000		1.920					
0.2500	1.026			1.010						
		0.009	0.009		1.916	53.016		1.47E-02		
0.5000	1.017			1.000						
		0.026	0.027		1.903	72.6		1.06E-02		
1.0000	1.000			0.982						
		0.061	0.064		1.877	110.98		6.73E-03		
2.0000	0.965			0.946						
		0.114	0.119		1.833	86.4		8.24E-03		
4.0000	0.912			0.890						
		0.232	0.243		1.747	126.15		5.13E-03		
8.0000	0.794			0.767						
		0.358	0.375		1.625	161.38		3.47E-03		
16.0000	0.668			0.635						
		0.463	0.484		1.510	101.4		4.77E-03		
24.0000	0.564			0.526						
		0.519	0.543		1.430	144.15		3.01E-03		0.469
32.0000	0.508			0.467						
		0.498	0.521		1.412					
16.0000	0.529			0.489						
		0.464	0.486		1.439					
4.0000	0.562			0.524						
		0.432	0.452		1.472					
1.0000	0.594			0.558						
		0.376	0.394		1.516					
0.2500	0.650			0.616						

		Condition	Initial	Final
Liquid limit (%)	100	Sample height (cm)	1.92	1.54
Plastic Index (%)	71	Water content (%)	37.9	37.1
Specific gravity	2.59	Dry unit weight (gr/cm^3)	1.29	1.53
Preconsolidated pressure (kg/cm^2)	4.0	Void ratio	1.01	0.62
Effective overburden pressure (kg/cm^2)		Saturation (%)	97.3	100.0
Sample description :	Silty clay, with a trace of sand, dark grey			

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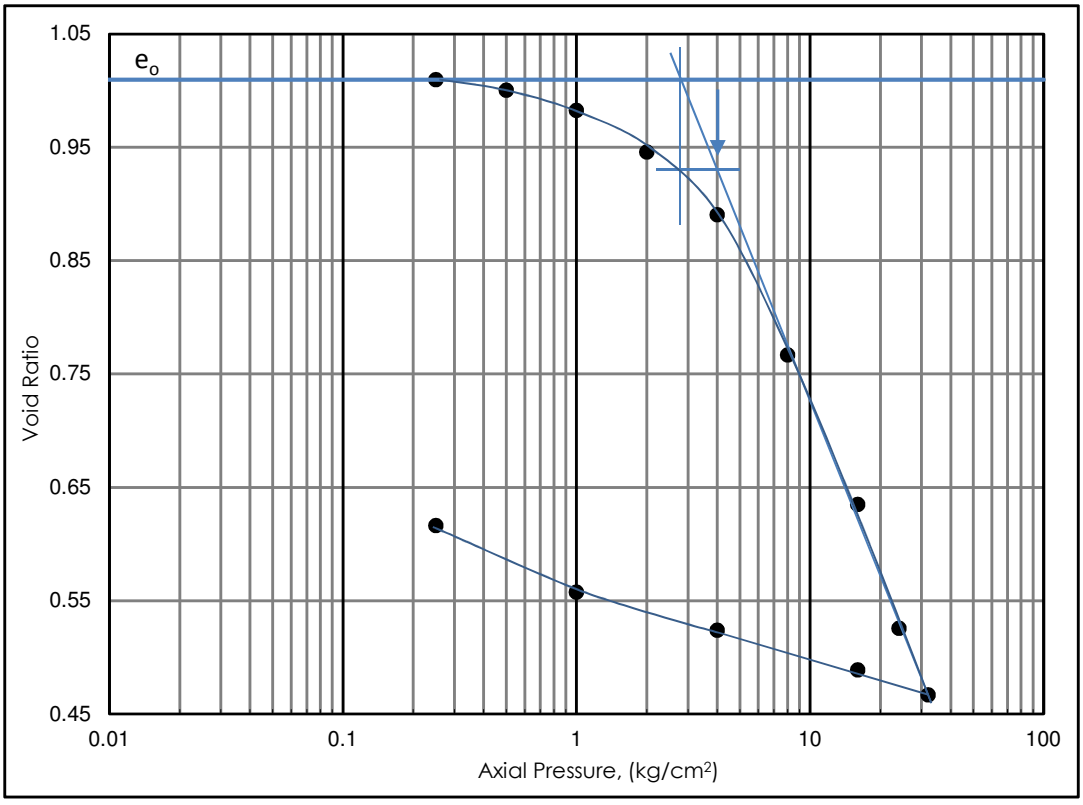
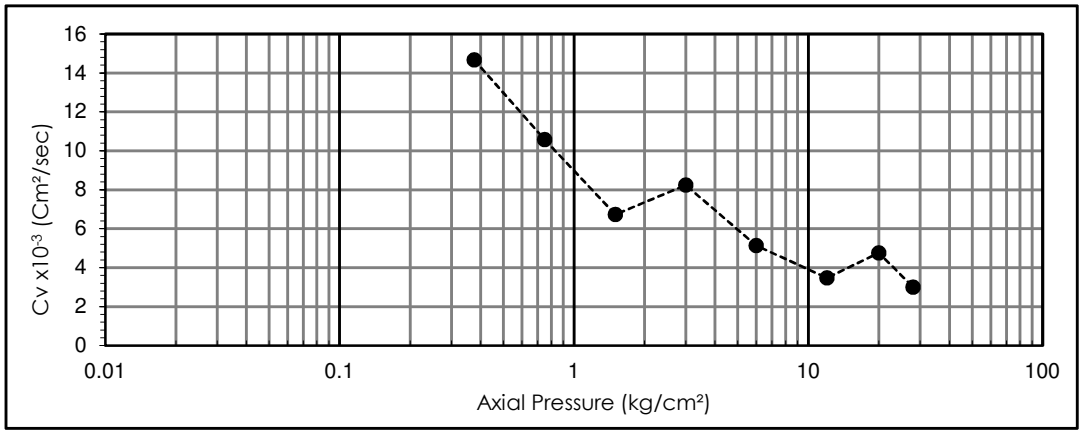
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-7.
DEPTH : 46.50-47.00m.

TEST NO. C4
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	E4
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-7.	TESTED BY	: Dh.
DEPTH	: 58.50-59.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.97	weight, gr =	69.03	W_3 = solid weight, gr =	49.03
diameter, cm =	5.12	Gs =	2.63	Hs = solid height, cm =	0.91
A area, cm^2 =	20.59	void ratio, e_i =	1.176		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.030			1.176						
		0.000	0.000		1.970					
0.2500	1.030			1.176						
		0.004	0.004		1.968	55.296		1.48E-02		
0.5000	1.026			1.171						
		0.018	0.020		1.959	144.15		5.64E-03		
1.0000	1.012			1.156						
		0.057	0.063		1.933	240		3.30E-03		
2.0000	0.973			1.113						
		0.106	0.117		1.889	135		5.60E-03		
4.0000	0.924			1.059						
		0.192	0.211		1.822	144.15		4.88E-03		
8.0000	0.838			0.964						
		0.291	0.321		1.729	240		2.64E-03		
16.0000	0.739			0.854						
		0.394	0.435		1.628	240		2.34E-03		
24.0000	0.636			0.741						
		0.466	0.514		1.541	470.4		1.07E-03		
32.0000	0.564			0.662						
		0.524	0.578		1.476	777.6		5.94E-04		0.661
40.0000	0.506			0.598						
		0.506	0.559		1.455					
24.0000	0.524			0.617						
		0.442	0.488		1.496					
8.0000	0.588			0.688						
		0.401	0.442		1.549					
4.0000	0.629			0.733						
		0.312	0.344		1.614					
1.0000	0.718			0.832						
		0.156	0.172		1.737					
0.2500	0.874			1.004						

		Condition	Initial	Final
Liquid limit (%)	106	Sample height (cm)	1.97	1.81
Plastic Index (%)	76	Water content (%)	40.8	43.0
Specific gravity	2.63	Dry unit weight (gr/cm^3)	1.21	1.29
Preconsolidation pressure (kg/cm^2)	8.0	Void ratio	1.18	1.00
Effective overburden pressure (kg/cm^2)		Saturation (%)	91.3	100.0
Sample description :	Silty clay, with a trace of sand, grey			

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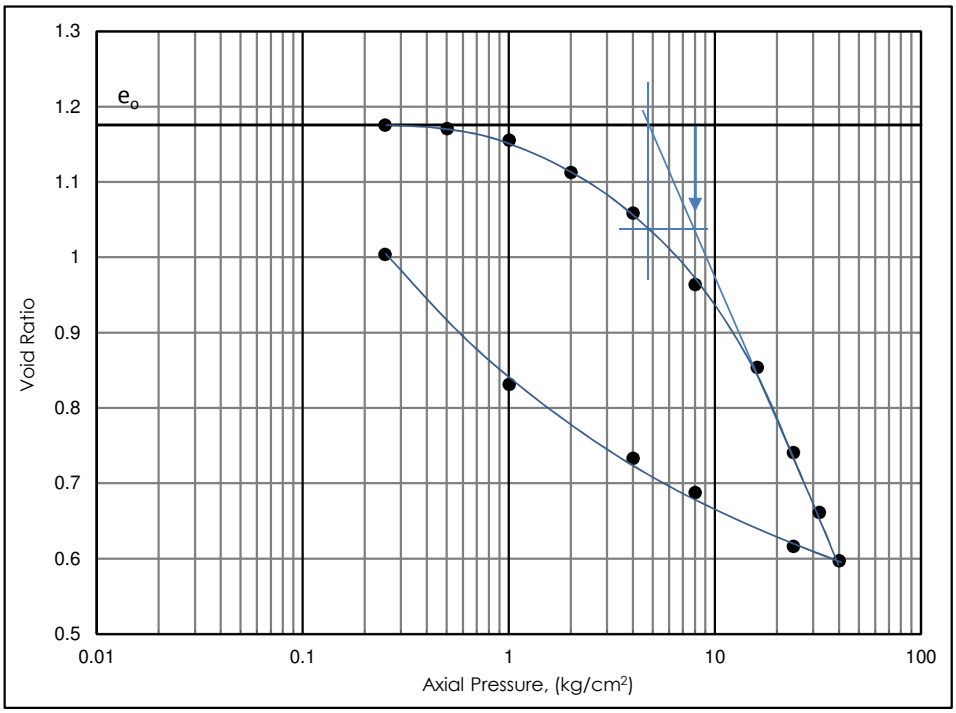
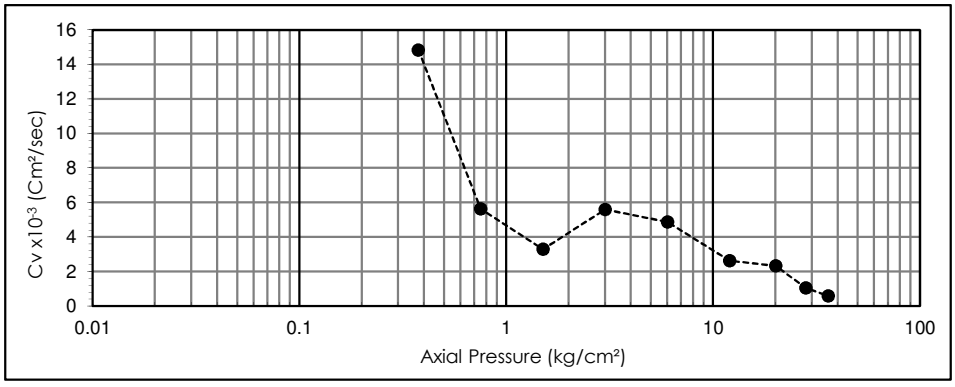
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	E4
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-7.	TESTED BY	: Dh.
DEPTH	: 58.50-59.00m.	CHECKED BY	: Y.





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Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	D4
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-8.	TESTED BY	: Dh.
DEPTH	: 16.50-17.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.96	weight, gr =	73.84	w_3 = solid weight, gr =	50.18
diameter, cm =	5.10	Gs =	2.63	Hs = solid height, cm =	0.93
A area, cm^2 =	20.43	void ratio, e_i =	1.098		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.000			1.098						
		0.001	0.002		1.959					
0.2500	0.999			1.097						
		0.018	0.019		1.950	55.296		1.46E-02		
0.5000	0.982			1.079						
		0.034	0.036		1.934	83.544		9.49E-03		
1.0000	0.966			1.062						
		0.069	0.073		1.909	83.544		9.25E-03		
2.0000	0.932			1.025						
		0.106	0.113		1.873	110.98		6.70E-03		
4.0000	0.895			0.985						
		0.174	0.186		1.820	157.46		4.46E-03		
8.0000	0.826			0.912						
		0.267	0.285		1.740	96.774		6.63E-03		0.329
16.0000	0.734			0.813						
		0.259	0.277		1.697					
8.0000	0.741			0.821						
		0.253	0.270		1.704					
4.0000	0.7475			0.828						
		0.236	0.252		1.716					
1.0000	0.7645			0.846						
		0.216	0.231		0.872					
0.2500	0.784			0.867						

		Condition	Initial	Final
Liquid limit (%)	71	Sample height (cm)	1.96	1.74
Plastic Index (%)	41	Water content (%)	47.1	38.8
Specific gravity	2.63	Dry unit weight (gr/cm^3)	1.25	1.43
Preconsolidation pressure (kg/cm^2)	3.1	Void ratio	1.10	0.87
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, with a trace of sand, brown			

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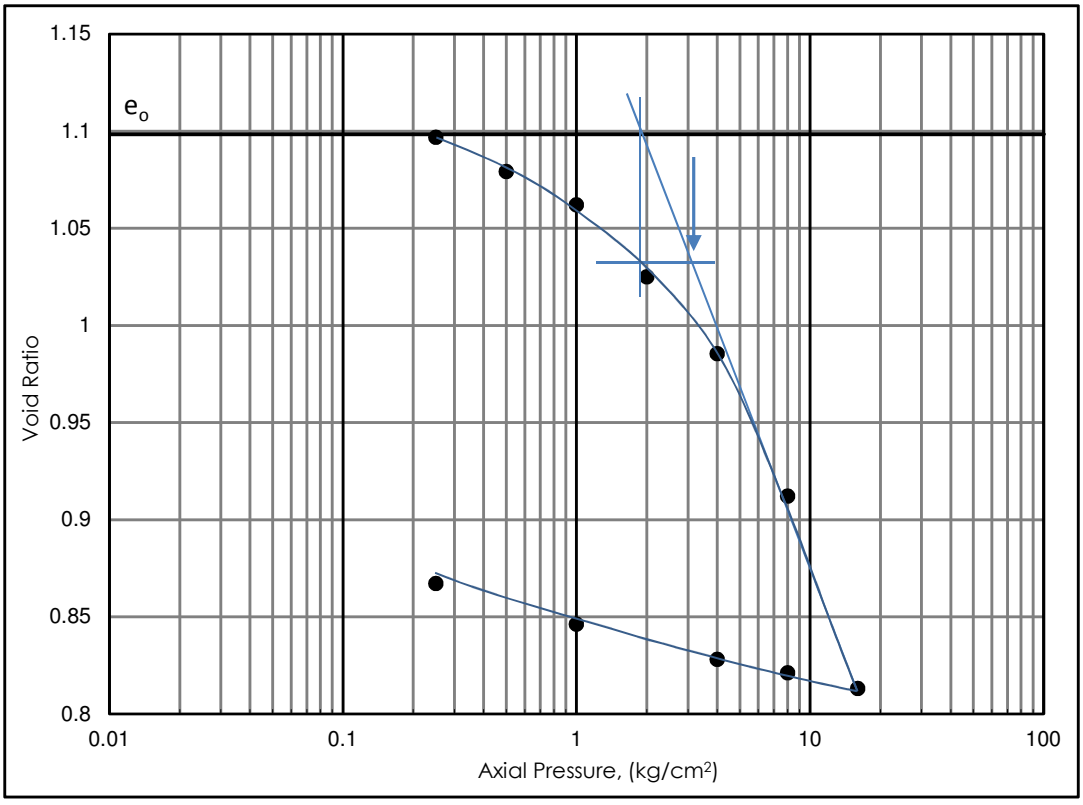
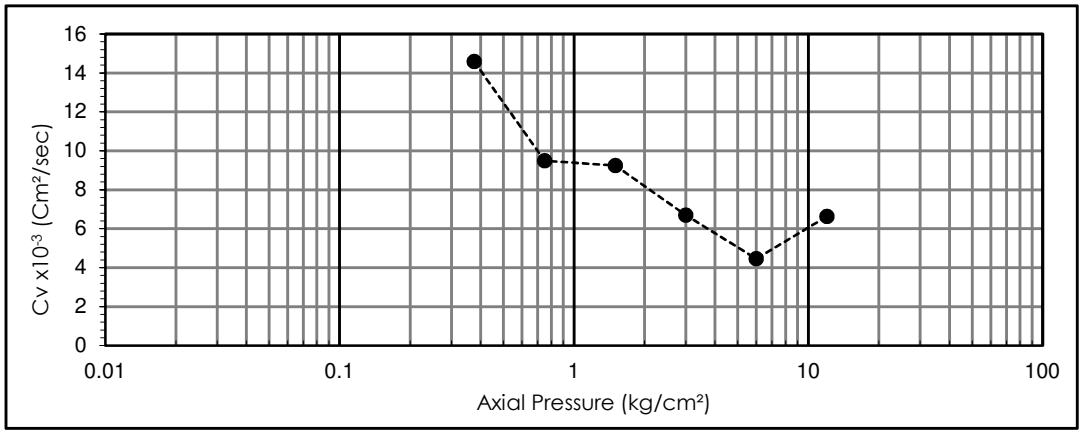
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-8.
DEPTH : 16.50-17.00m.

TEST NO. D4
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	E1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-8.	TESTED BY	: Dh.
DEPTH	: 34.50-35.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2	weight, gr =	56.66	W_3 = solid weight, gr =	34.68
diameter, cm =	5.12	Gs =	2.65	Hs = solid height, cm =	0.64
A area, cm^2 =	20.59	void ratio, e_i =	2.147		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.200			2.147						
		0.000	0.001		2.000					
0.2500	1.200			2.146						
		0.003	0.004		1.999	72.6		1.17E-02		
0.5000	1.197			2.143						
		0.047	0.074		1.975	120.98		6.84E-03		
1.0000	1.153			2.073						
		0.102	0.160		1.926	126.15		6.23E-03		
2.0000	1.099			1.987						
		0.220	0.345		1.840	161.38		4.45E-03		
4.0000	0.981			1.802						
		0.592	0.931		1.594	240		2.25E-03		
8.0000	0.608			1.215						
		0.901	1.417		1.254	144.15		2.31E-03		
16.0000	0.300			0.730						
		1.090	1.715		1.005	190.1		1.13E-03		1.642
24.0000	0.110			0.432						
		1.000	1.573		0.955					
8.0000	0.200			0.573						
		0.940	1.479		1.030					
4.0000	0.260			0.668						
		0.858	1.350		1.101					
1.0000	0.342			0.797						
		0.747	1.175		1.198					
0.2500	0.4535			0.972						

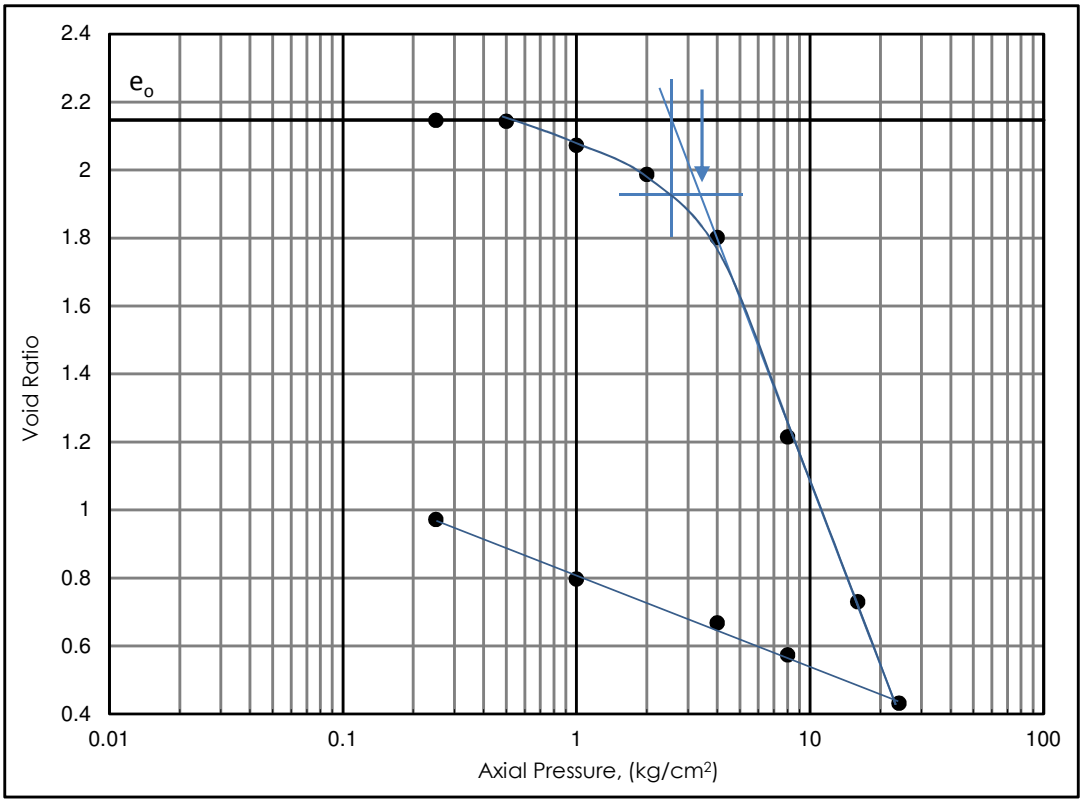
		Condition	Initial	Final
Liquid limit (%)	158	Sample height (cm)	2.00	1.25
Plastic Index (%)	129	Water content (%)	101.9	68.9
Specific gravity	2.65	Dry unit weight (gr/cm^3)	0.84	1.03
Preconsolidation pressure (kg/cm^2)	3.4	Void ratio	2.15	0.97
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, grey			

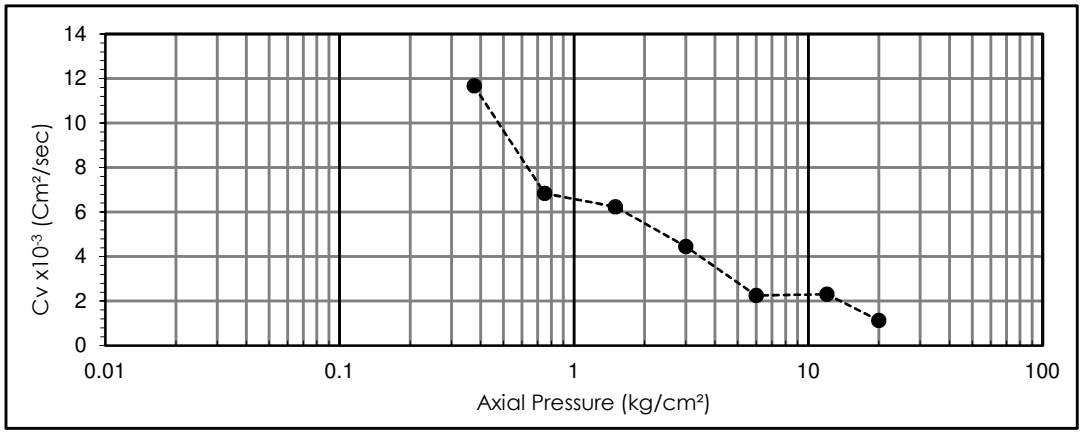
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-8.
DEPTH : 34.50-35.00m.

TEST NO. E1
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	C3
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-8.	TESTED BY	: Dh.
DEPTH	: 39.50-40.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2	weight, gr =	73.69	W_3 = solid weight, gr =	53.78
diameter, cm =	4.95	Gs =	2.63	Hs = solid height, cm =	1.06
A area, cm^2 =	19.24	void ratio, e_i =	0.882		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	$\Delta e = \frac{\Delta H}{Hs}$	e = ei - Δ e	Average height (cm)	Fitting time sec		Coef. of consolidation Cv, cm^2/sec		Compress. index (Cc)
						t_{90}	t_{50}	$0.848H^2/t_{90}$	$0.197H^2/t_{50}$	
0.0000	1.013			0.882						
		0.000	0.000		2.000					
0.2500	1.013			0.882						
		0.008	0.007		1.996	60		1.41E-02		
0.5000	1.005			0.875						
		0.028	0.026		1.983	72.6		1.15E-02		
1.0000	0.985			0.856						
		0.067	0.063		1.953	86.4		9.36E-03		
2.0000	0.946			0.820						
		0.107	0.100		1.914	144.15		5.38E-03		
4.0000	0.906			0.782						
		0.183	0.172		1.856	120.98		6.03E-03		
8.0000	0.830			0.710						
		0.277	0.260		1.771	240		2.77E-03		
16.0000	0.736			0.622						
		0.360	0.338		1.682	126.15		4.75E-03		0.444
24.0000	0.653			0.544						
		0.323	0.304		1.659					
8.0000	0.690			0.578						
		0.289	0.271		1.694					
4.0000	0.724			0.611						
		0.231	0.217		1.740					
1.0000	0.7815			0.665						
		0.142	0.133		1.814					
0.2500	0.871			0.749						

		Condition	Initial	Final
Liquid limit (%)	70	Sample height (cm)	2.00	1.86
Plastic Index (%)	41	Water content (%)	37.0	37.0
Specific gravity	2.63	Dry unit weight (gr/cm^3)	1.40	1.49
Preconsolidation pressure (kg/cm^2)	5.0	Void ratio	0.88	0.75
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, light brownish grey			

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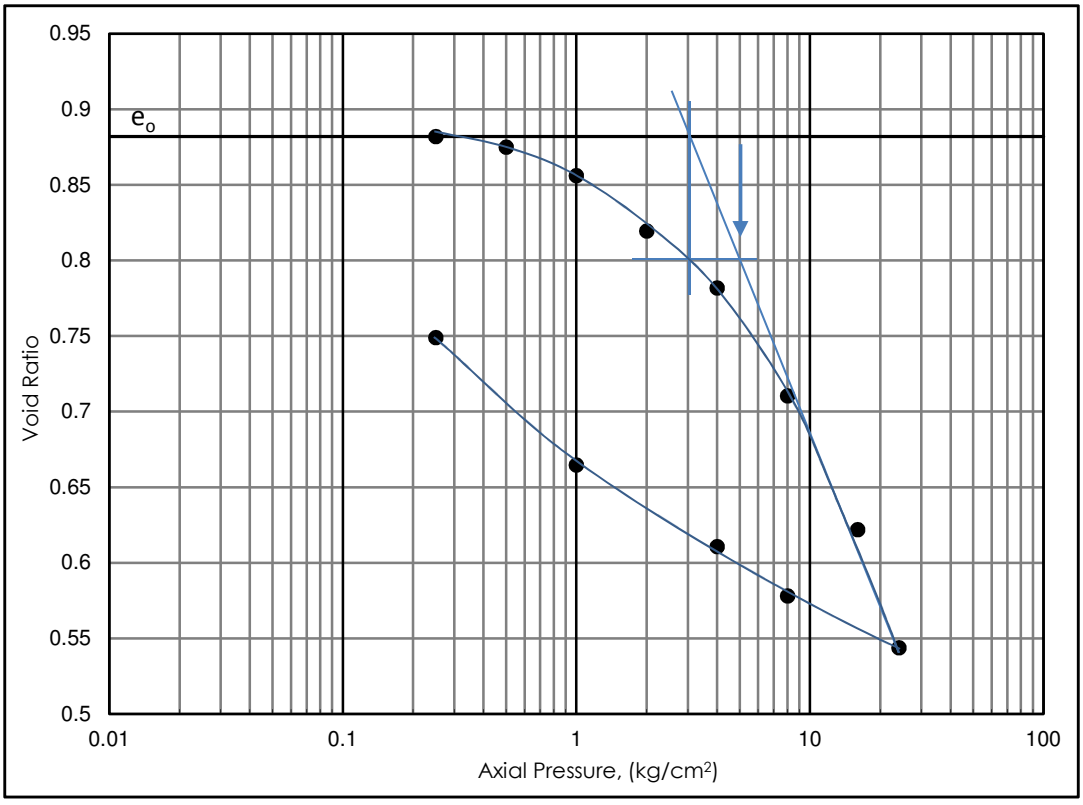
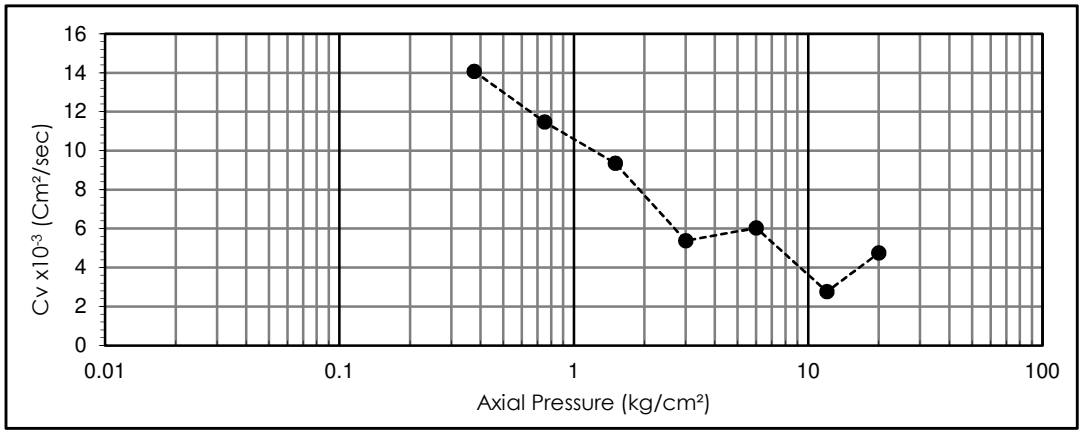
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-8.
DEPTH : 39.50-40.00m.

TEST NO. C3
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	C4
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-9.	TESTED BY	: Dh.
DEPTH	: 14.50-15.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.92	weight, gr =	60.18	w_3 = solid weight, gr =	35.71
diameter, cm =	5.10	Gs =	2.66	Hs = solid height, cm =	0.66
A area, cm^2 =	20.43	void ratio, e_i =	1.922		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Hs (Δ e = ----)	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.000			1.922						
		0.001	0.002		1.919					
0.2500	0.999			1.919						
		0.020	0.030		1.909	60		1.29E-02		
0.5000	0.980			1.891						
		0.055	0.083		1.883	96.774		7.77E-03		
1.0000	0.946			1.839						
		0.121	0.184		1.832	110.98		6.41E-03		
2.0000	0.879			1.738						
		0.216	0.328		1.752	106.13		6.13E-03		
4.0000	0.785			1.594						
		0.371	0.565		1.627	161.38		3.48E-03		
8.0000	0.629			1.357						
		0.532	0.809		1.469	179.57		2.55E-03		0.811
16.0000	0.469			1.113						
		0.519	0.789		1.395					
8.0000	0.482			1.133						
		0.501	0.762		1.410					
4.0000	0.499			1.159						
		0.461	0.701		1.439					
1.0000	0.5395			1.221						
		0.409	0.622		0.756					
0.2500	0.591			1.299						

		Condition	Initial	Final
Liquid limit (%)	78	Sample height (cm)	1.92	1.51
Plastic Index (%)	48	Water content (%)	68.5	54.4
Specific gravity	2.66	Dry unit weight (gr/cm^3)	0.91	1.12
Preconsolidation pressure (kg/cm^2)	2.5	Void ratio	1.92	1.30
Effective overburden pressure (kg/cm^2)		Saturation (%)	94.9	100.0
Sample description :	Silty clay, greyish brown			

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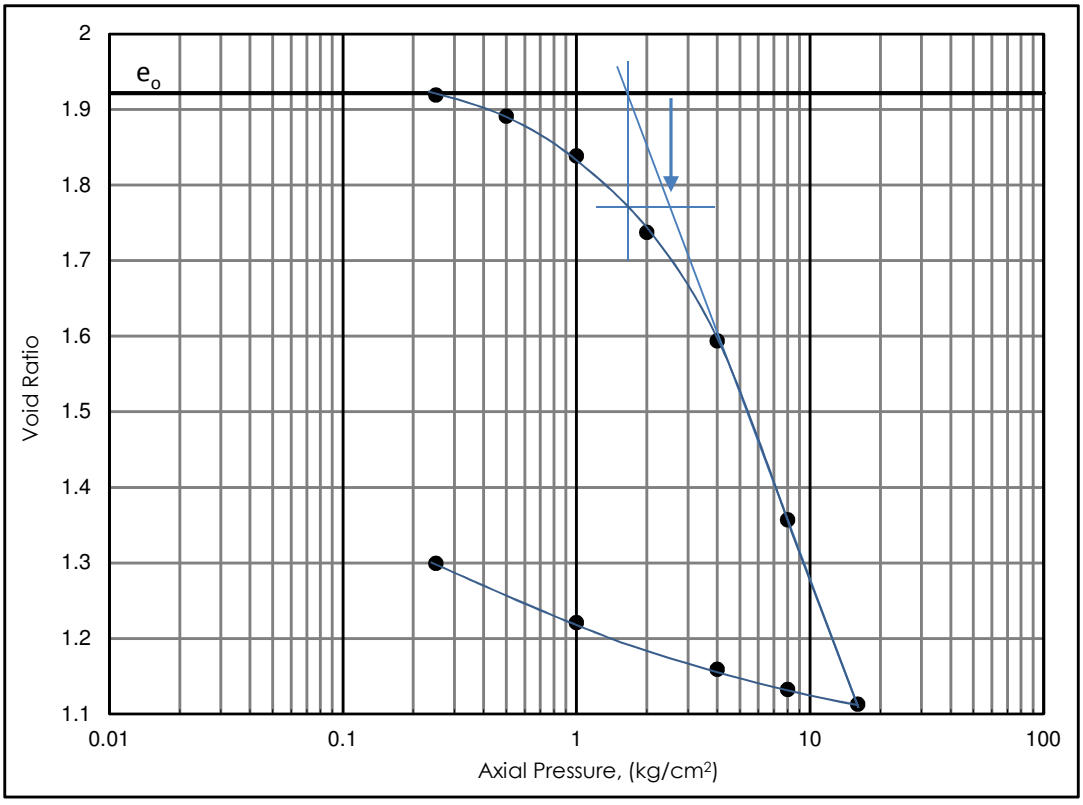
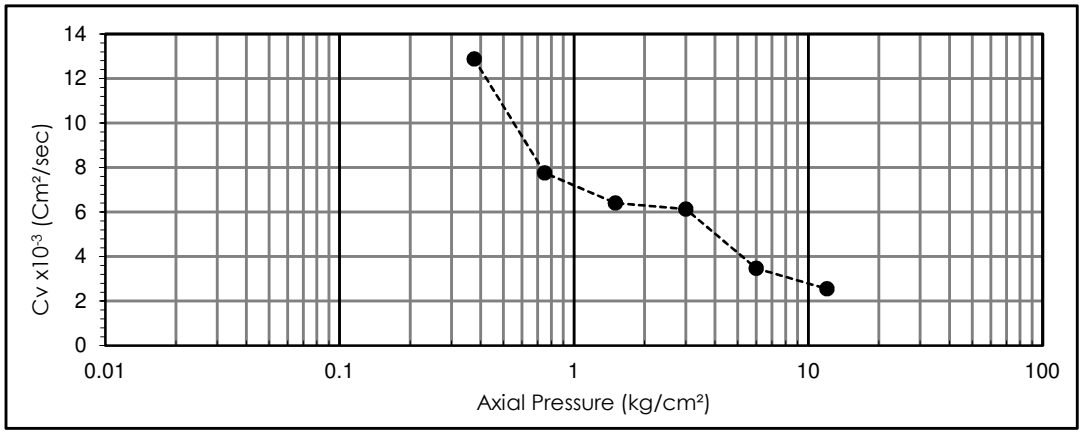
CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-9.
DEPTH : 14.50-15.00m.

TEST NO. C4
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





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Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	G2
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-9.	TESTED BY	: Dh.
DEPTH	: 34.50-35.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.96	weight, gr =	55.89	W_3 = solid weight, gr =	31.45
diameter, cm =	5.00	Gs =	2.67	Hs = solid height, cm =	0.60
A area, cm^2 =	19.63	void ratio, e_i =	2.268		

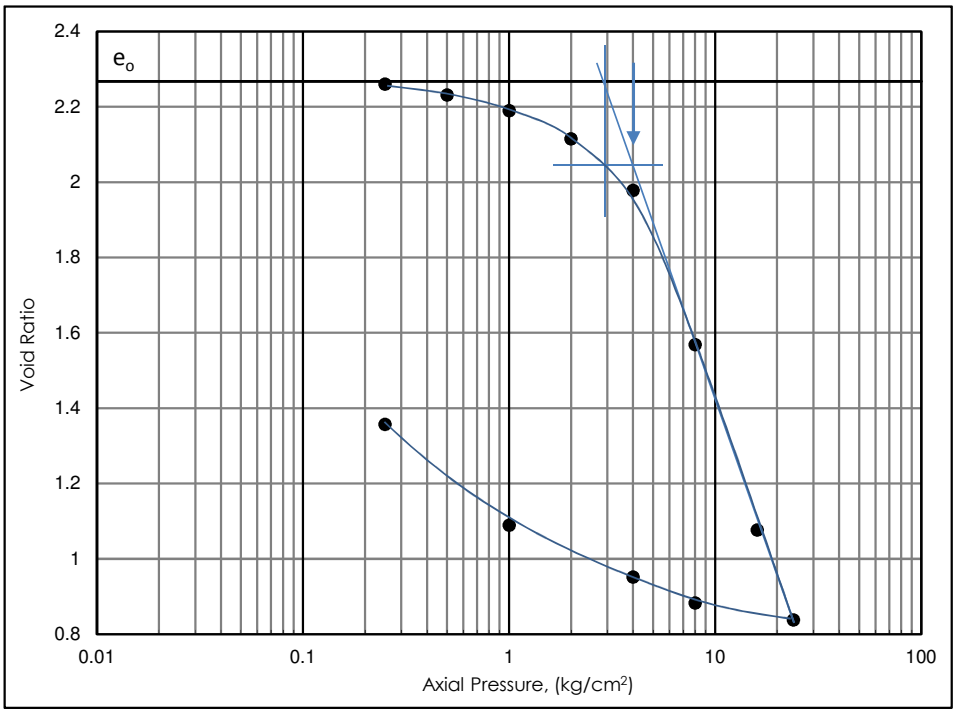
Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	$\Delta e = \frac{\Delta H}{Hs}$	e = ei - Δ e	Average height (cm)	Fitting time sec		Coef. of consolidation Cv, cm^2/sec		Compress. index (Cc)
						t_{90}	t_{50}	$0.848H^2/t_{90}$	$0.197H^2/t_{50}$	
0.0000	1.000			2.268						
		0.004	0.008		1.958					
0.2500	0.996			2.260						
		0.022	0.036		1.947	60		1.34E-02		
0.5000	0.979			2.232						
		0.047	0.078		1.926	161.38		4.87E-03		
1.0000	0.954			2.190						
		0.092	0.153		1.891	110.98		6.83E-03		
2.0000	0.909			2.115						
		0.174	0.289		1.828	126.15		5.61E-03		
4.0000	0.827			1.978						
		0.420	0.699		1.664	126.15		4.65E-03		
8.0000	0.581			1.568						
		0.715	1.191		1.393	102.97		4.00E-03		
16.0000	0.286			1.076						
		0.858	1.430		1.174	171.37		1.71E-03		1.354
24.0000	0.143			0.838						
		0.831	1.385		1.116					
8.0000	0.170			0.883						
		0.790	1.316		1.150					
4.0000	0.211			0.951						
		0.707	1.178		1.212					
1.0000	0.2935			1.090						
		0.546	0.910		1.334					
0.2500	0.454			1.357						

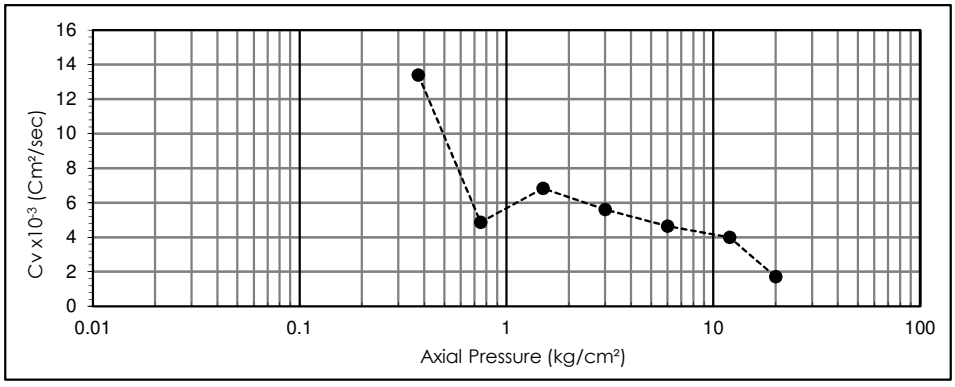
		Condition	Initial	Final
Liquid limit (%)	111	Sample height (cm)	1.96	1.41
Plastic Index (%)	82	Water content (%)	95.8	81.2
Specific gravity	2.67	Dry unit weight (gr/cm^3)	0.82	0.96
Preconsolidation pressure (kg/cm^2)	4.0	Void ratio	2.27	1.36
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, with a trace of sand, grey			

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	G2
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-9.	TESTED BY	: Dh.
DEPTH	: 34.50-35.00m.	CHECKED BY	: Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	I2
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-9.	TESTED BY	: Dh.
DEPTH	: 38.00-38.50m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2	weight, gr =	58.54	W_3 = solid weight, gr =	34.64
diameter, cm =	4.96	Gs =	2.73	Hs = solid height, cm =	0.66
A area, cm^2 =	19.32	void ratio, e_i =	2.046		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	$\Delta e = \frac{\Delta H}{Hs}$	e = ei - Δ e	Average height (cm)	Fitting time sec		Coef. of consolidation Cv, cm^2/sec		Compress. index (Cc)
						t_{90}	t_{50}	$0.848H^2/t_{90}$	$0.197H^2/t_{50}$	
0.0000	1.000			2.046						
		0.004	0.007		1.998					
0.2500	0.996			2.039						
		0.016	0.024		1.990	72.6		1.16E-02		
0.5000	0.985			2.022						
		0.043	0.065		1.971	102.97		8.00E-03		
1.0000	0.958			1.981						
		0.101	0.153		1.929	102.97		7.66E-03		
2.0000	0.900			1.893						
		0.175	0.266		1.863	153.6		4.79E-03		
4.0000	0.826			1.780						
		0.396	0.602		1.715	86.4		7.22E-03		
8.0000	0.605			1.443						
		0.670	1.020		1.468	179.57		2.54E-03		
16.0000	0.331			1.026						
		0.806	1.227		1.263	240		1.41E-03		1.176
24.0000	0.195			0.819						
		0.773	1.176		1.211					
8.0000	0.228			0.869						
		0.735	1.119		1.247					
4.0000	0.266			0.927						
		0.655	0.997		1.306					
1.0000	0.3455			1.049						
		0.542	0.825		1.402					
0.2500	0.4585			1.221						

		Condition	Initial	Final
Liquid limit (%)	154	Sample height (cm)	2.00	1.46
Plastic Index (%)	125	Water content (%)	84.1	57.2
Specific gravity	2.73	Dry unit weight (gr/cm^3)	0.90	1.11
Preconsolidation pressure (kg/cm^2)	4.0	Void ratio	2.05	1.22
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, with trace of sand and trace of gravel			

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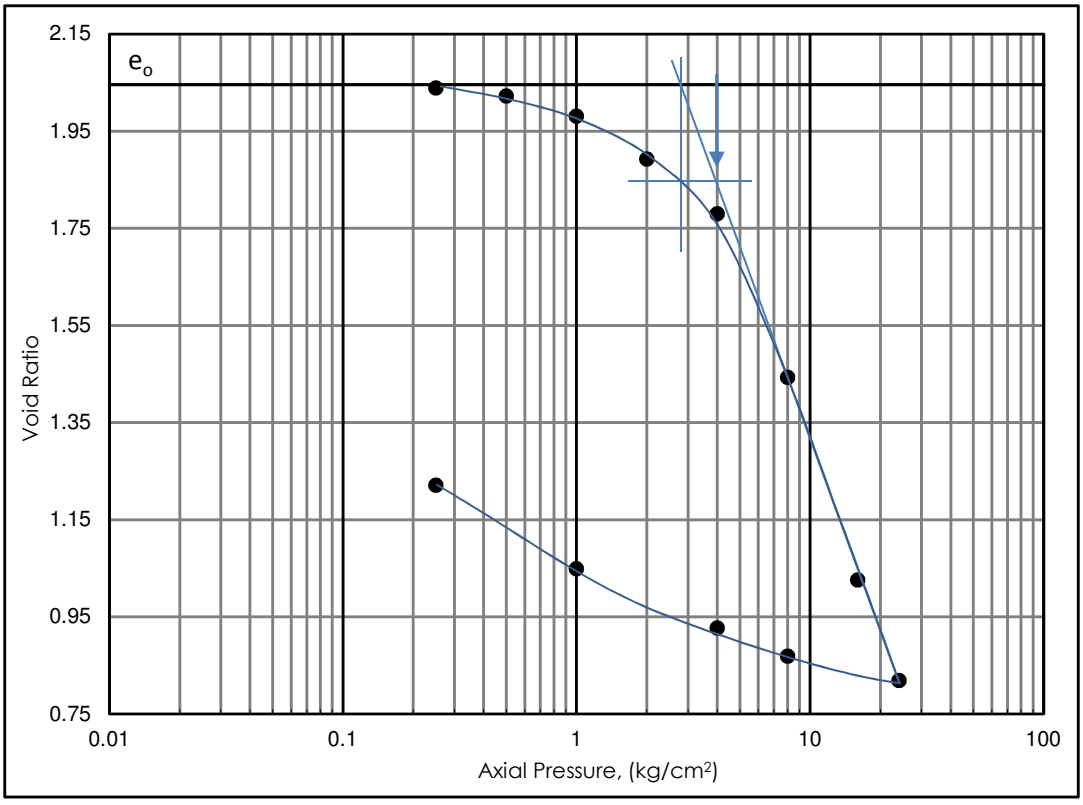
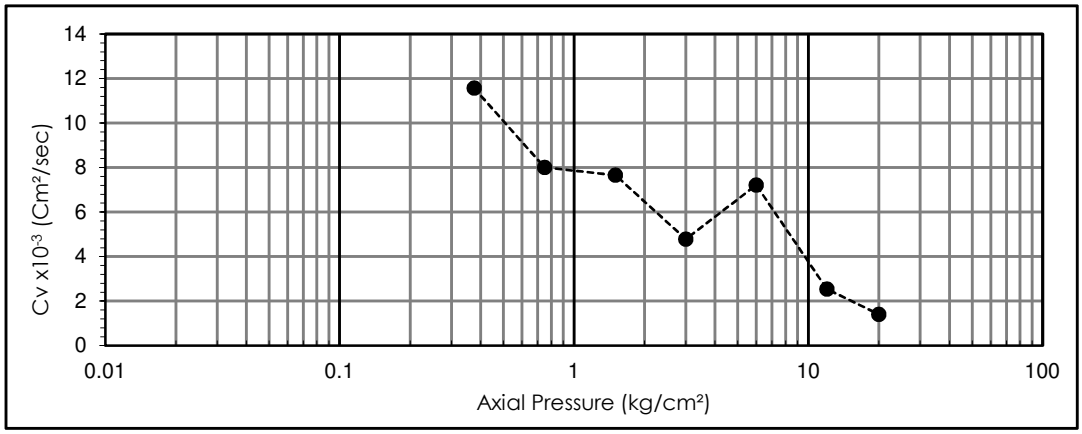
CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-9.
DEPTH : 38.00-38.50m.

TEST NO. I2
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	C1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-10.	TESTED BY	: Dh.
DEPTH	: 20.50-21.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	1.92	weight, gr =	60.58	w_3 = solid weight, gr =	35.84
diameter, cm =	5.10	Gs =	2.53	Hs = solid height, cm =	0.69
A area, cm^2 =	20.43	void ratio, e_i =	1.769		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.000			1.769						
		0.000	0.000		1.920					
0.2500	1.000			1.769						
		0.009	0.013		1.916	51.894		1.50E-02		
0.5000	0.991			1.756						
		0.027	0.038		1.902	79.35		9.67E-03		
1.0000	0.974			1.730						
		0.063	0.090		1.876	79.35		9.40E-03		
2.0000	0.938			1.678						
		0.117	0.168		1.831	144.15		4.93E-03		
4.0000	0.884			1.601						
		0.209	0.301		1.757	102.97		6.36E-03		
8.0000	0.791			1.467						
		0.344	0.496		1.644	264.6		2.16E-03		0.647
16.0000	0.656			1.273						
		0.331	0.477		1.583					
8.0000	0.670			1.292						
		0.310	0.447		1.600					
4.0000	0.69			1.322						
		0.276	0.398		1.627					
1.0000	0.724			1.371						
		0.196	0.282		0.862					
0.2500	0.8045			1.487						

		Condition	Initial	Final
Liquid limit (%)	127	Sample height (cm)	1.92	1.72
Plastic Index (%)	57	Water content (%)	69.0	71.4
Specific gravity	2.53	Dry unit weight (gr/cm^3)	0.91	1.00
Preconsolidation pressure (kg/cm^2)	4.5	Void ratio	1.77	1.49
Effective overburden pressure (kg/cm^2)		Saturation (%)	98.7	100.0
Sample description :	Silty clay, with a trace of sand, dark grey			

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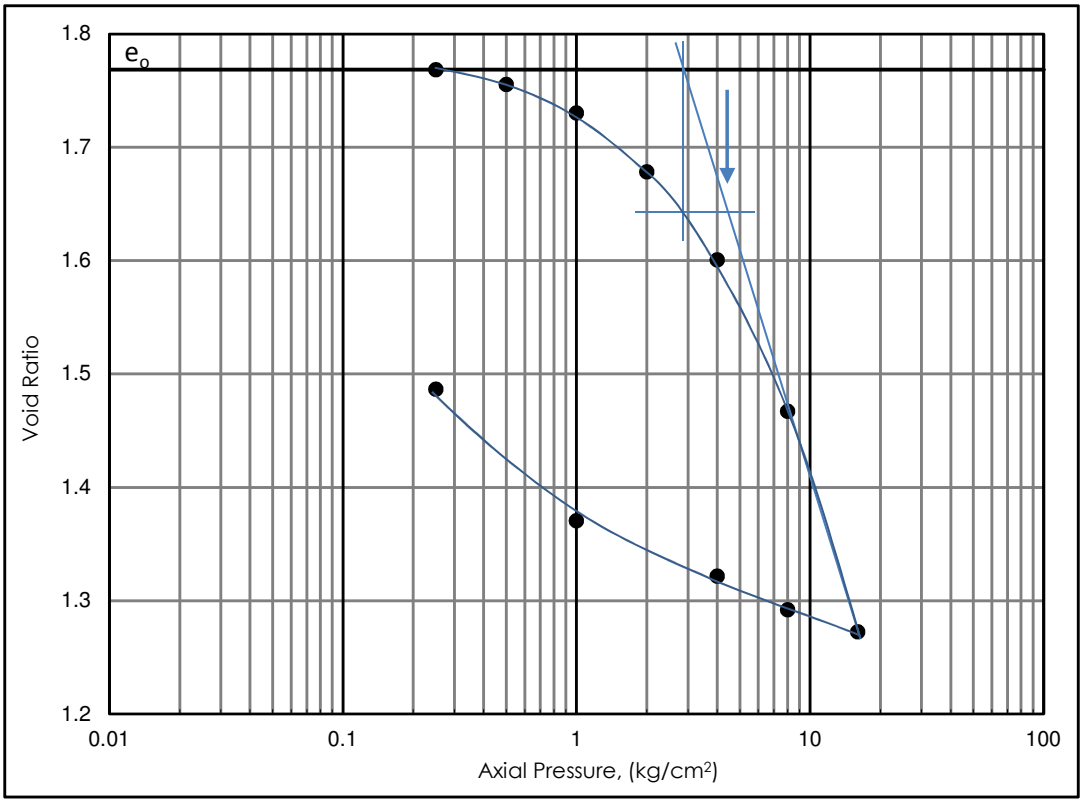
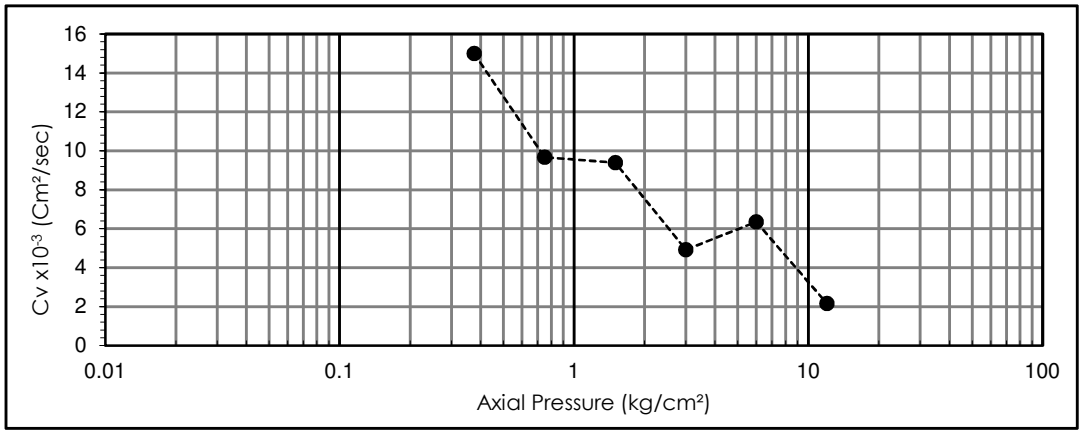
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-10.
DEPTH : 20.50-21.00m.

TEST NO. C1
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





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Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	E1
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-10.	TESTED BY	: Dh.
DEPTH	: 34.50-35.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2	weight, gr =	54.72	W_3 = solid weight, gr =	33.30
diameter, cm =	5.12	Gs =	2.65	Hs = solid height, cm =	0.61
A area, cm^2 =	20.59	void ratio, e_i =	2.277		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	ΔH / Δ e = ---- / Hs	e = ei - Δ e	Average height (cm)	Fitting time sec t_{90}	Fitting time sec t_{50}	Coef. of consolidation Cv, cm^2/sec $0.848H^2/t_{90}$	Coef. of consolidation Cv, cm^2/sec $0.197H^2/t_{50}$	Compress. index (Cc)
0.0000	1.100			2.277						
		0.008	0.012		1.996					
0.2500	1.093			2.264						
		0.028	0.046		1.982	60		1.39E-02		
0.5000	1.072			2.231						
		0.069	0.113		1.952	142.3		5.67E-03		
1.0000	1.031			2.164						
		0.146	0.239		1.893	120.98		6.28E-03		
2.0000	0.954			2.037						
		0.289	0.473		1.783	179.57		3.75E-03		
4.0000	0.811			1.803						
		0.609	0.998		1.551	146.02		3.49E-03		
8.0000	0.491			1.279						
		0.925	1.515		1.233	240		1.34E-03		
16.0000	0.175			0.761						
		1.062	1.739		1.007	127.9		1.68E-03		1.270
24.0000	0.039			0.538						
		1.025	1.679		0.957					
8.0000	0.075			0.597						
		0.984	1.612		0.996					
4.0000	0.116			0.665						
		0.888	1.454		1.064					
1.0000	0.2125			0.823						
		0.766	1.255		1.173					
0.2500	0.334			1.022						

		Condition	Initial	Final
Liquid limit (%)	158	Sample height (cm)	2.00	1.23
Plastic Index (%)	129	Water content (%)	105.8	75.2
Specific gravity	2.65	Dry unit weight (gr/cm^3)	0.81	0.99
Preconsolidation pressure (kg/cm^2)	3.0	Void ratio	2.28	1.02
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, with a trace of sand, dark grey			

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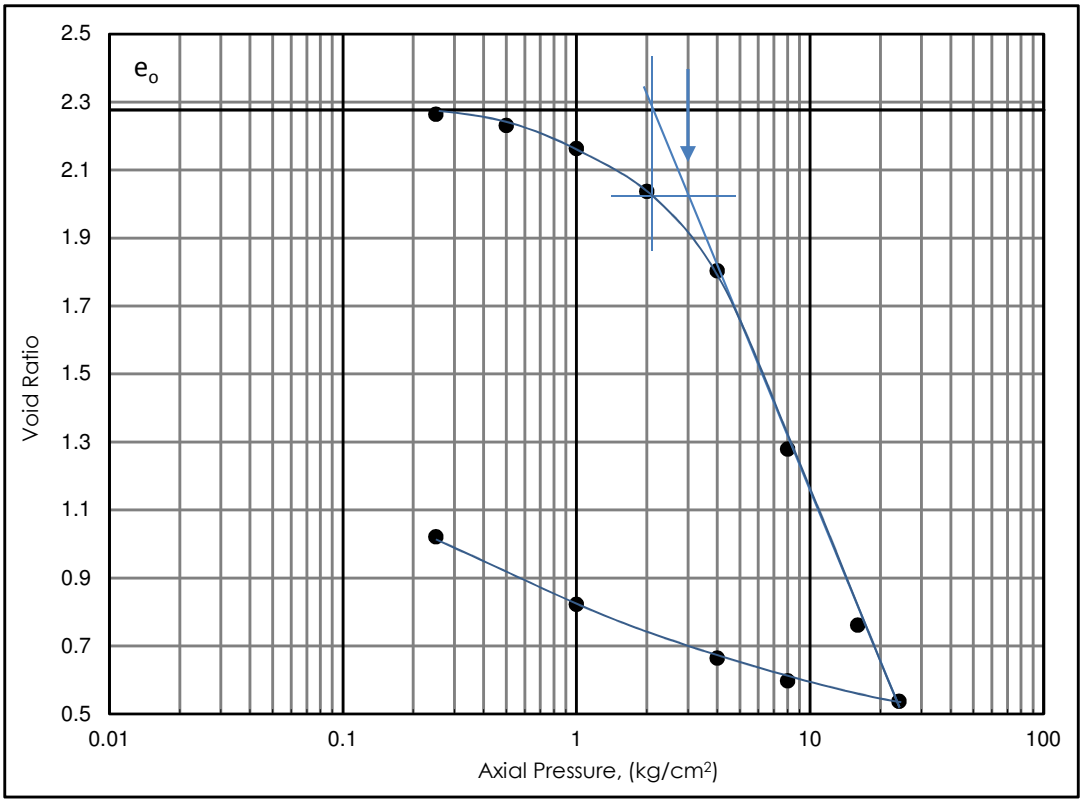
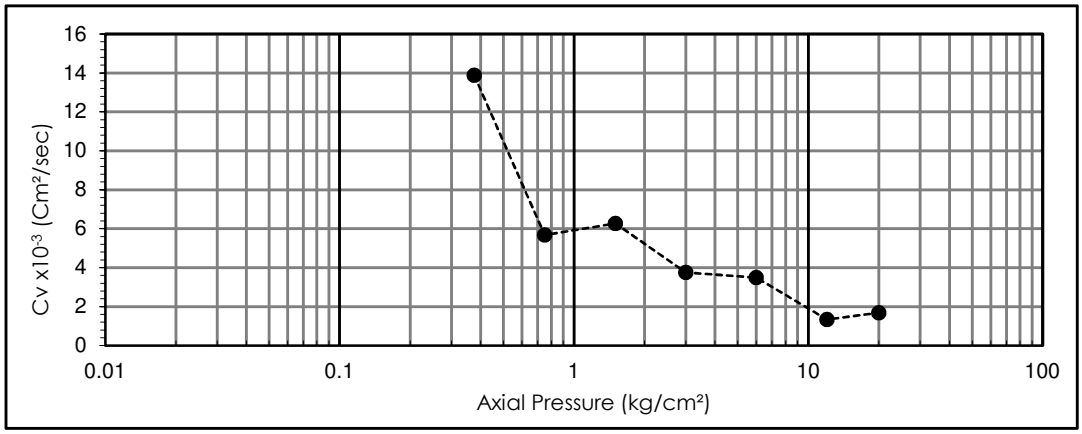
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. : **182729.**
PROJECT : **Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-10.
DEPTH : 34.50-35.00m.

TEST NO. E1
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No.	**: 182729.**		
PROJECT	**: Maritim Tower.**	TEST NO.	C3
LOCATION	: Jakarta.	DATE	: January 2019.
BORING No.	: BH-10.	TESTED BY	: Dh.
DEPTH	: 39.50-40.00m.	CHECKED BY	: Y.

APARATUS :

ring height, cm =	2	weight, gr =	65.77	W_3 = solid weight, gr =	44.50
diameter, cm =	4.95	Gs =	2.55	Hs = solid height, cm =	0.91
A area, cm^2 =	19.24	void ratio, e_i =	1.206		

Applied pressure P kg/cm2	Final dial reading	Dial change, ΔH, (cm)	$\Delta e = \frac{\Delta H}{Hs}$	e = ei - Δ e	Average height (cm)	Fitting time sec		Coef. of consolidation Cv, cm^2/sec		Compress. index (Cc)
						t_{90}	t_{50}	$0.848H^2/t_{90}$	$0.197H^2/t_{50}$	
0.0000	1.008			1.206						
		0.000	0.000		2.000					
0.2500	1.008			1.206						
		0.008	0.008		1.996	60		1.41E-02		
0.5000	1.000			1.197						
		0.025	0.027		1.984	153.6		5.43E-03		
1.0000	0.983			1.179						
		0.075	0.082		1.951	190.1		4.24E-03		
2.0000	0.933			1.123						
		0.145	0.160		1.890	153.6		4.93E-03		
4.0000	0.863			1.046						
		0.291	0.321		1.782	153.6		4.38E-03		
8.0000	0.717			0.885						
		0.456	0.503		1.627	153.6		3.65E-03		
16.0000	0.552			0.703						
		0.554	0.610		1.495	240		1.97E-03		0.611
24.0000	0.454			0.595						
		0.506	0.557		1.471					
8.0000	0.502			0.648						
		0.466	0.513		1.515					
4.0000	0.542			0.692						
		0.395	0.435		1.570					
1.0000	0.613			0.771						
		0.223	0.245		1.692					
0.2500	0.785			0.960						

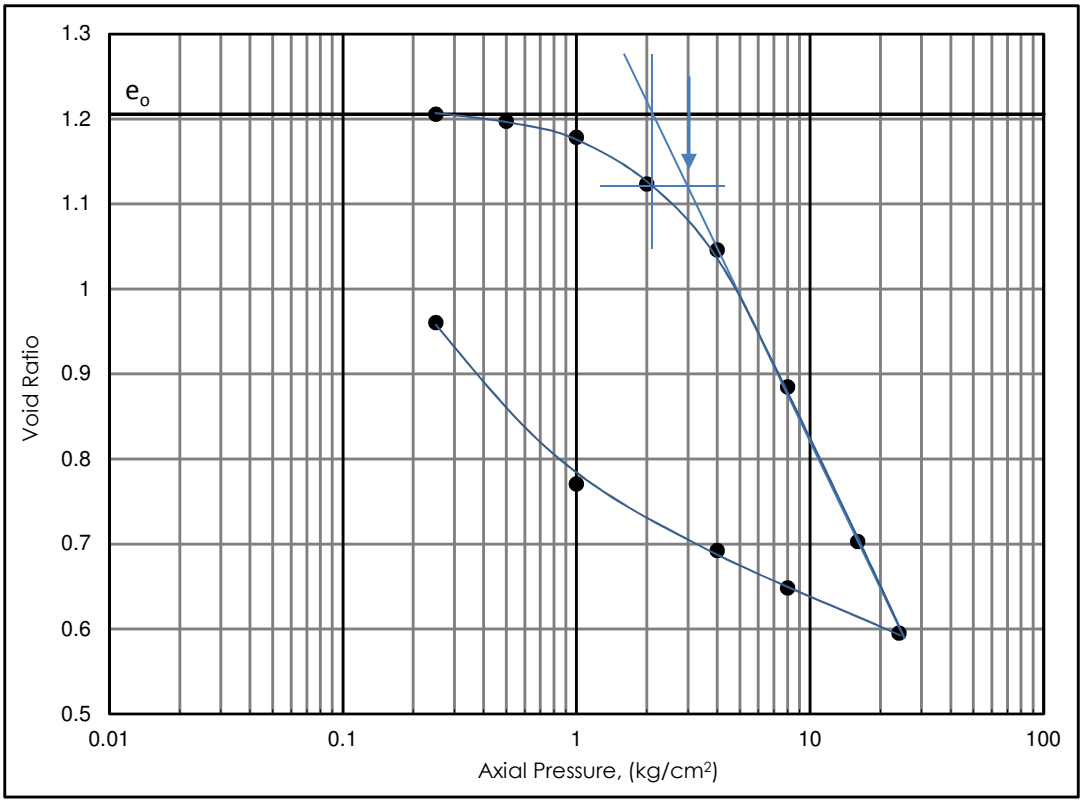
		Condition	Initial	Final
Liquid limit (%)	89	Sample height (cm)	2.00	1.78
Plastic Index (%)	59	Water content (%)	47.8	50.4
Specific gravity	2.55	Dry unit weight (gr/cm^3)	1.16	1.22
Preconsolidation pressure (kg/cm^2)	3.0	Void ratio	1.21	0.96
Effective overburden pressure (kg/cm^2)		Saturation (%)	100.0	100.0
Sample description :	Silty clay, light brownish grey			

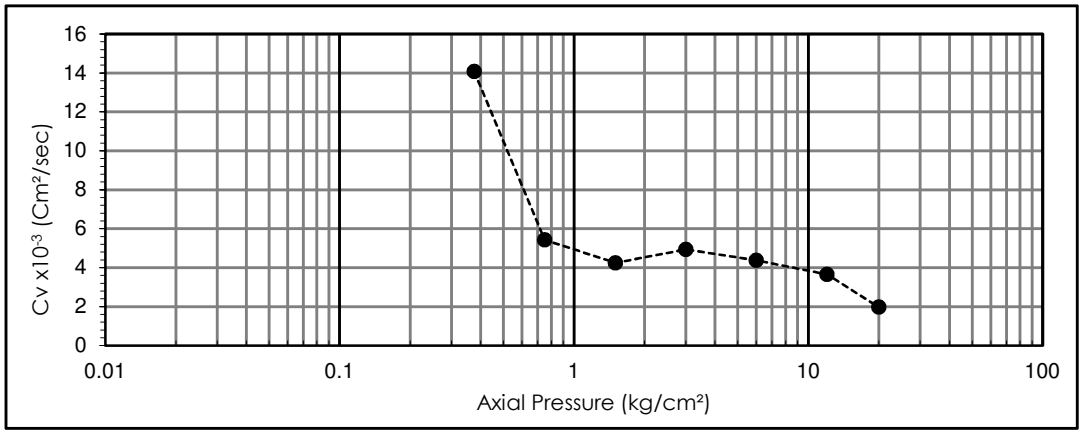
TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

CONSOLIDATION TEST

PROJECT No. **: 182729.**
PROJECT **: Maritim Tower.**
LOCATION : Jakarta.
BORING No. : BH-10.
DEPTH : 39.50-40.00m.

TEST NO. C3
DATE : January 2019.
TESTED BY : Dh.
CHECKED BY : Y.





Lampiran 7

Ringkasan Hasil Uji Laboratorium

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-5	BH-5	BH-5	BH-5	BH-5
Sample depth, m			2.50-3.00	6.50-7.00	14.50-15.00	38.50-39.00	46.50-47.00
Natural water content, %			66	68	77	38	40
Specific gravity, G_s			2.70	2.64	2.61	2.63	2.58
Unit weight, ton/m^3			1.52	1.54	1.50	1.83	1.79
Natural void ratio			1.94	1.89	2.08	0.98	1.02
Degree of saturation, %			92	95	96	100	100
Atterberg Limits		Liquid limit, %	108	88	81	69	93
		Plastic Limit, %	29	29	30	28	30
		Plasticity Index	79	59	51	41	63
Visual Soil description			Silty clay, with a trace of sand, dark grey.	Silty clay, with a trace of sand, dark grey.	Silty clay, with a trace of sand, brown.	Silty clay, brownish grey.	Silty clay, brownish grey.
Unified soil description			CH	CH	CH	CH	CH
STRENGTH	Unconfined (U)	Cohesion, kg/cm^2	0.16				
	(R)	Cohesion, kg/cm^2	0.11				
	Triaxial UU Test	Cohesion, kg/cm^2			0.28	0.40	0.98
		Angle of Int. Friction			5	5	7
	CU Test – Total	Cohesion, kg/cm^2	0.10	0.19			
		Angle of Int. Friction	13	9			
	CU Test – Eff.	Cohesion, kg/cm^2	0.07	0.16			
		Angle of Int. Friction	22	15			
Consol. Test	Precons.Pressure, kg/cm^2				3.00	4.00	
	Compression Index, C_c.				0.561	0.434	

Note :
*) sample unable to be molded / fail at test

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-5	BH-6	BH-6	BH-6	BH-6
Sample depth, m			59.50-60.00	2.50-3.00	4.50-5.00	8.50-9.00	20.50-21.00
Natural water content, %			49	72	57	98	77
Specific gravity, G_s			2.65	2.66	2.64	2.64	2.66
Unit weight, ton/m^3			1.71	1.56	1.57	1.42	1.51
Natural void ratio			1.31	1.93	1.64	2.69	2.12
Degree of saturation, %			99	99	92	96	97
Atterberg Limits		Liquid limit, %	105	77	102	140	108
		Plastic Limit, %	30	29	30	28	29
		Plasticity Index	75	48	72	112	79
Visual Soil description			Silty clay, grey.	Silty clay, with a trace of sand, grey.	Silty clay, with a trace of sand, dark grey.	Silty clay, dark grey.	Silty clay, grey.
Unified soil description			CH	CH	CH	CH	CH
STRENGTH TEST	Unconfined (U)	Cohesion, kg/cm^2		0.17			
	(R)	Cohesion, kg/cm^2		0.15			
	Triaxial UU Test	Cohesion, kg/cm^2	0.73				0.52
		Angle of Int. Friction	6				4
	CU Test – Total	Cohesion, kg/cm^2		0.28	0.15		
		Angle of Int. Friction		7	7		
	CU Test – Eff.	Cohesion, kg/cm^2		0.28	0.12		
		Angle of Int. Friction		9	12		
Consol. Test	Precons.Pressure, kg/cm^2		7.00				
	Compression Index, C_c.		0.715				

Note :
*) sample unable to be molded / fail at test

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-6	BH-6	BH-6	BH-6	BH-7
Sample depth, m			34.50-35.0	40.50-41.00	50.50-51.00	58.50-59.00	2.50-3.00
Natural water content, %			104	38	24	52	54
Specific gravity, G_s			2.73	2.61	2.65	2.64	2.75
Unit weight, ton/m^3			1.65	1.81	1.84	1.71	1.59
Natural void ratio			2.38	0.99	0.79	1.35	1.66
Degree of saturation, %			100	100	81	100	89
Atterberg Limits		Liquid limit, %	148	92	61	101	102
		Plastic Limit, %	30	30	30	29	30
		Plasticity Index	118	62	31	72	72
Visual Soil description			Silty clay, grey.	Silty clay, light brownish grey.	Silty clay, with a trace of sand, brownish grey.	Silty clay, with a trace of sand, brownish grey.	Silty clay, with a trace of sand, light brownish grey.
Unified soil description			CH	CH	CH	CH	CH
STRENGTH	Unconfined (U)	Cohesion, kg/cm^2					0.25
	(R)	Cohesion, kg/cm^2					0.17
	Triaxial UU Test	Cohesion, kg/cm^2	0.43	0.88	0.87	0.76	
		Angle of Int. Friction	2	9	10	7	
	CU Test – Total	Cohesion, kg/cm^2					
		Angle of Int. Friction					
	CU Test – Eff.	Cohesion, kg/cm^2					
		Angle of Int. Friction					
Consol. Test	Precons.Pressure, kg/cm^2			4.50	5.00	6.50	
	Compression Index, C_c.			0.404	0.301	0.809	

Note :
*) sample unable to be molded / fail at test

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-7	BH-7	BH-7	BH-7	BH-7
Sample depth, m			6.50-7.00	14.50-15.00	38.50-39.00	46.50-47.00	58.00-58.50
Natural water content, %			71	82	90	35	42
Specific gravity, G_s			2.59	2.63	2.68	2.59	2.63
Unit weight, ton/m^3			1.49	1.42	1.68	1.82	1.75
Natural void ratio			1.97	2.38	2.03	0.93	1.13
Degree of saturation, %			94	91	100	98	98
Atterberg Limits		Liquid limit, %	102	88	140	100	106
		Plastic Limit, %	29	29	30	29	30
		Plasticity Index	73	59	110	71	76
Visual Soil description			Silty clay, with a trace of sand, dark grey.	Silty clay, brown	Silty clay, with a trace of sand, light brownish grey.	Silty clay, with a trace of sand, dark grey.	Silty clay, with a trace of sand, grey.
Unified soil description			CH	CH	CH	CH	CH
STRENGTH	Unconfined (U)	Cohesion, kg/cm^2					
	(R)	Cohesion, kg/cm^2					
	Triaxial UU Test	Cohesion, kg/cm^2		0.11	0.40	1.20	0.90
		Angle of Int. Friction		3	2	3	7
	CU Test – Total	Cohesion, kg/cm^2	0.15				
		Angle of Int. Friction	11				
	CU Test – Eff.	Cohesion, kg/cm^2	0.15				
		Angle of Int. Friction	16				
Consol. Test	Precons.Pressure, kg/cm^2			1.70	3.50	4.00	8.00
	Compression Index, C_c.			0.944	1.206	0.469	0.661

Note :
*) sample unable to be molded / fail at test

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-8	BH-8	BH-8	BH-8	BH-8
Sample depth, m			6.50-7.00	8.50-9.00	16.50-17.00	34.50-35.00	39.50-40.00
Natural water content, %			42	98	47	101	32
Specific gravity, G_s			2.71	2.58	2.63	2.65	2.63
Unit weight, ton/m^3			1.69	1.37	1.84	1.70	1.91
Natural void ratio			1.28	2.74	1.10	2.13	0.82
Degree of saturation, %			89	92	100	100	100
Atterberg Limits		Liquid limit, %	55	123	71	158	70
		Plastic Limit, %	30	30	30	29	29
		Plasticity Index	25	93	41	129	41
Visual Soil description			Silty clay, with a little of sand, dark grey	Silty clay, dark grey	Silty clay, with a trace of sand, brown	Silty clay, grey	Silty clay, light brownish grey
Unified soil description			CH/MH	CH	CH	CH	CH
STRENGTH	Unconfined (U)	Cohesion, kg/cm^2		0.13			
	(R)	Cohesion, kg/cm^2		0.11			
	Triaxial UU Test	Cohesion, kg/cm^2				0.40	0.35
		Angle of Int. Friction				4	14
	CU Test Total	Cohesion, kg/cm^2	0.33				
		Angle of Int. Friction	6				
	CU Test Eff.	Cohesion, kg/cm^2	0.27				
		Angle of Int. Friction	14				
Consol. Test	Precons.Pressure, kg/cm^2				3.10	3.40	5.00
	Compression Index, C_c.				0.329	1.642	0.444

Note :
*) sample unable to be molded / fail at test

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-9	BH-9	BH-9	BH-9	BH-9
Sample depth, m			4.50-5.00	6.50-7.00	10.50-11.00	14.50-15.00	34.50-35.00
Natural water content, %			42	49	90	67	100
Specific gravity, G_s			2.70	2.65	2.65	2.66	2.67
Unit weight, ton/m^3			1.69	1.64	1.40	1.51	1.60
Natural void ratio			1.28	1.41	2.61	1.94	2.34
Degree of saturation, %			89	92	92	92	100
Atterberg Limits		Liquid limit, %	50	62	123	78	111
		Plastic Limit, %	30	30	30	30	29
		Plasticity Index	20	32	93	48	82
Visual Soil description			Clayey silt, with a trace of sand, greyish brown	Silty clay, with a trace of sand, dark grey	Silty clay, dark grey	Silty clay, greyish brown	Silty clay, with a trace of sand, grey
Unified soil description			MH/ML	CH	CH	CH	CH
STRENGTH	Unconfined (U)	Cohesion, kg/cm^2	0.04	0.12			
	(R)	Cohesion, kg/cm^2	0.03	0.10			
	Triaxial UU Test	Cohesion, kg/cm^2			0.08	0.18	0.34
		Angle of Int. Friction			2	1	3
	CU Test – Total	Cohesion, kg/cm^2	0.23	0.15			
		Angle of Int. Friction	9	8			
	CU Test – Eff.	Cohesion, kg/cm^2	0.22	0.11			
		Angle of Int. Friction	14	16			
Consol. Test	Precons.Pressure, kg/cm^2					2.50	4.00
	Compression Index, C_c.					0.811	1.354

Note :
*) sample unable to be molded / fail at test

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-9	BH-10	BH-10	BH-10	BH-10
Sample depth, m			38.00-38.50	2.50-3.00	6.50-7.00	8.50-9.00	20.50-21.00
Natural water content, %			93	72	62	90	70
Specific gravity, G_s			2.73	2.67	2.67	2.61	2.53
Unit weight, ton/m^3			1.65	1.49	1.55	1.40	1.53
Natural void ratio			2.19	2.09	1.79	2.54	1.81
Degree of saturation, %			100	92	92	92	98
Atterberg Limits		Liquid limit, %	154	98	65	128	127
		Plastic Limit, %	29	30	30	29	30
		Plasticity Index	125	68	35	99	97
Visual Soil description			Silty clay, with trace of sand and trace of gravel	Silty clay, with a trace of sand, dark grey	Silty clay, with a trace of sand, dark grey	Silty clay, with a trace of sand, dark grey	Silty clay, with a trace of sand, dark grey
Unified soil description			CH	CH	CH	CH	CH
STRENGTH	Unconfined (U)	Cohesion, kg/cm^2		0.09	0.08	0.08	
	(R)	Cohesion, kg/cm^2		0.07	0.07	0.06	
	Triaxial UU Test	Cohesion, kg/cm^2	0.46				0.47
		Angle of Int. Friction	2				4
	CU Test – Total	Cohesion, kg/cm^2		0.10	0.10	0.11	
		Angle of Int. Friction		11	7	8	
	CU Test – Eff.	Cohesion, kg/cm^2		0.09	0.10	0.08	
		Angle of Int. Friction		16	10	13	
Consol. Test	Precons.Pressure, kg/cm^2		4.00				4.50
	Compression Index, C_c.		1.176				0.647

Note :
*) sample unable to be molded / fail at test

Summary of Laboratory Test

Project : Maritim Tower.
Locatior : Jakarta.

Sample No.			BH-10	BH-10
Sample depth, m			34.50-35.00	39.50-40.00
Natural water content, %			105	50
Specific gravity, G_s			2.65	2.55
Unit weight, ton/m^3			1.66	1.68
Natural void ratio			2.26	1.28
Degree of saturation, %			100	100
Atterberg Limits		Liquid limit, %	158	89
		Plastic Limit, %	29	30
		Plasticity Index	129	59
Visual Soil description			Silty clay, with a trace of sand, dark grey	Silty clay, light brownish grey
Unified soil description			CH	CH
STRENGTH	Unconfined (U)	Cohesion, kg/cm^2		
	(R)	Cohesion, kg/cm^2		
	Triaxial UU Test	Cohesion, kg/cm^2	0.46	
		Angle of Int. Friction	2	
	CU Test – Total	Cohesion, kg/cm^2		
		Angle of Int. Friction		
	CU Test – Eff.	Cohesion, kg/cm^2		
		Angle of Int. Friction		
Consol. Test	Precons.Pressure, kg/cm^2		3.00	3.00
	Compression Index, C_c.		1.270	0.611

Note :
*) sample unable to be molded / fail at test

Lampiran 8

Output Perhitungan
Kapasitas Dukung Aksial Pondasi dalam

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

B O R P I L E

Program Komputer untuk Perhitungan Daya Dukung
Pondasi Borpile Berdasarkan Metode Reese
UNPAR (GEC) - Versi 2.10 (1997)

DATA TANAH

No	Kedalaman (m)	Jenis tanah
1	16	Lempung (CH)
2	22	Lanau (MH)
3	25.5	Pasir
4	34	Lanau (MH)
5	60	Lempung (CH)

DATA N-SPT

No	Kedalaman (m)	N-SPT
1	1	0
2	3	0
3	5	0
4	7	0
5	9	0
6	11	1
7	13	2
8	15	5
9	17	18
10	19	50
11	21	14
12	23	50
13	25	50
14	27	38
15	29	43
16	31	50
17	33	32
18	35	9
19	37	11
20	38.5	10
21	40	16
22	43	14
23	45	17
24	47	16
25	49	25
26	51	19
27	53	23
28	55	20
29	57	15
30	58.5	17
31	60	16

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

B O R P I L E

Program Komputer untuk Perhitungan Daya Dukung
Pondasi Borpile Berdasarkan Metode Reese
UNPAR (GEC) - Versi 2.10 (1997)

A. NAMA PROYEK : Maritim Tower BH8
B. UKURAN TIANG DALAM METER
     Diameter   = .8 m
     Panjang total tiang = 40 m
C. FAKTOR KEAMANAN
     F.K ujung   = 3
     F.K selimut = 2.5
D. KEDALAMAN MAX. DATA TANAH (m)   : 60
E. JUMLAH LAPIS TANAH   : 5
F. JUMLAH DATA (N-SPT dan atau Su) : 31
H. DAYA DUKUNG ULTIMATE =   910.8 ton
     Q ujung total   =   69.8 ton
     Q selimut total   =   841.0 ton
I. DAYA DUKUNG IJIN   =   359.7 ton

DATA BEBAN VS PENURUNAN

No	Q (ton)	S (cm)
1	550.9	0.79
2	746.3	1.23
3	852.9	1.67
4	874.4	1.98
5	882.1	2.28
6	893.9	3.42

LOAD TRANSFER

Depth (cm)	Q1 (ton)	Q2 (ton)	Q3 (ton)	Q4 (ton)	Q5 (ton)	Q6 (ton)
0.0	550.9	746.3	852.9	874.4	882.1	893.9
200.0	550.9	746.3	852.9	874.4	882.1	893.9
400.0	550.9	746.3	852.9	874.4	882.1	893.9
600.0	550.9	746.3	852.9	874.4	882.1	893.9
800.0	550.9	746.3	852.9	874.4	882.1	893.9
1000.0	550.9	746.3	852.9	874.4	882.1	893.9
1200.0	548.0	743.2	849.8	871.3	879.0	890.9
1400.0	542.3	737.1	843.7	865.2	872.8	884.7
1600.0	528.6	721.8	828.3	849.8	857.4	869.3
1800.0	490.6	678.1	783.9	805.4	813.1	825.0
2000.0	410.0	582.6	685.4	706.9	714.5	726.4
2200.0	383.2	549.9	650.9	672.4	680.0	691.9
2400.0	328.7	481.4	576.5	598.0	605.7	617.5
2550.0	290.5	431.4	520.8	542.2	549.9	561.7
2800.0	214.5	328.7	405.0	425.1	432.8	444.7
3000.0	155.9	245.3	307.8	326.6	334.3	346.1
3200.0	101.1	164.2	211.4	228.0	235.7	247.6
3400.0	59.4	100.6	134.8	149.2	156.9	168.7
3600.0	45.3	78.6	108.1	121.5	129.1	141.0
3775.0	30.6	55.4	79.6	91.8	99.5	111.4
3925.0	19.4	37.4	57.4	68.7	76.4	88.3
4000.0	10.5	23.0	39.8	50.2	57.9	69.8

TESTANA INDOTEKNIKA
Soil Investigation and Foundation Engineering

B O R P I L E

Program Komputer untuk Perhitungan Daya Dukung
Pondasi Borpile Berdasarkan Metode Reese
UNPAR (GEC) - Versi 2.10 (1997)

A. NAMA PROYEK : Maritim Tower BH8
B. UKURAN TIANG DALAM METER
   Diameter = 1 m
   Panjang total tiang = 40 m
C. FAKTOR KEAMANAN
   F.K ujung = 3
   F.K selimut = 2.5
D. KEDALAMAN MAX. DATA TANAH (m) : 60
E. JUMLAH LAPIS TANAH : 5
F. JUMLAH DATA (N-SPT dan atau Su) : 31
H. DAYA DUKUNG ULTIMATE = 1160.3 ton
   Q ujung total = 109.0 ton
   Q selimut total = 1051.2 ton
I. DAYA DUKUNG IJIN = 456.8 ton

DATA BEBAN VS PENURUNAN

No	Q (ton)	S (cm)
1	641.8	0.65
2	912.9	1.10
3	1074.3	1.60
4	1108.7	1.98
5	1120.7	2.35
6	1139.2	3.77

LOAD TRANSFER

Depth (cm)	Q1 (ton)	Q2 (ton)	Q3 (ton)	Q4 (ton)	Q5 (ton)	Q6 (ton)
0.0	641.8	912.9	1074.3	1108.7	1120.7	1139.2
200.0	641.8	912.9	1074.3	1108.7	1120.7	1139.2
400.0	641.8	912.9	1074.3	1108.7	1120.7	1139.2
600.0	641.8	912.9	1074.3	1108.7	1120.7	1139.2
800.0	641.8	912.9	1074.3	1108.7	1120.7	1139.2
1000.0	641.8	912.9	1074.3	1108.7	1120.7	1139.2
1200.0	638.5	909.1	1070.5	1104.9	1116.9	1135.4
1400.0	632.2	901.6	1062.8	1097.2	1109.2	1127.7
1600.0	616.8	883.2	1043.5	1077.9	1089.9	1108.4
1800.0	574.4	831.0	988.1	1022.5	1034.5	1053.0
2000.0	484.3	717.6	864.9	899.3	911.3	929.8
2200.0	454.4	678.6	821.7	856.2	868.1	886.7
2400.0	393.0	596.5	729.6	763.2	775.2	793.7
2550.0	349.5	536.4	660.6	693.4	705.4	724.0
2800.0	262.0	412.3	516.4	547.1	559.1	577.7
3000.0	193.2	310.7	395.8	423.9	435.9	454.5
3200.0	127.6	211.1	276.0	300.7	312.7	331.3
3400.0	77.0	132.6	180.8	202.2	214.2	232.7
3600.0	59.7	105.3	147.4	167.5	179.5	198.0
3775.0	41.5	76.3	111.9	130.5	142.5	161.0
3925.0	27.5	53.9	84.2	101.6	113.6	132.1
4000.0	16.4	36.0	62.1	78.5	90.5	109.0

Lampiran 9

Dokumentasi

Gambar 1. BH-5

Gambar 2. BH-6

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Gambar 3. BH-7

Gambar 4. BH-8

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Gambar 5. BH-9

Gambar 6. BH-10

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