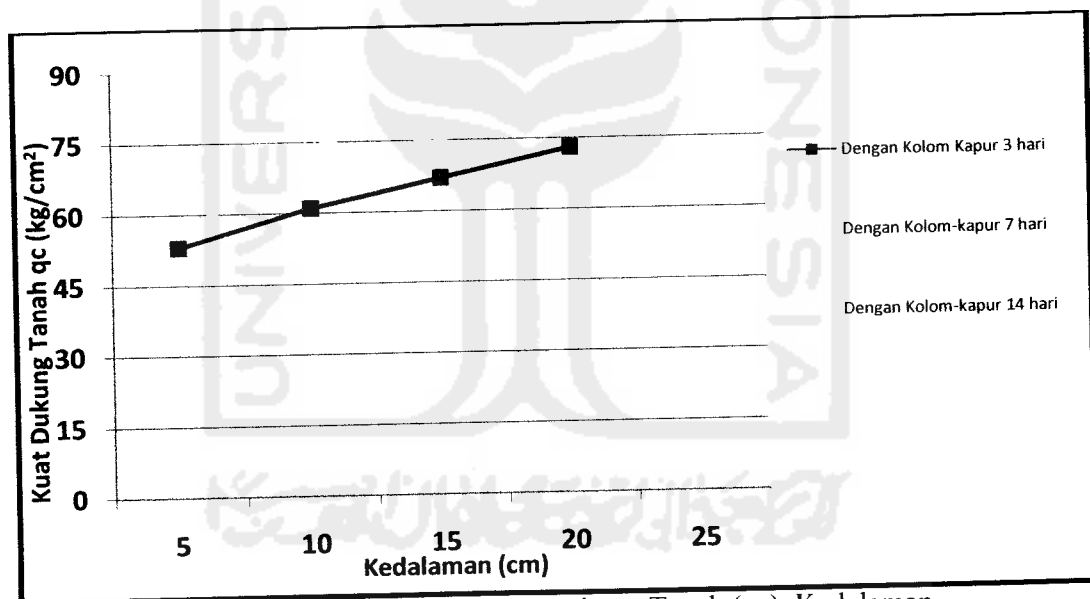


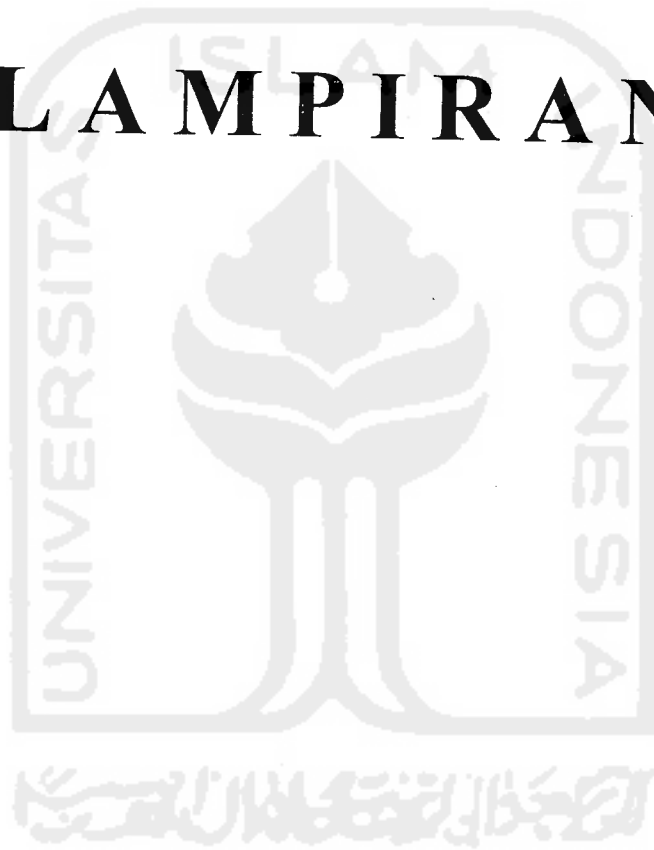
Gambar 6.7 Hubungan antara Kuat Dukung Tanah (q_c), Kedalaman Dan Umur Kolom-Kapur untuk Jarak 2D pada Uji Hand Penetrometer



Gambar 6.8 Hubungan antara Kuat Dukung Tanah (q_c), Kedalaman Dan Umur Kolom-Kapur untuk Jarak 3D pada Uji Hand Penetrometer

Gambar 6.6 pada hasil uji hand penetrometer menunjukkan bahwa kuat dukung tanah pada jarak 1D pada umur kolom kapur 3 hari mengalami peningkatan yang lebih besar dari jarak 2D dan 3D, yaitu sebesar 77 kg/cm^2 , sedangkan pada Gambar 6.7 dan Gambar 6.8 menunjukkan bahwa seiring dengan bertambahnya umur kolom-kapur dari 3 hari, 7 hari dan 14 hari maka kuat dukung tanah mengalami peningkatan, dimana

LAMPIRAN



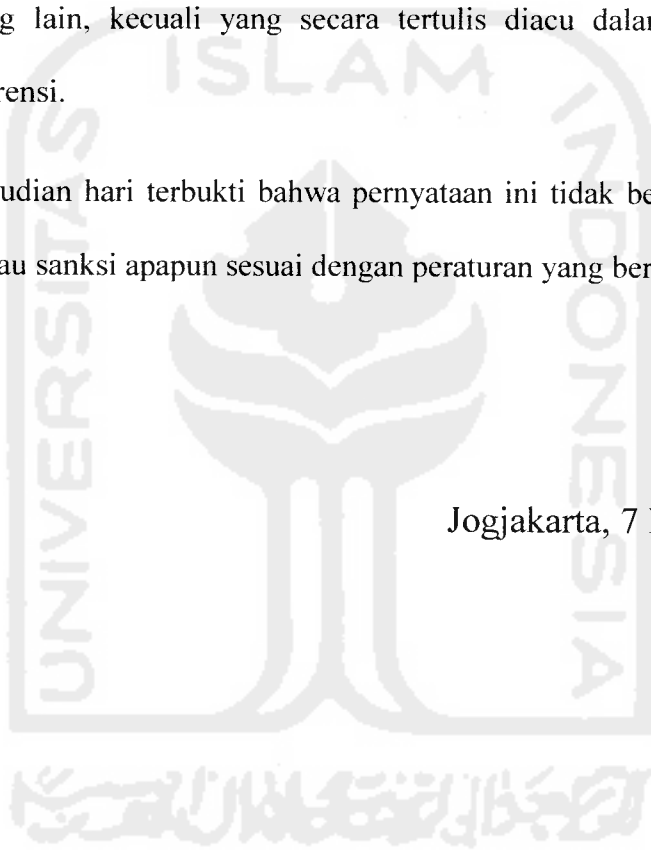
PERNYATAAN BEBAS PLAGIATISME

Dengan ini saya menyatakan bahwa dalam tugas akhir ini tidak terdapat karya yang pernah diajukan orang lain untuk memperoleh gelar kesarjanaan di jurusan Teknik Sipil, Fakultas Teknik Sipil Dan Perencanaan Universitas Islam Indonesia. Dan sepanjang pengetahuan saya juga, tidak terdapat karya atau pendapat yang pernah ditulis atau diterbitkan oleh orang lain, kecuali yang secara tertulis diacu dalam naskah ini dan disebutkan dalam referensi.

Apabila dikemudian hari terbukti bahwa pernyataan ini tidak benar, saya sanggup menerima hukuman atau sanksi apapun sesuai dengan peraturan yang berlaku.

Jogjakarta, 7 November 2007

Penulis



GRAIN SIZE ANALYSIS

Project : Tugas Akhir
 Sample no : 1
 Depth : 1.00 m
 Kode :
 Tested by : Ashadi Atjo
 Date : 15 Juni 2007
 Location : Jombor, Klaten, Jawa Tengah

Soil sample (disturbed/undisturbed)

Mass of soil = 60 gr
 Specific Gravity, G_s = 2.560
 $K_2 = a/W \times 100 = 1.702951$
 Hydrometer type = 152 H
 Hydr. Correction, a = 1.022
 Meniscus correction, m = 1

Sieve Analysis

Sieve No	Opening (mm)	Mass retained (gr)	Mass retained (gr)	% finer by mass $e/W \times 100\%$	Remarks
	90	0	60.00	100.00	
	75	0	60.00	100.00	
	63	0	60.00	100.00	
	50.8	0	60.00	100.00	
	38.1	0	60.00	100.00	
1	25.4	0	60.00	100.00	
3/4	19	0	$e_1 = 60.00$	100.00	
	13.2	0	$e_2 = 60.00$	100.00	
3/8	9.5	0	$e_3 = 60.00$	100.00	
1/4	6.7	0	$e_4 = 60.00$	100.00	
4	4.750	$d_1 = 0.00$	$e_5 = 60.00$	100.00	$e_7 = W - S_d$
10	2.000	$d_2 = 0.24$	$e_6 = 59.76$	99.60	$e_6 = d_7 + e_7$
20	0.850	$d_3 = 0.44$	$e_7 = 59.32$	98.87	$e_5 = d_6 + e_6$
40	0.425	$d_4 = 0.45$	$e_9 = 58.87$	98.12	$e_4 = d_5 + e_5$
60	0.250	$d_5 = 0.35$	$e_{10} = 58.52$	97.53	$e_3 = d_4 + e_4$
140	0.106	$d_6 = 2.02$	$e_{11} = 56.50$	94.17	$e_2 = d_3 + e_3$
200	0.075	$d_7 = 1.22$	$e_{12} = 55.28$	92.13	$e_1 = d_2 + e_2$
		$S_d = 4.72$			

Hidrometer Analysis

Time	elapsed time min. T	R1	R2	t	R' R1 + m	L	K	D (mm)	Rc= R1-R2+C	P K2 x R (%)
9.47										
9.49	2	45	-2.0	25	46	8.763	0.0132	0.02768	48.3	82.25
9.52	5	44	-2.0	25	45	8.927	0.0132	0.017669	47.3	80.55
9.77	30	35	-2.0	25	36	10.401	0.0132	0.007786	38.3	65.22
10.47	60	32	-2.0	25	33	10.892	0.0132	0.005634	35.3	60.11
13.57	250	22	-2.0	25	23	12.529	0.0132	0.00296	25.3	43.08
9.47	1440	15	-2.0	25	16	13.675	0.0132	0.001289	0.001	0.00

Remarks :

$R_c = R_1 - R_2 + C_r$ (C_r = Temperatur correction factors)

$R' = R_1 + m$ (m correctoin for meniscus)

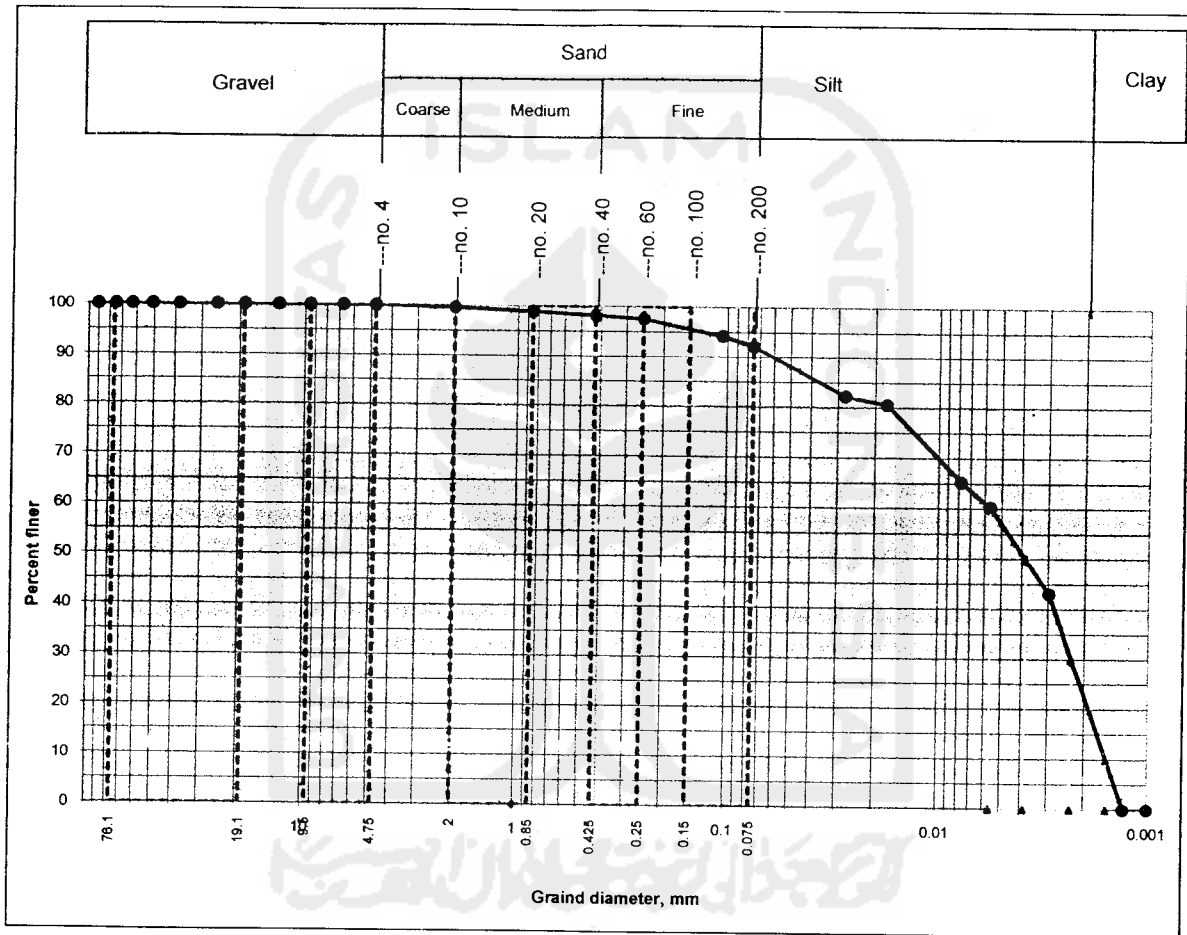
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INDONESIAN ISLAMIC UNIVERSITY

GRAIN SIZE ANALYSIS
ASTM D1140 - 54

Project : Tugas Akhir
 Location : Jombor, Klaten, Jawa Tengah
 Sample no. : 1
 Depth : -
 Kode :
 Tested by : Ashadi Atjo
 Date : 15 Juni 2007
 Berat jenis : 2.56



Finer # 200	92.133 %	D10 (mm)	0.002
		D30 (mm)	0.002
Gravel	0.000 %	D60 (mm)	0.006
Sand	7.867 %	Cu = D60/D10	3.589
Silt	71.819 %	Cc = D30 ² / (D10xD60)	1.471
Clay	20.315 %	D50(mm)	0.004

Yogyakarta : 15 Juni 2007

 Dr. Ir. Edy Purwanto, DEA

GRAIN SIZE ANALYSIS

Project : Tugas Akhir
 Sample no : 2
 Depth : 1.00 m
 Kode :
 Tested by : Ashadi Atjo
 Date : 15 Juni 2007
 Location : Jombor, Klaten, Jawa Tengah

Soil sample (disturbed/undisturbed)
 Mass of soil = 60 gr
 Specific Gravity, G_s = 2.560
 $K_2 = a/W \times 100 = 1.70295$
 Hydrometer type = 152 H
 Hydr. Correction, a = 1.022
 Meniscus correction, m = 1

Sieve Analysis

Sieve No	Opening (mm)	Mass retained (gr)	Mass retained (gr)	% finer by mass $e/W \times 100\%$	Remarks
	90	0	60.00	100.00	
	75	0	60.00	100.00	
	63	0	60.00	100.00	
	50.8	0	60.00	100.00	
	38.1	0	60.00	100.00	
1	25.4	0	60.00	100.00	
3/4	19	0	e1 = 60.00	100.00	
	13.2	0	e2 = 60.00	100.00	
3/8	9.5	0	e3 = 60.00	100.00	
1/4	6.7	0	e4 = 60.00	100.00	
4	4.750	d1 = 0.00	e5 = 60.00	100.00	e7 = W - Sd
10	2.000	d2 = 0.27	e6 = 59.73	99.55	e6 = d7 + e7
20	0.850	d3 = 0.45	e7 = 59.28	98.80	e5 = d6 + e6
40	0.425	d4 = 0.46	e9 = 58.82	98.03	e4 = d5 + e5
60	0.250	d5 = 0.24	e10 = 58.58	97.63	e3 = d4 + e4
140	0.106	d6 = 1.94	e11 = 56.64	94.40	e2 = d3 + e3
200	0.075	d7 = 0.97	e12 = 55.67	92.78	e1 = d2 + e2
		Sd = 4.33			

Hidrometer Analysis

Time	elapsed time min. T	R1	R2	t	R' $R1 + m$	L	K	D (mm)	Rc = $R1 - R2 + C$	P $K_2 \times R$ (%)
9.47										
9.49	2	42	-2.0	25	43	9.254	0.0132	0.028445	45.3	77.14
9.52	5	38	-2.0	25	39	9.909	0.0132	0.018616	41.3	70.33
9.77	30	31	-2.0	25	32	11.056	0.0132	0.008027	34.3	58.41
10.47	60	27	-2.0	25	28	11.710	0.0132	0.005842	30.3	51.60
13.57	250	25	-2.0	25	26	12.038	0.0132	0.002902	28.3	48.19
9.47	1440	12	-2.0	25	13	14.166	0.0132	0.001312	0.001	0.00

Remarks :
 $R_c = R_1 - R_2 + C_r$ (C_r = Temperatur correction factors)
 $R' = R_1 + m$ (m correctoin for meniscus)

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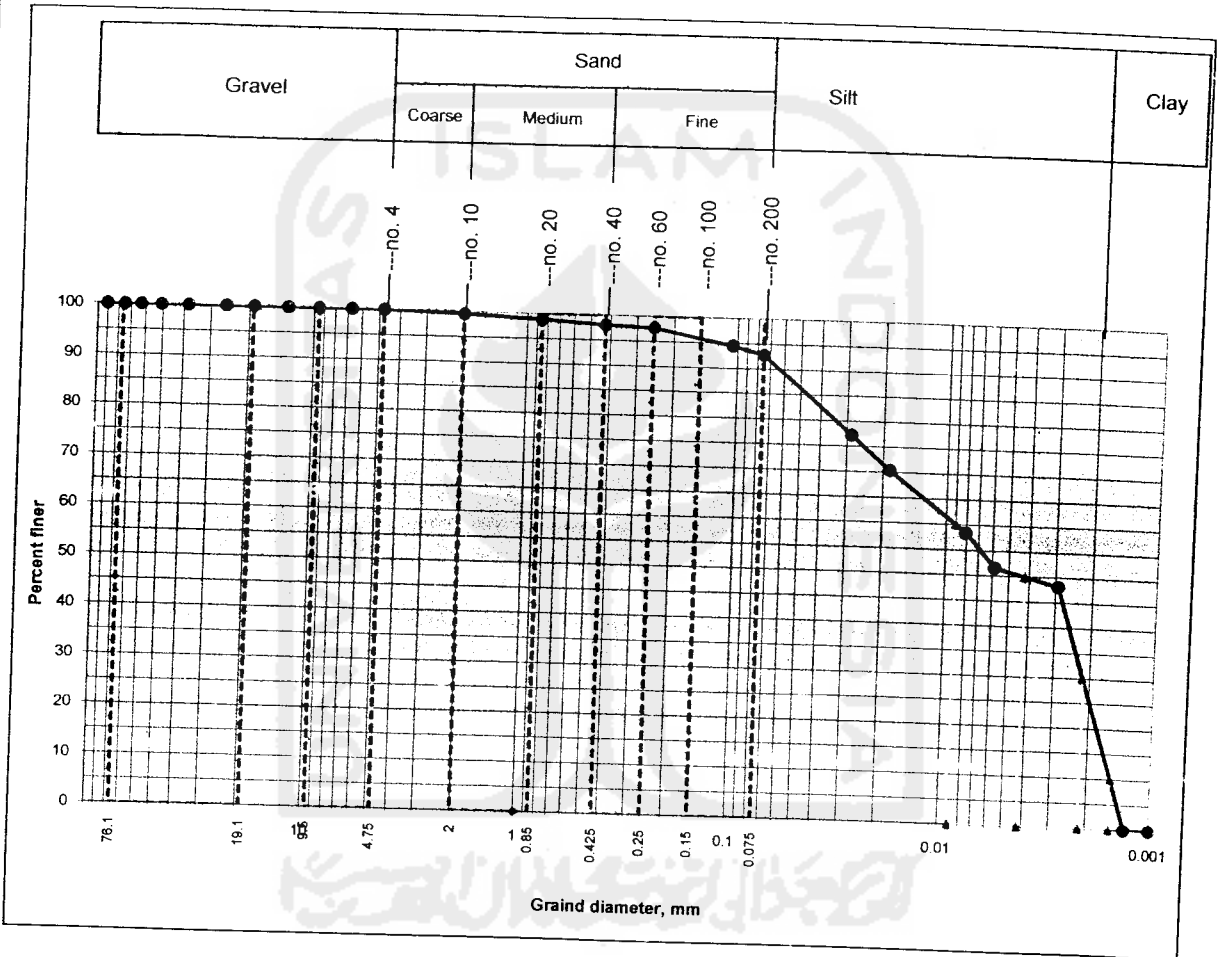




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INDONESIAN ISLAMIC UNIVERSITY

GRAIN SIZE ANALYSIS
ASTM D1140 - 54

Project : Tugas Akhir
 Location : Jombor, Klaten, Jawa Tengah
 Sample no. : 2
 Depth : -
 Kode :
 Tested by : Ashadi Atjo
 Date : 15 Juni 2007
 Berat jenis : 2.56



Finer # 200	92.783 %	D10 (mm)	0.002
		D30 (mm)	0.002
Gravel	0.000 %	D60 (mm)	0.009
Sand	7.217 %	Cu = D60/D10	5.807
Silt	70.196 %	Cc = D30 ² / (D10xD60)	1.390
Clay	22.587 %	D50(mm)	0.004

Yogyakarta : 15 Juni 2007

Dr.Ir. Edy Purwanto, DEA



LABORATORIUM MEKANIK TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN UII
Jl. Kaliurang KM. 14,4 Telp. (0274) 895042 Yogyakarta 55584.

KADAR AIR ASLI LAPANGAN

Proyek : Tugas Akhir
Asal sampel : Jombor, Klaten, Jawa Tengah

Dikerjakan : Ashadi Atjo
Tanggal : 17 Juni 2007

No	No. Pengujian		1	2
1	Berat cawan kosong (W_1)	gram	21.83	21.95
2	Berat cawan + tanah basah (W_2)	gram	41.95	44.12
3	Berat cawan + tanah kering (W_3)	gram	38.76	40.24
4	Berat air ($W_2 - W_3$)	%	3.19	3.88
5	Berat tanah kering ($W_3 - W_1$)	gram	16.93	18.29
6	Kadar air (W) ($W_2 - W_3$) ($W_3 - W_1$)	x 100 %	18.84	21.21
7	Kadar air rata-rata (W_{rt})		20.03	

Yogyakarta,
Kepala Operasional Laboratorium


Dr. Ir. Edy Purwanto. CES, DEA.



LABORATORIUM MEKANIKA TANAH

JURUSAN TEKNIK SIPIL

FAKULTAS TEKNIK SIPIL DAN PERENCANAAN UII

Jalan Kaliurang Km. 14,4 Telp. (0274) 895042 Fax. (0274) 895330 Yogyakarta

PENGUJIAN BERAT JENIS TANAH

Proyek : Tugas akhir

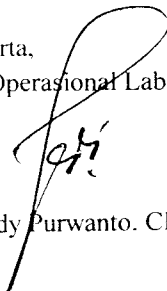
Kedalaman : 1 meter

Dikerjakan : Ashadi Atjo

Tanggal : 22 Juni 2007

	No. Pengujian	1	2	3
1	Berat piknometer kosong (W ₁) gram	17.25	18.51	17.36
2	Berat piknometer + tanah kering (W ₂) gram	22.16	23.19	25.07
3	Berat piknometer + tanah + air (W ₃) gram	44.22	45.23	47.24
4	Berat piknometer + air (W ₄) gram	41.26	42.35	42.54
5	Temperatur (t°)	24	24	24
6	BJ pada temperatur (t°)	0.9973	0.9973	0.997
7	BJ pada temperatur (27,5°)	0.9964	0.9964	0.996
8	Berat jenis tanah G _s (t°) = $\frac{W_2 - W_1}{(W_4 - W_1) - (W_3 - W_2)}$	2.52	2.60	2.56
9	Berat jenis tanah pada 27,5° = $G_s(t^\circ) \frac{B_j \text{ air } t^\circ}{B_j \text{ air } 27,5^\circ}$	2.52	2.60	2.56
10	Berat jenis rata-rata G _s rt	2.56		

Yogyakarta,
Kepala Operasional Laboratorium


Dr. Ir. Edy Purwanto. CES, DEA.



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL FTSP
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang Km 14,4 Telp. (0274) 895042, 895707, Fax (0274) 895330. Yogyakarta.

PENGUJIAN BATAS CAIR

Proyek : Tugas Akhir
 Lokasi : Jombor, Klaten, Jawa Tengah

Dikerjakan : Ashadi Atjo
 Tanggal : 25 Juni 2007

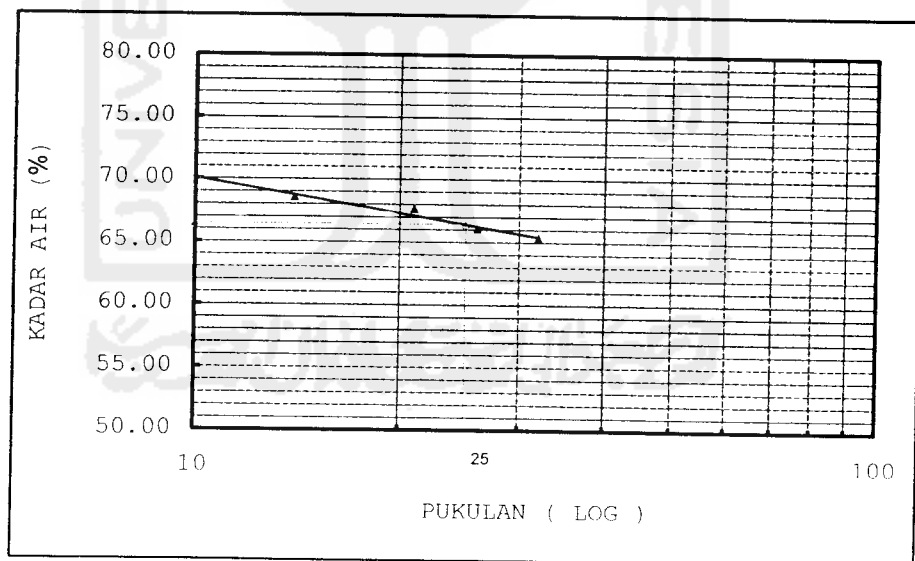
NO	NO. PENGUJIAN	I		II		III		IV	
		1	2	3	4	5	6	7	8
1	NO CAWAN								
2	Berat cawan kosong	21.37	21.73	21.77	20.33	22.10	21.64	21.95	22.14
3	Berat cawan + tanah basah (gr)	37.34	38.54	47.67	51.51	41.60	38.35	36.45	37.74
4	Berat cawan + tanah kering (gr)	30.66	31.91	35.21	40.91	35.24	32.79	32.85	33.19
5	Berat air (3) - (4)	6.68	6.63	12.46	8.75	6.36	9.33	9.76	4.55
6	Berat tanah kering (4) - (2)	9.29	10.18	13.44	20.58	13.14	11.15	10.90	11.05
7	KADAR AIR = $\frac{(5)}{(6)} \times 100\%$	71.91	65.13	92.71	42.52	48.40	83.68	89.54	41.18
8	KADAR AIR RATA-RATA =		68.52		67.61		66.04		65.36
9	PUKULAN		14		21		26		32

PENGUJIAN BATAS PLASTIS

NO		1	2
1	No. cawan		
2	Berat cawan kosong	21.79	21.90
3	Berat cawan + tanah basah	31.37	32.33
4	Berat cawan + tanah kering	28.87	29.59
5	Berat air (3)-(4)	2.50	2.74
6	Berat tanah kering (4)-(2)	7.08	7.69
7	Kadar air = $\frac{(5)}{(6)} \times 100\%$	35.31	35.63
8	Kadar air rata-rata =	35.47	

KESIMPULAN

FLOW INDEX : 3.436
 BATAS CAIR : 66.42
 BATAS PLASTIS : 35.47
 INDEX PLASTISITAS : 30.95



Yogyakarta,
 Kepala Operasional Laboratorium

Dr. Ir. Edy Purwanto. CES, DEA.



LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN UII
Jl. Kaliurang KM. 14,4 Telp. (0274) 895042 Yogyakarta 55584.

PENGUJIAN BATAS SUSUT TANAH

PROYEK : Tugas Akhir
Asal sampel : Jombor, Klaten
No. sampel :

Oleh : Ashadi Atjo

1	No. Pengujian	1			2			3			
		2.56			2.56			2.56			
3	Berat cawan susut (w1) gram	40.19	41.64	45.28	46.14	43.24	40.86				
4	Berat cawan + tanah basah (w2) gram	65.69	66.64	67.99	68.99	67.23	63.72				
5	Berat cawan + tanah kering (w3) gram	50.71	52.96	56.87	57.43	55.84	53.62				
6	Berat air raksa yg terdesak + gelas ukur (w4) gram	148.39	150.25	151.45	149.16	161.05	163.02				
7	Berat gelas ukur (w5) gram	60.25	60.25	60.25	60.25	60.25	60.25				
8	Berat air raksa (w4 - W5) gram	88.14	90	91.2	88.91	100.8	102.77				
9	Volume tanah kering : $V_o = (w4 - w5)/13,60$	6.48	6.62	6.71	6.54	7.41	7.56				
10	Batas susut tanah : $SL = [(V_o/(w3 - w1)) - (1/Gs)] \times 100\%$	22.54	19.40	18.80	18.84	19.76	20.16				
11	Batas susut tanah rata-rata (SL) rata-rata	19.92									



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL - FTSP
UNIVERSITAS ISLAM INDONESIA

PEMBACAAN PENURUNAN

Proyek : Tugas Akhir

Dikerjakan : Ashadi Atjo

Lokasi : Jombor, Klaten, Jawa Tengah

Tanggal : 2 Juli 2007

Kedalaman : 1 meter

Jenis sampel : Tanah Asli Sampel 1

Beban P (Kg)			1.00	2.00	4.00	8.00	16.00	32.00	64.00	16.00	4.00	
Waktu Pembacaan			Pembacaan dial ... (mm) untuk beban ... (kg/cm ²)									
Jam	t	\sqrt{t}	0.25	0.50	1.00	2.00	4.00	8.00	16.00	4.00	1.00	
	0	0	0.000	-0.021	0.078	0.542	1.619	2.867	3.986	4.786	4.574	
	5,40"	0.3	-0.021	0.024	0.102	0.738	1.972	3.098	4.160			
	15,00"	0.4	-0.021	0.037	0.130	0.941	2.054	3.115	4.181			
	29,40"	0.8	-0.021	0.042	0.204	1.026	2.115	3.187	4.194			
	1,00'	2.0	-0.021	0.047	0.276	1.125	2.181	3.235	4.208			
	2,25"	3.0	-0.021	0.051	0.319	1.186	2.196	3.252	4.238			
	4,00"	3.3	-0.021	0.053	0.335	1.209	2.216	3.262	4.258			
	6,25"	3.6	-0.021	0.055	0.341	1.235	2.247	3.273	4.276			
	9,00"	3.8	-0.021	0.058	0.356	1.256	2.269	3.300	4.290			
	12,25"	4.4	-0.021	0.064	0.375	1.291	2.335	3.364	4.325			
	16,00"	5.7	-0.021	0.071	0.413	1.373	2.457	3.457	4.394			
	25,00"	6.1	-0.021	0.072	0.429	1.398	2.479	3.487	4.416			
	36,00"	6.3	-0.021	0.073	0.448	1.408	2.492	3.499	4.423			
	49,00"	6.6	-0.021	0.073	0.460	1.420	2.516	3.518	4.440			
	1,04'	64,00"	7.6	-0.021	0.075	0.484	1.458	2.605	3.589	4.478		
	1,21'	81,00"	8.5	-0.021	0.076	0.505	1.471	2.639	3.620	4.497		
	1,40'	100,00"	9.3	-0.021	0.076	0.517	1.480	2.664	3.639	4.514		
	2,01'	121,00"	10.5	-0.021	0.077	0.521	1.501	2.698	3.679	4.535		
	2,24'	144,00"	12.0	-0.021	0.078	0.521	1.529	2.736	3.728	4.573		
	3,45'	225,00"	15.5	-0.021	0.078	0.531	1.562	2.789	3.809	4.622		
	6,40'	400,00"	21.3	-0.021	0.078	0.537	1.591	2.828	3.898	4.704		
	24,0'	1440,00"	37.9	-0.021	0.078	0.542	1.619	2.867	3.986	4.786	4.574	4.266



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL - FTSP
UNIVERSITAS ISLAM INDONESIA

HITUNGAN UJI KONSOLIDASI

Proyek : Tugas Akhir
 Lokasi : Jombor, Klaten, Jawa Tengah
 Kedalaman : 1 meter

Dikerjakan : Ashadi Atjo
 Tanggal : 2 Juli 2007
 Jenis sampel : Tanah Asli Sampel 1

Berat Jenis Tanah : 2.56 Luas ring (cm²) : 44.18
 Berat ring (gr) : 117.58 Tinggi (H₀) (cm) : 2
 Diameter (cm) : 7.5 Volume V₀ (cm³) : 88.36

Beban (kg/cm ²)	Pembacaan akhir dial (mm)	Perubahan tebal ΔH (cm)	Perubahan angka pori $\Delta e = \frac{\Delta H}{H_i}$	Angka pori $e = e_0 - \Delta e$	$C_c = \frac{\Delta e}{\log \frac{p_2}{p_1}}$	Tebal akhir H = H ₁ - ΔH	Tebal rata-rata d = (H ₁ + H ₂) / 2	\sqrt{t}_{90}	t ₉₀ (detik)	C _v = $\frac{0.848 \times (d/2)^2}{t_{90}}$ (cm ² /det)
0.00	0.0000			1.036		cm	cm			
0.25	-0.0210	-0.002	-0.002	1.038		2.002	2.00105			
0.50	0.0780	0.0099	0.010	1.028	0.033	1.992	1.99715	0.000	0	0
1.00	0.5420	0.0464	0.047	0.980	0.157	1.946	1.969	5.930	2110	0.000401
2.00	1.6190	0.1077	0.110	0.871	0.364	1.838	1.89195	7.610	3475	0.000237
4.00	2.8670	0.1248	0.127	0.744	0.422	1.713	1.7757	8.240	4074	0.000186
8.00	3.9860	0.1119	0.114	0.630	0.378	1.601	1.65735	10.630	6780	0.000099
16.00	4.7860	0.0800	0.081	0.548	0.270	1.521	1.5614	12.790	9815	0.000059
8.00	4.57	-0.021	-0.022	0.570	0.072	1.543	1.532	12.000	8640	0.000060
2.00	4.266	-0.031	-0.031	0.601	0.052	1.573	1.558			

Yogyakarta
 Kepala Operasional Laboratorium

Dr. Ir. Edy Purwanto CES, DEA



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL - FTSP
UNIVERSITAS ISLAM INDONESIA

GRAFIK PENURUNAN

Proyek : Tugas Akhir

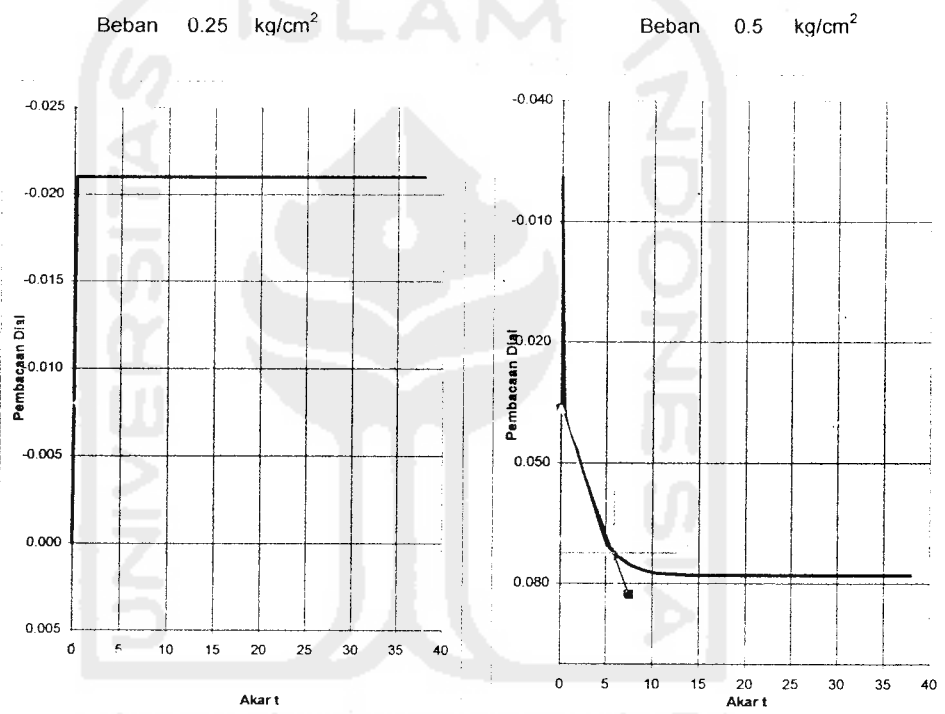
Dikerjakan : Ashadi Atjo

Lokasi : Jombor, Klaten, Jawa Tengah

Tanggal : 2 Juli 2007

Kedalaman : 1 meter

Jenis sampel : Tanah Asli Sampel 1



$\sqrt{t} : 0$

$\sqrt{t} : 5.93$



GRAFIK PENURUNAN

Proyek : Tugas Akhir

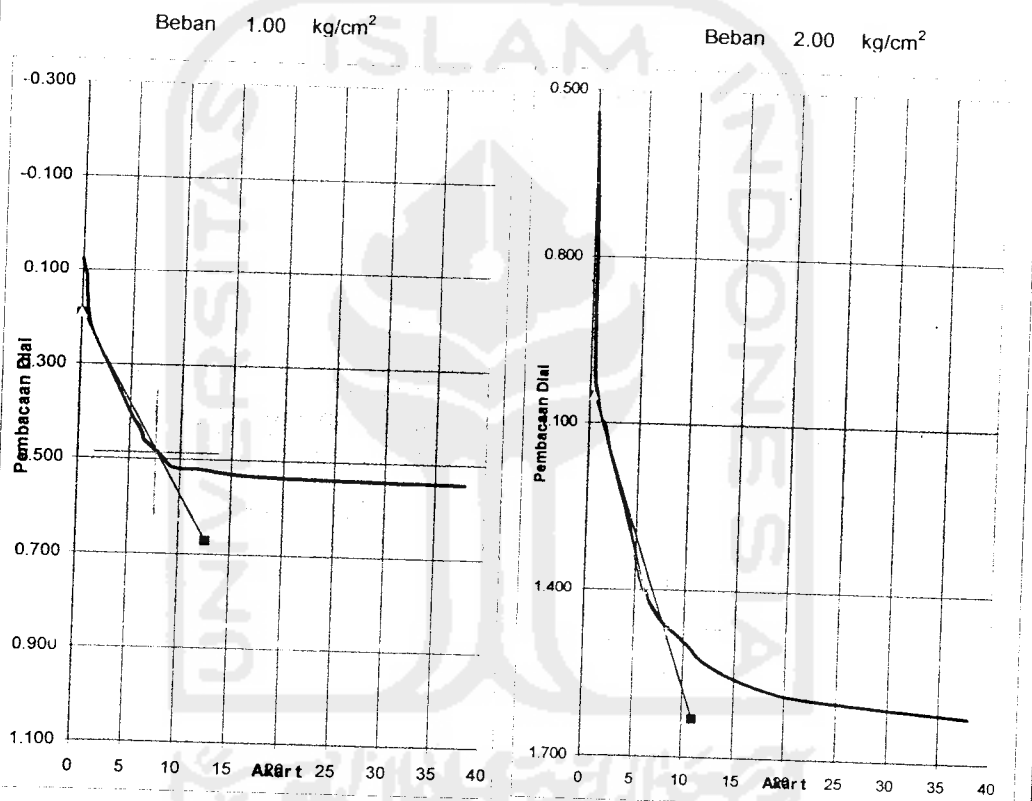
Lokasi : Jombor, Klaten, Jawa Tengah

Kedalaman : 1 meter

Dikerjakan : Ashadi Atjo

Tanggal : 2 Juli 2007

Jenis sampel : Tanah Asli Sampel 1



$\sqrt{t} : 7.61$

$\sqrt{t} : 8.24$



GRAFIK PENURUNAN

Proyek : Tugas Akhir

Dikerjakan : Ashadi Atjo

Lokasi : Jombor, Klaten, Jawa Tengah

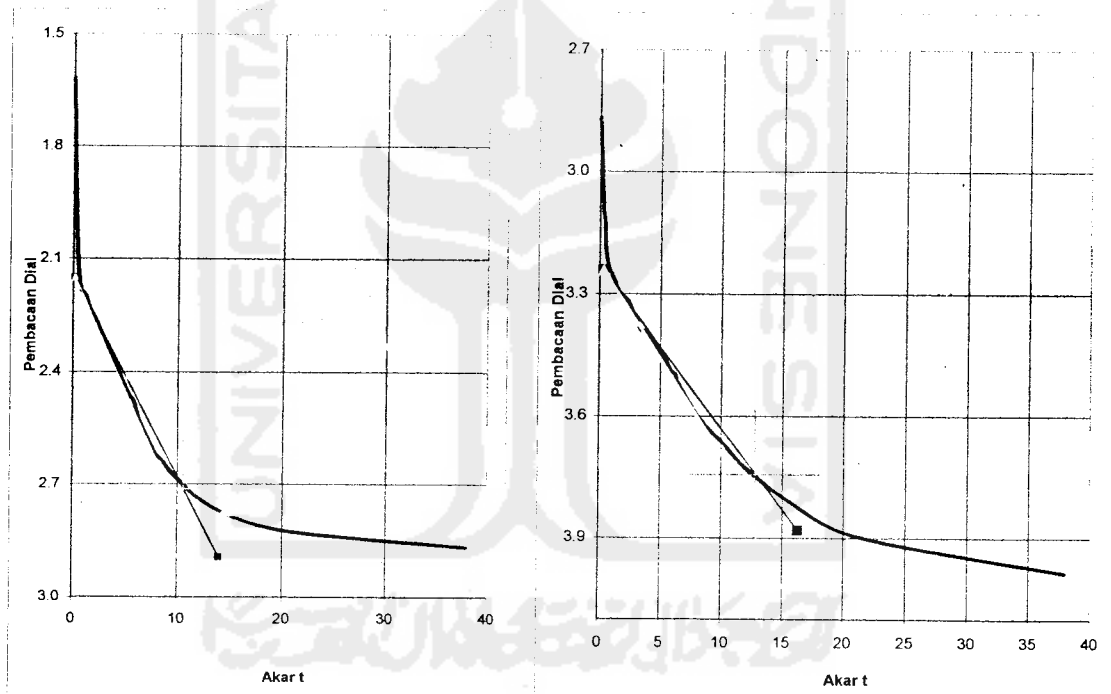
Tanggal : 2 Juli 2007

Kedalaman : 1 meter

Jenis sampel : Tanah Asli Sampel 1

Beban 4.00 kg/cm²

Beban 8.00 kg/cm²



$\sqrt{t} : 10.63$

$\sqrt{t} : 12.79$



GRAFIK PENURUNAN

Proyek : Tugas Akhir

Dikerjakan : Ashadi Atjo

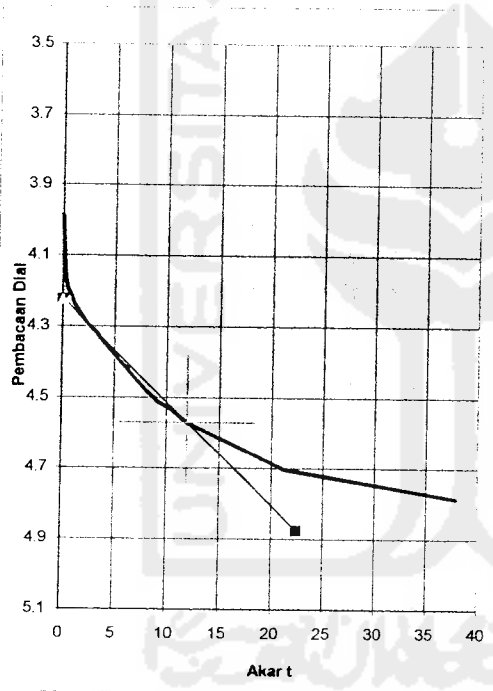
Lokasi : Jombor, Klaten, Jawa Tengah

Tanggal : 2 Juli 2007

Kedalaman : 1 meter

Jenis sampel : Tanah Asli Sampel 1

Beban 16.00 kg/cm²



\sqrt{t} : 12



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL - FTSP
UNIVERSITAS ISLAM INDONESIA

KESIMPULAN UJI KONSOLIDASI

Proyek : Tugas Akhir
Lokasi : Jombor, Klaten, Jawa Tengah
Kedalaman : 1 meter

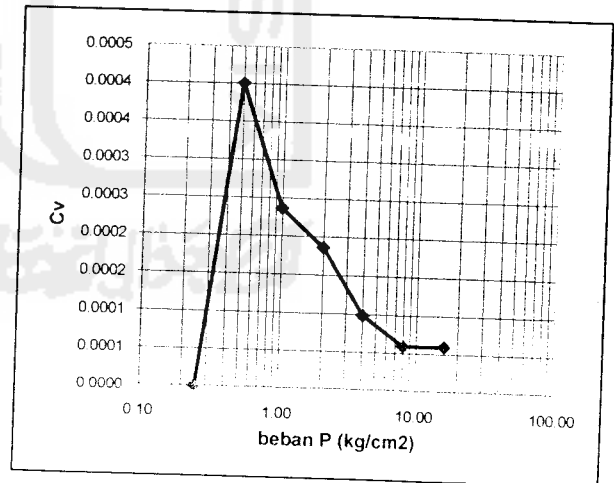
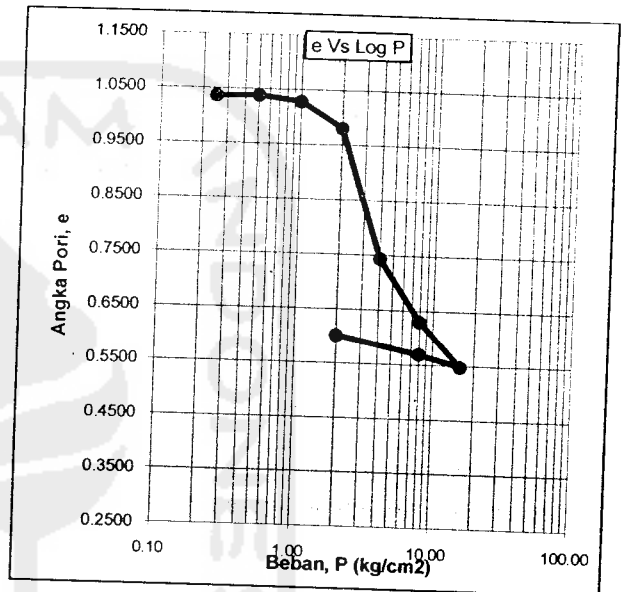
Dikerjakan : Ashadi Atjo
Tanggal : 2 Juli 2007
Jenis Sampel : Tanah Asli Sampel 1

Data parameter tanah dan ring	
Berat Jenis Tanah	2.55
Berat ring (gr)	117.58
Diameter (cm)	7.5
Luas ring (cm ²)	44.17865
Tinggi (H _o) (cm)	2
Volume V _o (cm ³)	88.35729

Kadar air		
Berat Container (cup), gr	22.10	21.65
Berat Cup + tanah basah, gr	61.27	59.05
Berat Cup + tanah kering, gr	51.05	50.42
Kadar air %	35.26	30.00
Kadar air rata-rata %	32.63	

Berat ring + tanah basah, gr	264.38
Berat volume tanah basah	1.661
Berat volume tanah kering	1.253
Tinggi bagian padat (H _t)	0.98
Angka pori (e)	1.035566
Derajat kejenuhan (S _r)	0.803390

Setelah pengujian	
Berat ring + tanah basah, gr	273.75
Berat ring + tanah kering, gr	241.82
Kadar air, %	25.70026
Angka pori (e)	0.570032
Derajat Kejenuhan (S _r)	1.154





HITUNGAN UJI KONSOLIDASI

Proyek : Tugas Akhir
 Lokasi : Jombor, Klaten, Jawa Tengah
 Kedalaman : 1 meter

Dikerjakan : Ashadi Atjo
 Tanggal : 2 Juli 2007
 Jenis sampel : Tanah Asli Sampel 2

Berat Jenis Tanah : 2.56 Luas ring (cm²) : 44.179
 Berat ring (gr) : 117.58 Tinggi (H₀) (cm) : 2
 Diameter (cm) : 7.5 Volume V₀ (cm³) : 88.357

Beban	Pembacaan akhir dial	Perubahan tebal ΔH	Perubahan angka pori $\Delta e = \frac{\Delta H}{H_i}$	Angka pori $e = e_0 - \Delta e$	$C_c = \frac{\Delta e}{\log \frac{P_2}{P_1}}$	Tebal akhir H=H ₁ -ΔH	Tebal rata-rata d=(H ₁ +H ₂)/2	\sqrt{t}_{90}	t ₉₀ (detik)	$C_v = \frac{0.848 \times (d/2)^2}{t_{90}}$ (cm ² /det)
(kg/cm ²)	(mm)	(cm)				cm	cm			
0.00	0.0000			1.015			2.0009			
		-0.002	-0.002			2.002				
0.25	-0.0180			1.017			1.99715		0	0.000000
		0.0093	0.009		0.031	1.993				
0.50	0.0750			1.007			1.9687		6.19	2298.966
		0.0476	0.048		0.159	1.945				
1.00	0.5510			0.959			1.8904		12	8640
		0.1090	0.110		0.365	1.836				
2.00	1.6410			0.850			1.772		13.36	10709.38
		0.1278	0.129		0.428	1.708				
4.00	2.9190			0.721			1.6561		14.32	12303.74
		0.1040	0.105		0.348	1.604				
8.00	3.9590			0.616			1.5527		16.75	16833.75
		0.1028	0.104		0.344	1.501				
16.00	4.9870			0.513			1.5235		21.68	28201.34
		-0.044	-0.045		0.149	1.546				
8.00	4.54			0.557			1.55695			
		-0.023	-0.023		0.038	1.568				
2.00	4.318			0.580						

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GRAFIK PENURUNAN

Proyek : Tugas Akhir

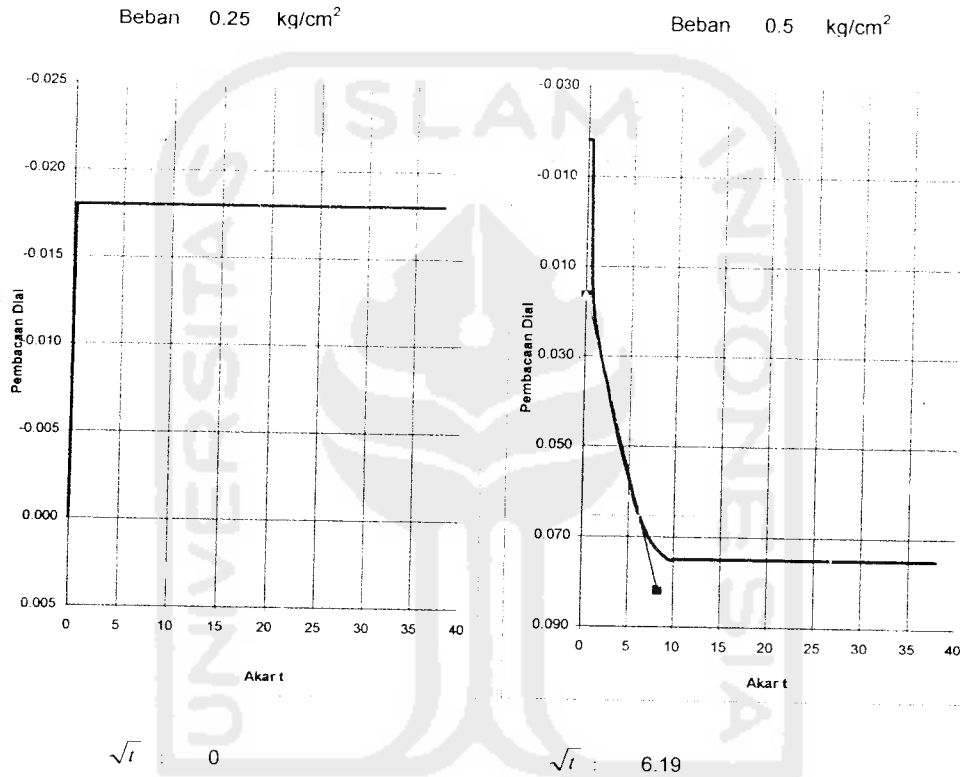
Lokasi : Jombor, Klaten, Jawa Tengah

Kedalaman : 1 meter

Dikerjakan : Ashadi Atjo

Tanggal : 2 Juli 2007

Jenis sampel : Tanah Asli Sampel 2





GRAFIK PENURUNAN

Proyek : Tugas Akhir

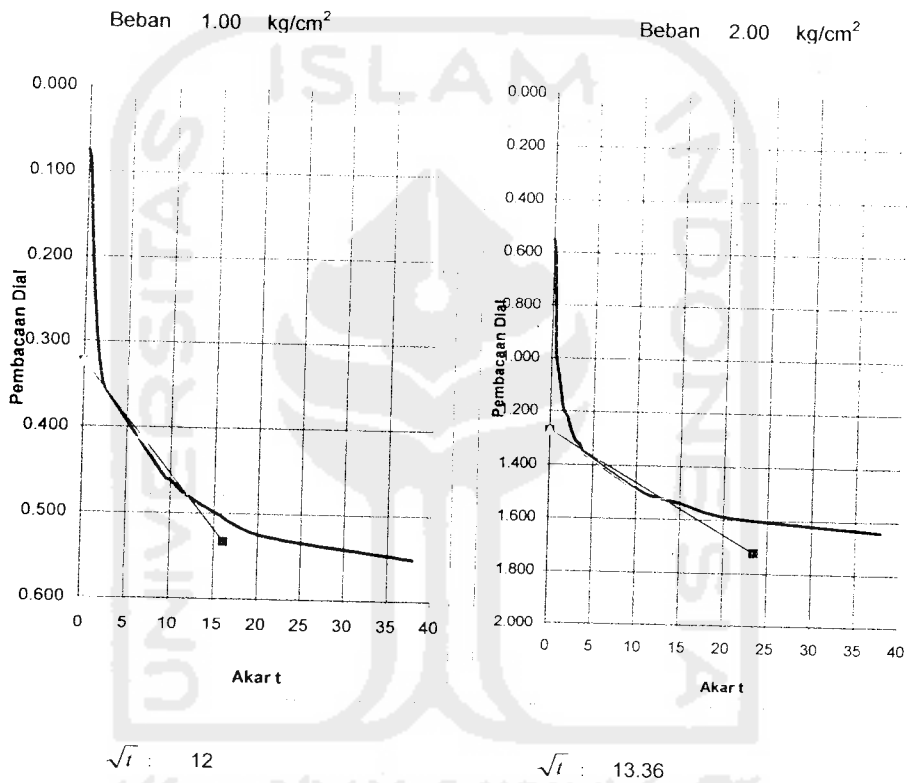
Dikerjakan : Ashadi Atjo

Lokasi : Jombor, Klaten, Jawa Tengah

Tanggal : 2 Juli 2007

Kedalaman : 1 meter

Jenis sampel : Tanah Asli Sampel 2





LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL - FTSP
UNIVERSITAS ISLAM INDONESIA

GRAFIK PENURUNAN

Proyek : Tugas Akhir

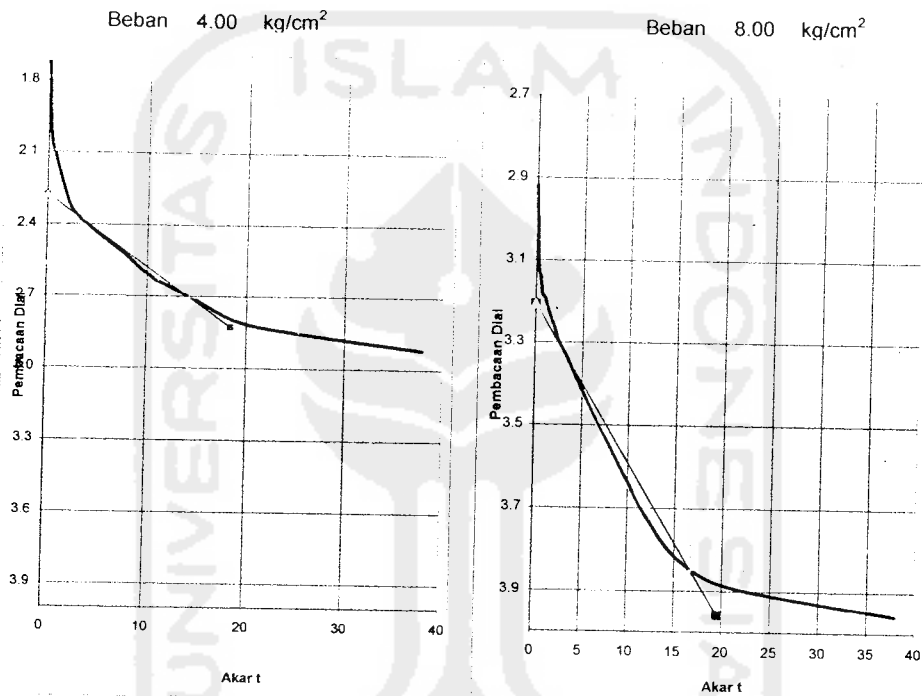
Dikerjakan : Ashadi Atjo

Lokasi : Jombor, Klaten, Jawa Tengah

Tanggal : 2 Juli 2007

Kedalaman : 1 meter

Jenis sampel : Tanah Asli Sampel 2



\sqrt{t} : 14.32

\sqrt{t} : 16.75



GRAFIK PENURUNAN

Proyek : Tugas Akhir

Lokasi : Jombor, Klaten, Jawa Tengah

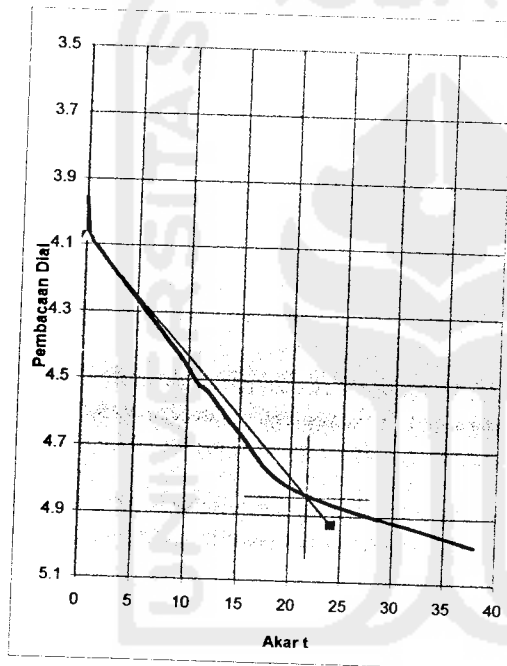
Kedalaman : 1 meter

Dikerjakan : Ashadi Atjo

Tanggal : 2 Juli 2007

Jenis sampel : Tanah Asli Sampel 2

Beban 16.00 kg/cm²



\sqrt{t} : 21.68



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL - FTSP
UNIVERSITAS ISLAM INDONESIA

KESIMPULAN UJI KONSOLIDASI

Proyek : Tugas Akhir

Lokasi : Jombor, Klaten, Jawa Tengah

Kedalaman : 1 meter

Dikerjakan : Ashadi Atjo

Tanggal : 2 Juli 2007

Jenis Sampel : Tanah Asli Sampel 2

Data parameter tanah dan ring

Berat Jenis Tanah	2.55
Berat ring (gr)	117.58
Diameter (cm)	7.5
Luas ring (cm ²)	44.17865
Tinggi (H _o) (cm)	2
Volume V _o (cm ³)	88.35729

Kadar air

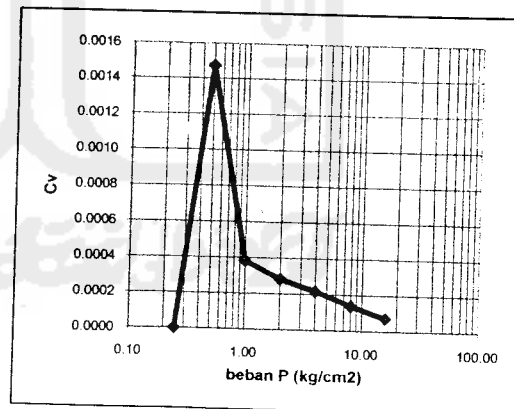
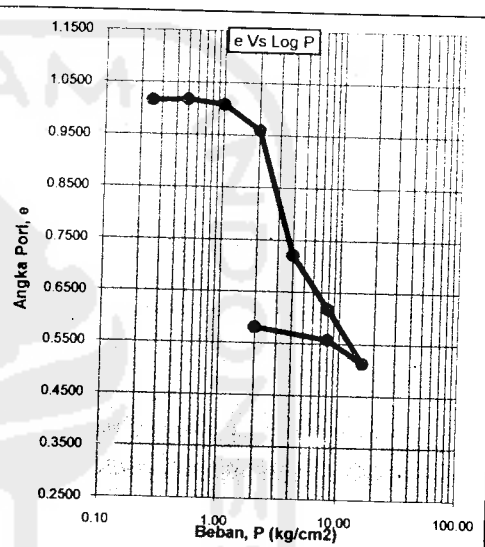
Berat Container (cup), gr	23.12	22.35
Berat Cup + tanah basah, gr	60.24	58.76
Berat Cup + tanah kering, gr	51.06	50.42
Kadar air %	32.86	29.71
Kadar air rata-rata %	31.28	

Sebelum Pengujian

Berat ring + tanah basah, gr	264.38
Berat volume tanah basah	1.661
Berat volume tanah kering	1.266
Tinggi bagian padat (H _t)	0.99
Angka pori (e)	1.014965
Derajat kejenuhan (Sr)	0.785974

Setelah pengujian

Berat ring + tanah basah, gr	271.40
Berat ring + tanah kering, gr	251.20
Kadar air, %	15.1175
Angka pori (e)	0.557266
Derajat Kejenuhan (Sr)	0.826635



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LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 2
 Depth : 1,00

Date : 6 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 1 D

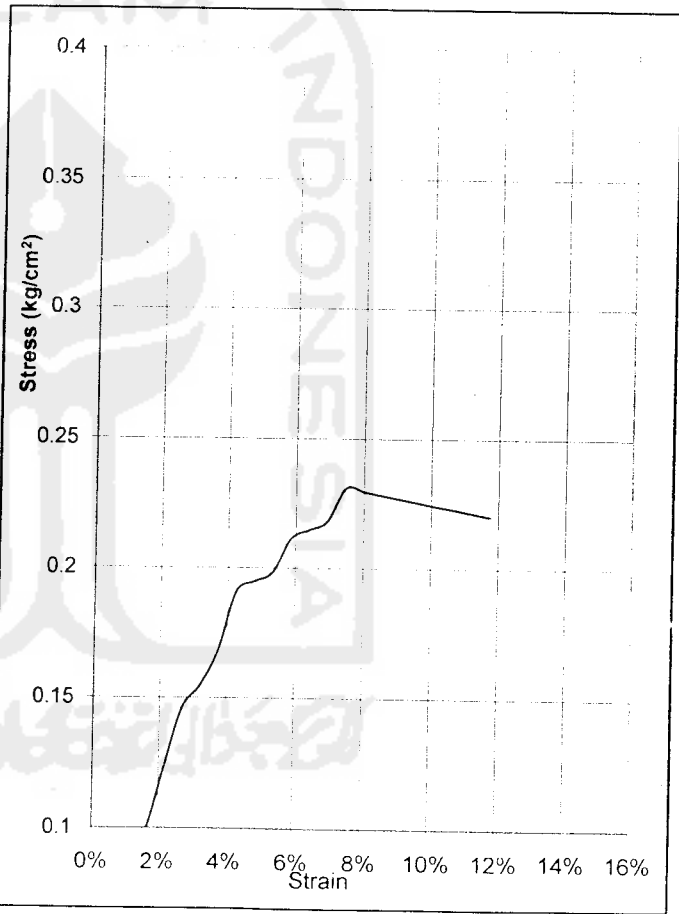
Lempung tanpa kolom kapur

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht,Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	136.5
Wet Unit wt (gr/cm ³)	1.79
Dry Unit wt (gr/cm ³)	1.31692

Water Content		
Wt Container (cup). gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1	0.53%	0.5083	0.049671
80	1.9	1.07%	0.96577	0.093869
120	2	1.60%	1.0166	0.098277
160	2.5	2.13%	1.27075	0.12218
200	3	2.67%	1.5249	0.145817
240	3.2	3.20%	1.62656	0.154686
280	3.5	3.73%	1.77905	0.168255
320	4	4.27%	2.0332	0.191227
360	4.1	4.80%	2.08403	0.194915
400	4.2	5.33%	2.13486	0.198551
440	4.5	5.87%	2.28735	0.211534
480	4.6	6.40%	2.33818	0.21501
520	4.7	6.93%	2.38901	0.218432
560	5	7.47%	2.5415	0.231043
600	5	8.00%	2.5415	0.229712
640	5	8.53%	2.5415	0.22838
680	5	9.07%	2.5415	0.227048
720	5	9.60%	2.5415	0.225717
760	5	10.13%	2.5415	0.224385
800	5	10.67%	2.5415	0.223053
840	5	11.20%	2.5415	0.221722
880	5	11.73%	2.5415	0.22039
920			0	0
960			0	0
1000			0	0
1040			0	0
1080			0	0
1120			0	0



qu = 0.23104 kg/cm²
 α = 46°
 Angle Of Internal friction, φ = 2°
 Cohesion = 0.112 kg/cm²

Checked by
 (.....)

Tested by,
 (Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 1
 Depth : 1,00

Date : 6 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 1 D

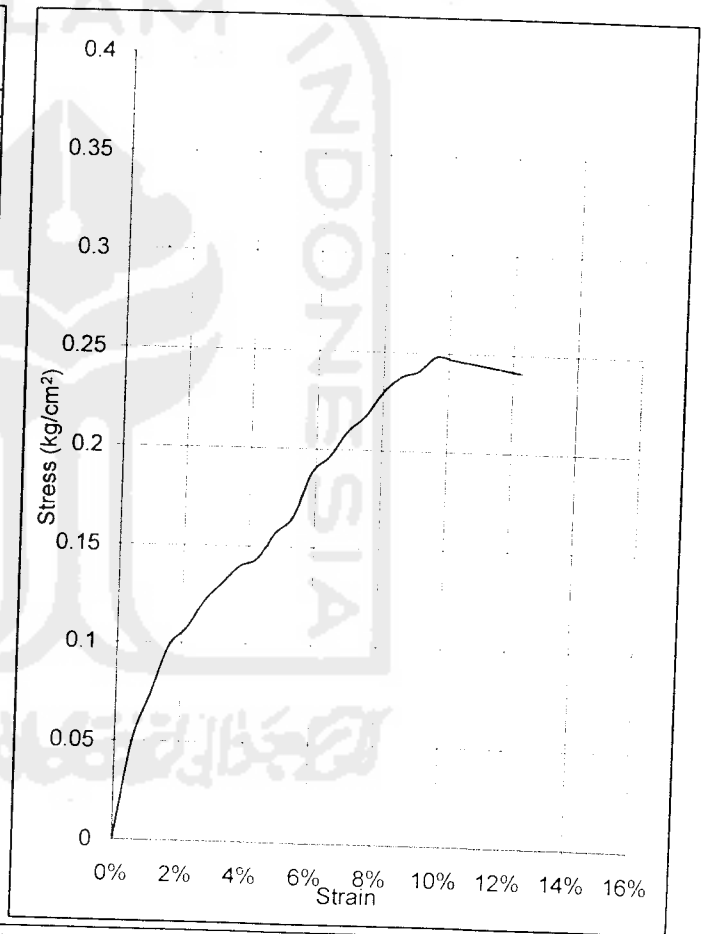
Lempung dengan kolom kapur 3 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht,Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	137.15
Wet Unit wt (gr/cm ³)	1.80
Dry Unit wt (gr/cm ³)	1.32319

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1	0.53%	0.5083	0.049671
80	1.5	1.07%	0.76245	0.074107
120	2	1.60%	1.0166	0.098277
160	2.2	2.13%	1.11826	0.107518
200	2.5	2.67%	1.27075	0.121514
240	2.7	3.20%	1.37241	0.130516
280	2.9	3.73%	1.47407	0.139412
320	3	4.27%	1.5249	0.14342
360	3.3	4.80%	1.67739	0.156883
400	3.5	5.33%	1.77905	0.165459
440	4	5.87%	2.0332	0.188031
480	4.2	6.40%	2.13486	0.196314
520	4.5	6.93%	2.28735	0.209137
560	4.7	7.47%	2.38901	0.217181
600	5	8.00%	2.5415	0.229712
640	5.2	8.53%	2.64316	0.237515
680	5.3	9.07%	2.69399	0.240671
720	5.5	9.60%	2.79565	0.248200
760	5.5	10.13%	2.79565	0.246824
800	5.5	10.67%	2.79565	0.245359
840	5.5	11.20%	2.79565	0.243894
880	5.5	11.73%	2.79565	0.242429
920	5.5	12.27%	2.79565	0.240964
960			0	0
1000			0	0
1040			0	0
1080			0	0
1120			0	0



qu = 0.24829 kg/cm²
 α = 49°
 Angle Of Internal friction, φ = 8°
 Cohesion = 0.108 kg/cm²

Checked by

(.....)

Tested by,

(Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 2
 Depth : 1,00

Date : 6 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 2 D

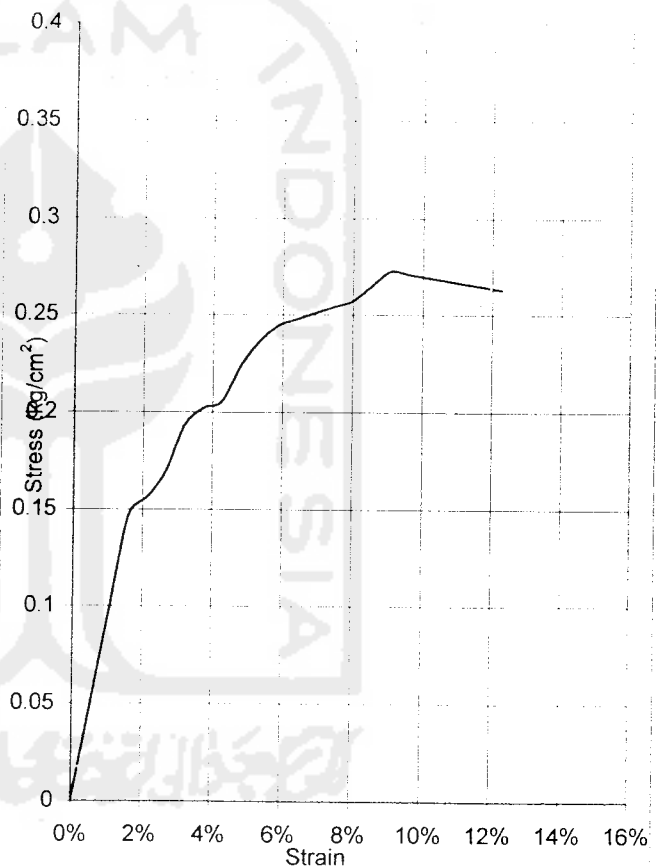
Lempung Dgn kolom kapur 3 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht,Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	135.2
Wet Unit wt (gr/cm ³)	1.77
Dry Unit wt (gr/cm ³)	1.30438

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1	0.53%	0.5083	0.049671
80	2	1.07%	1.0166	0.098809
120	3	1.60%	1.5249	0.147415
160	3.2	2.13%	1.62656	0.15639
200	3.5	2.67%	1.77905	0.17012
240	4	3.20%	2.0332	0.193357
280	4.2	3.73%	2.13486	0.201907
320	4.3	4.27%	2.18569	0.205569
360	4.7	4.80%	2.38901	0.22344
400	5	5.33%	2.5415	0.23637
440	5.2	5.87%	2.64316	0.24444
480	5.3	6.40%	2.69399	0.247729
520	5.4	6.93%	2.74482	0.250965
560	5.5	7.47%	2.79565	0.254148
600	5.6	8.00%	2.84648	0.257277
640	5.8	8.53%	2.94814	0.264921
680	6	9.07%	3.0498	0.272458
720	6	9.60%	3.0498	0.27086
760	6	10.13%	3.0498	0.269262
800	6	10.67%	3.0498	0.267664
840	6	11.20%	3.0498	0.266066
880	6	11.73%	3.0498	0.264468
920	6	12.27%	3.0498	0.26287
960			0	0
1000			0	0
1040			0	0
1080			0	0
1120			0	0



qu =	0.27246 kg/cm ²
α =	46 °
Angle Of Internal friction, φ =	2 °
Cohesion =	0.132 kg/cm ²

Checked by

(.....)

Tested by,

(Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 2
 Depth : 1,00

Date : 6 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 2 D

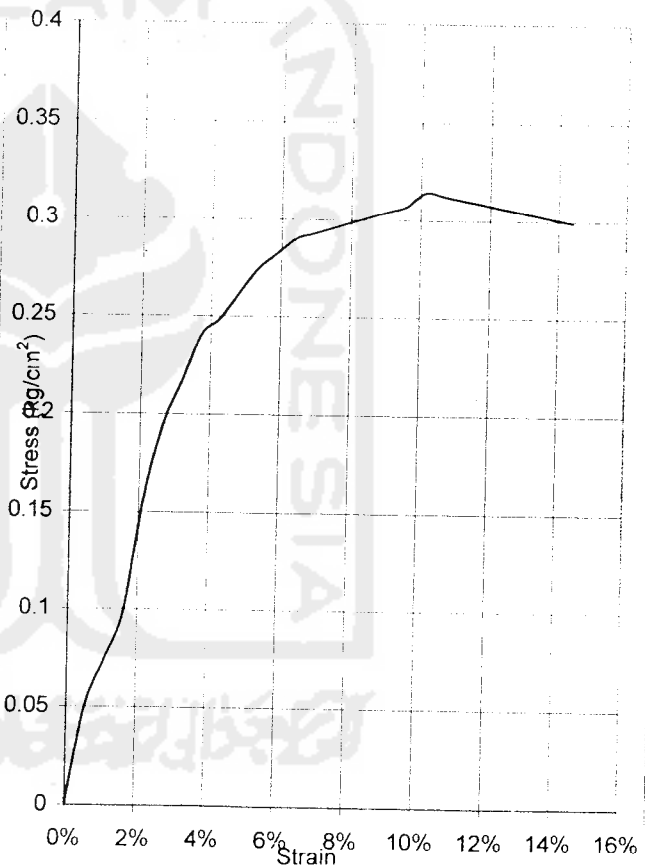
Lempung Dgn kolom kapur 3 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht.Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	137.4
Wet Unit wt (gr/cm ³)	1.80
Dry Unit wt (gr/cm ³)	1.32561

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1	0.53%	0.5083	0.049671
80	1.5	1.07%	0.76245	0.074107
120	2	1.60%	1.0166	0.098277
160	3.2	2.13%	1.62656	0.15639
200	4	2.67%	2.0332	0.194423
240	4.5	3.20%	2.28735	0.217527
280	5	3.73%	2.5415	0.240365
320	5.2	4.27%	2.64316	0.248595
360	5.5	4.80%	2.79565	0.261472
400	5.8	5.33%	2.94814	0.274189
440	6	5.87%	3.0498	0.282046
480	6.2	6.40%	3.15146	0.289796
520	6.3	6.93%	3.20229	0.292792
560	6.4	7.47%	3.25312	0.295735
600	6.5	8.00%	3.30395	0.298625
640	6.6	8.53%	3.35478	0.301462
680	6.7	9.07%	3.40561	0.304245
720	6.8	9.60%	3.45644	0.306975
760	7	10.13%	3.5581	0.314139
800	7	10.67%	3.5581	0.312275
840	7	11.20%	3.5581	0.31041
880	7	11.73%	3.5581	0.308546
920	7	12.27%	3.5581	0.306682
960	7	12.80%	3.5581	0.304817
1000	7	13.33%	3.5581	0.302953
1040	7	13.87%	3.5581	0.301089
1080	7	14.40%	3.5581	0.299224
1120			0	0



qu = 0.31414 kg/cm²
 α = 46°
 Angle Of Internal friction, φ = 2°
 Cohesion = 0.152 kg/cm²

Checked by

(.....)

Tested by,

(Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 3
 Depth : 1,00

Date : 10 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 1 D

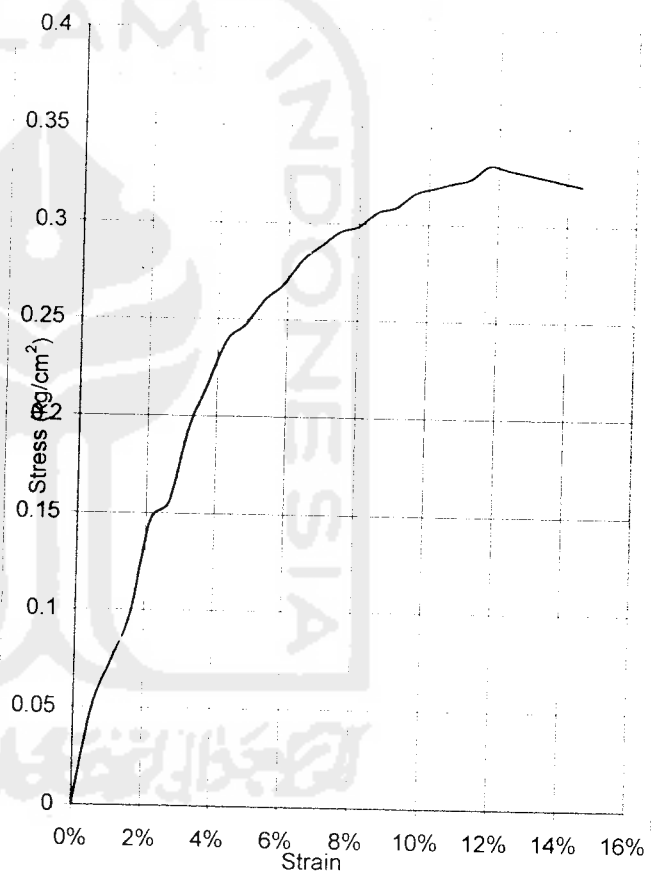
Lempung Dgn kolom kapur 7 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht, Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	133.78
Wet Unit wt (gr/cm ³)	1.75
Dry Unit wt (gr/cm ³)	1.29068

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1	0.53%	0.5083	0.049671
80	1.5	1.07%	0.76245	0.074107
120	2	1.60%	1.0166	0.098277
160	3	2.13%	1.5249	0.146616
200	3.2	2.67%	1.62656	0.155538
240	4	3.20%	2.0332	0.193357
280	4.5	3.73%	2.28735	0.216328
320	5	4.27%	2.5415	0.239033
360	5.2	4.80%	2.64316	0.24721
400	5.5	5.33%	2.79565	0.260007
440	5.7	5.87%	2.89731	0.267944
480	6	6.40%	3.0498	0.280448
520	6.2	6.93%	3.15146	0.288145
560	6.4	7.47%	3.25312	0.295735
600	6.5	8.00%	3.30395	0.298625
640	6.7	8.53%	3.40561	0.306029
680	6.8	9.07%	3.45644	0.308786
720	7	9.60%	3.5581	0.316003
760	7.1	10.13%	3.60893	0.318627
800	7.2	10.67%	3.65976	0.321197
840	7.3	11.20%	3.71059	0.323714
880	7.5	11.73%	3.81225	0.330585
920	7.5	12.27%	3.81225	0.328588
960	7.5	12.80%	3.81225	0.32659
1000	7.5	13.33%	3.81225	0.324593
1040	7.5	13.87%	3.81225	0.322595
1080	7.5	14.40%	3.81225	0.320598
1120			0	0



qu = 0.33059 kg/cm²
 α = 46°
 Angle Of Internal friction, φ = 2°
 Cohesion = 0.160 kg/cm²

Checked by
 (.....)

Tested by,
 (Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 3
 Depth : 1,00

Date : 10 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 2 D

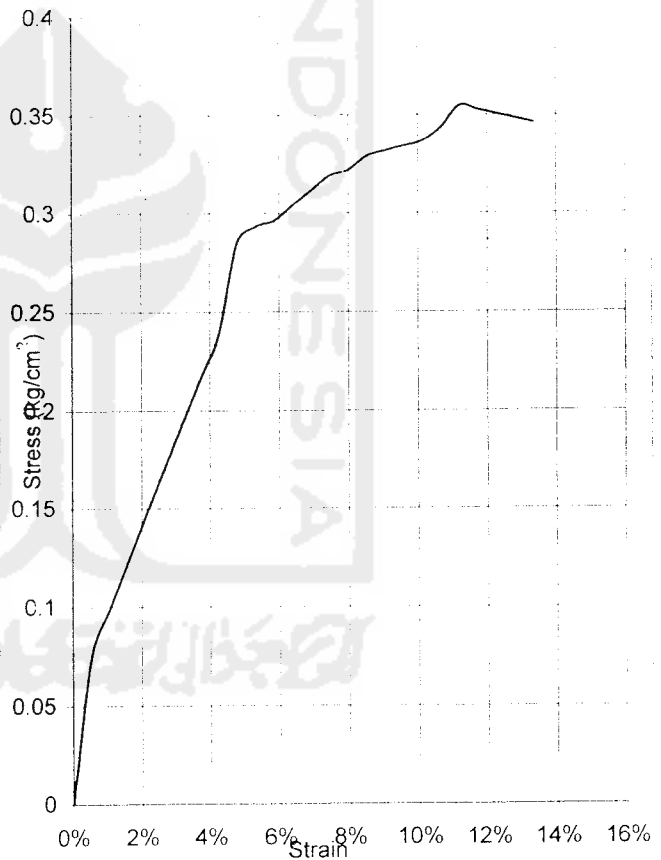
Lempung Dgn kolom kapur 7 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht,Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	139.75
Wet Unit wt (gr/cm ³)	1.83
Dry Unit wt (gr/cm ³)	1.34828

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1.5	0.53%	0.76245	0.074506
80	2	1.07%	1.0166	0.098809
120	2.5	1.60%	1.27075	0.122846
160	3	2.13%	1.5249	0.146616
200	3.5	2.67%	1.77905	0.17012
240	4	3.20%	2.0332	0.193357
280	4.5	3.73%	2.28735	0.216328
320	5	4.27%	2.5415	0.239033
360	6	4.80%	3.0498	0.285242
400	6.2	5.33%	3.15146	0.293099
440	6.3	5.87%	3.20229	0.296148
480	6.5	6.40%	3.30395	0.303819
520	6.7	6.93%	3.40561	0.311382
560	6.9	7.47%	3.50727	0.31884
600	7	8.00%	3.5581	0.321596
640	7.2	8.53%	3.65976	0.328867
680	7.3	9.07%	3.71059	0.331491
720	7.4	9.60%	3.76142	0.334061
760	7.5	10.13%	3.81225	0.336578
800	7.7	10.67%	3.91391	0.343502
840	8	11.20%	4.0664	0.354755
880	8	11.73%	4.0664	0.352624
920	8	12.27%	4.0664	0.350493
960	8	12.80%	4.0664	0.348363
1000	8	13.33%	4.0664	0.346232
1040			0	0
1080			0	0
1120			0	0



qu = 0.35475 kg/cm²
 α = 52 °
 Angle Of Internal friction, φ = 14 °
 Cohesion = 0.139 kg/cm²

Checked by
 (.....)

Tested by,
 (Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan: Tugas Akhir
 Location : Jombor klaten
 Boring No. : 3
 Depth : 1,00

Date : 10 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 3 D

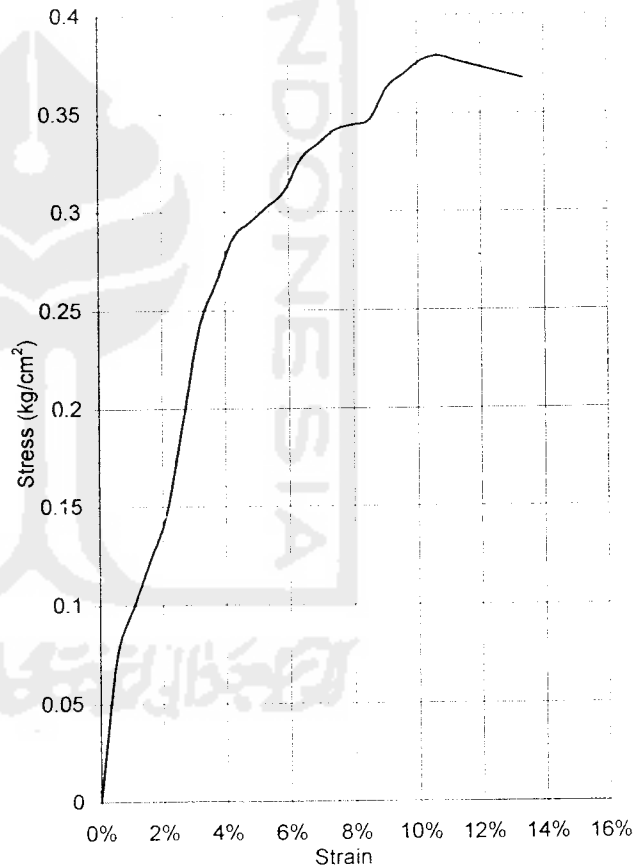
Lempung Dengan kolom kapur

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht,Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	135.24
Wet Unit wt (gr/cm ³)	1.77
Dry Unit wt (gr/cm ³)	1.30477

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1.5	0.53%	0.76245	0.074506
80	2	1.07%	1.0166	0.098809
120	2.5	1.60%	1.27075	0.122846
160	3	2.13%	1.5249	0.146616
200	4	2.67%	2.0332	0.194423
240	5	3.20%	2.5415	0.241697
280	5.5	3.73%	2.79565	0.264401
320	6	4.27%	3.0498	0.28684
360	6.2	4.80%	3.15146	0.29475
400	6.4	5.33%	3.25312	0.302554
440	6.6	5.87%	3.35478	0.310251
480	7	6.40%	3.5581	0.327189
520	7.2	6.93%	3.65976	0.33462
560	7.4	7.47%	3.76142	0.341944
600	7.5	8.00%	3.81225	0.344568
640	7.6	8.53%	3.86308	0.347138
680	8	9.07%	4.0664	0.363277
720	8.2	9.60%	4.16806	0.370175
760	8.4	10.13%	4.26972	0.376967
800	8.5	10.67%	4.32055	0.379191
840	8.5	11.20%	4.32055	0.376927
880	8.5	11.73%	4.32055	0.374663
920	8.5	12.27%	4.32055	0.372399
960	8.5	12.80%	4.32055	0.370135
1000	8.5	13.33%	4.32055	0.367872
1040			0	0
1080			0	0
1120			0	0



qu = 0.37919 kg/cm²
 α = 48°
 Angle Of Internal friction, ϕ = 6°
 Cohesion = 0.171 kg/cm²

Checked by
 (.....)

Tested by,
 (Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 4
 Depth : 1,00

Date : 17 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 1 D

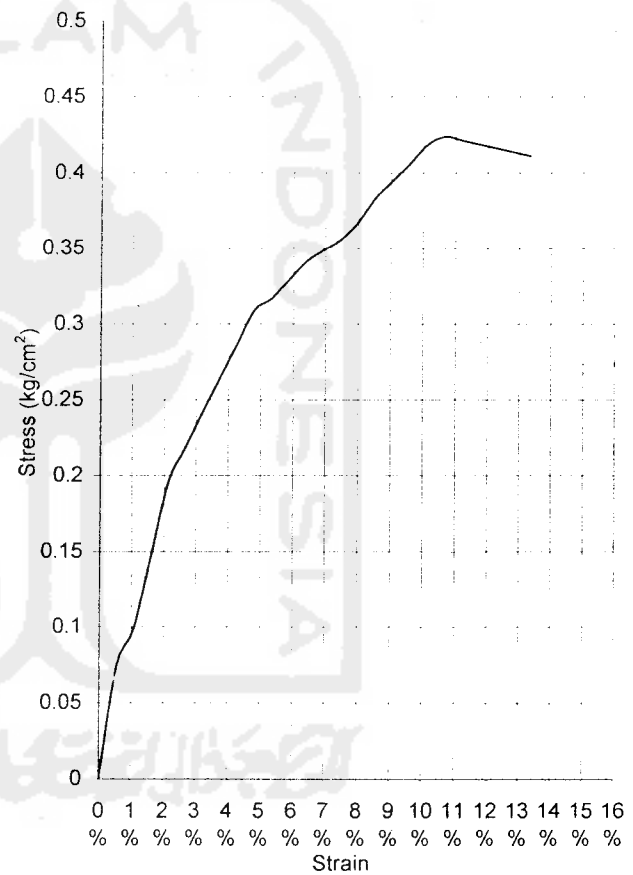
Lempung Dengan kolom kapur 14 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht.Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	145.27
Wet Unit wt (gr/cm ³)	1.90
Dry Unit wt (gr/cm ³)	1.40153

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1.5	0.53%	0.76245	0.074506
80	2	1.07%	1.0166	0.098809
120	3	1.60%	1.5249	0.147415
160	4	2.13%	2.0332	0.195488
200	4.5	2.67%	2.28735	0.218725
240	5	3.20%	2.5415	0.241697
280	5.5	3.73%	2.79565	0.264401
320	6	4.27%	3.0498	0.28684
360	6.5	4.80%	3.30395	0.309012
400	6.7	5.33%	3.40561	0.316736
440	7	5.87%	3.5581	0.329054
480	7.3	6.40%	3.71059	0.341212
520	7.5	6.93%	3.81225	0.348562
560	7.7	7.47%	3.91391	0.355807
600	8.0	8.00%	4.0664	0.367539
640	8.4	8.53%	4.26972	0.383678
680	8.7	9.07%	4.42221	0.395064
720	9	9.60%	4.5747	0.40629
760	9.3	10.13%	4.742439	0.418702
800	9.5	10.67%	4.82885	0.423801
840	9.5	11.20%	4.82885	0.421271
880	9.5	11.73%	4.82885	0.418741
920	9.5	12.27%	4.82885	0.416211
960	9.5	12.80%	4.82885	0.413681
1000	9.5	13.33%	4.82885	0.411151
1040				
1080				
1120				



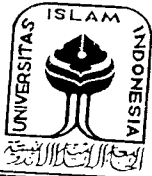
qu = 0.42380 kg/cm²
 α = 63 °
 Angle Of Internal friction, φ = 36 °
 Cohesion = 0.108 kg/cm²

Checked by

(.....)

Tested by,

(Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan : Tugas Akhir
 Location : Jombor klaten
 Boring No. : 4
 Depth : 1,00

Date : 17 Juli 2007
 Tested by : Ashadi Atjo
 Kode : 2 D

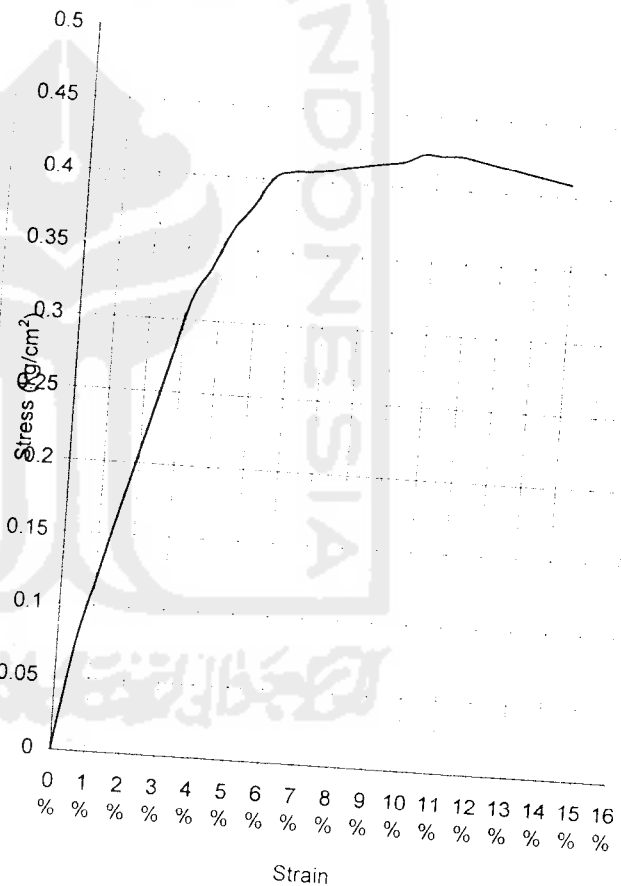
Lempung Dengan kolom kapur 14 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht.Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	143.23
Wet Unit wt (gr/cm ³)	1.88
Dry Unit wt (gr/cm ³)	1.38185

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1.5	0.53%	0.76245	0.074506
80	2.5	1.07%	1.27075	0.123512
120	3.5	1.60%	1.77905	0.171984
160	4.5	2.13%	2.28735	0.219924
200	5.5	2.67%	2.79565	0.267331
240	6.5	3.20%	3.30395	0.314206
280	7	3.73%	3.5581	0.336511
320	7.6	4.27%	3.86308	0.363331
360	8	4.80%	4.0664	0.380323
400	8.5	5.33%	4.310384	0.400883
440	8.6	5.87%	4.386629	0.405676
480	8.7	6.40%	4.42221	0.40665
520	8.8	6.93%	4.462874	0.40805
560	8.9	7.47%	4.52387	0.411257
600	9	8.00%	4.5747	0.413481
640	9.1	8.53%	4.62553	0.415652
680	9.2	9.07%	4.67636	0.417769
720	9.4	9.60%	4.72937	0.423895
760	9.4	10.13%	4.793269	0.42319
800	9.5	10.67%	4.82885	0.423801
840	9.5	11.20%	4.82885	0.421271
880	9.5	11.73%	4.82885	0.418741
920	9.5	12.27%	4.82885	0.416211
960	9.5	12.80%	4.82885	0.413681
1000	9.5	13.33%	4.82885	0.411151
1040	9.5	13.87%	4.82885	0.40862
1080				
1120				



qu = 0.42390 kg/cm²
 α = 73 °
 Angle Of Internal friction, φ = 56 °
 Cohesion = 0.065 kg/cm²

Checked by
 (.....)

Tested by
 (Ashadi Atjo)



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

UNCONFINED COMPRESSION TEST

Keterangan: Tugas Akhir
 Location: Jombor klaten
 Boring No.: 4
 Depth: 1,00

Date: 17 Juli 2007
 Tested by: Ashadi Atjo
 Kode: 3 D

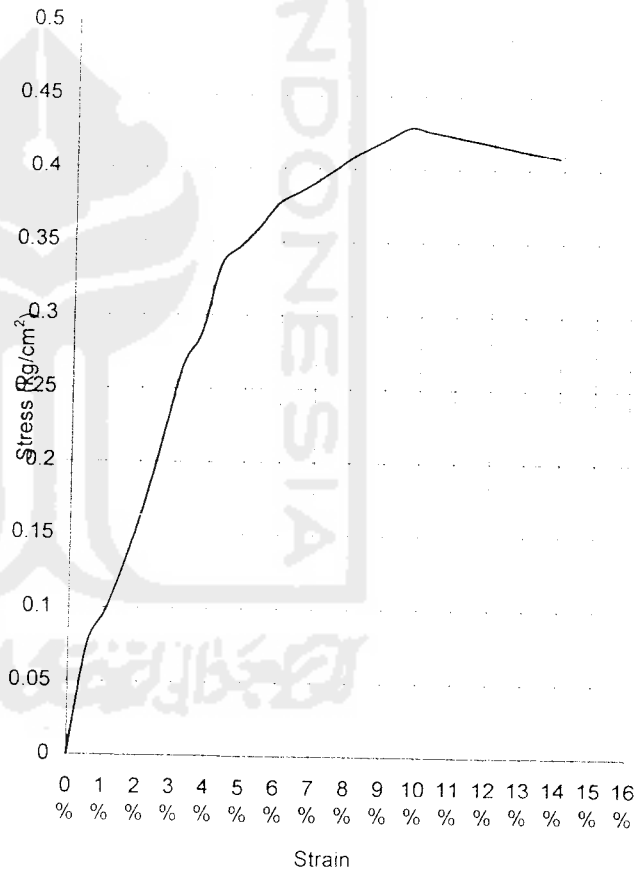
Lempung Dengan kolom kapur 14 hari

Sample data	
diam (cm)	3.6
Area (cm ²)	10.1788
Ht.Lo (cm)	7.5
Vol (cm ³)	76.302
Wt (gr)	144.56
Wet Unit wt (gr/cm ³)	1.89
Dry Unit wt (gr/cm ³)	1.39468

Water Content		
Wt Container (cup), gr	22.00	21.77
Wt of Cup + Wet soil, gr	32.300	32.76
Wt of Cup + Dry soil, gr	29.50	29.95
Water Content %	37.33	34.35
Average water content %	35.84	

LRC = 0.5083 kg/div

Deformation dial rading (x 10 ⁻²)	Load dial (unit)	Unit Strain (ΔL/Lo)	Total load on sample (kg)	Sample stress (kg/cm ²)
0	0	0.00%	0	0
40	1.5	0.53%	0.76245	0.074506
80	2	1.07%	1.0166	0.098809
120	2.7	1.60%	1.362244	0.131691
160	3.5	2.13%	1.77905	0.171052
200	4.5	2.67%	2.28735	0.218725
240	5.5	3.20%	2.79565	0.265866
280	6	3.73%	3.0498	0.288438
320	7	4.27%	3.5581	0.334647
360	7.3	4.80%	3.705507	0.346569
400	7.6	5.33%	3.873246	0.360228
440	8	5.87%	4.0664	0.376061
480	8.2	6.40%	4.16806	0.383279
520	8.4	6.93%	4.274803	0.390855
560	8.7	7.47%	4.396795	0.399705
600	8.9	8.00%	4.52387	0.408887
640	9.1	8.53%	4.62553	0.415652
680	9	9.07%	4.72719	0.42231
720	9.5	9.60%	4.82885	0.428862
760	9.5	10.13%	4.82885	0.426332
800	9.5	10.67%	4.82885	0.423801
840	9.5	11.20%	4.82885	0.421271
880	9.5	11.73%	4.82885	0.418741
920	9.5	12.27%	4.82885	0.416211
960	9.5	12.80%	4.82885	0.413681
1000	9.5	13.33%	4.82885	0.411151
1040	9.5	13.87%	4.82885	0.40862
1080			0	0
1120			0	0



qu = 0.42886 kg/cm²
 α = 47 °
 Angle Of Internal friction, φ = 4 °
 Cohesion = 0.200 kg/cm²

Checked by
 (.....)

Tested by,
 (Ashadi Atjo)