



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

PENGUJIAN KADAR AIR TANAH

PROYEK : Tugas Akhir
 Asal sampel : Mertoyudan, Magelang, Jawa Tengah.

DIKERJAKAN : Okky + Anto
 TANGGAL : 11 Juli 2005

1	No Pengujian (kode sampel)		1	2
2	Berat Container	W1 (gr)	21.92	22.35
3	Berat Container + tanah basah	W2 (gr)	36.90	51.85
4	Berat Container + tanah kering	W3 (gr)	33.05	43.77
5	Berat air	Wa (gr) = (W2-W3)	3.85	8.08
6	Berat tanah Kering	Wo (gr) = (W3-W1)	11.13	21.42
7	Kadar Air	w (%) = $\frac{(W2-W3)}{(W3-W1)} \times 100 \%$	34.59	37.72
8	Kadar Air rata - rata	wrt (%)	36.16 %	

PENGUJIAN BERAT VOLUME TANAH

PROYEK : Tugas Akhir
 Asal sampel : Mertoyudan, Magelang, Jawa Tengah.

DIKERJAKAN : Okky + Anto
 TANGGAL : 14 Juli 2005

1	No Pengujian (kode sampel)		1	2	3
2	Diameter ring	(d) cm	6.40	6.40	6.40
3	Tinggi ring	(t) cm	2.58	2.58	2.58
4	Volume ring	(V) cm ³	82.96	82.96	82.96
5	Berat ring	W1 (gr)	83.05	83.05	83.05
6	Berat ring + tanah	W2 (gr)	237.47	232.51	224.48
7	Berat tanah	Wo (gr) = (W2-W1)	154.42	149.46	141.43
7	Berat volume tanah	γ (gram/cm ³) = $\frac{(W2-W1)}{V}$	1.86	1.80	1.70
8	Berat volume rata - rata	γ_{rt} (gram/cm ³)	1.789		



PENGUJIAN BATAS SUSUT TANAH

PROYEK : Tugas Akhir
Asal sampel : Mertoyudan, Magelang, Jawa Tengah.

DIKERJAKAN : : Okky + Anto
TANGGAL : : 14 Juli 2005

			1	2
1	No Pengujian (kode sampel)			
2	Berat jenis tanah		2.538	
3	Berat Cawan Susut	W1 (gr)	38.13	38.05
4	Berat cawan susut + tanah basah	W2 (gr)	66.73	66.60
5	Berat cawan susut + tanah kering	W3 (gr)	62.14	61.67
6	Berat air	Wa (gr) = (W2-W3)	4.59	4.93
7	Berat tanah Kering	Wo (gr) = (W3-W1)	24.01	23.62
8	Berat air raksa yang terdesak tanah kering + gelas ukur	Wr (gr)	204.91	202.39
9	Berat gelas ukur	W4 (gr)	33.97	33.97
10	Volume tanah kering	Vo (Cm ³) = (Wr-W4)/13,6	12.57	12.38
11	Batas Susut Tanah	SL (%) = ((Vo/Wo)-(1/Gs)) x 100%	12.95	13.03
12	Batas susut tanah rata-rata	SL (%)	12.99	



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UNIVERSITAS ISLAM INDONESIA

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PENGUJIAN BATAS CAIR

PROYEK : Tugas Akhir

Tanggal : 13 Juli 2005

LOKASI : Mertoyudan, Magelang, Jawa Tengah.

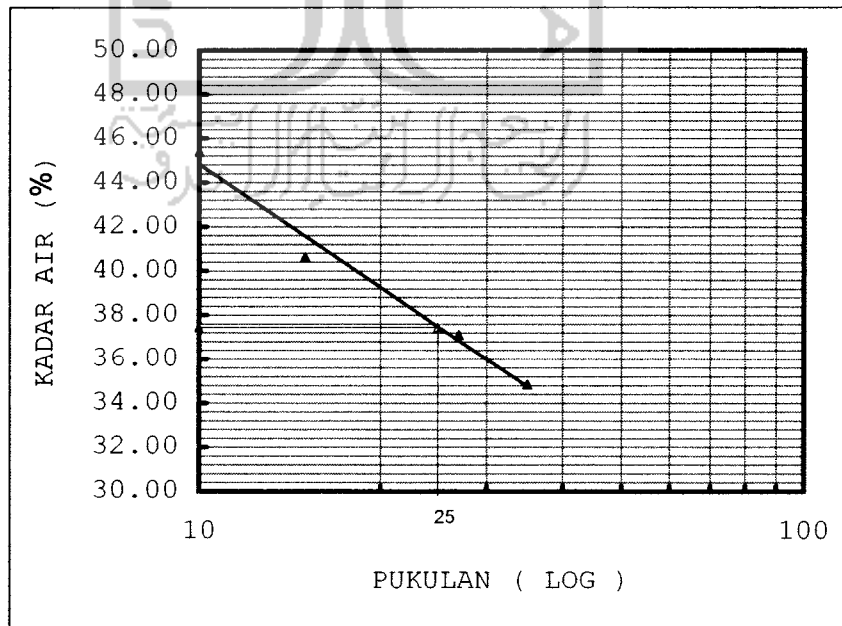
Dikerjakan : Okky dan Anto

NO	NO. PENGUJIAN	I		II		III		IV	
		1	2	3	4	5	6	7	8
1	NO CAWAN								
2	Berat cawan kosong	21.75	22.30	22.10	15.00	21.72	21.79	21.88	22.13
3	Berat cawan + tanah basah (gr)	53.70	50.67	40.90	36.51	43.20	55.80	44.66	43.92
4	Berat cawan + tanah kering (gr)	43.76	41.78	35.49	30.27	37.38	46.60	38.76	38.30
5	Berat air (3) - (4)	9.94	8.89	5.41	6.24	5.82	9.20	5.90	5.62
6	Berat tanah kering (4) - (2)	22.01	19.48	13.39	15.27	15.66	24.81	16.88	16.17
7	$\text{KADAR AIR} = \frac{(5)}{(6)} \times 100\% =$	45.16	45.64	40.40	40.86	37.16	37.08	34.95	34.76
8	KADAR AIR RATA-RATA =		45.40		40.63		37.12		34.85
9	PUKULAN		10		15		27		35

PENGUJIAN BATAS PLASTIS

NO		
1	NO CAWAN	1
2	BERAT CAWAN KOSONG	21.90
3	BERAT CAWAN + TANAH BASAH	23.49
4	BERAT CAWAN + TANAH KERING	23.18
5	BERAT AIR (3)-(4)	0.31
6	BERAT TANAH KERING (4)-(2)	1.28
7	$\text{KADAR AIR} = \frac{(5)}{(6)} \times 100\% =$	24.22
8	KADAR AIR RATA-RATA =	24.22

KESIMPULAN		
FLOW INDEX	:	7.193
BATAS CAIR	:	37.47
BATAS PLASTIS	:	24.22
INDEX PLASTISITAS	:	13.25





PEMADATAN TANAH Proctor test

PROYEK : Tugas Akhir
 Asal Sampel : Mertoyudan, Magelang, Jawa Tengah
 NO Sampel : _____
 Komposisi : _____

DIKERJAKAN : Okky + Anto
 TANGGAL : 12-Jul-05

DATA SILINDER	
1	Diameter (ϕ) cm : 10.1
2	Tinggi (H) cm : 11.6
3	Volume (V) cm ³ : 929.37
4	Berat gram : 1859

DATA PENUMBUK	
Berat (kg)	2.505
Jumlah lapis	3
Jumlah tumbukan /lapis	25
Tinggi jatuh	30.48

Berat jenis Gs : 2.538

PENAMBAHAN AIR						
1	Berat tanah absah gram	2000	2000	2000	2000	2000
2	Kadar air mula-mula %	8.60	8.60	8.60	8.60	8.60
3	Penambahan air %	0	5	10	15	20
4	Penambahan air ml	0	100	200	300	400

PENGUJIAN PEMADATAN SILINDER						
1	Nomor pengujian	1	2	3	4	5
2	Berat silinder + tanah padat gram	3367.5	3538	3654	3658	3550
3	Berat tanah padat gram	1508.5	1679	1795	1799	1691
4	Berat volume tanah gr/cm ³	1.623	1.807	1.931	1.936	1.820

PENGUJIAN KADAR AIR											
1	NOMOR PERCOBAAN	1		2		3		4		5	
2	Nomor cawan	a	b	a	b	a	b	a	b	a	b
3	Berat cawan kosong gram	21.45	21.37	22.02	21.81	22.34	21.68	21.92	21.65	21.92	21.79
4	Berat cawan + tanah basah gram	46.91	45.31	36.45	71.79	38.41	40.24	42.35	85.53	46.39	64.97
5	Berat cawan + tanah kering gram	44.98	43.30	34.65	65.50	35.76	37.20	38.30	72.78	40.92	55.25
8	Kadar air = w %	8.20	9.17	14.25	14.40	19.75	19.59	24.73	24.94	28.79	29.05
9	Kadar air rata-rata	8.68		14.32		19.67		24.83		28.92	
10	Berat volume tanah kering gr/cm ³	1.493		1.580		1.614		1.551		1.411	

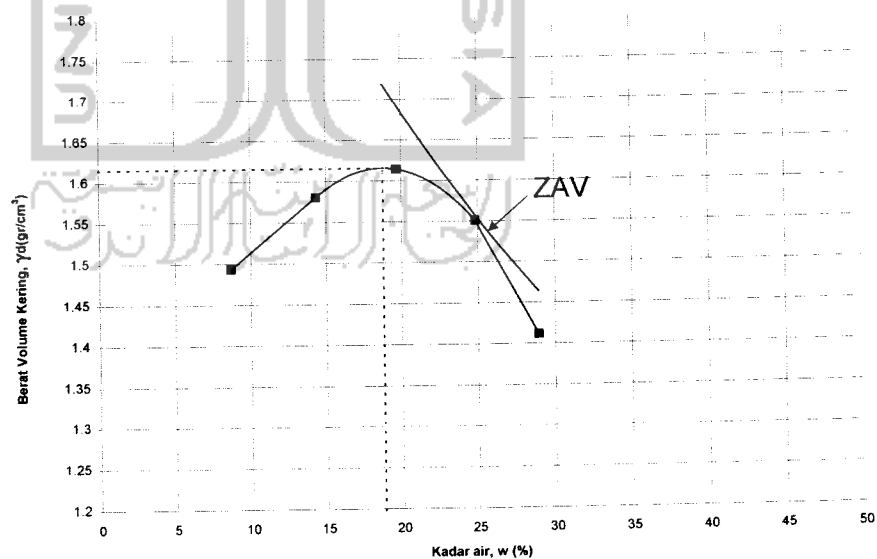
**BERAT VOLUME KERING
MAKSIMUM (gr/cm³)**

1.61537

KADAR AIR OPTIMUM (%)

18.78

Diperiksa :



GRAIN SIZE ANALYSIS

Project : TA
 Test no : 1
 Depth : 0-2.00 meter
 Location : Mertoyudan, Magelang, Jawa Tengah.
 Date : 20 Agustus 2005
 Tested by : Okky + Anto

Soil sample (disturbed/undisturbed)

Mass of soil = 60 gr
 Specific Gravity, G = 2.538
 K₂ = a/W x 100 = 1.71246657
 Hydrometer type = 152 H
 Hydr. Correction, a = 1.027
 Meniscus correction, m = 1

Sieve Analysis

Sieve No	Opening (mm)	Mass retained (gr)	Mass retained (gr)	% finer by mass e/W x 100%	Remarks
4	4.750	d1 = 0.00	e1 = 60.00	100.00	e7 = W - Sd
10	2.000	d2 = 1.90	e2 = 58.10	96.83	e6 = d7 + e7
20	0.850	d3 = 0.82	e3 = 57.28	95.47	e5 = d6 + e6
40	0.425	d4 = 0.93	e4 = 56.35	93.92	e4 = d5 + e5
60	0.250	d5 = 1.15	e5 = 55.20	92.00	e3 = d4 + e4
140	0.106	d6 = 10.35	e6 = 44.85	74.75	e2 = d3 + e3
200	0.075	d7 = 1.10	e7 = 43.75	72.92	e1 = d2 + e2
		Sd = 16.25			

Hirometer Analysis

Time	elapsed time min. T	R1	R2	t	R'	R1 + m	L	K	D (mm)	Rc = R1 - R2 + Cr	P / K ₂ x R (%)
9.29											
9.31	2	30	-2.0	27	31	11.219	0.0129	0.03053605		33.3	57.03
9.34	5	25	-2.0	27	26	12.038	0.0129	0.0200049		28.3	48.46
9.59	30	17	-2.0	27	18	13.348	0.0129	0.00859982		20.3	34.76
10.29	60	14	-2.0	26	15	13.839	0.0131	0.00629467		17.3	29.63
13.39	250	12	-2.0	26	13	14.166	0.0131	0.00312002		15.3	26.20
9.29	1440	10	-2.0	25	11	14.494	0.0131	0.00131495		13.3	22.78

Remarks :

Rc = R1 - R2 + Cr (Cr = Temperatur correction factors)

R' = R1 + m (m correctoin for meniscus)

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GRAIN SIZE ANALYSIS

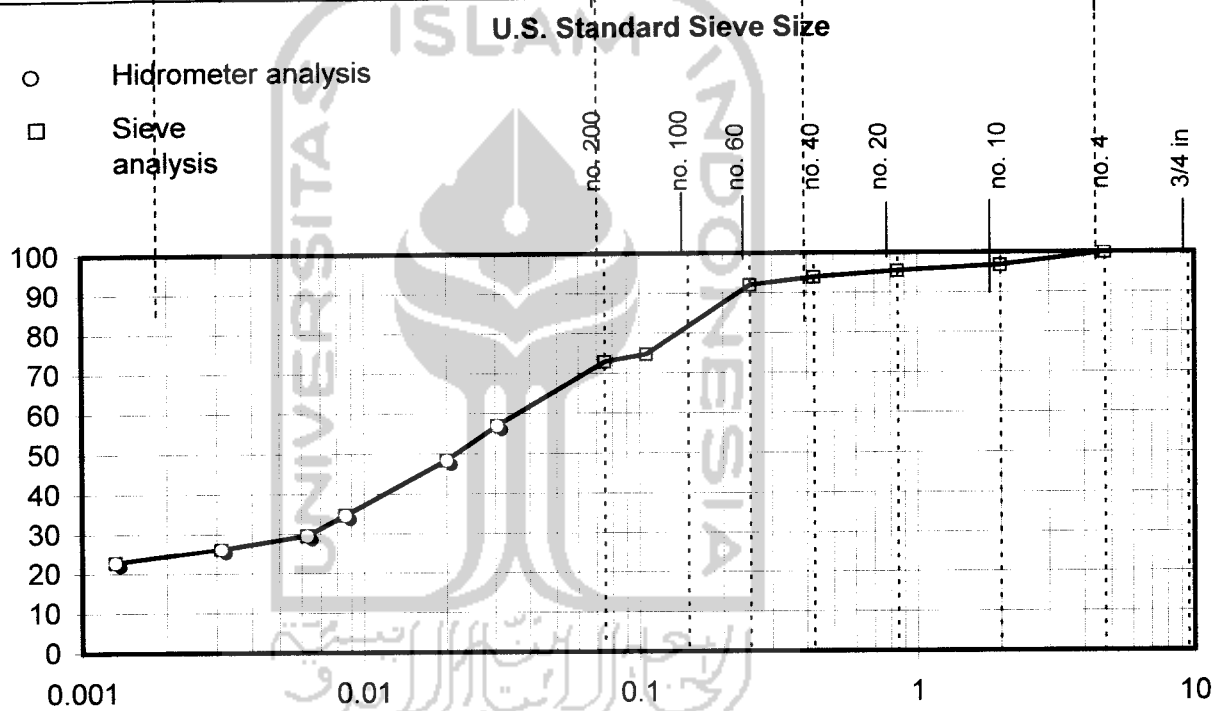
Project : TA
 Tested : Okky + Anto
 Sample no. : 1
 Date : 20 Agustus 2005
 Depth : 0-2.00 meter
 Location : Mertoyudan, Magelang, Jawa Tengah.

Soil sample (disturbed/undisturbed)

Specific Gravity : 2.538

Description of soil : Silt Clay

Clay	Silt	Sand		Gravel
		Fine	Coarse to medium	



Finer # 200 :	72.918 %	D10 (mm)	
		D30 (mm)	0.0065
Gravel :	0.00 %	D60 (mm)	0.0350
Sand :	27.08 %	Cu = D60/D10	
Silt :	35.24 %	Cc = D30 ² / (D10xD60)	
Clay :	12.46 %		

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GRAIN SIZE ANALYSIS

Project : TA
 Test no : 2
 Depth : 0-2.00 meter

Location : Mertoyudan, Magelang, Jawa Tengah.
 Date : 20 Agustus 2005
 Tested by : Okky + Anto

Soil sample (disturbed/undisturbed)

Mass of soil = 60 gr
 Specific Gravity, G = 2.538
 $K_2 = a/W \times 100 = 1.71246657$

Hydrometer type = 152 H
 Hydr. Correction, a = 1.027
 Meniscus correction, m = 1

Sieve Analysis

Sieve No	Opening (mm)	Mass retained (gr)	Mass retained (gr)	% finer by mass $e/W \times 100\%$	Remarks
4	4.750	d1 = 0.00	e1 = 60.00	100.00	e7 = W - Sd
10	2.000	d2 = 2.10	e2 = 57.90	96.50	e6 = d7 + e7
20	0.850	d3 = 0.86	e3 = 57.04	95.07	e5 = d6 + e6
40	0.425	d4 = 1.10	e4 = 55.94	93.23	e4 = d5 + e5
60	0.250	d5 = 1.40	e5 = 54.54	90.90	e3 = d4 + e4
140	0.106	d6 = 10.10	e6 = 44.44	74.07	e2 = d3 + e3
200	0.075	d7 = 2.42	e7 = 42.02	70.03	e1 = d2 + e2
		Sd = 17.98			

Hirometer Analysis

Time	elapsed time min. T	R1	R2	t	R'	R1 + m	L	K	D (mm)	Rc = R1 - R2 + Cr	P K2 x R (%)
9.29											
9.31	2	32	-2.0	27	33	10.892	0.0129	0.03008711		35.3	60.45
9.34	5	25	-2.0	27	26	12.038	0.0129	0.0200049		28.3	48.46
9.59	30	15	-2.0	27	16	13.675	0.0129	0.00870468		18.3	31.34
10.29	60	12	-2.0	26	13	14.166	0.0131	0.00636871		15.3	26.20
13.39	250	10	-2.0	26	11	14.494	0.0131	0.00315587		13.3	22.78
9.29	1440	8	-2.0	25	9	14.821	0.0131	0.00132972		11.3	19.35

Remarks :

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

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

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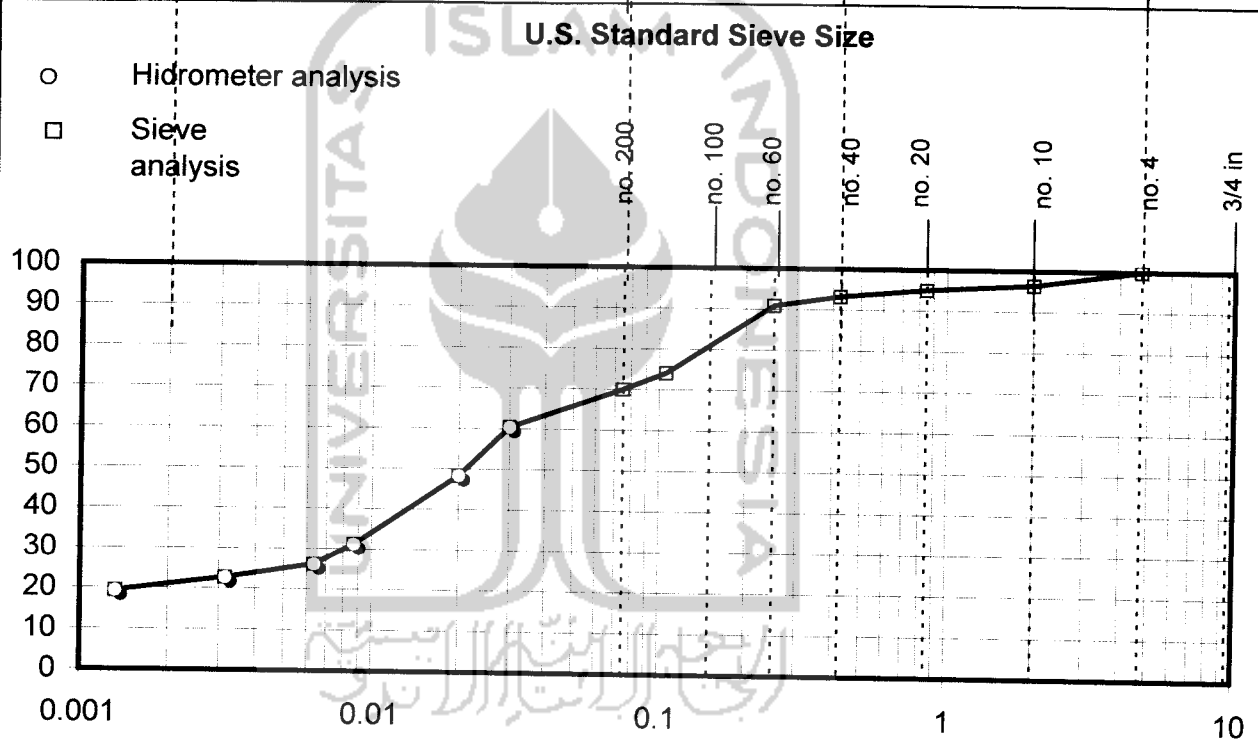
GRAIN SIZE ANALYSIS

Project : TA	Tested : Okky + Anto
Smple no. : 2	Date : 20 Agustus 2005
Depth : 0-2,00 meter	Location : Mertoyudan, Magelang, Jawa Tengah.

Soil sample (disturbed/undisturbed)

Specifig Gravity : 2.538
 Discription of soil : Silt Clay

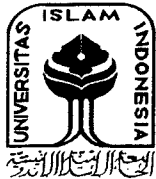
Clay	Silt	Sand		Gravel
		Fine	Coarse to medium	



Finer # 200 :	70.033 %	D10 (mm)	
		D30 (mm)	0.0086
Gravel :	0.00 %	D60 (mm)	0.0300
Sand :	29.97 %	Cu = D60/D10	
Silt :	35.79 %	Cc = D30 ² / (D10xD60)	
Clay :	16.44 %		

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 ISLAMIC UNIVERSITY OF INDONESIA**

LAMPIRAN NO.8



LABORATORIUM MEKANIKA TANAH
 JURUSAN TEKNIK SIPIL-FTSP
 UNIVERSITAS ISLAM INDONESIA

Proyek : Tugas Akhir
 Lokasi : Mertoyudan, Magelang, Jawa Tengah
 No. Titik :
 kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
 dikerjakan : Okky + Anto

Beban P (Kg)			0.50	1.00	2.00	4.00	8.00	16.00	4.00	0.50
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	2,00 (*)	0,25 (*)
	0	0	10.000	9.630	9.437	9.025	8.715	8.220	7.690	7.735
	5,40"	0.3	9.850	9.600	9.340	8.930	8.530	8.000		
	15,00"	0.5	9.840	9.580	9.320	8.910	8.490	7.960		
	29,40"	0.7	9.815	9.570	9.309	8.900	8.470	7.940		
	1,00'	1.0	9.800	9.565	9.290	8.890	8.445	7.910		
	2,25"	1.5	9.780	9.550	9.275	8.870	8.415	7.870		
	4,00"	2.0	9.770	9.545	9.262	8.850	8.385	7.845		
	6,25"	2.5	9.760	9.540	9.250	8.840	8.375	7.820		
	9,00"	3.0	9.750	9.530	9.243	8.831	8.360	7.803		
	12,25"	3.5	9.740	9.525	9.235	8.824	8.352	7.790		
	16,00"	4.0	9.730	9.520	9.230	8.814	8.340	7.778		
	25,00"	5.0	9.716	9.510	9.218	8.800	8.327	7.760		
	36,00"	5.8	9.705	9.500	9.208	8.792	8.315	7.750		
	49,00"	7.0	9.700	9.491	9.200	8.781	8.307	7.740		
1,04'	64,00"	8.0	9.695	9.480	9.195	8.765	8.299	7.730		
1,21'	81,00"	9.6	9.688	9.475	9.190	8.748	8.290	7.725		
1,40'	100,00"	10.0	9.683	9.472	9.185	8.742	8.283	7.720		
2,01'	121,00"	11.0	9.680	9.470	9.180	8.735	8.280	7.713		
2,24'	144,00"	12.0	9.680	9.470	9.178	8.725	8.272	7.710		
3,45'	225,00"	15.0								
6,40'	400,00"	20.0								
24,0'	1440,00"	38.0	9.630	9.437	9.025	8.715	8.220	7.690	7.735	8.150



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

HITUNGAN UJI KONSOLIDASI

Proyek : Tugas Akhir
 Lokasi : Mertoyudan, Magelang, Jawa Tengah
 No. Titik :
 kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
 dikerjakan : Okky + Anto

Berat Jenis Tanah : 2.538 Luas ring (cm²) : 19.635
 Berat ring (gr) : 36.3 Tinggi (H₀) (cm) : 2.06
 Diameter (cm) : 5 Volume V₀ (cm³) : 40.448

Beban (kg/cm ²)	Pembacaan akhir dial (mm)	Perubahan tebal ΔH (cm)	Perubahan angka pori $\frac{\Delta H}{H_1} = \frac{\Delta e}{e_1}$	Angka pori $e = e_1 - \Delta e$	$Cc = \frac{\Delta e}{\log \frac{P_2}{P_1}}$	tebal akhir H=H ₁ -ΔH	1/2 tebal rata-rata d=(H ₁ +H ₂)/2	$\sqrt{t_{90}}$	t ₉₀ (detik)	$Cv = \frac{0.848 \times (d/2)^2}{t_{90}}$ (cm ² /det)
0.00	10.000			0.923			1.02075			
		0.037	0.035			2.023		6	2160	0.000409
0.25	9.630			0.888			1.006675			
		0.019	0.018		0.060	2.004		6.6	2613.6	0.000329
0.50	9.437			0.870			0.99155			
		0.041	0.038		0.128	1.963		6	2160	0.000386
1.00	9.025			0.832			0.9735			
		0.031	0.029		0.096	1.932		8.8	4646.4	0.000173
2.00	8.715			0.803			0.953375			
		0.049	0.046		0.153	1.882		6.45	2496.15	0.000309
4.00	8.220			0.757			0.92775			
		0.053	0.049		0.164	1.829		6.35	2419.35	0.000302
8.00	7.690			0.707						
		-0.045	-0.042		0.070					
2.00	7.735			0.749						
		-0.042	-0.039		0.043					
0.25	8.150			0.788						
0.00										



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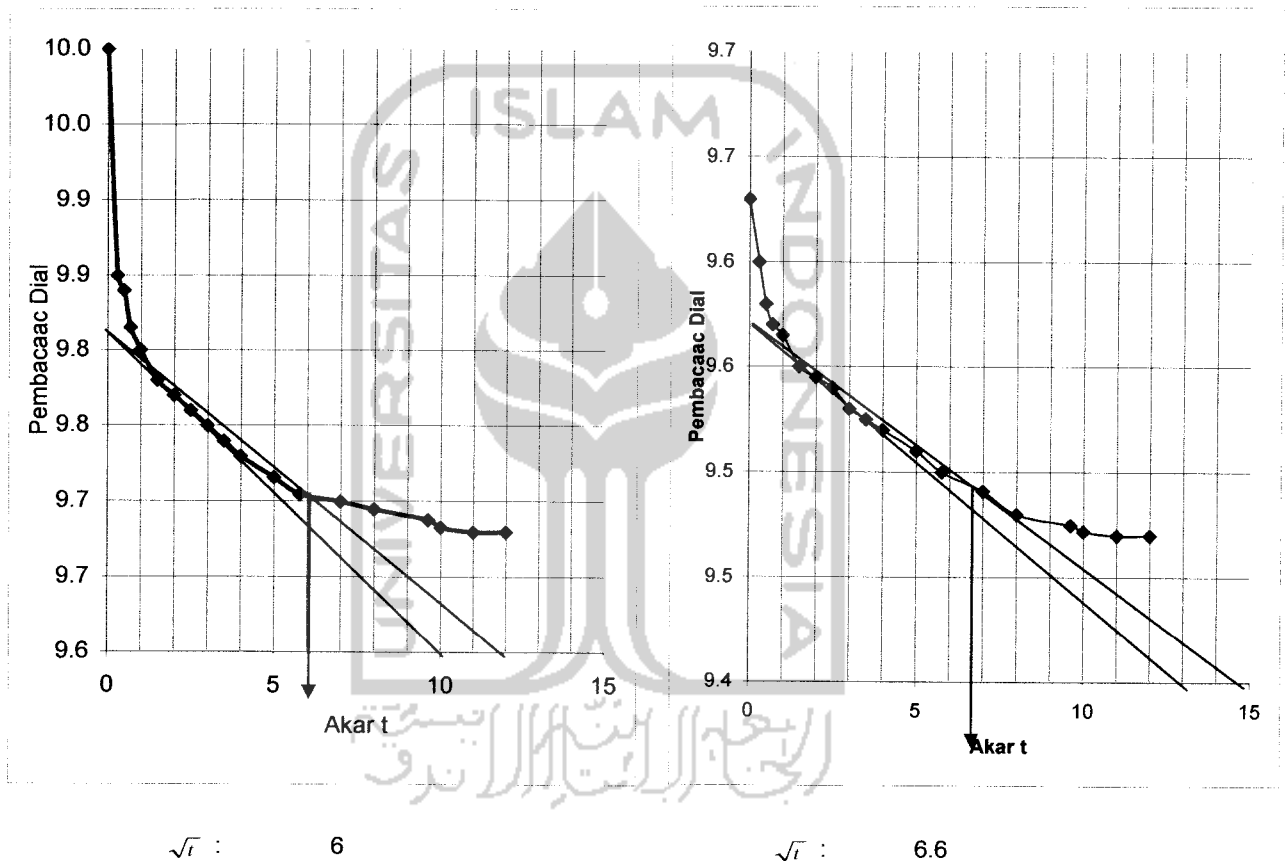
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Beban 0.25 kg/cm²

Beban 0.5 kg/cm²





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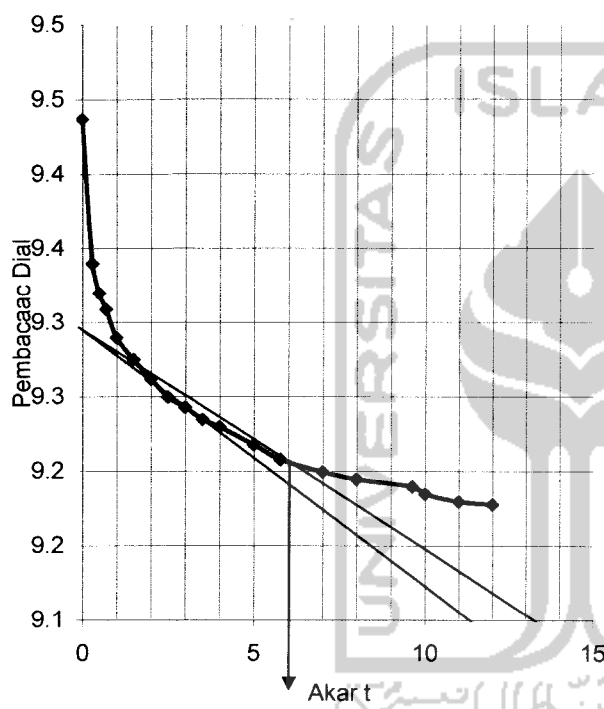
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman : 2.00 meter

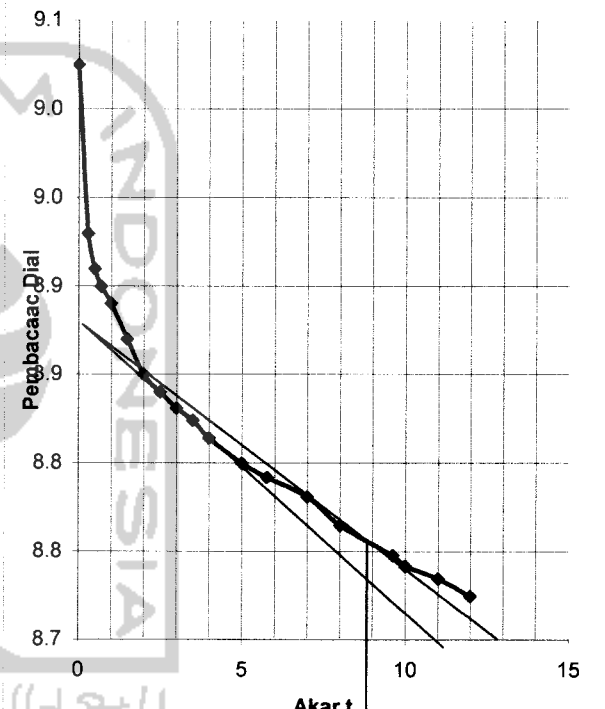
Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Beban 1.00 kg/cm²

Beban 2.00 kg/cm²



\sqrt{t} : 6



\sqrt{t} : 8.8



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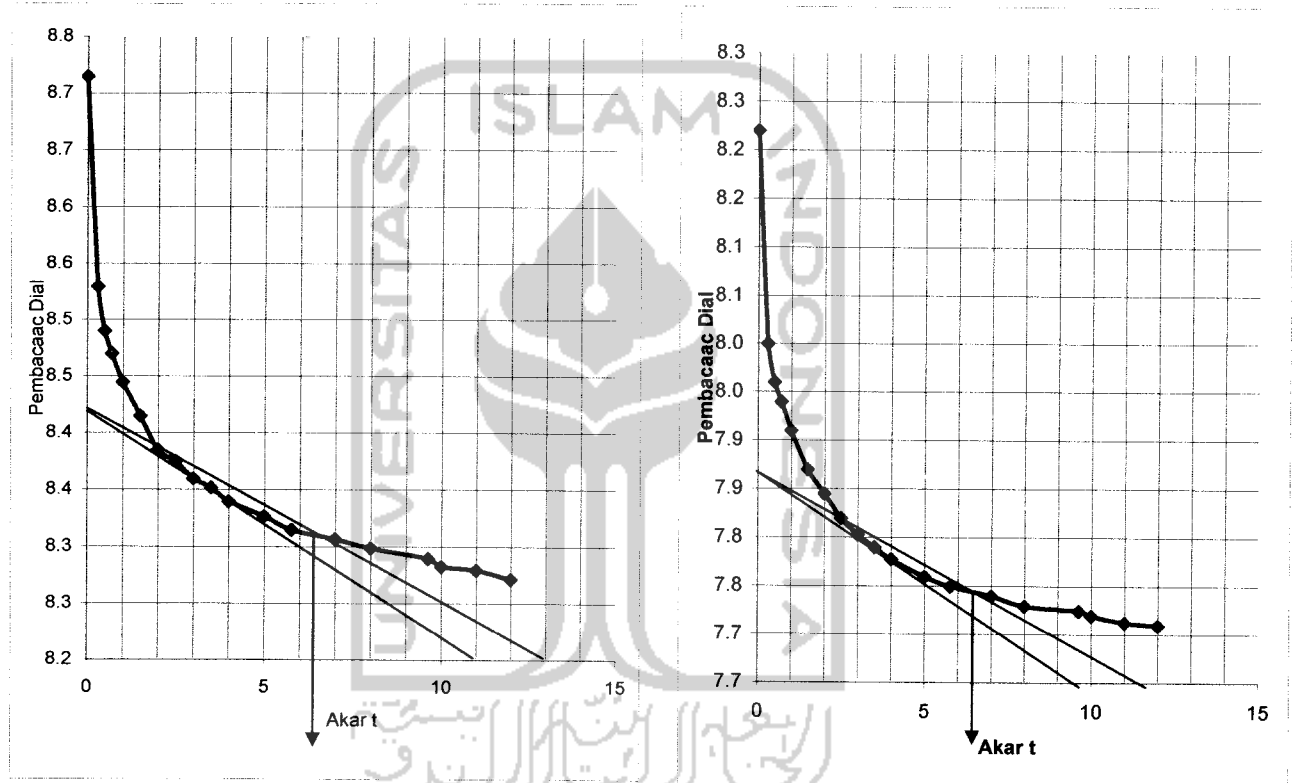
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Beban 4.00 kg/cm²

Beban 8.00 kg/cm²



\sqrt{t} : 6.45

\sqrt{t} : 6.35



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KESIMPULAN UJI KONSOLIDASI

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Data Parameter tanah dan ring

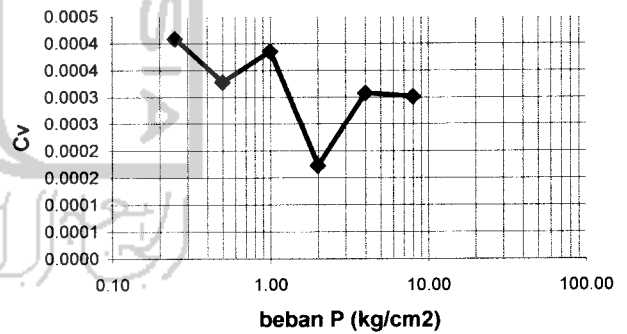
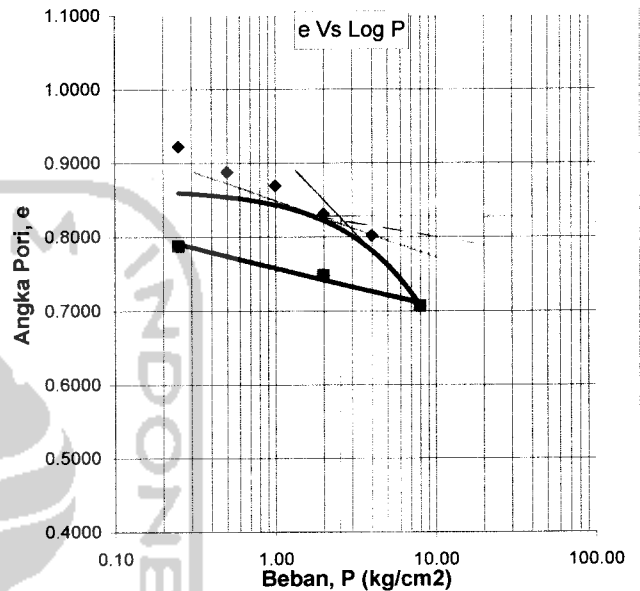
Berat Jenis Tanah 2.538
Berat ring (gr) 36.3
Diameter (cm) 5
Luas ring (cm²) 19.63495
Tinggi (H_o) (cm) 2.06
Volume V_o (cm³) 40.44801

Kadar air		
Berat Container (cup), gr	21.92	22.05
Berat Cup + tanah basah, gr	36.90	39.50
Berat Cup + tanah kering, gr	33.05	34.55
Kadar air %	34.59	39.60
Kadar air rata-rata %	37.10	

Berat ring + tanah basah, gr	109.50
Berat volume tanah basah	1.810
Berat volume tanah kering	1.320
Tinggi bagian padat (H _t)	1.07
Angka pori (e)	0.922654
Derajat kejenuhan (Sr)	146.8724
Setelah pengujian	
Berat ring + tanah basah, gr	108.72
Berat ring + tanah kering, gr	91.17
Kadar air, %	31.98469
Angka pori (e)	0.787788
Derajat Kejanuhan (Sr)	178.6774

C_c 0.143241

C_s -0.04289





LABORATORIUM MEKANIKA TANAH
 JURUSAN TEKNIK SIPIL-FTSP
 UNIVERSITAS ISLAM INDONESIA

Proyek : Tugas Akhir
 Lokasi : Mertoyudan, Magelang, Jawa Tengah
 No. Titik
 kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
 dikerjakan : Okky + Anto

Beban P (Kg)			0.50	1.00	2.00	4.00	8.00	16.00	4.00	0.50
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	2.00 (*)	0.25 (*)
	0	0	10.000	9.510	9.285	8.910	8.465	7.910	7.289	7.340
	5,40"	0.3	9.780	9.450	9.180	8.750	8.250	7.650		
	15,00"	0.5	9.730	9.440	9.140	8.720	8.210	7.635		
	29,40"	0.7	9.710	9.435	9.120	8.700	8.190	7.605		
	1,00"	1.0	9.690	9.420	9.105	8.675	8.165	7.575		
	2,25"	1.5	9.660	9.405	9.080	8.640	8.110	7.540		
	4,00"	2.0	9.648	9.395	9.062	8.627	8.105	7.505		
	6,25"	2.5	9.630	9.388	9.053	8.605	8.085	7.460		
	9,00"	3.0	9.620	9.380	9.043	8.600	8.070	7.442		
	12,25"	3.5	9.610	9.374	9.035	8.587	8.055	7.420		
	16,00"	4.0	9.600	9.368	9.025	8.578	8.045	7.410		
	25,00"	5.0	9.590	9.354	9.015	8.565	8.022	7.390		
	36,00"	5.8	9.580	9.345	9.005	8.553	8.010	7.380		
	49,00"	7.0	9.570	9.330	9.000	8.548	8.000	7.370		
1,04'	64,00"	8.0	9.566	9.322	8.990	8.544	7.980	7.353		
1,21'	81,00"	9.6	9.563	9.319	8.988	8.530	7.975	7.350		
1,40'	100,00"	10.0	9.558	9.317	8.983	8.525	7.970	7.343		
2,01'	121,00"	11.0	9.553	9.313	8.980	8.520	7.968	7.335		
2,24'	144,00"	12.0	9.550	9.310	8.975	8.515	7.960	7.320		
3,45'	225,00"	15.0								
6,40'	400,00"	20.0								
24,0'	1440,00"	38.0	9.510	9.285	8.910	8.465	7.910	7.289	7.340	7.820

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 البنية التحتية



LABORATORIUM MEKANIKA TANAH
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 UNIVERSITAS ISLAM INDONESIA

HITUNGAN UJI KONSOLIDASI

Proyek : Tugas Akhir
 Lokasi : Mertoyudan, Magelang, Jawa Tengah
 No. Titik :
 kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
 dikerjakan : Okky + Anto

Berat Jenis Tanah : 2.538
 Berat ring (gr) : 41.1
 Diameter (cm) : 5.04

Luas ring (cm²) : 19.9504
 Tinggi (H₀) (cm) : 2.09
 Volume V₀ (cm³) : 41.6963

Beban (kg/cm ²)	Pembacaan akhir dial (mm)	Perubahan tebal ΔH (cm)	Perubahan angka pori $\Delta e = \frac{\Delta H}{H_1}$	Angka pori $e = e_1 - \Delta e$	$Cc = \frac{\Delta e}{\log \frac{p_2}{p_1}}$	tebal akhir H=H ₁ -ΔH	1/2 tebal rata-rata d=(H ₁ +H ₂)/2	$\sqrt{t_{90}}$	t ₉₀ (detik)	$Cv = \frac{0.848 \times (d/2)^2}{t_{90}}$ (cm ² /det)
0.00	10.000			0.933			1.03275			
		0.049	0.045			2.041		4.2	1058.4	0.000855
0.25	9.510			0.888			1.014875			
		0.023	0.021		0.069	2.019		8.4	4233.6	0.000206
0.50	9.285			0.867			0.999875			
		0.038	0.035		0.115	1.981		6	2160	0.000392
1.00	8.910			0.832			0.979375			
		0.045	0.041		0.137	1.937		5.85	2053.35	0.000396
2.00	8.465			0.791			0.954375			
		0.056	0.051		0.171	1.881		6.15	2269.35	0.00034
4.00	7.910			0.740			0.924975			
		0.062	0.057		0.191	1.819		6	2160	0.000336
8.00	7.289			0.682						
		-0.051	-0.047		0.078					
2.00	7.340			0.729						
		-0.048	-0.044		0.049					
0.25	7.820			0.774						
0.00										

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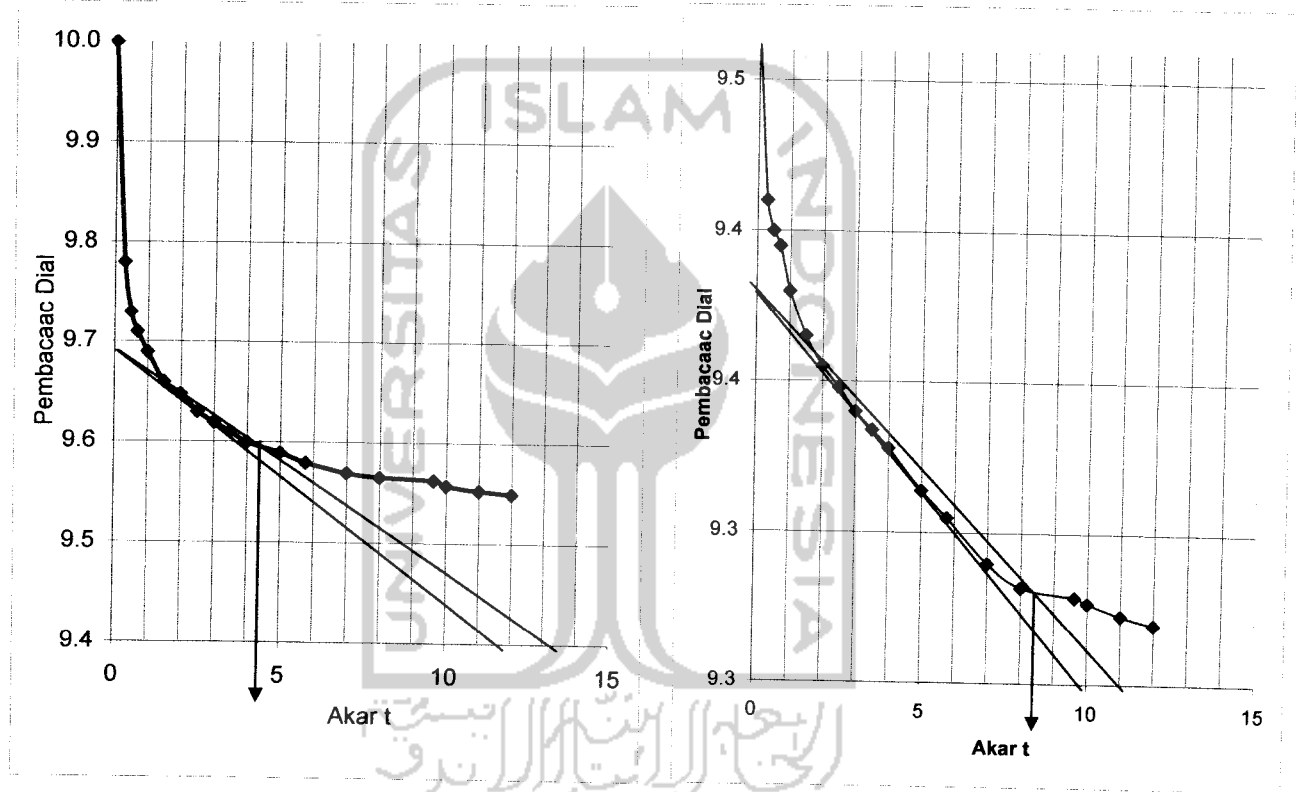
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Beban 0.25 kg/cm²

Beban 0.5 kg/cm²



\sqrt{t} : 4.2

\sqrt{t} : 8.4



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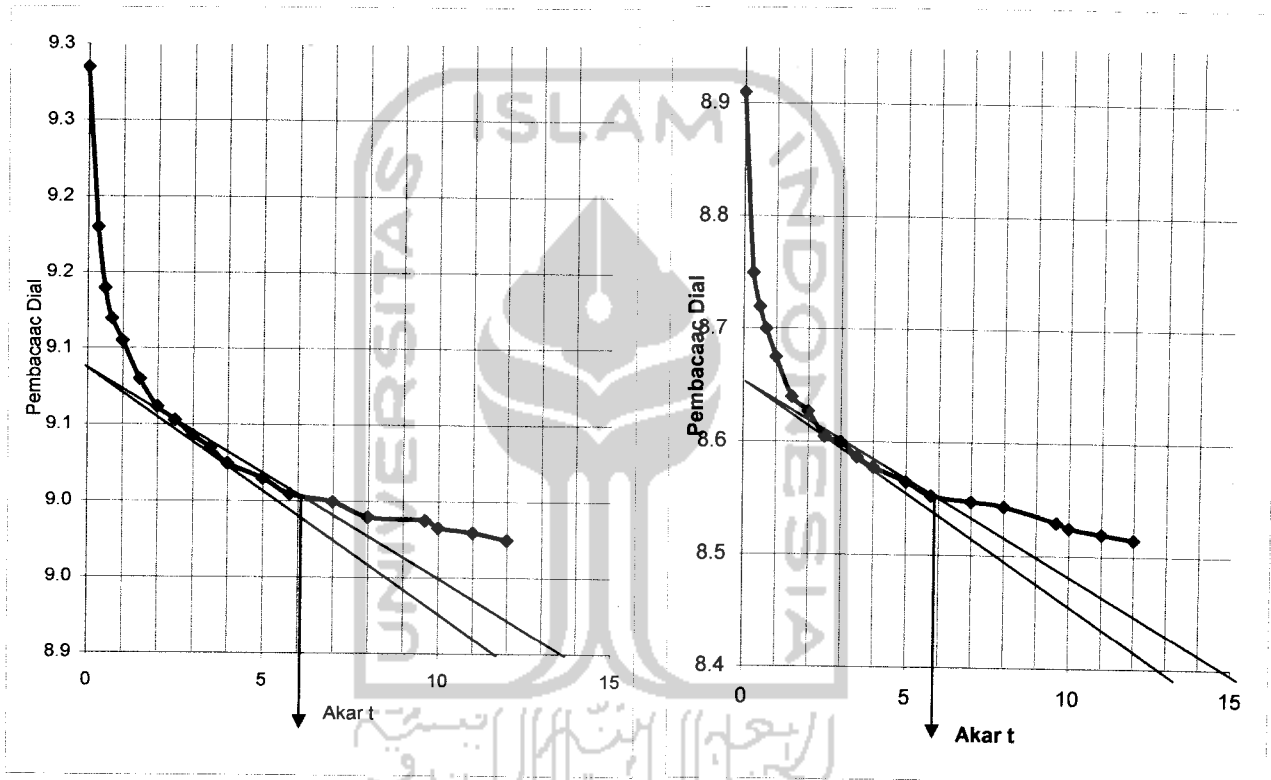
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Beban 1.00 kg/cm²

Beban 2.00 kg/cm²



\sqrt{t} : 6

\sqrt{t} : 5.85



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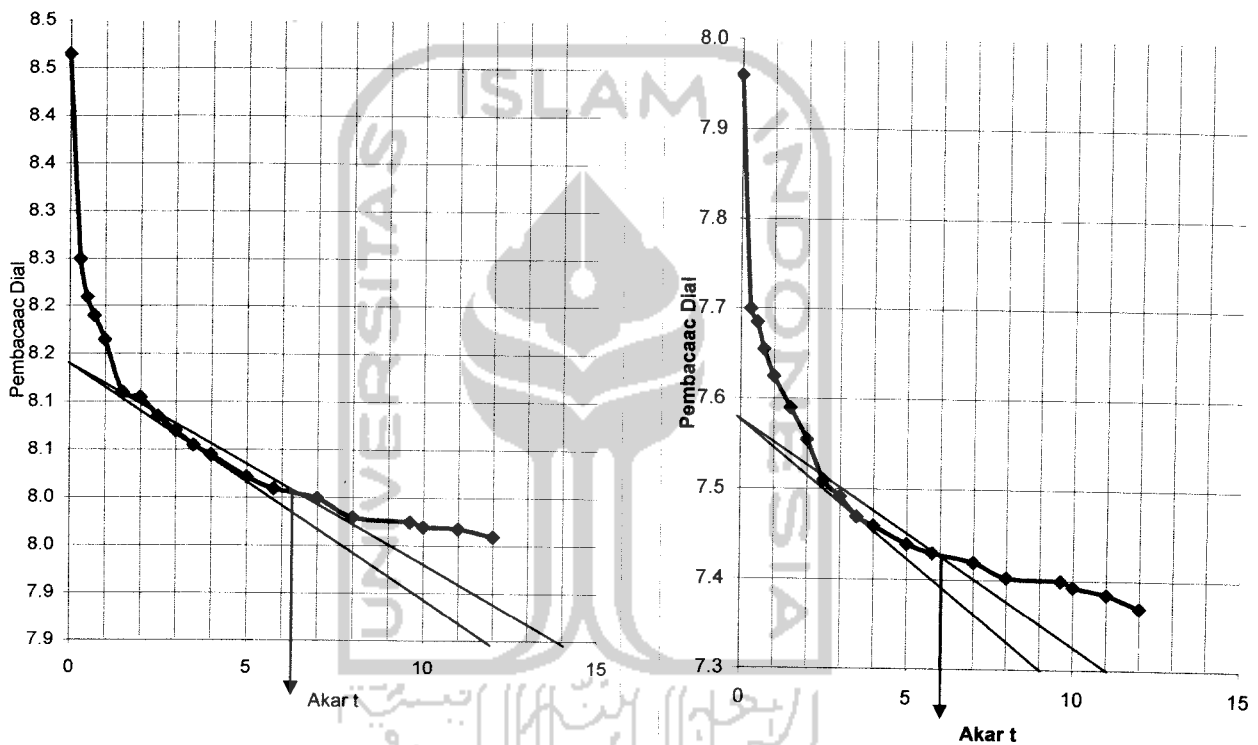
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman : 2.00 meter

Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Beban 4.00 kg/cm²

Beban 8.00 kg/cm²



\sqrt{t} : 6.15

\sqrt{t} : 6



KESIMPULAN UJI KONSOLIDASI

Proyek : Tugas Akhir
Lokasi : Mertoyudan, Magelang, Jawa Tengah
No. Titik :
kedalaman: 2.00 meter

Tanggal : 12 Juli 2005
dikerjakan : Okky + Anto

Data Parameter tanah dan ring

Berat Jenis Tana 2.538
Berat ring (gr) 41.1
Diameter (cm) 5.04
Luas ring (cm²) 19.95037
Tinggi (Ho) (cm) 2.09
Volume Vo (cm³) 41.69627

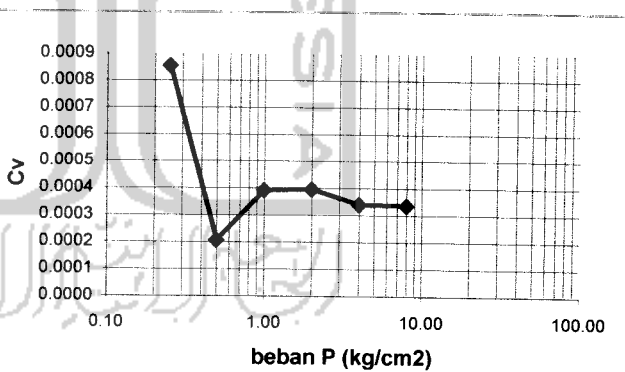
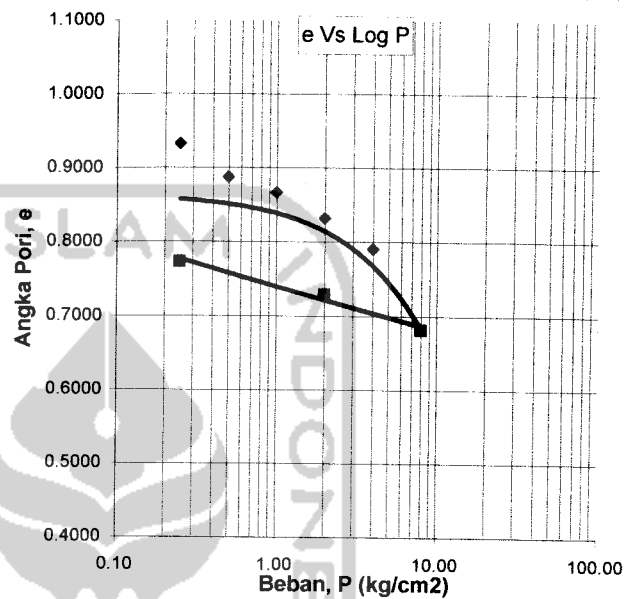
Kadar air	
Berat Container	21.70
Berat Cup + tana	54.70
Berat Cup + tana	46.38
Kadar air %	33.71
Kadar air rata-rata	35.72

Berat ring + tanah	115.40
Berat volume tan	1.782
Berat volume tan	1.313
Tinggi bagian pad	1.08
Angka pori (e)	0.933006
Derajad kejenuha	148.9235

Setelah pengujian	
Berat ring + tanah	114.10
Berat ring + tanah	95.45
Kadar air, %	34.31463
Angka pori (e)	0.773833
Derajad Kejenuha	181.4303

Cc 0.166585

Cs -0.04916



PENGUJIAN BERAT JENIS AGREGAT

Proyek : Tugas Akhir
 Lokasi : Mertoyudan, Magelang, Jawa Tengah.
 Dikerjakan : anto + okky
 Kedalaman : 2,00 meter

AGREGAT KASAR (tertahan # 10)

A	Berat benda uji kering oven		
B	Berat benda uji kering permukaan jenuh		
C	Berat benda uji dalam air		
*	Berat jenis kering oven (SG)		
*	Berat jenis kering permukaan jenuh (SSD)		
*	Berat jenis semu (Apperen)		
*	Penyerapan (Absorsi)		

AGREGAT HALUS (lolos #10)

1	No pengujian	1	2
2	Berat Picknometer (W1)	35.45	16.80
3	Berat Picknometer +tanah kering (W2)	48.93	23.96
4	Berat Picknometer + tanah + air (W3)	92.33	46.46
5	Berat Picknometer + air (W4)	84.17	42.12
6	Temperatur (t°)	27.00	27.00
7	Bj pata temperatu (t°)	0.996550	0.996550
8	Bj pata temperatu (27,5 °C)	0.996410	0.996410
7	Berat tanah kering (Wt)	13.48	7.16
8	A = Wt + W4	97.65	49.28
9	I = A - W3	5.32	2.82
10	Berat Jenis tanah, Gs = Wt / I	2.53	2.54
11	Bret Jenis = Gs. (Bj t° / Bj t 27,5 °C)	2.5342	2.5412
12	Berat jenis rata-rata	2.538	

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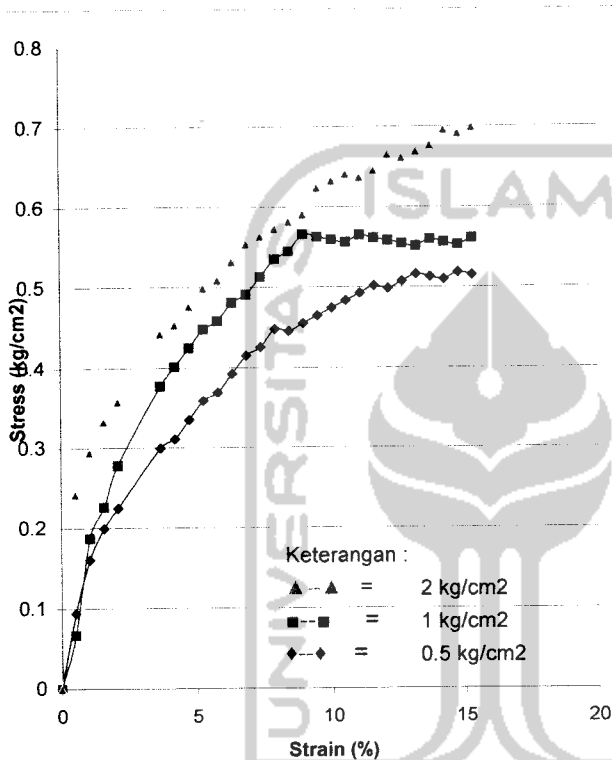
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 04 Agustus 2005
 Tested by : Okky + Anto

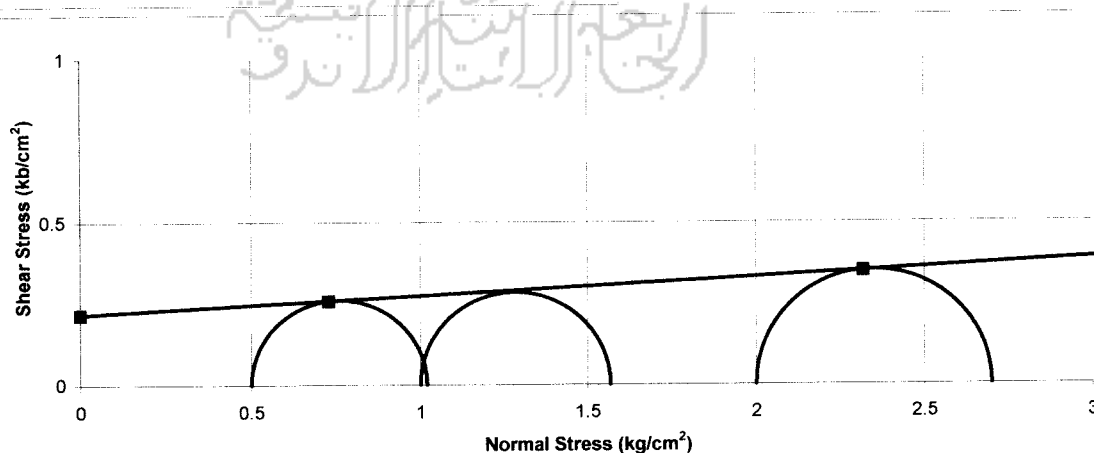


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	165.42	165.42	165.42

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	

γ _d gram/cm ³	1.7899318	1.7899318	1.7899318
γ _d gram/cm ³	1.3146138	1.3146138	1.3146138

σ ₃	0.5	1	2
Δσ = P/A	0.5190121	0.5666819	0.6991933
σ ₁ = Δσ + σ ₃	1.0190121	1.5666819	2.6991933
(σ ₁ + σ ₂)/2	0.759506	1.2833409	2.3495967
(σ ₁ - σ ₂)/2	0.259506	0.2833409	0.3495967
Angle of shearing resistance (φ)	3.2620979		
Apperen cohesion (kg/cm ²)	0.2160855		





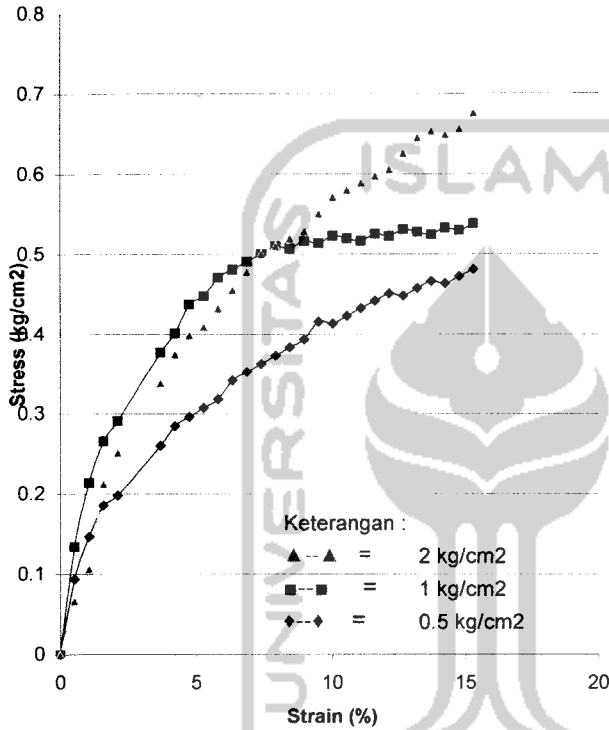
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 04 Agustus 2005
 Tested by : Okky + Anto

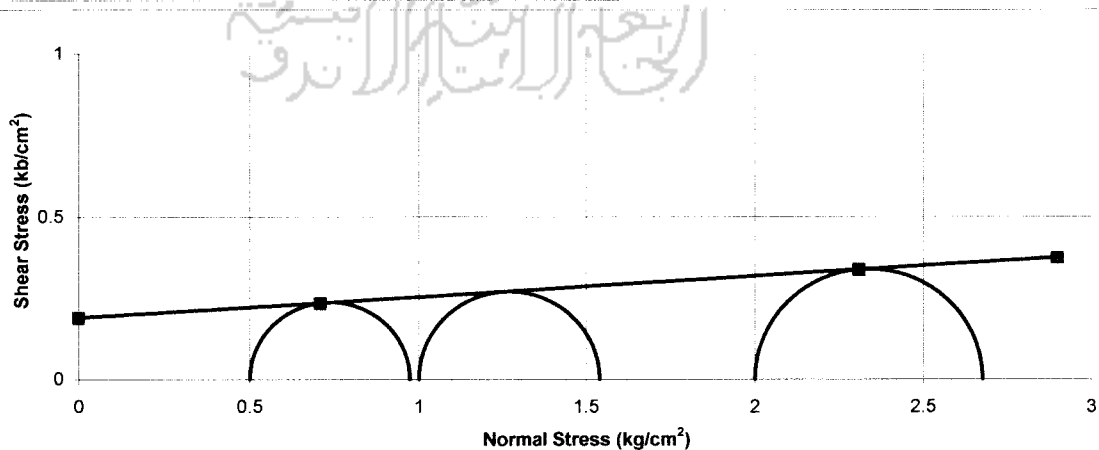


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	165.42	165.42	165.42

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	

γ_d gram/cm ³	1.7899318	1.7899318	1.7899318
γ_d gram/cm ³	1.3146138	1.3146138	1.3146138

σ_3	0.5	1	2
$\Delta\sigma = P/A$	0.4728777	0.5387227	0.676269
$\sigma_1 = \Delta\sigma + \sigma_3$	0.9728777	1.5387227	2.676269
$(\sigma_1 + \sigma_2)/2$	0.7364388	1.2693614	2.3381345
$(\sigma_1 - \sigma_2)/2$	0.2364388	0.2693614	0.3381345
Angle of shearing resistance (o)	3.6514134		
Apperen cohesion (kg/cm ²)	0.189519		





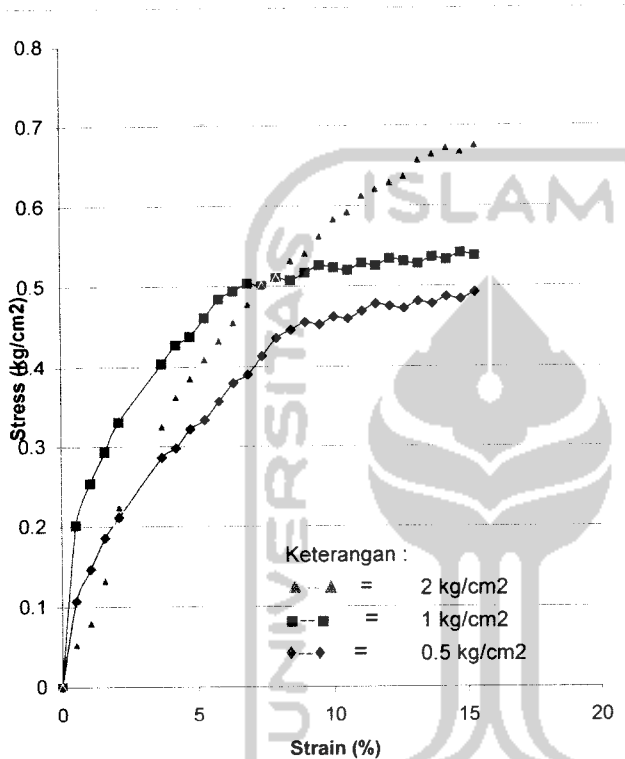
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 04 Agustus 2005
 Tested by : Okky + Anto

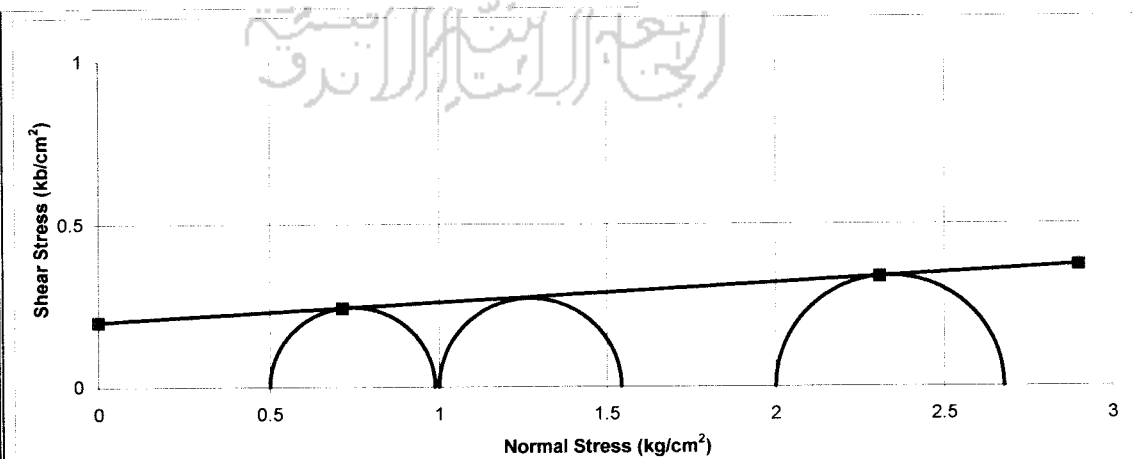


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	165.42	165.42	165.42

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	

γ _d gram/cm ³	1.7899318	1.7899318	1.7899318
γ _d gram/cm ³	1.3146138	1.3146138	1.3146138

σ ₃	0.5	1	2
Δσ = P/A	0.4874107	0.5420793	0.676269
σ ₁ = Δσ + σ ₃	0.9874107	1.5420793	2.676269
(σ ₁ + σ ₂)/2	0.7437054	1.2710396	2.3381345
(σ ₁ - σ ₂)/2	0.2437054	0.2710396	0.3381345
Angle of shearing resistance (φ)	3.4078325		
Apperen cohesion (kg/cm ²)	0.1993711		





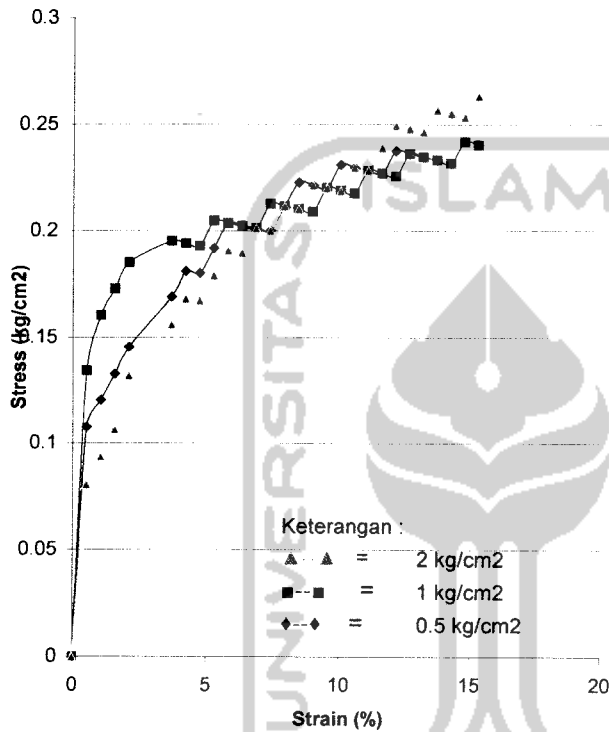
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

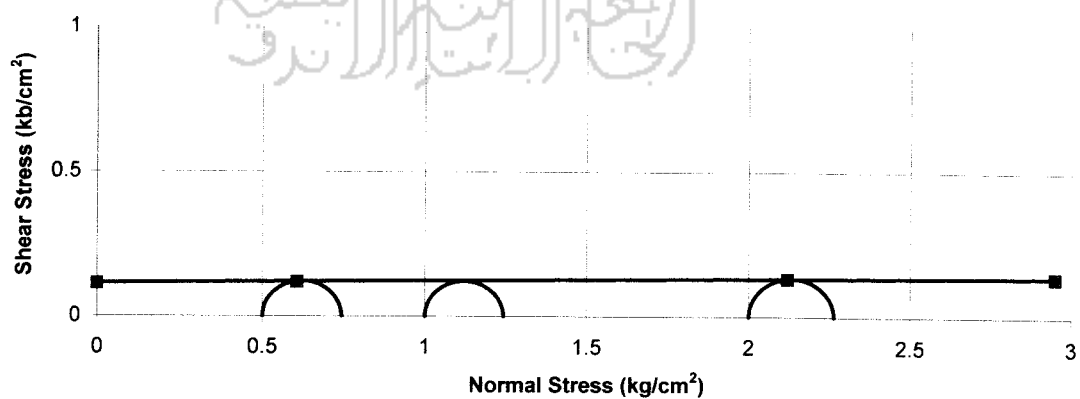
Sample No. : Undisturbed
 Date : 08 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	153.80	160.50	161.20

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	
5% > water content %	37.96	
γ_d gram/cm ³	1.6641973	1.7366948
γ_d gram/cm ³	1.2062521	1.2588002
	1.2642902	

σ_3	0.5	1	2
$\Delta\sigma = P/A$	0.2422056	0.2422056	0.2636303
$\sigma_1 = \Delta\sigma + \sigma_3$	0.7422056	1.2422056	2.2636303
$(\sigma_1 + \sigma_2)/2$	0.6211028	1.1211028	2.1318151
$(\sigma_1 - \sigma_2)/2$	0.1211028	0.1211028	0.1318151
Angle of shearing resistance (o)	0.4205729		
Apperen cohesion (kg/cm ²)	0.1157493		





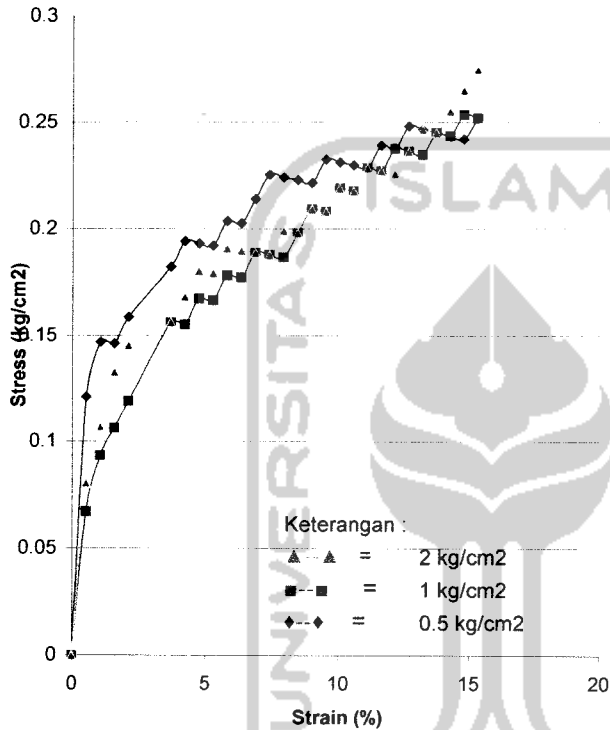
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

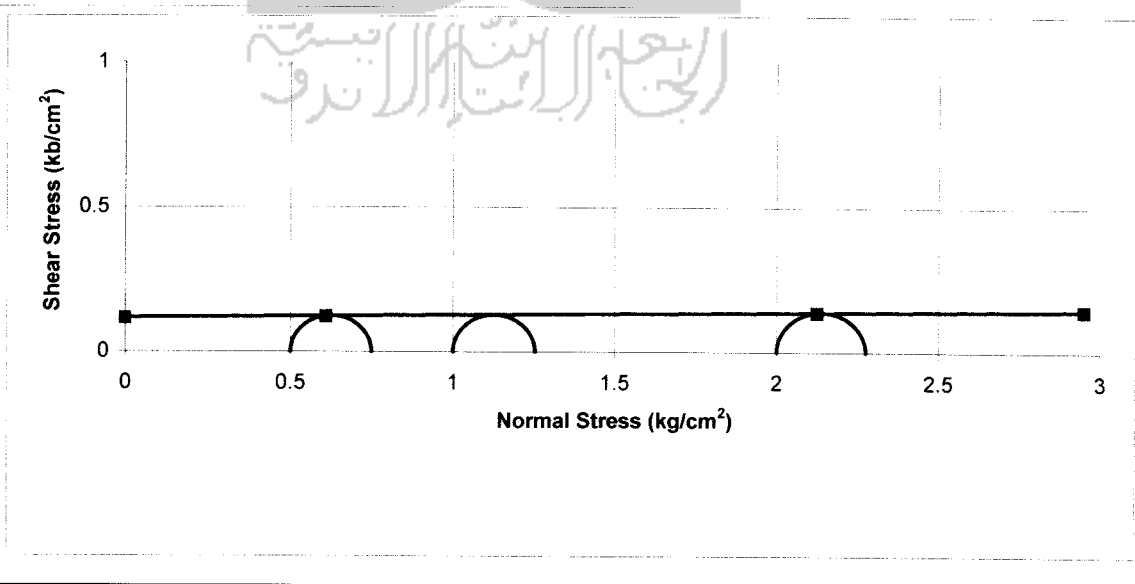
Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 08 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	157.50	159.10	158.00
Water Content			
Wt Container (cup), gr	21.92	22.35	
Wt of Cup + Wet soil, gr	36.90	51.85	
Wt of Cup + Dry soil, gr	33.05	43.77	
Water Content %	34.59	37.72	
Average water content %	36.16		
5% > water content %	37.96		
yd gram/cm ³	1.7042332	1.7215461	1.7096435
yd gram/cm ³	1.2352712	1.24782	1.2391927

σ_3	0.5	1	2
$\Delta\sigma = P/A$	0.2482045	0.2537392	0.2750925
$\sigma_1 = \Delta\sigma + \sigma_3$	0.7482045	1.2537392	2.2750925
$(\sigma_1 + \sigma_2)/2$	0.6241023	1.1268696	2.1375462
$(\sigma_1 - \sigma_2)/2$	0.1241023	0.1268696	0.1375462
Angle of shearing resistance (o)	0.5230665		
Apperen cohesion (kg/cm ²)	0.1176176		





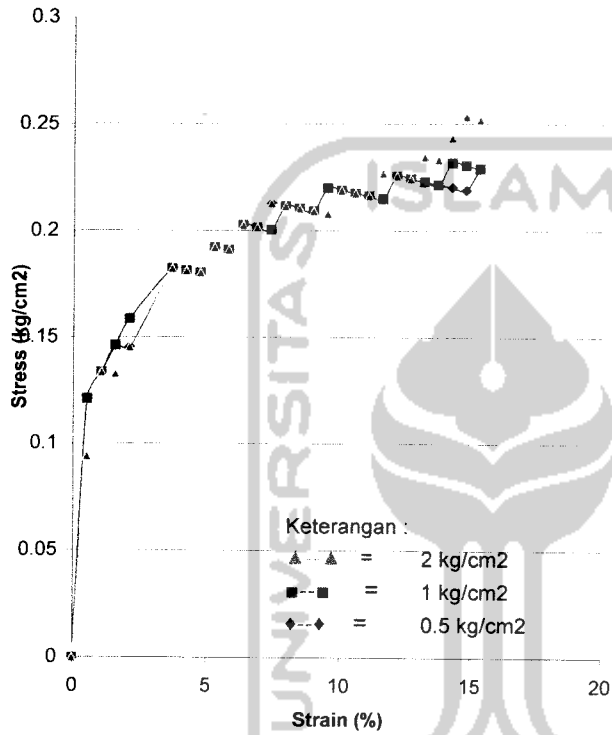
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Teip. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAxIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

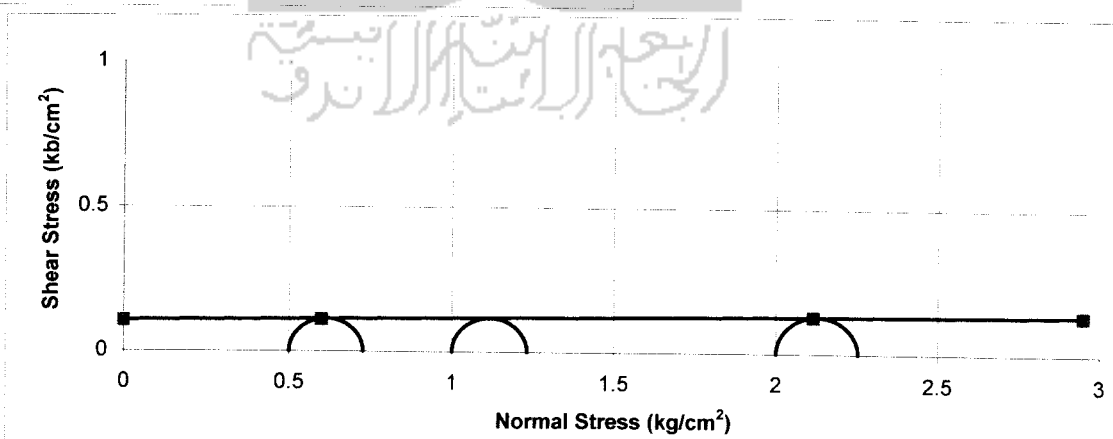
Sample No. : Undisturbed
 Date : 08 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	156.80	160.00	157.80

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	
5% > water content %	37.96	
γ_d gram/cm ³	1.6966589	1.7312845
γ_d gram/cm ³	1.2297811	1.2548787

σ_3	0.5	1	2
$\Delta\sigma = P/A$	0.2259229	0.2321003	0.2537392
$\sigma_1 = \Delta\sigma + \sigma_3$	0.7259229	1.2321003	2.2537392
$(\sigma_1 + \sigma_2)/2$	0.6129614	1.1160502	2.1268696
$(\sigma_1 - \sigma_2)/2$	0.1129614	0.1160502	0.1268696
Angle of shearing resistance (o)	0.5389869		
Apperen cohesion (kg/cm ²)	0.1064826		





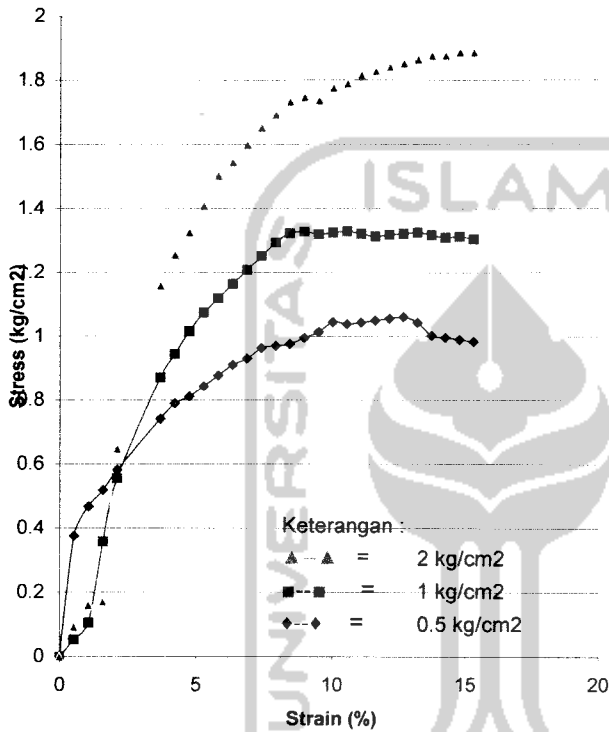
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UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

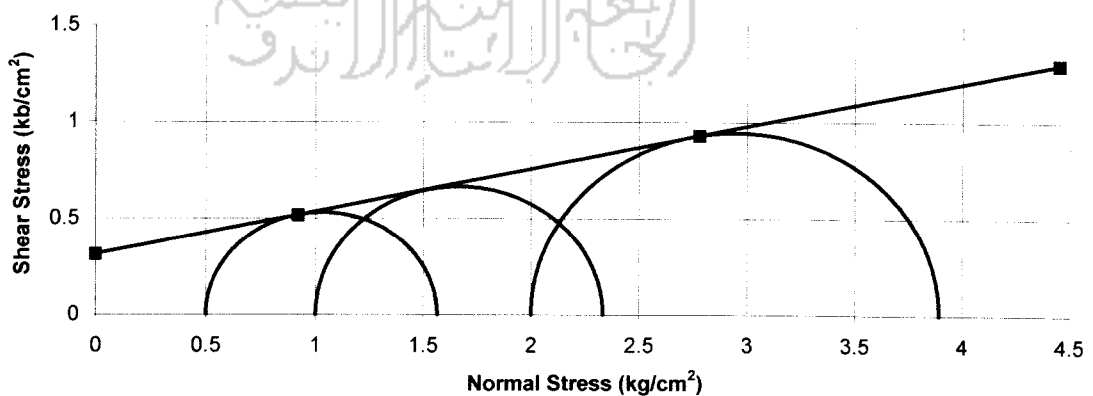
Sample No. : Undisturbed
 Date : 06 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	168.70	166.60	167.50

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	
5% < water content %	34.35	
γ _d gram/cm ³	1.8254231	1.8027
γ _d gram/cm ³	1.3587209	1.3418073

σ ₃	0.5	1	2
Δσ = P/A	1.0637337	1.3315418	1.8915106
σ ₁ = Δσ + σ ₃	1.5637337	2.3315418	3.8915106
(σ ₁ + σ ₂)/2	1.0318668	1.6657709	2.9457553
(σ ₁ - σ ₂)/2	0.5318668	0.6657709	0.9457553
Angle of shearing resistance (φ)	12.462927		
Apperen cohesion (kg/cm ²)	0.3166255		





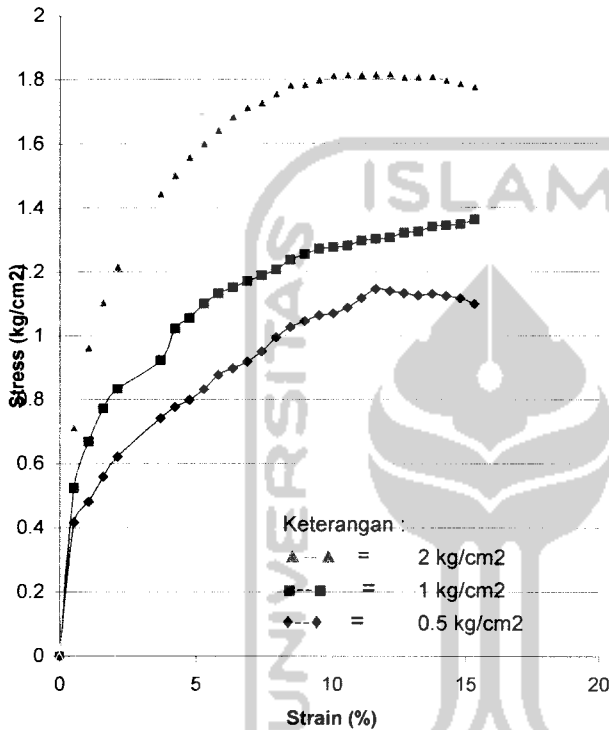
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UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

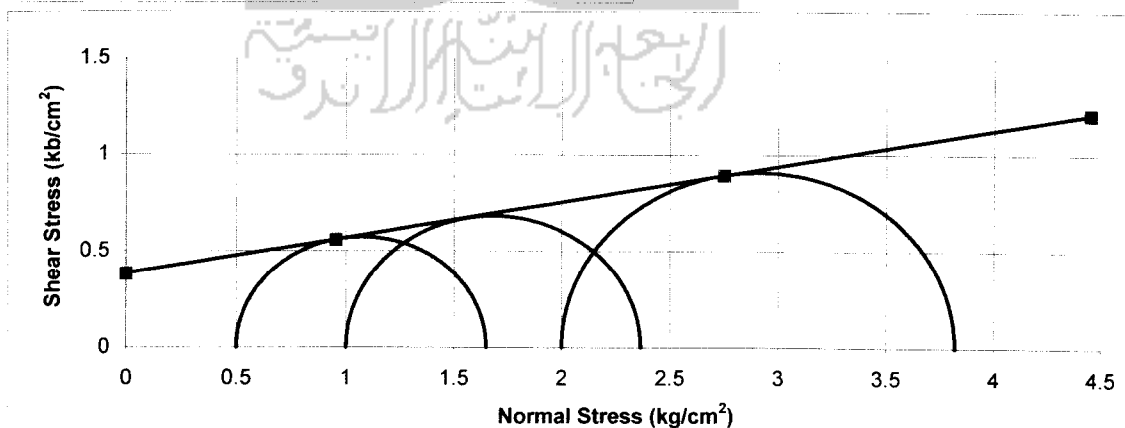
Sample No. : Undisturbed
 Date : 06 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	169.80	168.60	167.50

Water Content			
Wt Container (cup), gr		21.92	22.35
Wt of Cup + Wet soil, gr		36.90	51.85
Wt of Cup + Dry soil, gr		33.05	43.77
Water Content %		34.59	37.72
Average water content %		36.16	
5% < water content %		34.35	
γ_d gram/cm ³	1.8373257	1.8243411	1.8124385
γ gram/cm ³	1.3675803	1.3579154	1.349056

σ_3	0.5	1	2
$\Delta\sigma = P/A$	1.148361	1.3640001	1.8192738
$\sigma_1 = \Delta\sigma + \sigma_3$	1.648361	2.3640001	3.8192738
$(\sigma_1 + \sigma_2)/2$	1.0741805	1.6820001	2.9096369
$(\sigma_1 - \sigma_2)/2$	0.5741805	0.6820001	0.9096369
Angle of shearing resistance (o)	10.535523		
Apperen cohesion (kg/cm ²)	0.3840589		





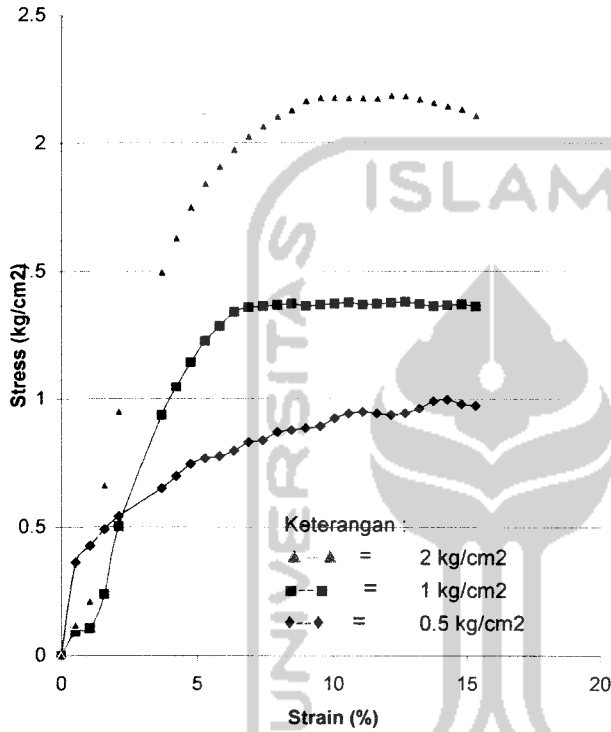
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UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAxIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

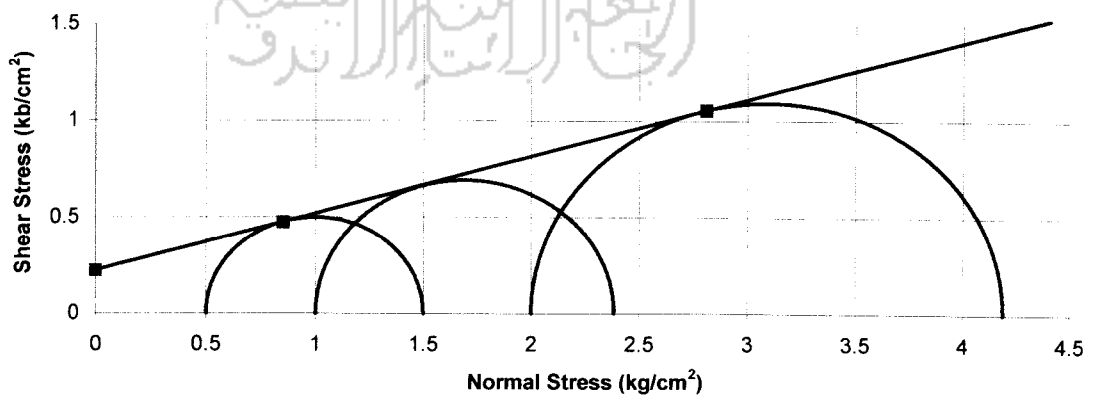
Sample No. : Undisturbed
 Date : 06 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	171.20	169.30	167.90

Water Content			
Wt Container (cup), gr		21.92	22.35
Wt of Cup + Wet soil, gr		36.90	51.85
Wt of Cup + Dry soil, gr		33.05	43.77
Water Content %		34.59	37.72
Average water content %		36.16	
5% < water content %		34.35	
γ_d gram/cm ³	1.8524745	1.8319155	1.8167667
γ gram/cm ³	1.378856	1.3635533	1.3522776

σ_3	0.5	1	2
$\Delta\sigma = P/A$	0.9980314	1.3828538	2.1878849
$\sigma_1 = \Delta\sigma + \sigma_3$	1.4980314	2.3828538	4.1878849
$(\sigma_1 + \sigma_2)/2$	0.9990157	1.6914269	3.0939424
$(\sigma_1 - \sigma_2)/2$	0.4990157	0.6914269	1.0939424
Angle of shearing resistance (o)	16.4882		
Apperen cohesion (kg/cm ²)	0.2246973		





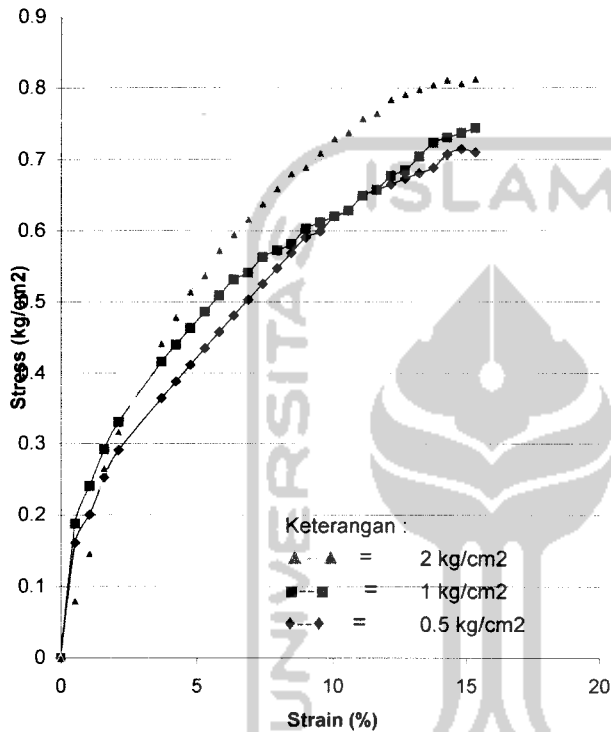
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UNIVERSITAS ISLAM INDONESIA

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TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 11 Agustus 2005
 Tested by : Okky + Anto

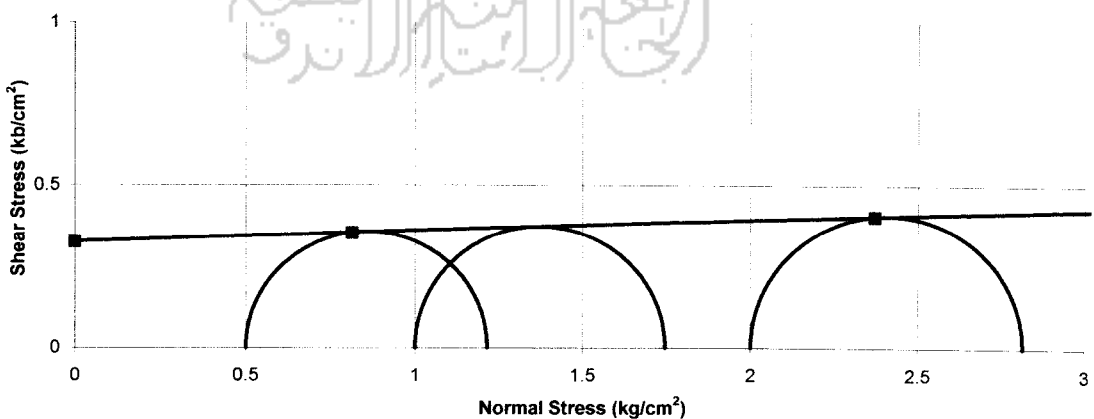


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	173.69	173.69	173.69

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	

γ_d gram/cm ³	1.8794176	1.8794176	1.8794176
γ gram/cm ³	1.3803365	1.3803365	1.3803365

σ_3	0.5	1	2
$\Delta\sigma = P/A$	0.7150833	0.7450421	0.8138152
$\sigma_1 = \Delta\sigma + \sigma_3$	1.2150833	1.7450421	2.8138152
$(\sigma_1 + \sigma_2)/2$	0.8575416	1.372521	2.4069076
$(\sigma_1 - \sigma_2)/2$	0.3575416	0.372521	0.4069076
Angle of shearing resistance (o)	1.8564845		
Apperen cohesion (kg/cm ²)	0.3284933		





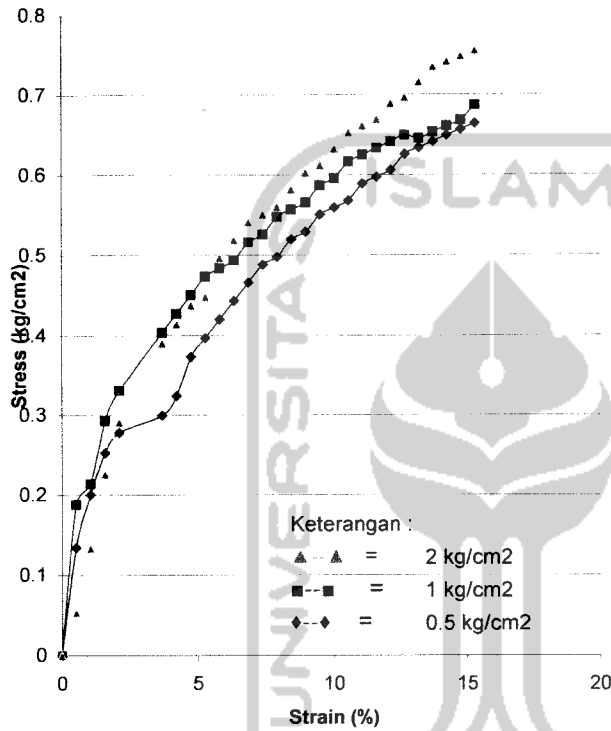
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TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 11 Agustus 2005
 Tested by : Okky + Anto

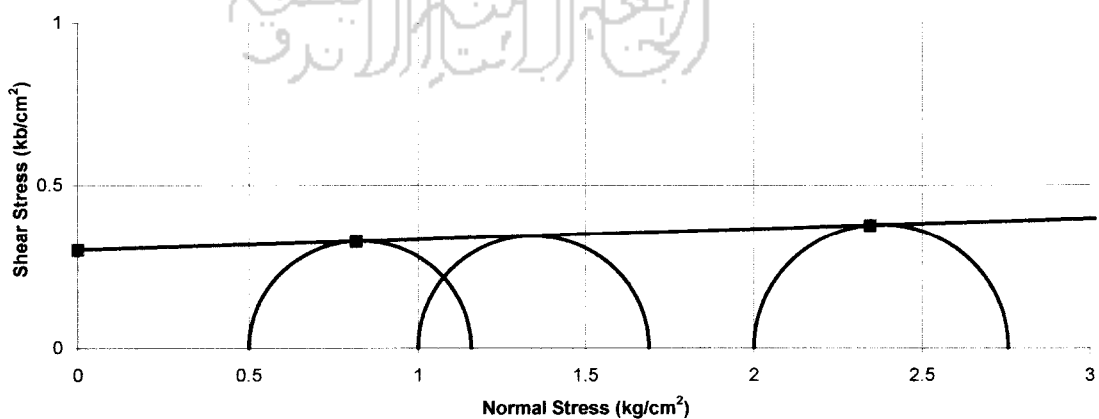


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	173.69	173.69	173.69

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	

γ _d gram/cm ³	1.8794176	1.8794176	1.8794176
γ _d gram/cm ³	1.3803365	1.3803365	1.3803365

σ ₃	0.5	1	2
Δσ = P/A	0.6574153	0.6877311	0.7565043
σ ₁ = Δσ + σ ₃	1.1574153	1.6877311	2.7565043
(σ ₁ + σ ₂)/2	0.8287076	1.3438656	2.3782521
(σ ₁ - σ ₂)/2	0.3287076	0.3438656	0.3782521
Angle of shearing resistance (o)	1.8106564		
Apperen cohesion (kg/cm ²)	0.3026726		





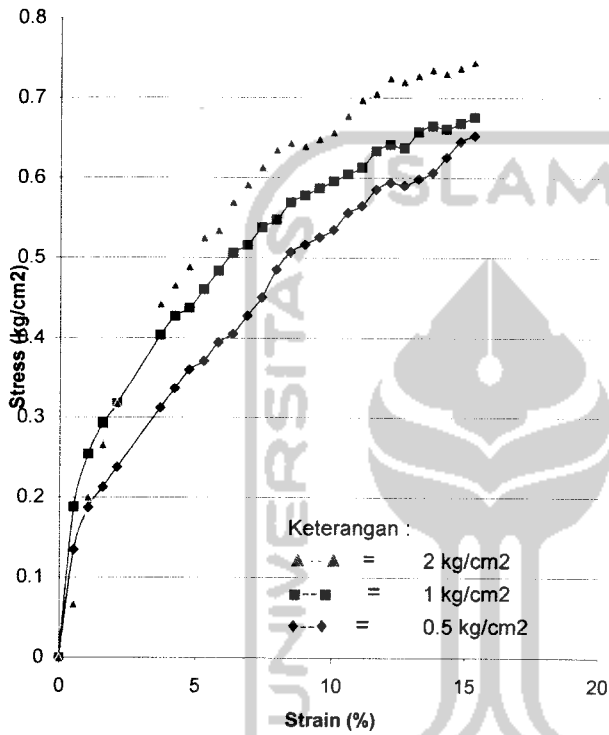
LABORATORIUM MEKANIKA TANAH
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UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 11 Agustus 2005
 Tested by : Okky + Anto

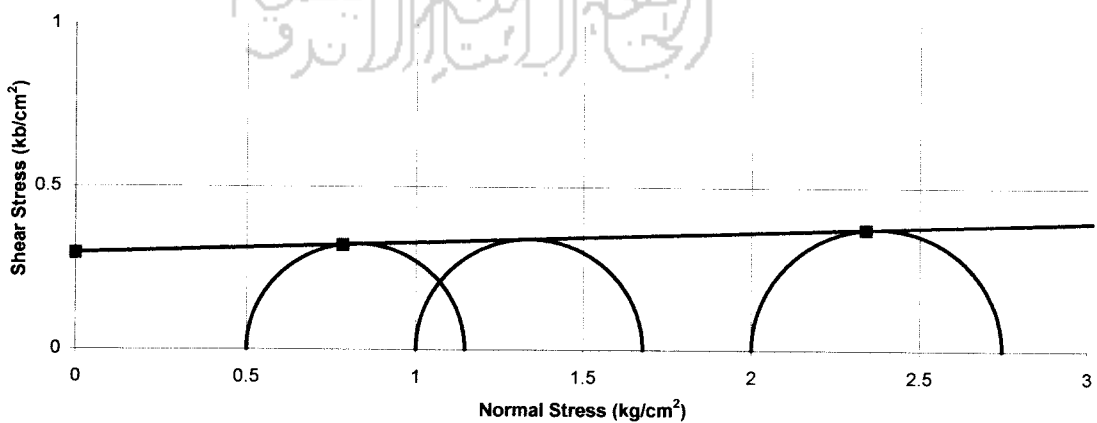


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	173.69	173.69	173.69

Water Content	
Wt Container (cup), gr	21.92 22.35
Wt of Cup + Wet soil, gr	36.90 51.85
Wt of Cup + Dry soil, gr	33.05 43.77
Water Content %	34.59 37.72
Average water content %	36.16

γ _d gram/cm ³	1.8794176	1.8794176	1.8794176
γ _w gram/cm ³	1.3803365	1.3803365	1.3803365

σ ₃	0.5	1	2
Δσ = P/A	0.6458817	0.676269	0.7450421
σ ₁ = Δσ + σ ₃	1.1458817	1.676269	2.7450421
(σ ₁ + σ ₂)/2	0.8229408	1.3381345	2.372521
(σ ₁ - σ ₂)/2	0.3229408	0.3381345	0.372521
Angle of shearing resistance (φ)	1.8608892		
Apperen cohesion (kg/cm ²)	0.295075		





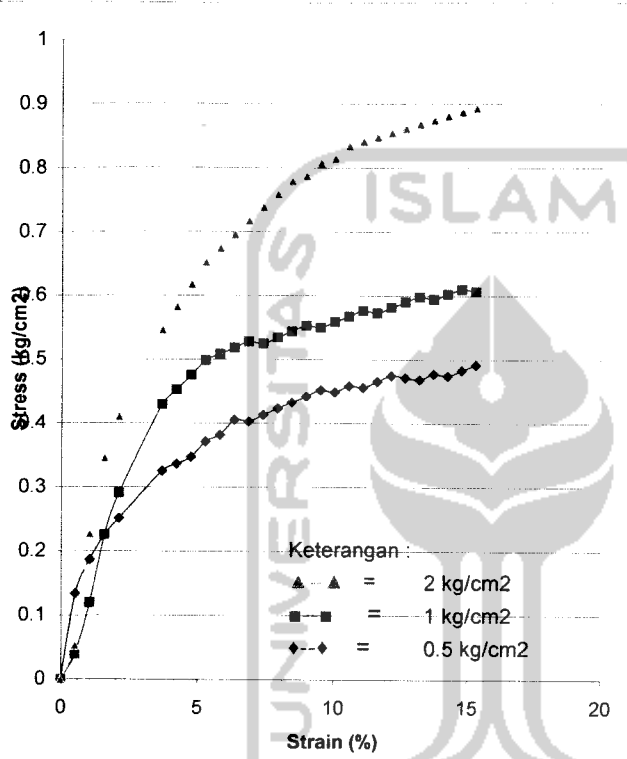
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UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 09 Agustus 2005
 Tested by : Okky + Anto

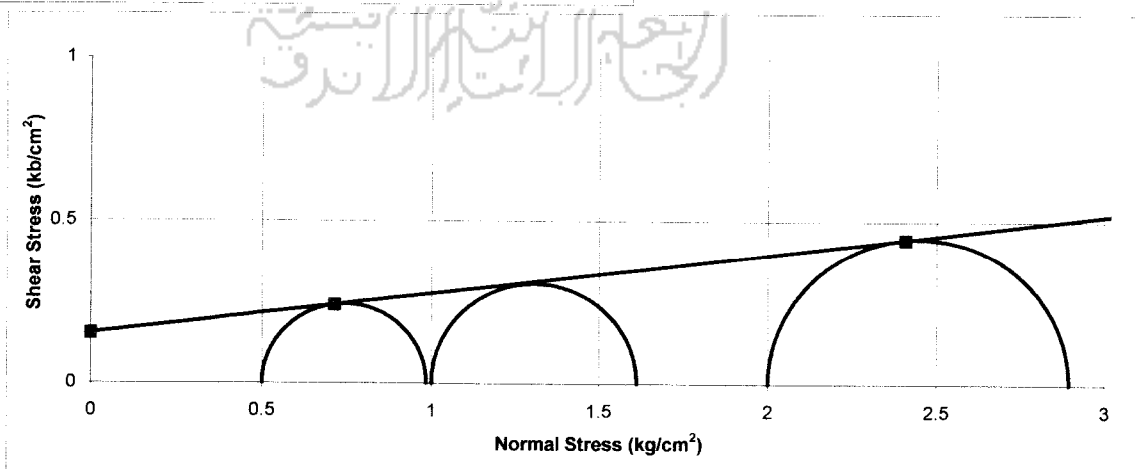


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	157.15	157.15	157.15

Water Content	
Wt Container (cup), gr	21.92 22.35
Wt of Cup + Wet soil, gr	36.90 51.85
Wt of Cup + Dry soil, gr	33.05 43.77
Water Content %	34.59 37.72
Average water content %	36.16

γ _d gram/cm ³	1.700446	1.700446	1.700446
γ _w gram/cm ³	1.2488911	1.2488911	1.2488911

σ ₃	0.5	1	2
Δσ = P/A	0.4844113	0.6112809	0.8940505
σ ₁ = Δσ + σ ₃	0.9844113	1.6112809	2.8940505
(σ ₁ + σ ₂)/2	0.7422056	1.3056404	2.4470252
(σ ₁ - σ ₂)/2	0.2422056	0.3056404	0.4470252
Angle of shearing resistance (φ)	6.8920343		
Apperen cohesion (kg/cm ²)	0.154256		





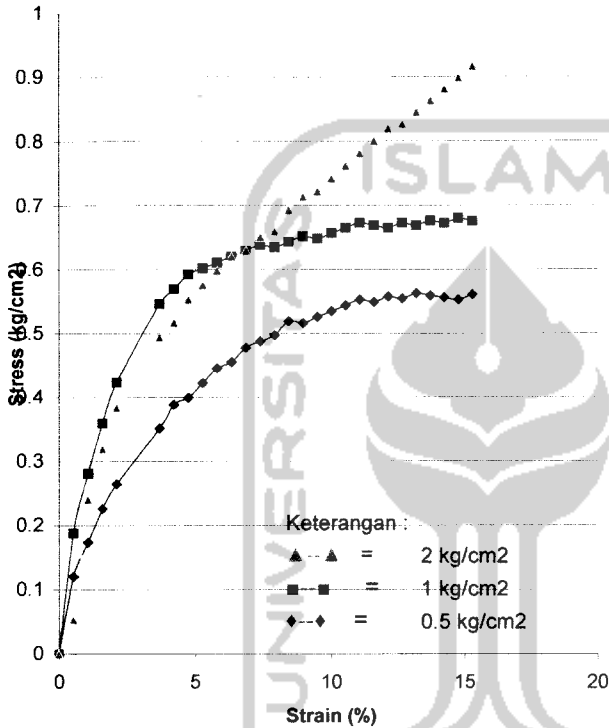
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UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

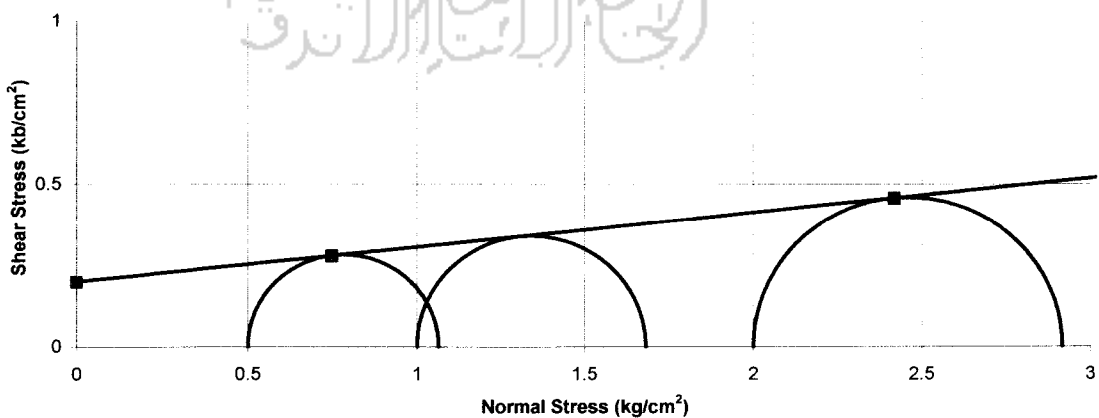
Sample No. : Undisturbed
 Date : 09 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	157.15	157.15	157.15
Water Content			
Wt Container (cup), gr	21.92	22.35	
Wt of Cup + Wet soil, gr	36.90	51.85	
Wt of Cup + Dry soil, gr	33.05	43.77	
Water Content %	34.59	37.72	
Average water content %	36.16		

γ _d gram/cm ³	1.700446	1.700446	1.700446
γ _d gram/cm ³	1.2488911	1.2488911	1.2488911

σ ₃	0.5	1	2
Δσ = P/A	0.5638967	0.6804825	0.9169749
σ ₁ = Δσ + σ ₃	1.0638967	1.6804825	2.9169749
(σ ₁ + σ ₂)/2	0.7819483	1.3402412	2.4584874
(σ ₁ - σ ₂)/2	0.2819483	0.3402412	0.4584874
Angle of shearing resistance (o)	6.0431742		
Apperen cohesion (kg/cm ²)	0.2007025		





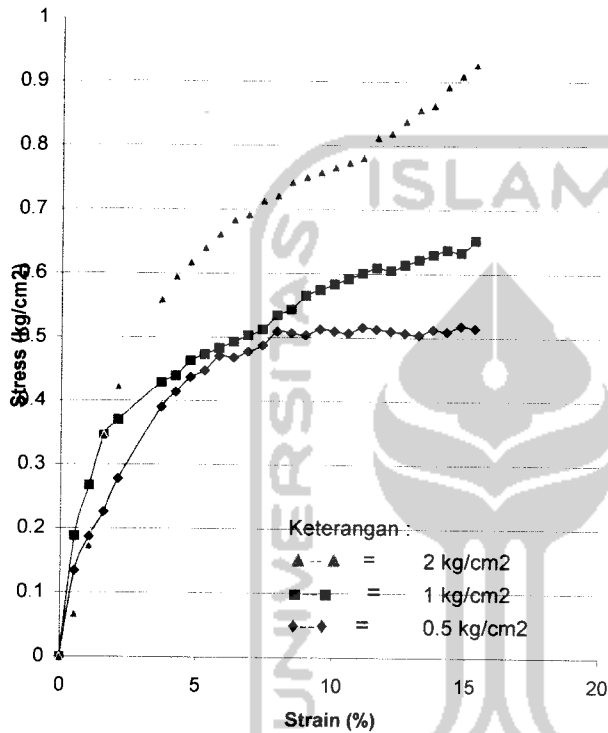
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UNIVERSITAS ISLAM INDONESIA

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TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Mertoyudan, Magelang, Jawa Tengah
 Description of soil : Silt Clay

Sample No. : Undisturbed
 Date : 09 Agustus 2005
 Tested by : Okky + Anto

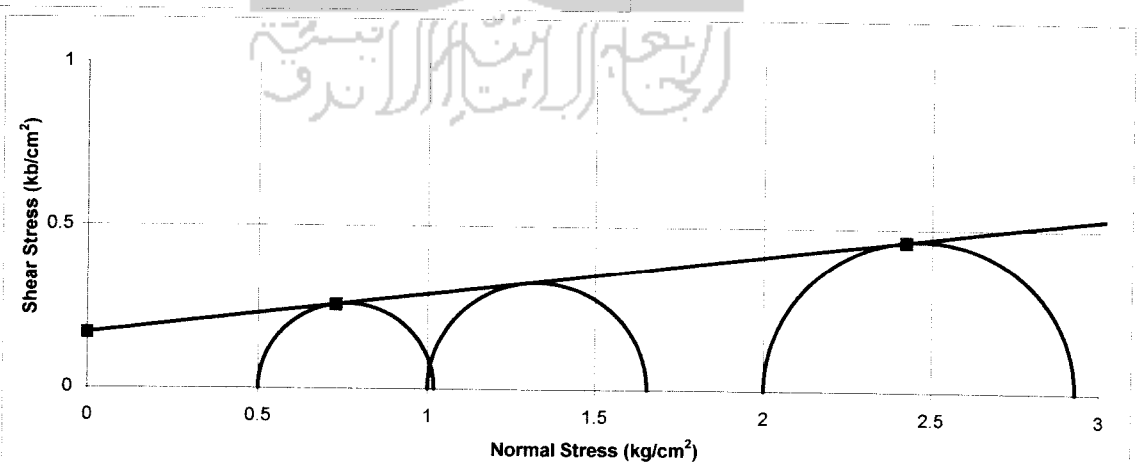


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	157.15	157.15	157.15

Water Content		
Wt Container (cup), gr	21.92	22.35
Wt of Cup + Wet soil, gr	36.90	51.85
Wt of Cup + Dry soil, gr	33.05	43.77
Water Content %	34.59	37.72
Average water content %	36.16	

γ_d gram/cm ³	1.700446	1.700446	1.700446
γ gram/cm ³	1.2488911	1.2488911	1.2488911

σ_3	0.5	1	2
$\Delta\sigma = P/A$	0.5190121	0.6533446	0.928437
$\sigma_1 = \Delta\sigma + \sigma_3$	1.0190121	1.6533446	2.928437
$(\sigma_1 + \sigma_2)/2$	0.759506	1.3266723	2.4642185
$(\sigma_1 - \sigma_2)/2$	0.259506	0.3266723	0.4642185
Angle of shearing resistance (ϕ)	6.888559		
Apperen cohesion (kg/cm ²)	0.169636		





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

PENGUJIAN KADAR AIR TANAH

PROYEK : Tugas Akhir
 Asal sampel : Kampus UII FTSP

DIKERJAKAN : Okky + Anto
 TANGGAL : 19 Juli 2005

1	No Pengujian (kode sampel)		1	2
2	Berat Container	W1 (gr)	21.80	22.12
3	Berat Container + tanah basah	W2 (gr)	42.15	38.88
4	Berat Container + tanah kering	W3 (gr)	40.48	37.62
5	Berat air	Wa (gr) = (W2-W3)	1.67	1.26
6	Berat tanah Kering	Wo (gr) = (W3-W1)	18.68	15.50
7	Kadar Air	w (%) = $\frac{(W2-W3)}{(W3-W1)} \times 100\%$	8.94	8.13
8	Kadar Air rata - rata	wrt (%)	8.53 %	

PENGUJIAN BERAT VOLUME TANAH

PROYEK : Tugas Akhir
 Asal sampel : Kampus UII FTSP

DIKERJAKAN : Okky + Anto
 TANGGAL : 19 Juli 2005

1	No Pengujian (kode sampel)		1	2	3
2	Diameter ring	(d) cm	6.40	6.40	6.40
3	Tinggi ring	(t) cm	2.58	2.58	2.58
4	Volume ring	(V) cm ³	82.96	82.96	82.96
5	Berat ring	W1 (gr)	83.05	83.05	83.05
6	Berat ring + tanah	W2 (gr)	236.83	234.58	235.69
7	Berat tanah	Wo (gr) = (W2-W1)	153.78	151.53	152.64
7	Berat volume tanah	γ (gram/cm ³) = $\frac{(W2-W1)}{V}$	1.85	1.83	1.84
8	Berat volume rata - rata	yrt (gram/cm ³)	1.840		

PENGUJIAN BERAT JENIS AGREGAT

Proyek : Tugas Akhir
 Lokasi : Kampus UII FTSP
 Dikerjakan : Anto + Okky
 kedalaman : 2,00 meter

AGREGAT KASAR (tertahan # 10)

A	Berat benda uji kering oven		
B	Berat benda uji kering permukaan jenuh		
C	Berat benda uji dalam air		
*	Berat jenis kering oven (SG)		
*	Berat jenis kering permukaan jenuh (SSD)		
*	Berat jenis semu (Apperen)		
*	Penyerapan (Absorsi)		

AGREGAT HALUS (lolos #10)

1	No pengujian	1	2
2	Berat Picknometer (W1)	17.07	16.71
3	Berat Picknometer + tanah kering (W2)	32.27	30.71
4	Berat Picknometer + tanah + air (W3)	52.16	50.46
5	Berat Picknometer + air (W4)	42.4	41.49
6	Temperatur (t°)	25.00	25.00
7	Bj pata temperatu (t°)	0.997090	0.997090
8	Bj pata temperatu (27,5 ° C)	0.996410	0.996410
7	Berat tanah kering (Wt)	15.20	14.00
8	A = Wt + W4	57.60	55.49
9	I = A - W3	5.44	5.03
10	Berat Jenis tanah, Gs = Wt / I	2.79	2.78
11	Bret Jenis = Gs. (Bj t° / Bj t 27,5 ° C)	2.7960	2.7852
12	Berat jenis rata-rata	2.791	

LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL FTSP
UNIVERSITAS ISLAM INDONESIA

GRAIN SIZE ANALYSIS

Project : TA
 Test no : 1
 Depth : 0-2.00 meter

Location : Kampus UII Fak. Teknik Sipil / Perencanaan
 Date : 20 Agustus 2005
 Tested by : Okky + Anto

Soil sample (disturbed/undisturbed)

Mass of soil = 60 gr
 Specific Gravity, G = 2.791
 $K_2 = a/W \times 100 = 1.61715285$

Hydrometer type = 152 H
 Hydr. Correction, a = 0.970
 Meniscus correction, m = 1

Sieve Analysis

Sieve No	Opening (mm)	Mass retained (gr)	Mass retained (gr)	% finer by mass $e/W \times 100\%$	Remarks
4	4.750	d1 = 0.00	e1 = 60.00	100.00	e7 = W - Sd
10	2.000	d2 = 8.60	e2 = 51.40	85.67	e6 = d7 + e7
20	0.850	d3 = 12.00	e3 = 39.40	65.67	e5 = d6 + e6
40	0.425	d4 = 13.00	e4 = 26.40	44.00	e4 = d5 + e5
60	0.250	d5 = 2.20	e5 = 24.20	40.33	e3 = d4 + e4
140	0.106	d6 = 1.00	e6 = 23.20	38.67	e2 = d3 + e3
200	0.075	d7 = 0.48	e7 = 22.72	37.87	e1 = d2 + e2
		Sd = 37.28			

Hydrometer Analysis

Time	elapsed time min. T	R1	R2	t	R'	L	K	D (mm)	Rc = R1 - R2 + Cr	P K2 x R (%)
9.29										
9.31	2	14	-2.0	27	15	13.839	0.0119	0.03143248	17.3	27.98
9.34	5	11	-2.0	27	12	14.330	0.0119	0.02022937	14.3	23.13
9.59	30	10	-2.0	27	11	14.494	0.0119	0.00830565	13.3	21.51
10.29	60	8	-2.0	26	9	14.821	0.0121	0.0060375	11.3	18.27
13.39	250	6	-2.0	26	7	15.149	0.0121	0.00299026	9.3	15.04
9.29	1440	5	-2.0	25	6	15.313	0.0121	0.00125266	8.3	13.42

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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 CIVIL ENGINEERING DEPARTEMENT
 ISLAMIC UNIVERSITY OF INDONESIA**

GRAIN SIZE ANALYSIS

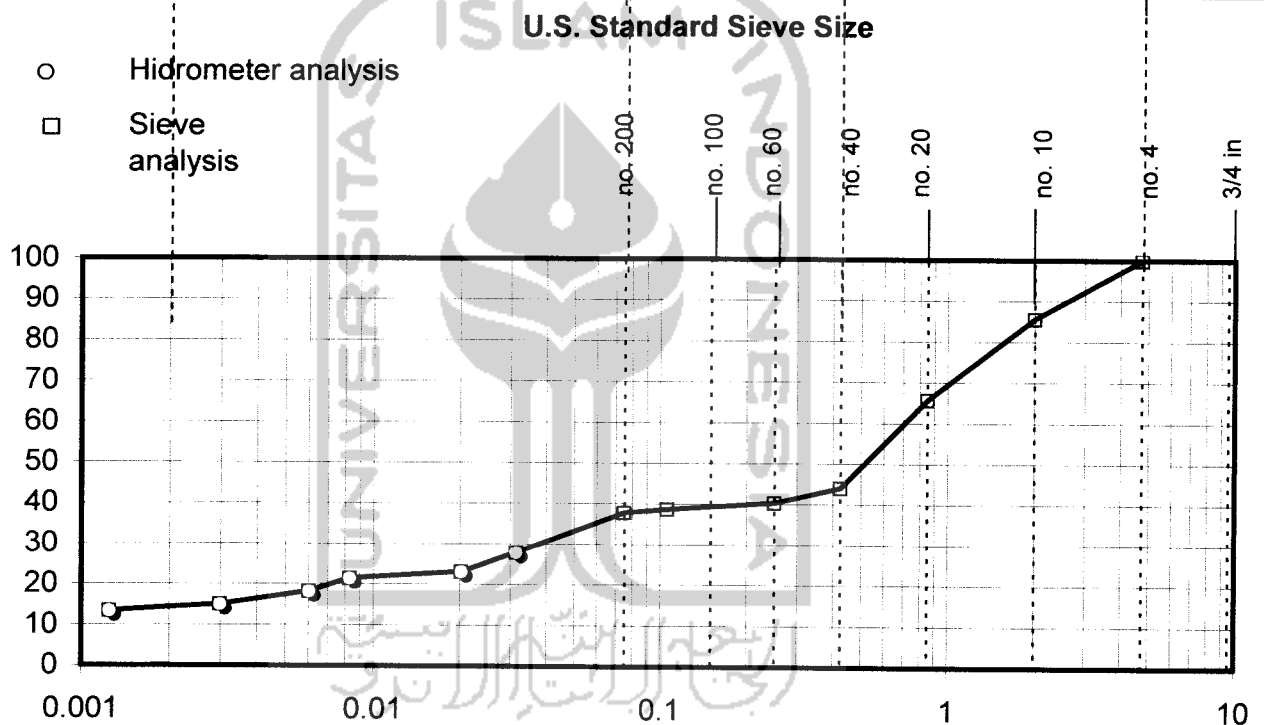
Project : TA	Tested : Okky + Anto
Smple no. : 1	Date : 20 Agustus 2005
Depth : 0-2,00 meter	Location : Kampus UII Fak. Teknik Sipil / Perencanaan

Soil sample (disturbed/undisturbed)

Specifig Gravity : 2.791

Discription of soil : Clay Sand

Clay	Silt	Sand		Gravel
		Fine	Coarse to medium	



Finer # 200 :	37.867 %	D10 (mm)	
		D30 (mm)	0.0036
Gravel :	0.00 %	D60 (mm)	0.0700
Sand :	62.13 %	Cu = D60/D10	
Silt :	15.64 %	Cc = D30 ² / (D10xD60)	
Clay :	2.21 %		

**SOIL MECHANICS LABORATORY
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ISLAMIC UNIVERSITY OF INDONESIA**

GRAIN SIZE ANALYSIS

Project : TA
 Test no : 2
 Depth : 0-2.00 meter

Location : Kampus UII Fak. Teknik Sipil / Perencanaan
 Date : 20 Agustus 2005
 Tested by : Okky + Anto

Soil sample (disturbed/undisturbed)

Mass of soil = 60 gr
 Specific Gravity, G = 2.791
 $K_2 = a/W \times 100 = 1.61715285$

Hydrometer type = 152 H
 Hydr. Correction, a = 0.970
 Meniscus correction, m = 1

Sieve Analysis

Sieve No	Opening (mm)	Mass retained (gr)	Mass retained (gr)	% finer by mass $e/W \times 100\%$	Remarks
4	4.750	d1 = 0.00	e1 = 60.00	100.00	e7 = W - Sd
10	2.000	d2 = 8.43	e2 = 51.57	85.95	e6 = d7 + e7
20	0.850	d3 = 11.80	e3 = 39.77	66.28	e5 = d6 + e6
40	0.425	d4 = 12.98	e4 = 26.79	44.65	e4 = d5 + e5
60	0.250	d5 = 1.90	e5 = 24.89	41.48	e3 = d4 + e4
140	0.106	d6 = 1.20	e6 = 23.69	39.48	e2 = d3 + e3
200	0.075	d7 = 0.23	e7 = 23.46	39.10	e1 = d2 + e2
		Sd = 36.54			

Hirometer Analysis

Time	elapsed time min. T	R1	R2	t	R'	L	K	D (mm)	Rc = R1-R2+Cr	P K2 x R
										(%)
9.29										
9.31	2	13	-2.0	27	14	14.003	0.0119	0.03161788	16.3	26.36
9.34	5	12	-2.0	27	13	14.166	0.0119	0.02011347	15.3	24.74
9.59	30	10	-2.0	27	11	14.494	0.0119	0.00830565	13.3	21.51
10.29	60	9	-2.0	26	10	14.658	0.0121	0.00600406	12.3	19.89
13.39	250	6	-2.0	26	7	15.149	0.0121	0.00299026	9.3	15.04
9.29	1440	4	-2.0	25	5	15.476	0.0121	0.00125933	7.3	11.81
									0	0

Remarks :

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

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

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GRAIN SIZE ANALYSIS

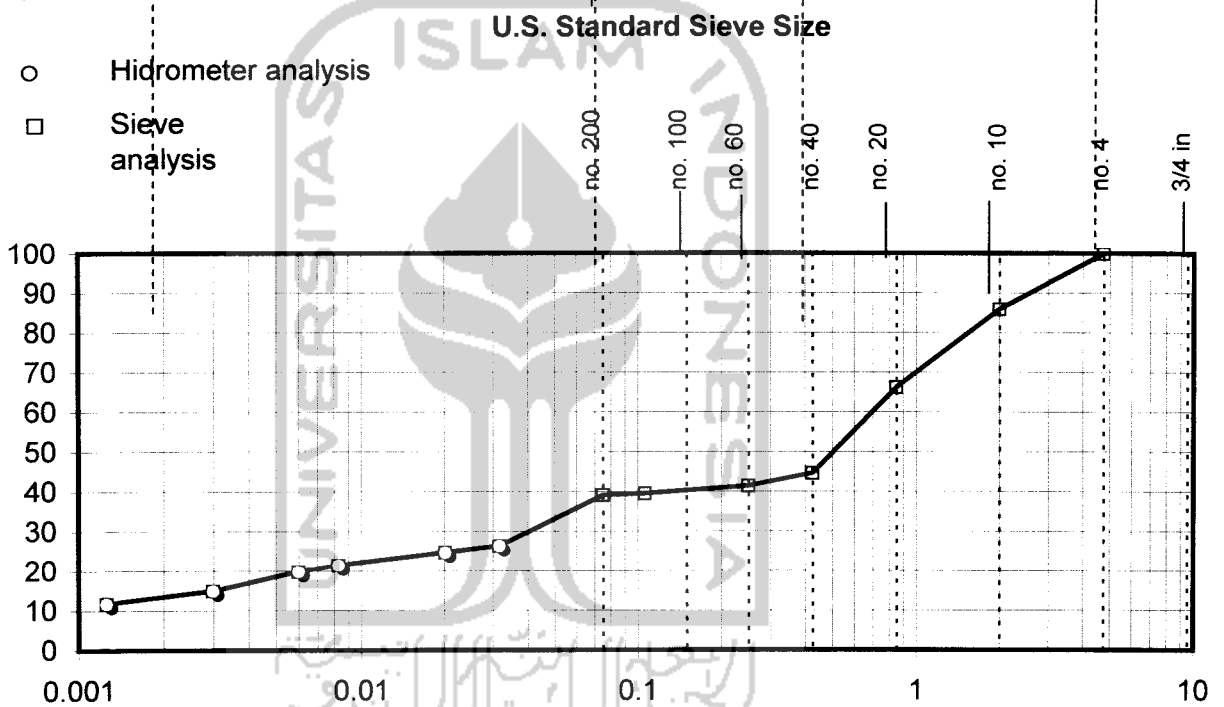
Project : TA	Tested : Okky + Anto
Smple no. : 2	Date : 20 Agustus 2005
Depth : 0-2.00 meter	Location : Kampus UII Fak. Teknik Sipil / Perencanaan

Soil sample (disturbed/undisturbed)

Specifig Gravity : 2.791

Discription of soil : Clay Sand

Clay	Silt	Sand		Gravel
		Fine	Coarse to medium	



Finer # 200 :	39.1 %	D10 (mm)	
		D30 (mm)	0.0039
Gravel :	0.00 %	D60 (mm)	0.0690
Sand :	60.90 %	Cu = D60/D10	
Silt :	15.30 %	Cc = D30 ² / (D10xD60)	
Clay :	3.49 %		

SOIL MECHANICS LABORATORY
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 ISLAMIC UNIVERSITY OF INDONESIA



LABORATORIUM MEKANIKA TANAH
 JURUSAN TEKNIK SIPIL-FTSP
 UNIVERSITAS ISLAM INDONESIA

Proyek : Tugas Akhir
 Lokasi : Kampus UII FTSP
 No. Titik :
 kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
 dikerjakan : Okky + Anto

Beban P (Kg)			0.50	1.00	2.00	4.00	8.00	16.00	4.00	0.50
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	2,00 (*)	0,25 (*)
	0	0	11.000	10.800	10.660	10.390	10.000	9.325	8.635	8.685
	5,40"	0.3	10.950	10.755	10.500	10.245	9.910	9.120		
	15,00"	0.5	10.900	10.740	10.490	10.210	9.720	9.075		
	29,40"	0.7	10.875	10.735	10.480	10.180	9.690	9.030		
	1,00"	1.0	10.860	10.730	10.470	10.160	9.610	8.985		
	2,25"	1.5	10.850	10.720	10.465	10.130	9.550	8.915		
	4,00"	2.0	10.840	10.710	10.455	10.110	9.515	8.870		
	6,25"	2.5	10.830	10.705	10.450	10.085	9.488	8.835		
	9,00"	3.0	10.825	10.695	10.440	10.070	9.460	8.805		
	12,25"	3.5	10.820	10.690	10.430	10.055	9.435	8.775		
	16,00"	4.0	10.815	10.680	10.420	10.035	9.410	8.750		
	25,00"	5.0	10.810	10.670	10.410	10.020	9.380	8.695		
	36,00"	5.8	10.805	10.665	10.400	10.010	9.350	8.660		
	49,00"	7.0	10.800	10.660	10.390	10.000	9.325	8.635		
1,04'	64,00"	8.0								
1,21'	81,00"	9.6								
1,40'	100,00"	10.0								
2,01'	121,00"	11.0								
2,24'	144,00"	12.0								
3,45'	225,00"	15.0								
6,40'	400,00"	20.0								
24,0'	1440,00"	38.0	10.800	10.660	10.390	10.000	9.325	8.635	8.685	8.890

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LABORATORIUM MEKANIKA TANAH
 JURUSAN TEKNIK SIPIL-FTSP
 UNIVERSITAS ISLAM INDONESIA

HITUNGAN UJI KONSOLIDASI

Proyek : Tugas Akhir
 Lokasi : Kampus UII FTSP
 No. Titik :
 kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
 dikerjakan : Okky + Anto

Berat Jenis Tanah : 2.791 Luas ring (cm²) : 19.635
 Berat ring (gr) : 35.6 Tinggi (H₀) (cm) : 2.02
 Diameter (cm) : 5 Volume V₀ (cm³) : 39.6626

Beban (kg/cm ²)	Pembacaan akhir dial (mm)	Perubahan tebal ΔH (cm)	Perubahan angka pori $\Delta e = \frac{\Delta H}{H_i}$	Angka pori $e = e_1 - \Delta e$	$C_c = \frac{\Delta e}{\log \frac{P_2}{P_1}}$	tebal akhir H=H ₁ -ΔH	1/2 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	11.000			0.654			1.005			
		0.020	0.016			2.000		3.9	912.6	0.000939
0.25	10.800			0.638			0.9965			
		0.014	0.011		0.038	1.986		5.8	2018.4	0.000417
0.50	10.660			0.626			0.98625			
		0.027	0.022		0.073	1.959		6.3	2381.4	0.000346
1.00	10.390			0.604			0.96975			
		0.039	0.032		0.106	1.920		5	1500	0.000532
2.00	10.000			0.572			0.943125			
		0.068	0.055		0.184	1.853		6.15	2269.35	0.000332
4.00	9.325			0.517			0.909			
		0.069	0.057		0.188	1.784		6.5	2535	0.000276
8.00	8.635			0.460						
		-0.050	-0.041		0.068					
2.00	8.685			0.501						
		-0.021	-0.017		0.019					
0.25	8.890			0.518						
0.00										

UNIVERSITAS ISLAM INDONESIA
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LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

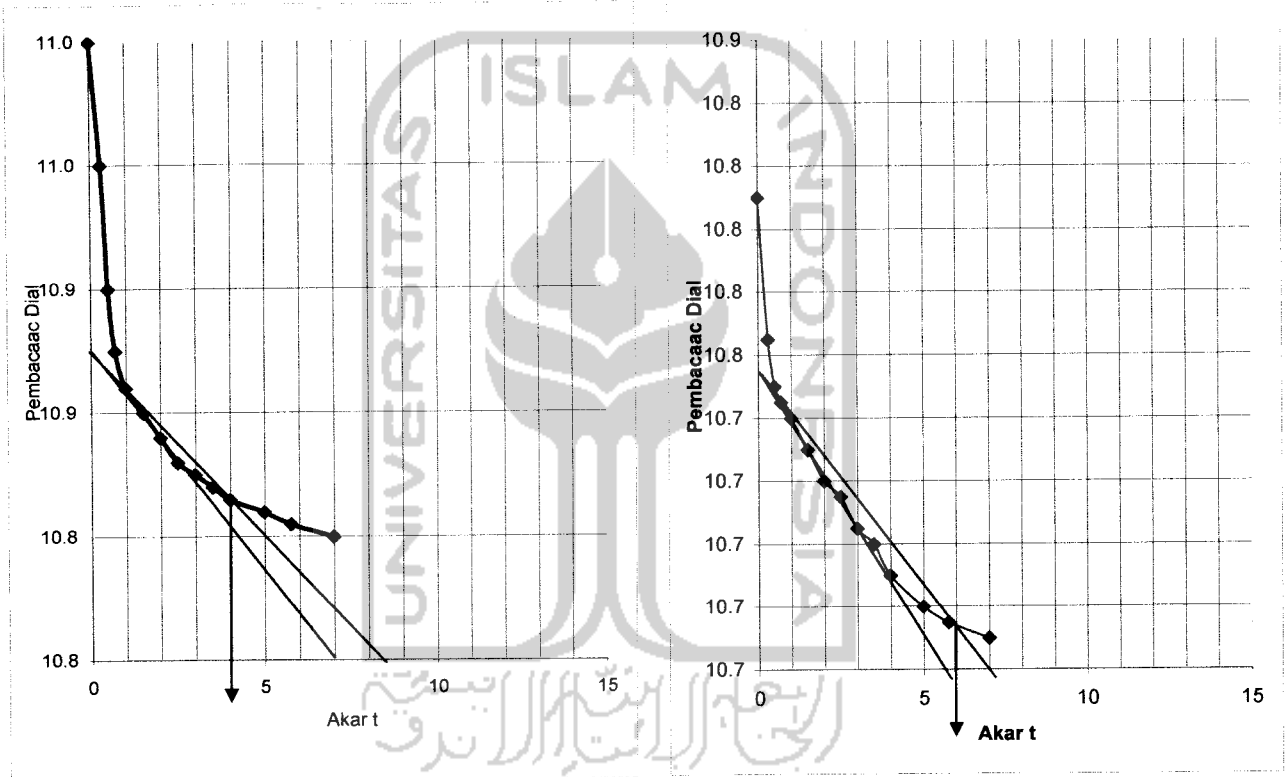
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Beban 0.25 kg/cm²

Beban 0.5 kg/cm²



\sqrt{t} : 3.9

\sqrt{t} : 5.8



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

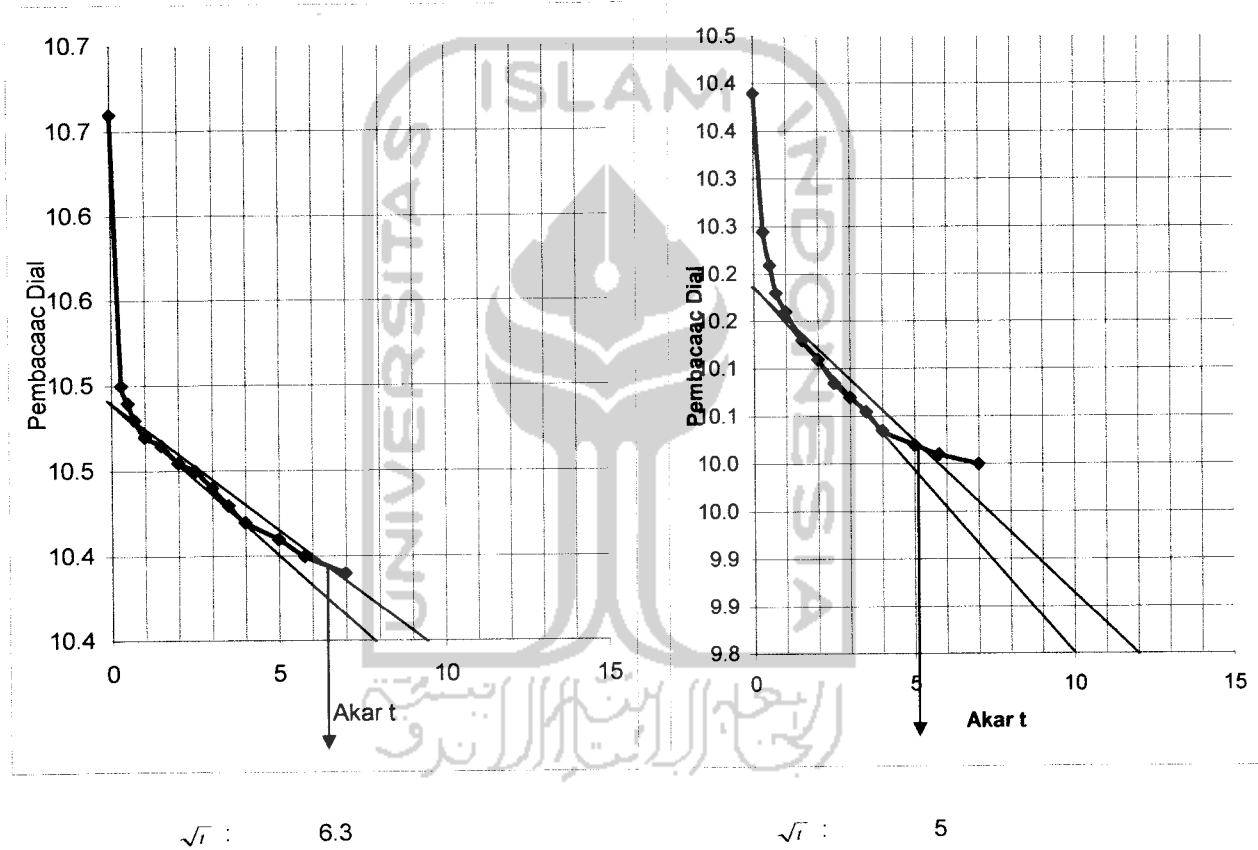
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Beban 1.00 kg/cm²

Beban 2.00 kg/cm²





LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

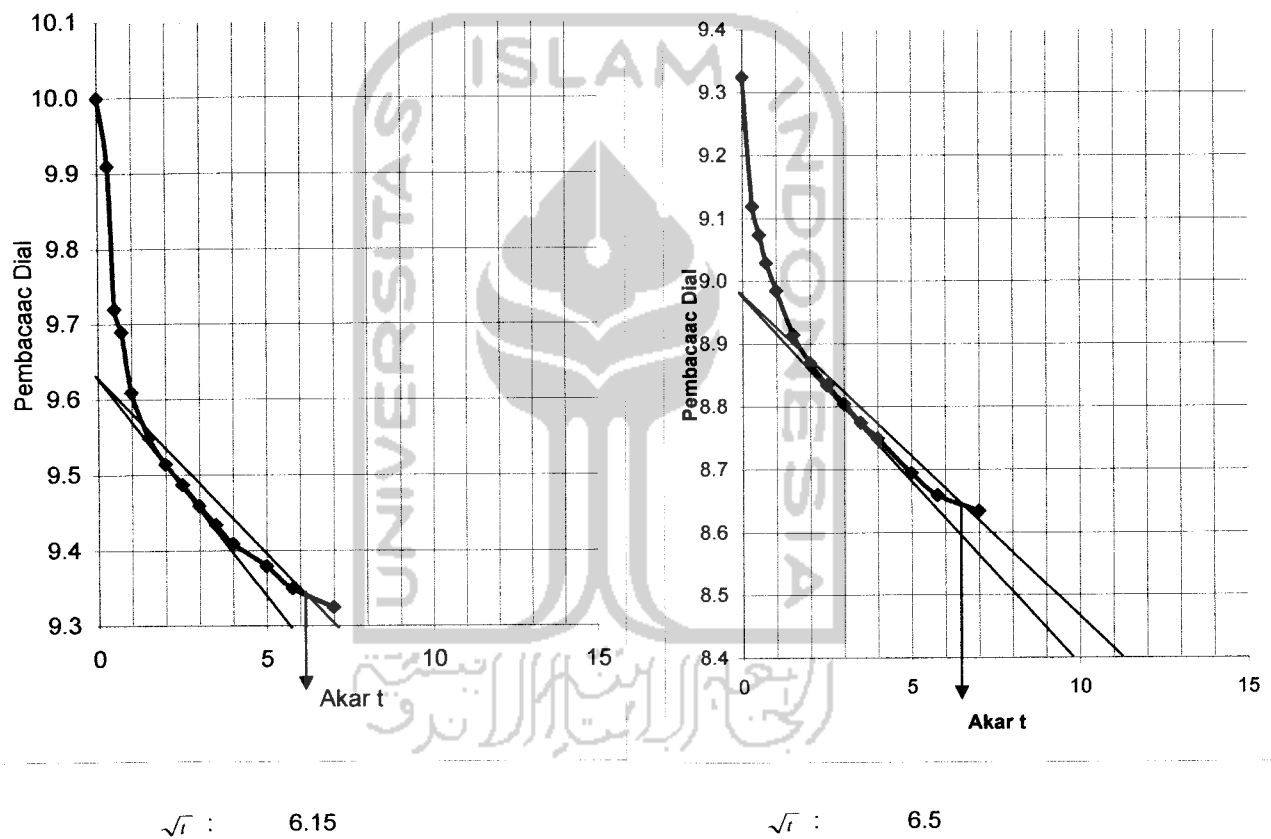
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Beban 4.00 kg/cm²

Beban 8.00 kg/cm²





LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

KESIMPULAN UJI KONSOLIDASI

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Data Parameter tanah dan ring

Berat Jenis Tanah	2.791
Berat ring (gr)	35.6
Diameter (cm)	5
Luas ring (cm ²)	19.63495
Tinggi (Ho) (cm)	2.02
Volume Vo (cm ³)	39.66261

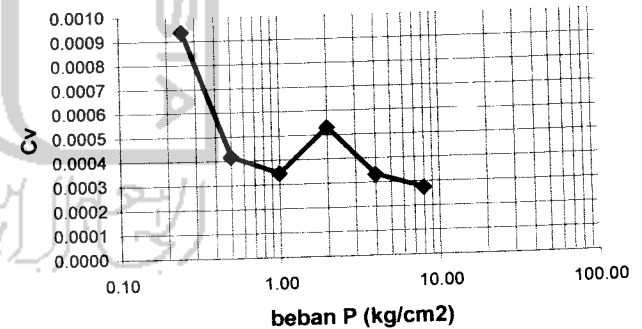
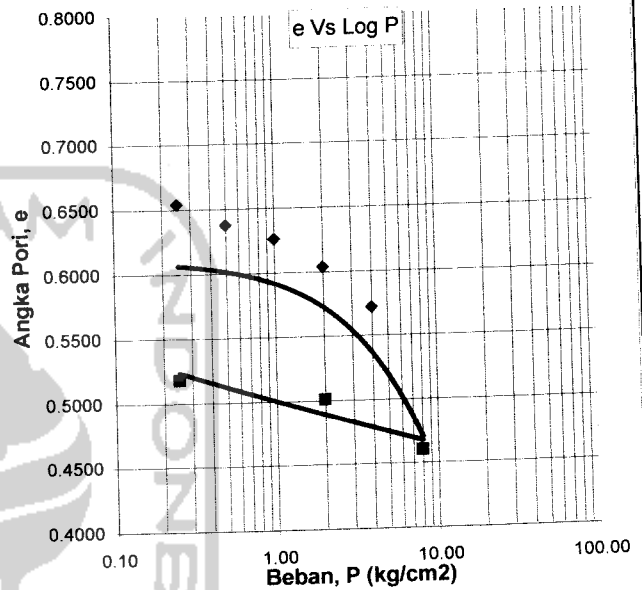
Kadar air	
Berat Container (cup), gr	21.92 22.27
Berat Cup + tanah basah, gr	42.27 39.03
Berat Cup + tanah kering, gr	40.62 37.75
Kadar air %	8.82 8.27
Kadar air rata-rata %	8.55

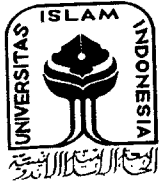
Berat ring + tanah basah, gr	108.24
Berat volume tanah basah	1.831
Berat volume tanah kering	1.687
Tinggi bagian padat (Ht)	1.22
Angka pori (e)	0.654168
Derajat kejenuhan (Sr)	285.517

Setelah pengujian	
Berat ring + tanah basah, gr	107.05
Berat ring + tanah kering, gr	97.14
Kadar air, %	16.10335
Angka pori (e)	0.518231
Derajat Kejenuhan (Sr)	336.9513

Cc 0.128671

Cs -0.01859





LABORATORIUM MEKANIKA TANAH
 JURUSAN TEKNIK SIPIL-FTSP
 UNIVERSITAS ISLAM INDONESIA

Proyek : Tugas Akhir
 Lokasi : Kampus UII FTSP
 No. Titik :
 kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
 dikerjakan : Okky + Anto

Beban P (Kg)			0.50	1.00	2.00	4.00	8.00	16.00	4.00	0.50
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	2,00 (*)	0,25 (*)
	0	0	11.000	10.830	10.670	10.400	10.015	9.370	8.660	8.715
	5,40"	0.3	10.900	10.800	10.550	10.250	9.930	9.100		
	15,00"	0.5	10.895	10.765	10.530	10.220	9.680	9.060		
	29,40"	0.7	10.885	10.755	10.520	10.190	9.650	9.030		
	1,00"	1.0	10.880	10.745	10.500	10.180	9.630	9.000		
	2,25"	1.5	10.870	10.730	10.480	10.140	9.570	8.960		
	4,00"	2.0	10.860	10.720	10.470	10.120	9.550	8.920		
	6,25"	2.5	10.855	10.713	10.460	10.100	9.520	8.890		
	9,00"	3.0	10.850	10.705	10.450	10.080	9.490	8.860		
	12,25"	3.5	10.845	10.700	10.440	10.065	9.470	8.825		
	16,00"	4.0	10.840	10.695	10.432	10.050	9.450	8.800		
	25,00"	5.0	10.833	10.685	10.420	10.030	9.420	8.750		
	36,00"	5.8	10.830	10.680	10.410	10.020	9.390	8.700		
	49,00"	7.0	10.830	10.670	10.400	10.015	9.370	8.660		
1,04'	64,00"	8.0								
1,21'	81,00"	9.6								
1,40'	100,00"	10.0								
2,01'	121,00"	11.0								
2,24'	144,00"	12.0								
3,45'	225,00"	15.0								
6,40'	400,00"	20.0								
24,0'	1440,00"	38.0	10.830	10.670	10.400	10.015	9.370	8.660	8.715	9.210

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LABORATORIUM MEKANIKA TANAH
 JURUSAN TEKNIK SIPIL-FTSP
 UNIVERSITAS ISLAM INDONESIA

HITUNGAN UJI KONSOLIDASI

Proyek : Tugas Akhir
 Lokasi : Kampus UII FTSP
 No. Titik :
 kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
 dikerjakan : Okky + Anto

Berat Jenis Tanah : 2.791 Luas ring (cm²) : 20.4683
 Berat ring (gr) : 34 Tinggi (H₀) (cm) : 1.98
 Diameter (cm) : 5.105 Volume V₀ (cm³) : 40.5272

Beban (kg/cm ²)	Pembacaan akhir dial (mm)	Perubahan tebal ΔH (cm)	Perubahan angka pori $\Delta e = \frac{\Delta H}{H_1}$	Angka pori $e = e_1 - \Delta e$	$C_c = \frac{\Delta e}{\log \frac{p_2}{p_1}}$	tebal akhir H=H ₁ -ΔH	1/2 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	11.000			0.683			0.98575			
		0.017	0.014			1.963		6	2160	0.000381
0.25	10.830			0.669			0.9775			
		0.016	0.014		0.045	1.947		5.25	1653.75	0.00049
0.50	10.670			0.655			0.96675			
		0.027	0.023		0.076	1.920		5.75	1983.75	0.0004
1.00	10.400			0.632			0.950375			
		0.039	0.033		0.109	1.882		5.6	1881.6	0.000407
2.00	10.015			0.599			0.924625			
		0.065	0.055		0.182	1.817		6.3	2381.4	0.000304
4.00	9.370			0.544			0.89075			
		0.071	0.060		0.200	1.746		5.7	1949.4	0.000345
8.00	8.660			0.484						
		-0.055	-0.047		0.078					
2.00	8.715			0.531						
		-0.050	-0.042		0.047					
0.25	9.210			0.573						
0.00										



LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

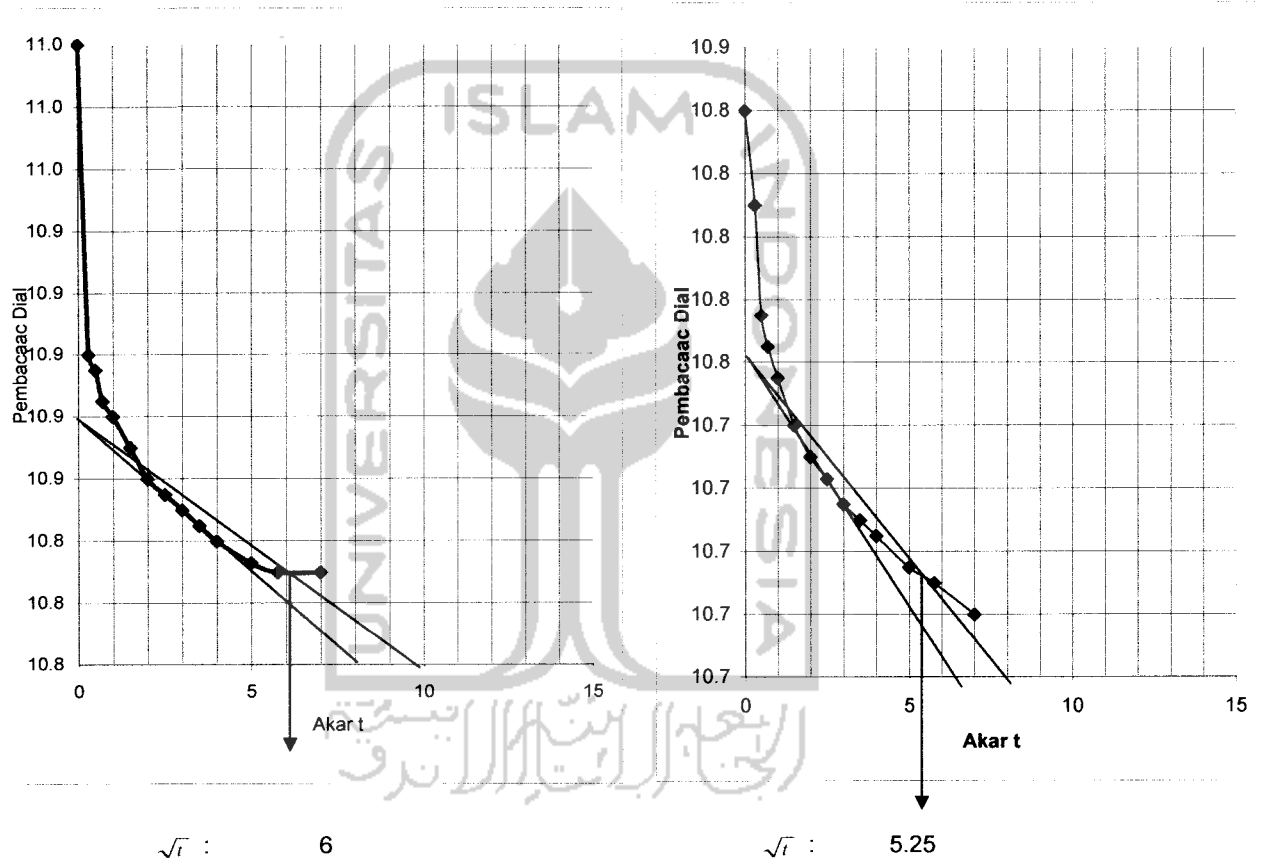
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Beban 0.25 kg/cm²

Beban 0.5 kg/cm²





LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

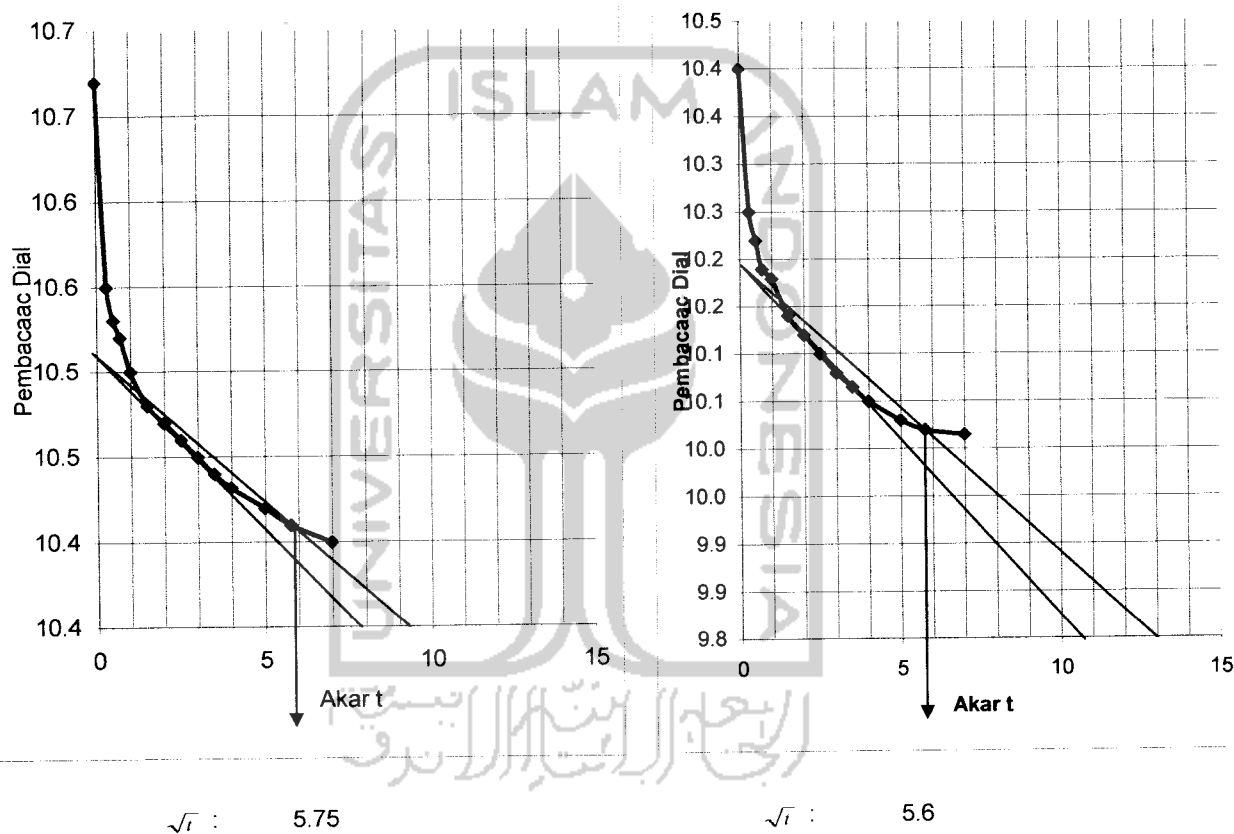
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Beban 1.00 kg/cm²

Beban 2.00 kg/cm²





LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA

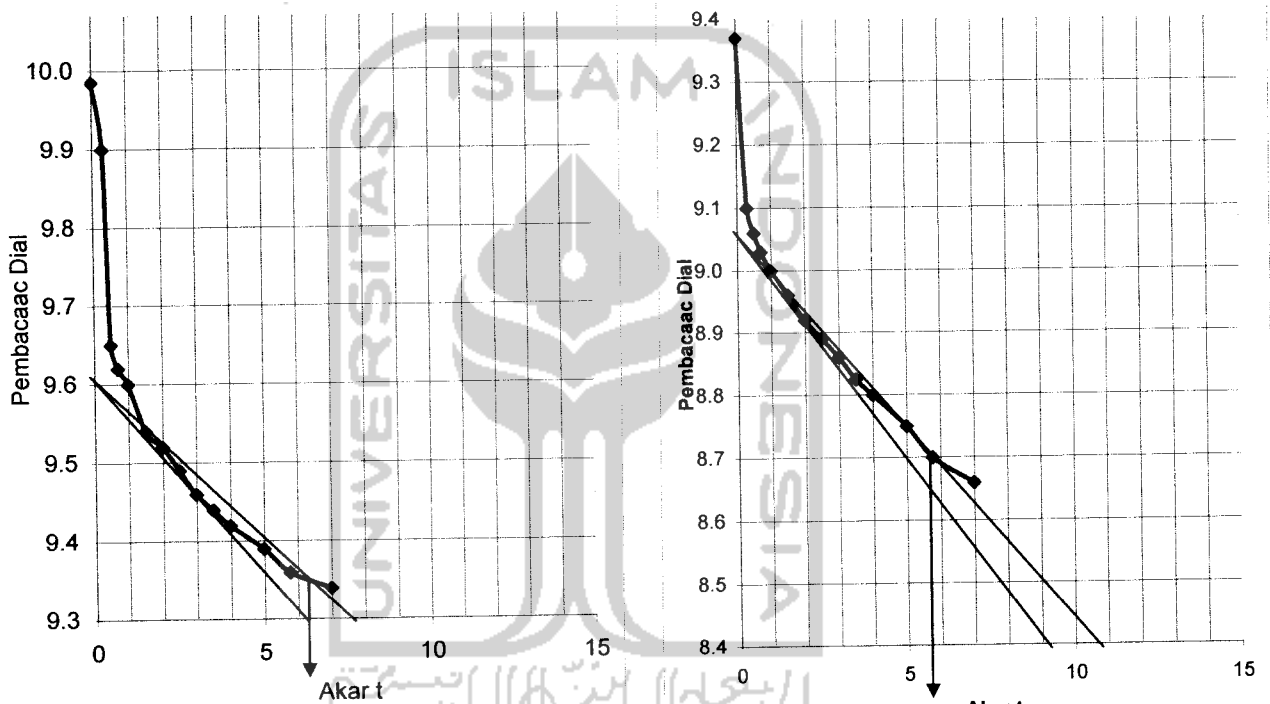
GRAFIK PENURUNAN

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Beban 4.00 kg/cm²

Beban 8.00 kg/cm²



\sqrt{t} : 6.3

\sqrt{t} : 5.7



**LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL-FTSP
UNIVERSITAS ISLAM INDONESIA**

KESIMPULAN UJI KONSOLIDASI

Proyek : Tugas Akhir
Lokasi : Kampus UII FTSP
No. Titik :
kedalaman : 2.00 meter

Tanggal : 19 Juli 2005
dikerjakan : Okky + Anto

Data Parameter tanah dan ring

Berat Jenis Tanah : 2.791
Berat ring (gr) : 34
Diameter (cm) : 5.105
Luas ring (cm²) : 20.46828
Tinggi (H_o) (cm) : 1.98
Volume V_o (cm³) : 40.5272

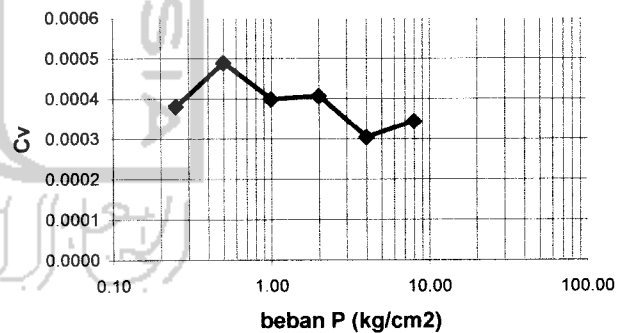
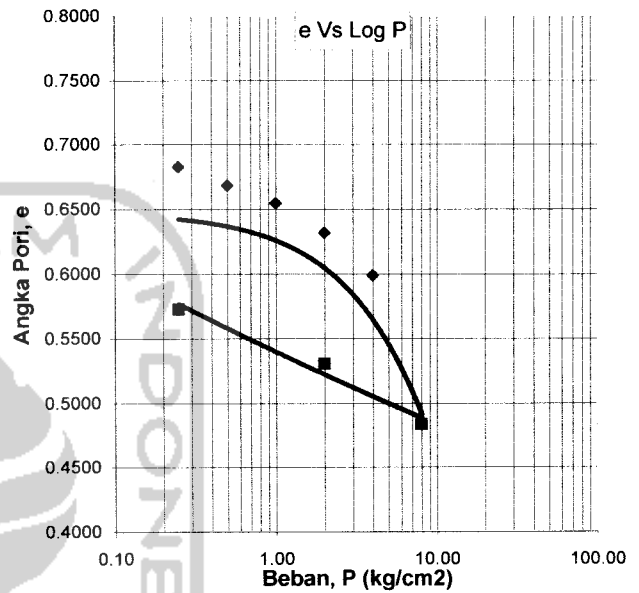
Kadar air		
Berat Container (cup), gr	21.67	21.92
Berat Cup + tanah basah, gr	37.78	42.41
Berat Cup + tanah kering, gr	36.49	40.82
Kadar air %	8.70	8.41
Kadar air rata-rata %	8.56	

Berat ring + tanah basah, gr	106.96
Berat volume tanah basah	1.800
Berat volume tanah kering	1.658
Tinggi bagian padat (H _t)	1.18
Angka pori (e)	0.683006
Derajat kejenuhan (Sr)	274.635

Setelah pengujian	
Berat ring + tanah basah, gr	105.82
Berat ring + tanah kering, gr	96.46
Kadar air, %	14.98559
Angka pori (e)	0.572931
Derajat Kejenuhan (Sr)	309.1001

C_c : 0.132147

C_s : -0.04659





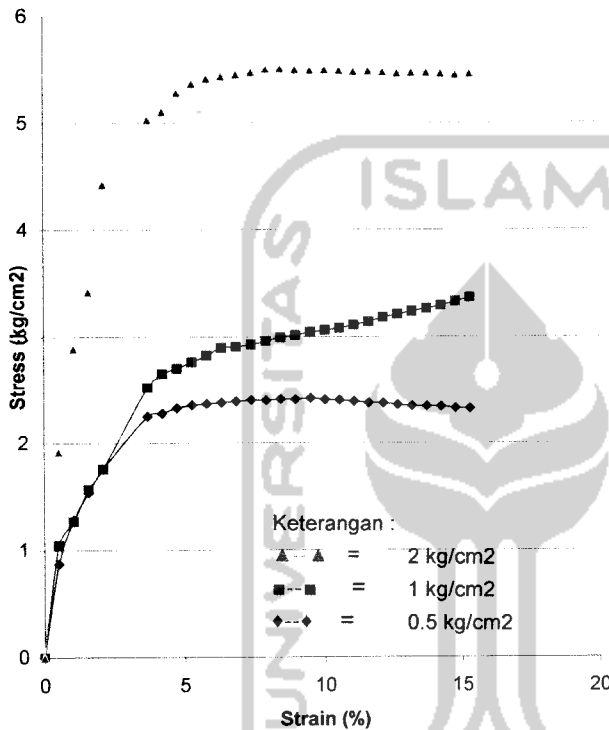
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
UNIVERSITAS ISLAM INDONESIA

Jl. Kaliurang KM. 14,4 Telp. (0274) 895042, 895707 fax 895330 Yogyakarta 55584.

TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Kampus UII FTSP
 Description of soil : Clay Sand

Sample No. : Disturbed
 Date : 13 Agustus 2005
 Tested by : Anto + Okky

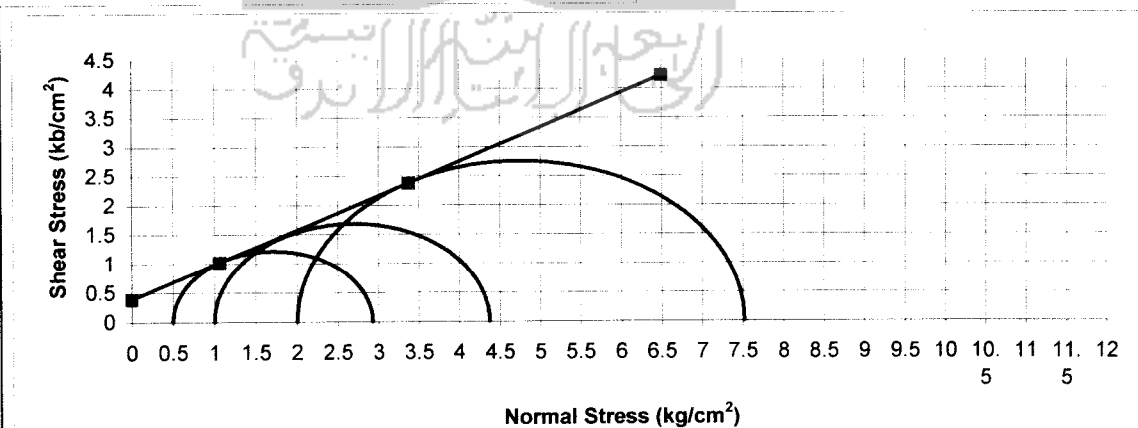


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	170.05	170.05	170.05

Water Content		
Wt Container (cup), gr	21.80	22.12
Wt of Cup + Wet soil, gr	42.15	38.88
Wt of Cup + Dry soil, gr	40.48	37.62
Water Content %	8.94	8.13
Average water content %	8.53	

γ_d gram/cm ³	1.8400309	1.8400309	1.8400309
γ_d gram/cm ³	1.6953413	1.6953413	1.6953413

σ_3	0.5	1	2
$\Delta\sigma = P/A$	2.4250557	3.3698826	5.5138112
$\sigma_1 = \Delta\sigma + \sigma_3$	2.9250557	4.3698826	7.5138112
$(\sigma_1 + \sigma_2)/2$	1.7125279	2.6849413	4.7569056
$(\sigma_1 - \sigma_2)/2$	1.2125279	1.6849413	2.7569056
Angle of shearing resistance (ϕ)	30.490371		
Apperen cohesion (kg/cm ²)	0.3982542		





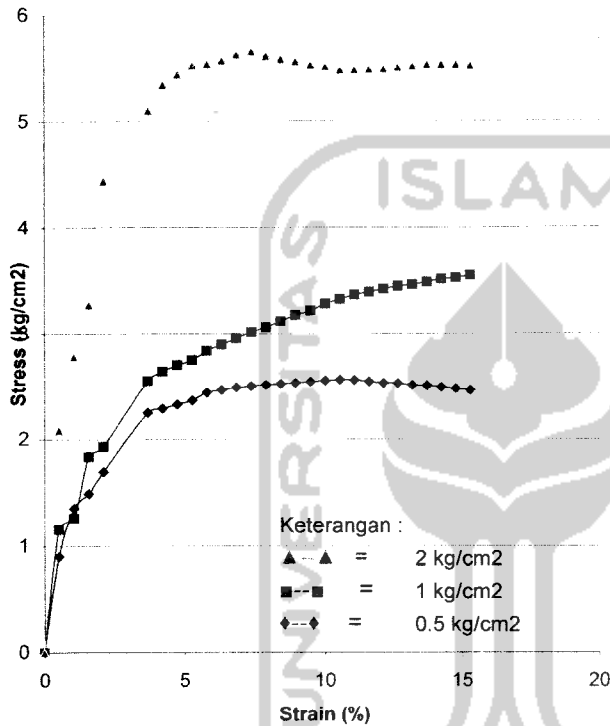
LABORATORIUM MEKANIKA TANAH
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TRIAXIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Kampus UII FTSP
 Description of soil : Clay Sand

Sample No. : Disturbed
 Date : 13 Agustus 2005
 Tested by : Okky + Anto

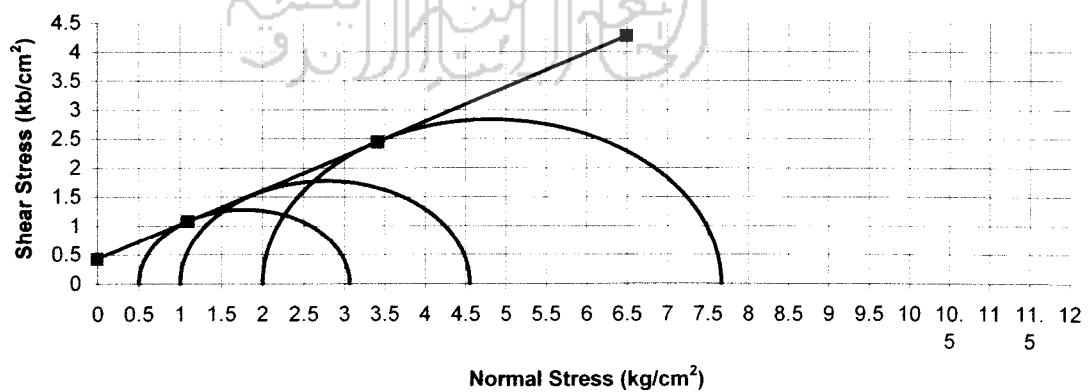


Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	170.05	170.05	170.05

Water Content		
Wt Container (cup), gr	21.80	22.12
Wt of Cup + Wet soil, gr	42.15	38.88
Wt of Cup + Dry soil, gr	40.48	37.62
Water Content %	8.94	8.13
Average water content %	8.53	

γ_d gram/cm ³	1.8400309	1.8400309	1.8400309
γ gram/cm ³	1.6953413	1.6953413	1.6953413

σ_3	0.5	1	2
$\Delta\sigma = P/A$	2.5662441	3.5532776	5.665105
$\sigma_1 = \Delta\sigma + \sigma_3$	3.0662441	4.5532776	7.665105
$(\sigma_1 + \sigma_2)/2$	1.7831221	2.7766388	4.8325525
$(\sigma_1 - \sigma_2)/2$	1.2831221	1.7766388	2.8325525
Angle of shearing resistance (o)	30.543932		
Apperen cohesion (kg/cm ²)	0.437192		





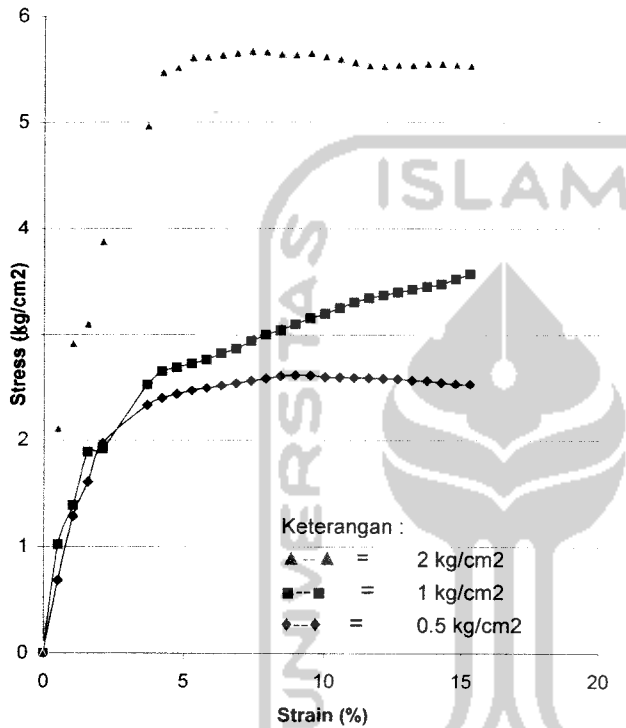
LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
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TRIAxIAL COMPRESSION TEST RESULT
UNCONSOLIDATED UNDRAINED (TXUU)

Project : Tugas Akhir
 Location : Kampus UII FTSP
 Description of soil : Clay Sand

Sample No. : Disturbed
 Date : 13 Agustus 2005
 Tested by : Okky + Anto



Piece No :	1	2	3
H cm	7.58	7.58	7.58
D cm	3.94	3.94	3.94
A cm ²	12.19	12.19	12.19
V cm ³	92.42	92.42	92.42
Wt gram	170.05	170.05	170.05

Water Content		
Wt Container (cup), gr	21.80	22.12
Wt of Cup + Wet soil, gr	42.15	38.88
Wt of Cup + Dry soil, gr	40.48	37.62
Water Content %	8.94	8.13
Average water content %	8.53	

γ_d gram/cm ³	1.8400309	1.8400309	1.8400309
γ gram/cm ³	1.6953413	1.6953413	1.6953413

σ_3	0.5	1	2
$\Delta\sigma = P/A$	2.6239835	3.5762019	5.6776384
$\sigma_1 = \Delta\sigma + \sigma_3$	3.1239835	4.5762019	7.6776384
$(\sigma_1 + \sigma_2)/2$	1.8119918	2.788101	4.8388192
$(\sigma_1 - \sigma_2)/2$	1.3119918	1.788101	2.8388192
Angle of shearing resistance (o)	30.305326		
Apperen cohesion (kg/cm ²)	0.4599215		

