UJI KADAR AIR

No. Uji : 01						**Awal**
Sampel Tanah	Lempung Coklat Kehitaman					
Lokasi	Desa Cijeruk Cadas Pangeran / 0.00-1.00m					
Tanggal	28-08-2006/30-08-2006/29-08-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	21	22	A23	A24	12	35
Berat kon.+Tanah Basah (gr)	70.45	72.43	70.45	72.43	71.76	60.23
Berat kon.+Tanah Kering (gr)	56.32	57.67	56.32	57	56.84	47.35
Berat air (gr)	13.78	15.3	14.4	14.8	13.65	9.98
Berat Container (gr)	14.13	14.76	14.13	15.43	14.92	12.88
Berat tanah kering (gr)	42.54	42.37	41.92	42.2	43.19	37.37
Kadar Air (%)	33.22	34.84	33.71	36.57	34.55	34.47
Kadar Air Rata-rata (%)	34.00		35.10		34.50	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	20	69	19	26	25	01
Berat kon.+Tanah Basah (gr)	25.65	27.13	27.72	24.9	27.37	30.86
Berat kon.+Tanah Kering (gr)	22.3	22.46	24.11	20.9	23.77	26.21
Berat air (gr)	12.83	9.19	13.62	10.10	13.56	13.57
Berat kontainer (gr)	3.35	4.67	3.61	4	3.6	4.65
Berat tanah kering (gr)	9.47	12.97	10.49	10.8	10.21	12.64
Kadar Air (%)	35.4	36	34.4	37.03	35.25	36.79
Kadar Air Rata-rata (%)	35.70		35.72		36.02	

No. Uji : 02						**Awal**
Sampel Tanah	Tufa Merah (lanau)					
Lokasi	Desa Tugu Cisarua Bogor / 0.00-1.00m					
Tanggal	28-08-2006/31-08-2006/04-09-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	156	15	156	34G	56	75
Berat kon.+Tanah Basah (gr)	48.73	48.3	47.78	49.67	54.32	53.27
Berat kon.+Tanah Kering (gr)	36.9	36.8	37.4	36.56	39.98	40.56
Berat air (gr)	13.5	14.5	13.5	13.52	14.78	15.57
Berat kontainer (gr)	11.83	11.5	10.38	13.11	14.34	12.71
Berat tanah kering (gr)	23.4	22.3	23.9	23.04	25.2	24.99
Kadar Air (%)	50.56	51.57	43.44	56.91	56.91	50.87
Kadar Air Rata-rata (%)	50.10		50.18		53.9	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	59	55	47	11	47	11
Berat kon.+Tanah Basah (gr)	28.68	25	21.52	26.55	25.33	23
Berat kon.+Tanah Kering (gr)	23.22	19.52	17.44	20.41	19.80	17.86
Berat air (gr)	13.68	10	9.96	9.06	9.96	9.06
Berat kontainer (gr)	5.46	5.48	4.08	6.14	5.53	5.14
Berat tanah kering (gr)	9.54	9.52	7.48	11.4	9.84	8.8
Kadar Air (%)	57.4	57.6	54.5	53.9	56.2	58.4
Kadar Air Rata-rata (%)	57.40		54.2		57.3	

UJI KADAR AIR

No. Uji : 03						**Awal**
Sampel Tanah	Lempung Gemuk (Abu-abu)					
Lokasi	STA 153+900B / 4.00-4.40m					
Tanggal	07-09-2006/12-09-2006/14-09-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	21.2	22.76	21.2	22.8	20.45	22.6
Berat kon.+Tanah Kering (gr)	16.6	18.01	16.54	17.98	16.1	17.9
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat kontainer (gr)	4.6	4.75	4.66	4.82	4.35	4.7
Berat tanah kering (gr)	7.54	8.05	7.48	8.02	7.04	7.94
Kadar Air (%)	61.09	59.01	62.3	60.1	61.79	59.2
Kadar Air Rata-rata (%)	60.05		61.20		60.48	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	23.42	22.42	21.3	22.34	22.76	23.43
Berat kon.+Tanah Kering (gr)	17.78	17.68	16.73	17.56	17.6	18.45
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat Container (gr)	5.64	4.66	4.57	4.78	5.16	4.98
Berat tanah kering (gr)	8.72	7.72	7.67	7.6	8.54	8.49
Kadar Air (%)	64.68	60.37	59.59	62.9	60.43	58.66
Kadar Air Rata-rata (%)	62.53		61.25		59.55	

No. Uji : 04						**Awal**
Sampel Tanah	Lempung Gemuk (Abu-abu)					
Lokasi	STA 173+400B / 2.00-2.40m					
Tanggal	19-09-2006/21-09-2006/26-09-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	22.45	21.68	21.34	21.87	22.78	21.43
Berat kon.+Tanah Kering (gr)	18.06	17.8	17.31	17.99	18.25	17.55
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat Container (gr)	4.39	3.88	4.03	3.88	4.53	3.88
Berat tanah kering (gr)	9	7.84	8.25	8.03	9.19	7.59
Kadar Air (%)	48.78	49.49	48.85	48.32	49.3	51.12
Kadar Air Rata-rata (%)	49.17		48.60		50.21	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	22.98	21.41	22.58	21.12	22.65	21.48
Berat kon.+Tanah Kering (gr)	17.75	17.09	17.66	17.02	17.99	17.57
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat Container (gr)	5.23	4.32	4.92	4.1	4.66	3.91
Berat tanah kering (gr)	8.69	7.13	8.6	7.06	8.93	7.61
Kadar Air (%)	60.19	60.59	57.21	58.08	52.19	51.38
Kadar Air Rata-rata (%)	60.36		57.66		51.80	

UJI KADAR AIR

No. Uji : 05						**Awal**
Sampel Tanah	Lempung Gemuk (Abu-abu)					
Lokasi	BM.2.STA 172+400 / 4.00-4.40m					
Tanggal	28-09-2006/02-10-2006/04-10-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	22.56	22.28	23.78	21.43	22.54	20.56
Berat kon.+Tanah Kering (gr)	17.63	17.78	18.73	17.4	17.68	16.59
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat kontainer (gr)	4.93	4.5	5.05	4.03	4.86	3.97
Berat tanah kering (gr)	8.57	7.82	9.67	7.44	8.62	6.63
Kadar Air (%)	57.53	57.55	52.23	54.17	56.39	59.88
Kadar Air Rata-rata (%)	57.50		53.23		54.60	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	22.87	21.41	23.13	22.37	22.54	20.56
Berat kon.+Tanah Kering (gr)	17.54	17.1	17.72	17.62	17.68	16.59
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat Container (gr)	5.33	4.31	5.41	4.75	4.86	3.97
Berat tanah kering (gr)	8.48	7.14	8.66	7.66	8.62	6.63
Kadar Air (%)	62.86	60.37	62.48	62.02	56.39	59.88
Kadar Air Rata-rata (%)	61.62		62.25		58.14	

No. Uji : 06						**Awal**
Sampel Tanah	Lanau Elastis (Abu-abu)					
Lokasi	STA 153+900A /4.00-4.40m					
Tanggal	10-10-2006/12-10-2006/17-10-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	22.8	21.45	22.51	21.32	21.56	21.78
Berat kon.+Tanah Kering (gr)	18.17	17.59	17.98	17.56	17.32	17.87
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat Container (gr)	4.63	3.86	4.53	3.76	4.24	3.91
Berat tanah kering (gr)	9.11	7.63	8.92	7.6	8.26	7.91
Kadar Air R (%)	50.83	50.59	50.79	49.48	51.34	49.44
Kadar Air Rata-rata (%)	50.71		50.19		50.40	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	11	47	11	47	11	47
Berat kon.+Tanah Basah (gr)	23.76	21.45	22.87	21.34	22.92	22.47
Berat kon.+Tanah Kering (gr)	18.75	17.36	18	17.35	18.15	18.12
Berat air (gr)	9.06	9.96	9.06	9.96	9.06	9.96
Berat Container (gr)	5.01	4.09	4.87	3.99	4.77	4.35
Berat tanah kering (gr)	9.69	7.4	8.94	7.39	9.09	8.16
Kadar Air (%)	51.71	55.28	54.48	54	52.48	53.31
Kadar Air Rata-rata (%)	53.5		54.24		52.9	

BERAT VOLUME TANAH

No. Uji : 01

Sampel Tanah	Lempung Gemuk (Abu-abu)	
Lokasi	STA 153+900B / 4.00-4.40m	
Tanggal	05-08-2006	
No Benda Uji	1	2
Diameter Sampel (mm)	50.00	50.00
Tinngi Sampel (mm)	20.00	20.00
Luas Sampel (mm^2)	1963.5	1963.5
Volume Sampel (mm^3)	39.27	39.27
Berat Sampel (gr)	63.11	66.29
Berat Volume (gr/ mm^3)	1.734	1.688
Rata-rata	1.711	

No. Uji : 02

Sampel Tanah	Lempung Gemuk (Abu-abu)	
Lokasi	STA 173+400B / 2.00-2.40m	
Tanggal	07-08-2006	
No Benda Uji	1	2
Diameter Sampel (mm)	50.00	50.00
Tinngi Sampel (mm)	20.00	20.00
Luas Sampel (mm^2)	1963.5	1963.50
Volume Sampel (mm^3)	39.27	39.27
Berat Sampel (gr)	68.72	67.93
Berat Volume (gr/ mm^3)	1.750	1.730
Rata-rata	1.765	

No. Uji : 03

Sampel Tanah	Lanau Elastis (Abu-abu)	
Lokasi	STA 153+900A /4.00-4.40m	
Tanggal	05-08-2006	
No Benda Uji	1	2
Diameter Sampel (mm)	50.00	50.00
Tinngi Sampel (mm)	20.00	20.00
Luas Sampel (mm^2)	1963.5	1963.5
Volume Sampel (mm^3)	39.27	39.27
Berat Sampel (gr)	67.15	64.04
Berat Volume (gr/ mm^3)	1.710	1.631
Rata-rata	1.670	

No. Uji : 04

Sampel Tanah	Lempung Gemuk (Abu-abu)	
Lokasi	BM.2.STA 172+400 / 4.00-4.40m	
Tanggal	03-08-2006	
No Benda Uji	1	2
Diameter Sampel (mm)	38.00	38.00
Tinngi Sampel (mm)	76.00	76.00
Luas Sampel (mm^2)	1134.11	1134.11

Volume Sampel (mm^3)	86.19	86.19
Berat Sampel (gr)	145.13	145.55
Berat Volume (gr/ mm^3)	1.684	1.689
Rata-rata	1.686	

Catatan : Untuk Lokasi Daerah Cijeruk dan Desa Tugu Berat Volume tanah diasumsikan 1.7 gr/ mm^3 dan 1.6 gr/ mm^3. Ini dikarenakan sampel tanah yang diterima merupakan tanah yang sudah terganggu dan berat tanah tersebut tidak memenuhi syarat unutk melakukan percobaan kompaksi.

UJI KADAR AIR

No. Uji : 01						**Awal**
Sampel Tanah	Lempung Coklat Kehitaman					
Lokasi	Desa Cijeruk Cadas Pangeran / 0.00-1.00m					
Tanggal	28-08-2006/30-08-2006/29-08-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	21	22	A23	A24	12	35
Berat kon.+Tanah Basah (gr)	70.45	72.43	70.45	72.43	71.76	60.23
Berat kon.+Tanah Kering (gr)	56.32	57.67	56.32	57	56.84	47.35
Berat air (gr)	13.78	15.3	14.4	14.8	13.65	9.98
Berat Container (gr)	14.13	14.76	14.13	15.43	14.92	12.88
Berat tanah kering (gr)	42.54	42.37	41.92	42.2	43.19	37.37
Kadar Air (%)	33.22	34.84	33.71	36.57	34.55	34.47
Kadar Air Rata-rata (%)	34.00		35.10		34.50	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	20	69	19	26	25	01
Berat kon.+Tanah Basah (gr)	25.65	27.13	27.72	24.9	27.37	30.86
Berat kon.+Tanah Kering (gr)	22.3	22.46	24.11	20.9	23.77	26.21
Berat air (gr)	12.83	9.19	13.62	10.10	13.56	13.57
Berat kontainer (gr)	3.35	4.67	3.61	4	3.6	4.65
Berat tanah kering (gr)	9.47	12.97	10.49	10.8	10.21	12.64
Kadar Air (%)	35.4	36	34.4	37.03	35.25	36.79
Kadar Air Rata-rata (%)	35.70		35.72		36.02	

No. Uji : 02						**Awal**
Sampel Tanah	Tufa Merah (lanau)					
Lokasi	Desa Tugu Cisarua Bogor / 0.00-1.00m					
Tanggal	28-08-2006/31-08-2006/04-09-2006					
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	156	15	156	34G	56	75
Berat kon.+Tanah Basah (gr)	48.73	48.3	47.78	49.67	54.32	53.27
Berat kon.+Tanah Kering (gr)	36.9	36.8	37.4	36.56	39.98	40.56
Berat air (gr)	13.5	14.5	13.5	13.52	14.78	15.57
Berat kontainer (gr)	11.83	11.5	10.38	13.11	14.34	12.71
Berat tanah kering (gr)	23.4	22.3	23.9	23.04	25.2	24.99
Kadar Air (%)	50.56	51.57	43.44	56.91	56.91	50.87
Kadar Air Rata-rata (%)	50.10		50.18		53.9	
						Waktu Uji
Beban	**50 kPa**		**100 kPa**		**200 kPa**	
No kontainer	59	55	47	11	47	11
Berat kon.+Tanah Basah (gr)	28.68	25	21.52	26.55	25.33	23
Berat kon.+Tanah Kering (gr)	23.22	19.52	17.44	20.41	19.80	17.86
Berat air (gr)	13.68	10	9.96	9.06	9.96	9.06
Berat kontainer (gr)	5.46	5.48	4.08	6.14	5.53	5.14
Berat tanah kering (gr)	9.54	9.52	7.48	11.4	9.84	8.8
Kadar Air (%)	57.4	57.6	54.5	53.9	56.2	58.4
Kadar Air Rata-rata (%)	57.40		54.2		57.3	

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ATTERBERG LIMITS

Sampel tanah : Cijeruk
Lokasi: Cadas Pangeran-Jawa Barat / 0.00-1.00m

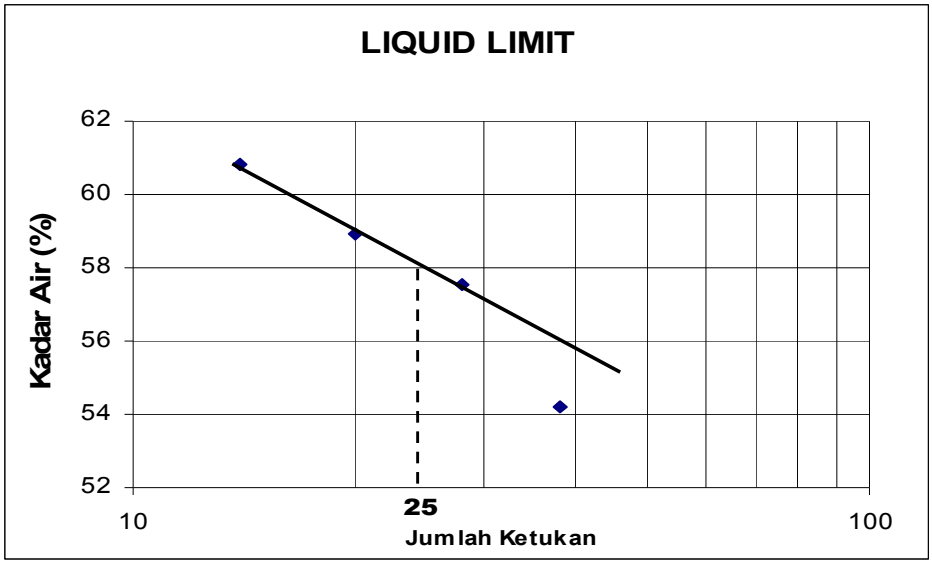
Tes No. : 01
Tanggal : 02-06-2006
Di tes oleh :Achmad Novarianda

LIQUID LIMIT

No kontainer	**46**	**92**	**61**	**295**
Berat kon.+Tanah Basah (gr)	27,98	41,45	29,25	35,25
Berat kon.+Tanah Kering (gr)	21,96	29,96	22,14	25,78
Berat air (gr)	6,02	11,49	7,11	9,47
Berat kontainer (gr)	10,85	10,00	10,07	10,21
Berat tanah kering (gr)	11,11	19,96	12,07	15,57
Kadar Air (%)	54,2	57,56	58,90	60,82
Jumlah Ketukan	38	28	20	14

PLASTIC LIMIT

No kontainer	**297**	**295**
Berat kon.+Tanah Basah (gr)	16,70	18,65
Berat kon.+Tanah Kering (gr)	14,81	16,62
Berat air (gr)	1,89	2,03
Berat kontainer (gr)	8,53	10,09
Berat tanah kering (gr)	6,28	6,53
Kadar Air (%)	30,09	31,09
Kadar Air Rata-rata (%)	31	



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ATTERBERG LIMITS

Sampel tanah : Tufa Merah
Lokasi: Tugu-Puncak Jawa Barat/ 0.00-1.00m

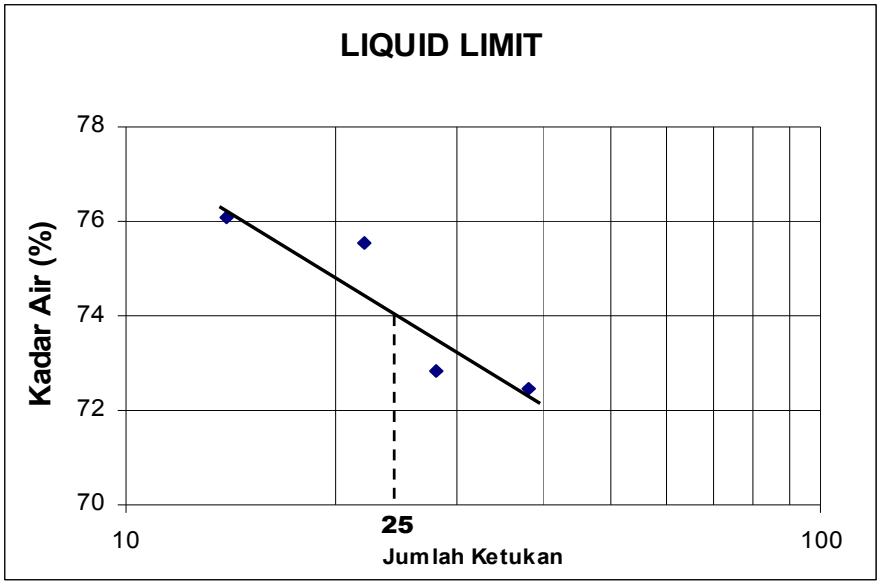
Tes No. : 02
Tanggal : 02-06-2006
Di tes oleh : Achmad Novarianda

LIQUID LIMIT

No kontainer	76	52	14	AC/69
Berat kon.+Tanah Basah (gr)	24	20,66	22,39	24,85
Berat kon.+Tanah Kering (gr)	18,24	16,47	17,08	18,93
Berat air (gr)	5,76	4,19	5,31	5,92
Berat kontainer (gr)	10,29	10,72	10,05	11,15
Berat tanah kering (gr)	7,95	5.75	7.03	7,78
Kadar Air (%)	72,45	72,87	75,53	76,09
Jumlah Ketukan	38	28	22	16

PLASTIC LIMIT

No kontainer	49	44
Berat kon.+Tanah Basah (gr)	18,29	19,14
Berat kon.+Tanah Kering (gr)	15,48	16,38
Berat air (gr)	2,81	2,76
Berat kontainer (gr)	10,11	11,16
Berat tanah kering (gr)	5,37	5,22
Kadar Air (%)	52,33	52,87
Kadar Air Rata-rata (%)	53	



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ATTERBERG LIMITS

Sampel tanah : Lempung
Lokasi: 153+900B / 4.00-4.40m

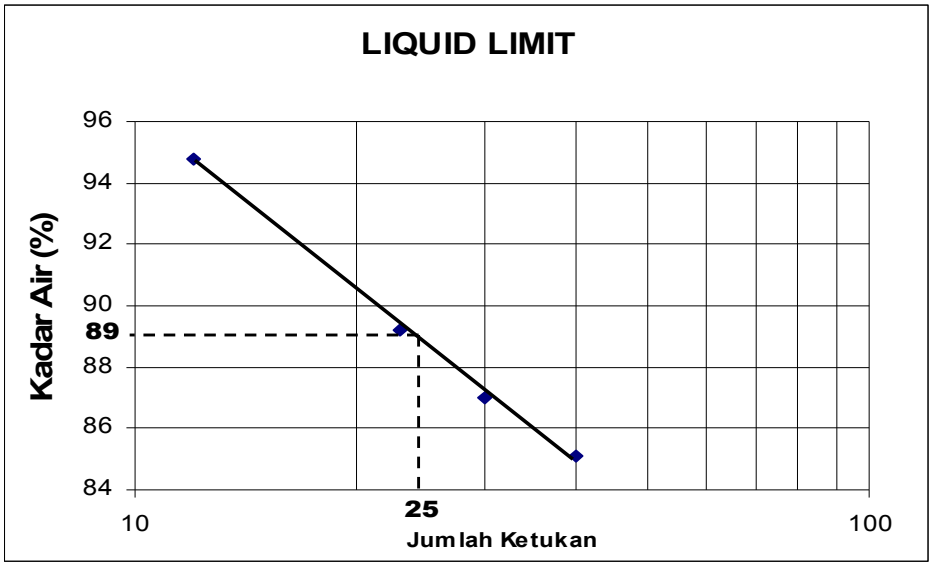
Tes No. : 03
Tanggal : 07-08-2006
Di tes oleh : Achmad Novarianda

LIQUID LIMIT

No kontainer	24	36	36A	78
Berat kon.+Tanah Basah (gr)	11.24	11.38	11.5	11.38
Berat kon.+Tanah Kering (gr)	8.04	8.1	8.12	7.94
Berat air (gr)	4.28	4.33	4.33	4.31
Berat kontainer (gr)	3.2	3.28	3.38	3.44
Berat tanah kering (gr)	3.76	3.77	3.79	3.63
Kadar Air (%)	85.11	87.01	89.19	94.77
Jumlah Ketukan	40	30	23	12

PLASTIC LIMIT

No kontainer	12	13
Berat kon.+Tanah Basah (gr)	22.46	22.18
Berat kon.+Tanah Kering (gr)	19.18	19.14
Berat air (gr)(gr)	9.91	10.39
Berat kontainer (gr)	3.28	3.04
Berat tanah kering (gr)	9.27	8.75
Kadar Air (%)	35.39	34.75
Kadar Air Rata-rata (%)	35	



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ATTERBERG LIMITS

Sampel tanah : Lempung
Lokasi: STA 173+400B / 2.00-2.40m

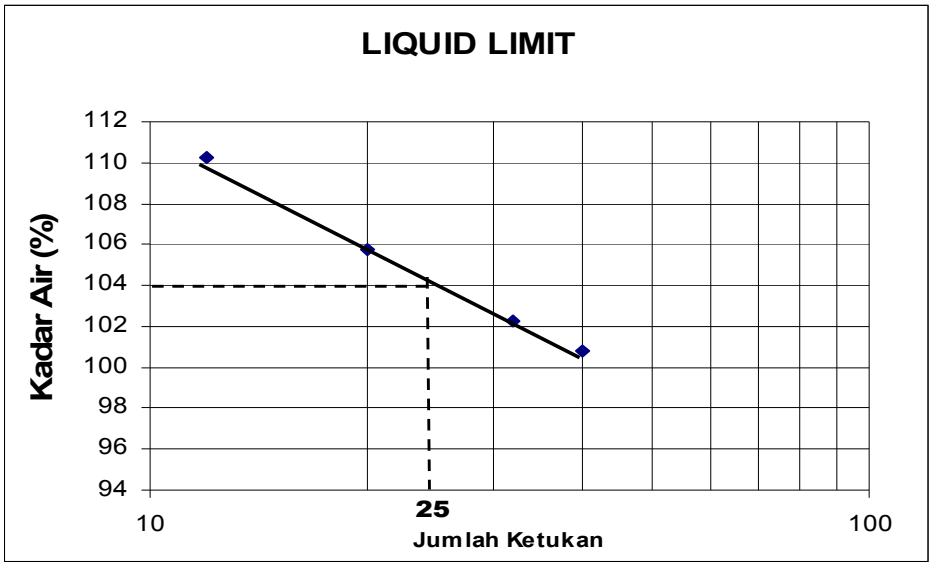
Tes No. : 04
Tanggal : 15-08-2006
Di tes oleh : Achmad Novarianda

LIQUID LIMIT

No kontainer	245	24	219	11
Berat kon.+Tanah Basah (gr)	11.64	11.58	11.46	11.72
Berat kon.+Tanah Kering (gr)	8	7.97	7.81	7.85
Berat air (gr)	4.39	4.44	4.36	4.34
Berat kontainer (gr)	3.64	3.61	3.65	3.87
Berat tanah kering (gr)	3.61	3.53	3.45	3.51
Kadar Air (%)	100.84	102.27	105.8	110.26
Jumlah Ketukan	40	32	20	12

PLASTIC LIMIT

No kontainer	65	P7
Berat kon.+Tanah Basah (gr)	28.04	26.83
Berat kon.+Tanah Kering (gr)	23	22.12
Berat air (gr)	10.27	10
Berat kontainer (gr)	5.04	4.71
Berat tanah kering (gr)	12.73	12.12
Kadar Air (%)	39.6	38.87
Kadar Air Rata-rata (%)	39	



UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

ATTERBERG LIMITS

Sampel tanah : Lempung
Lokasi:BM.2 Km. 172+400 / 4.00-4.40 m

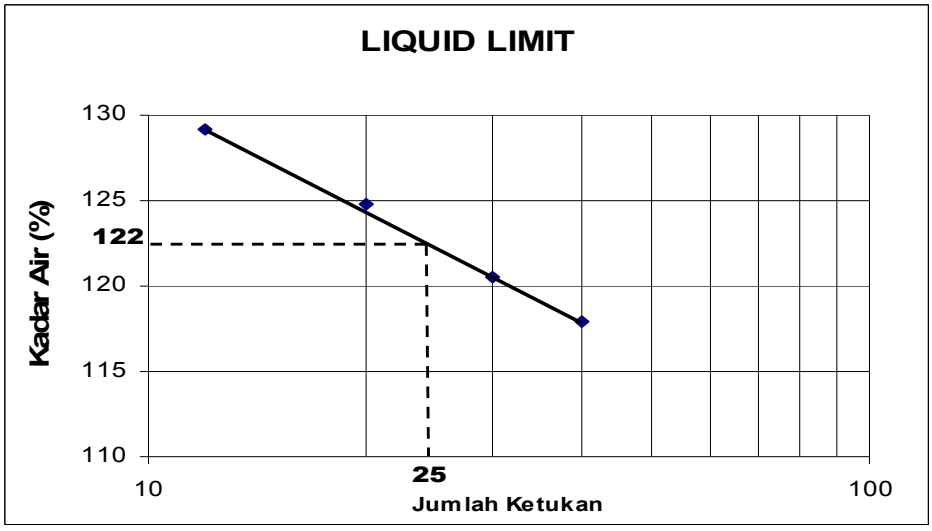
Tes No. : 05
Tanggal : 01-08-2006
Di tes oleh : Achmad Novarianda

LIQUID LIMIT

No kontainer	**35**	**47**	**48**	**125**
Berat kon.+Tanah Basah (gr)	11.41	13.68	12.1	12.23
Berat kon.+Tanah Kering (gr)	7.66	8.57	7.77	7.76
Berat air (gr)	4.48	4.33	4.3	4.3
Berat kontainer (gr)	3.75	5.11	4.33	4.47
Berat tanah kering (gr)	3.18	4.24	3.47	3.46
Kadar Air (%)	117.93	120.52	124.79	129.2
Jumlah Ketukan	40	30	20	12

PLASTIC LIMIT

No kontainer	**152**	**173**
Berat kon.+Tanah Basah (gr)	22	21.67
Berat kon.+Tanah Kering (gr)	18.71	18.35
Berat air (gr)	10.25	9.8
Berat kontainer (gr)	3.29	3.32
Berat tanah kering (gr)	8.46	8.55
Kadar Air (%)	38.89	38.84
Kadar Air Rata-rata (%)	39	



UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

ATTERBERG LIMITS

Sampel tanah : Lempung
Lokasi:153+900A / 4.00-4.40m

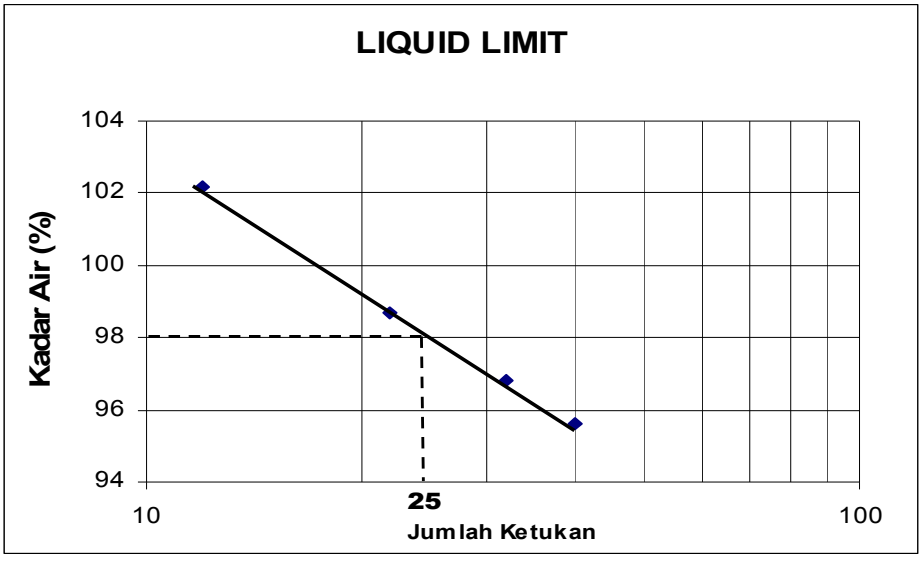
Tes No. : 06
Tanggal : 05-08-2006
Di tes oleh : Achmad Novarianda

LIQUID LIMIT

No kontainer	S12	65	46	45
Berat kon.+Tanah Basah (gr)	10.49	11.74	13.84	10.85
Berat kon.+Tanah Kering (gr)	7.46	8.07	9.12	7.55
Berat air (gr)	3.03	3.67	4.72	3.3
Berat kontainer (gr)	4.29	4.28	4.34	4.32
Berat tanah kering (gr)	3.17	3.79	4.78	3.23
Kadar Air (%)	95.59	96.84	98.75	102.17
Jumlah Ketukan	40	32	22	12

PLASTIC LIMIT

No kontainer	Sd12	153
Berat kon.+Tanah Basah (gr)	26.33	24.33
Berat kon.+Tanah Kering (gr)	21.35	19.52
Berat air (gr)	4.98	4.81
Berat kontainer (gr)	10.07	8.53
Berat tanah kering (gr)	11.28	10.99
Kadar Air (%)	44.15	43.77
Kadar Air Rata-rata (%)	44	



UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

Sampel Tanah : Lempung Kecoklatan
Lokasi : Desa cijeruk Cadas Pangeran
Gs : 2.66
Sampel No : 01
Koreksi Meniskus : 0.5

Form No. : 01
Test No. : 01
Tanggal : 08-06-2006
Berat sampel tanah : 66.80 gr
Berat Hidrometer sampel : 63.12 gr

SIEVE ANALYSIS

Sieve No	Sieve Opening (mm)	Wt Sieve (gr)	Wt. Sieve + Soil (gr)	Wt.Soil Retained (gr)	Percent Retained (%)	Cumul Percent (%)	Percent Finer (%)
4	4.75	519.9	519.90	0.00	0.00	0.00	100.00
10	2	442.4	442.42	0.02	0.03	0.03	100.00
16	1.4	433.5	433.51	0.01	0.01	0.04	100.00
20	1	391.9	392.01	0.11	0.16	0.21	99.80
30	0.59	287.4	287.43	0.03	0.04	0.25	99.70
40	0.425	302.2	302.32	0.12	0.18	0.43	99.60
60	0.25	356.8	357.06	0.26	0.39	0.82	99.20
80	0.212	256.7	257.09	0.39	0.58	1.41	98.60
100	0.15	282.9	283.46	0.56	0.84	2.25	97.80
140	0.106	280.4	281.60	1.20	1.80	4.04	96.00
170	0.088	274.6	275.37	0.77	1.15	5.19	94.80
200	0.075	269.5	269.72	0.22	0.33	5.52	94.50

HYDROMETER ANALYSIS

Time	Elapsed Time	Hydrometer Reading (Rh')	T (°C)	Rh	Zr	D(mm)	N(%)	N'(%)
08.50	0.5	38.00	25	38.50	6.10	0.045	97.47	92.11
08.51	1	37.70	25	38.20	6.20	0.032	96.71	91.39
08.52	2	37.00	25	37.50	6.40	0.023	94.94	89.72
08.54	4	36.00	25	36.50	6.60	0.016	92.41	87.33
08.58	8	34.30	25	34.80	7.10	0.012	88.10	83.26
09.05	15	33.00	25	33.50	7.40	0.009	84.81	80.15
09.20	30	31.00	25	31.50	8.00	0.007	79.75	75.36
09.50	60	28.00	25	28.50	8.80	0.005	72.15	68.19
10.50	120	26.00	25	26.50	9.30	0.004	67.09	63.40
12.50	240	23.00	25	23.50	10.10	0.003	59.50	56.22
16.20	450	21.00	25	21.50	10.60	0.002	54.43	51.44
08.50	1440	18.00	24	18.50	11.40	0.001	46.85	44.27

$$N = \frac{Gs}{Gs - 1} \times \frac{V}{Ws} \gamma c \times Rh \times 100 \ \% \ ; N' = \%\ \text{finer No.200 x N (Kombinasi analisis)}$$

UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua Bogor
Gs : 2.65
Sampel No : 02
Koreksi Meniskus : 0.5

Form No. : 02
Test No. : 02
Tanggal : 08-06-2006
Berat sampel tanah : 53.17 gr
Berat Hidrometer sampel : 44.04gr

SIEVE ANALYSIS

Sieve No	Sieve Opening (mm)	Wt Sieve (gr)	Wt. Sieve + Soil (gr)	Wt.Soil Retained (gr)	Percent Retained (%)	Cumul Percent (%)	Percent Finer (%)
4	4.75	519.9	519.90	0.00	0.00	0.00	100.00
10	2	442.4	442.75	0.35	0.52	0.52	99.50
16	1.4	433.5	433.70	0.20	0.30	0.82	99.20
20	1	391.9	392.30	0.40	0.60	1.42	98.60
30	0.59	287.4	287.71	0.31	0.46	1.89	98.10
40	0.425	302.2	303.30	1.10	1.65	3.53	96.50
60	0.25	356.8	358.43	1.63	2.44	5.97	94.00
80	0.212	256.7	258.46	1.76	2.63	8.61	91.40
100	0.15	282.9	284.42	1.52	2.28	10.88	89.10
140	0.106	280.4	282.36	1.96	2.93	13.82	86.20
170	0.088	274.6	276.14	1.54	2.31	16.12	83.90
200	0.075	269.5	270.94	1.44	2.16	18.28	81.70

HYDROMETER ANALYSIS

Time	Elapsed Time	Hydrometer Reading (Rh')	T (°C)	Rh	Zr	D(mm)	N(%)	N'(%)
08.50	0.5	24.80	25	25.30	9.60	0.056	98.69	75.99
08.51	1	24.50	25	25.00	9.70	0.040	97.52	75.09
08.52	2	23.60	25	24.10	9.90	0.029	94.01	72.39
08.54	4	22.00	25	22.50	10.30	0.021	87.77	67.58
08.58	8	19.60	25	20.10	11.00	0.015	78.41	60.37
09.05	15	17.30	25	17.80	11.60	0.011	69.43	53.46
09.20	30	15.00	25	15.50	12.20	0.008	60.46	46.56
09.50	60	3.20	25	3.70	15.30	0.006	14.43	41.11
10.50	120	11.30	25	11.80	13.20	0.004	46.03	35.44
12.50	240	10.00	25	10.50	13.50	0.003	40.96	31.54
16.20	450	9.00	25	9.50	13.80	0.002	37.06	28.53
08.50	1440	8.00	24	8.50	14.00	0.001	33.16	25.54

$$N = \frac{Gs}{Gs - 1} \times \frac{V}{Ws} \gamma c \times Rh \times 100 \ \% \ ; N' = \%\ \text{finer No.200 x N (Kombinasi analisis)}$$

UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA153+900B
Gs : 2.615
Sampel No : 03
Koreksi Meniskus : 0.5

Form No. : 03
Test No. : 03
Tanggal : 18-08-2006
Berat sampel tanah : 43.94gr
Berat Hidrometer sampel : 40.3840.20gr

SIEVE ANALYSIS

Sieve No	Sieve Opening (mm)	Wt Sieve (gr)	Wt. Sieve + Soil (gr)	Wt.Soil Retained (gr)	Percent Retained (%)	Cumul Percent (%)	Percent Finer (%)
4	4.75	519.9	520.61	0.71	1.63	1.63	98.40
10	2	442.4	443.19	0.79	1.81	3.44	96.60
16	1.4	433.5	433.70	0.20	0.46	3.90	96.10
20	1	391.9	392.04	0.14	0.32	4.22	95.80
30	0.59	287.4	287.50	0.10	0.23	4.45	95.50
40	0.425	302.2	302.32	0.12	0.28	4.73	95.30
60	0.25	356.8	356.93	0.13	0.30	5.02	95.00
80	0.212	256.7	256.86	0.16	0.37	5.39	94.60
100	0.15	282.9	283.08	0.18	0.41	5.80	94.20
140	0.106	280.4	280.79	0.39	0.89	6.70	93.30
170	0.088	274.6	275.03	0.43	0.99	7.69	92.30
200	0.075	269.5	269.71	0.21	0.48	8.17	91.80

HYDROMETER ANALYSIS

Time	Elapsed Time	Hydrometer Reading (Rh')	T (°C)	Rh	Zr	D(mm)	N(%)	N'(%)
08.50	0.5	24.90	24.8	24.50	9.80	0.058	97.87	89.95
08.51	1	24.70	24.8	23.90	10.00	0.041	95.48	87.74
08.52	2	24.50	24.8	23.20	10.20	0.030	92.68	85.17
08.54	4	24.20	24.8	22.20	10.40	0.021	88.69	81.50
08.58	8	23.90	24.8	20.70	10.80	0.015	82.69	76.00
09.05	15	23.70	24.8	19.50	11.10	0.011	77.90	71.59
09.20	30	23.60	24.8	17.80	11.60	0.008	71.11	65.35
09.50	60	23.50	25	16.00	12.10	0.006	63.91	58.73
10.50	120	23.40	26	14.50	12.50	0.004	57.90	53.21
12.50	240	23.10	27	12.50	13.00	0.003	49.90	45.86
16.20	450	22.80	27.4	10.50	13.50	0.002	41.92	38.52
08.50	1440	22.80	25	6.50	14.60	0.001	25.96	23.86

$$N = \frac{Gs}{Gs - 1} \times \frac{V}{Ws} \gamma c \times Rh \times 100 \ \% \ ; N' = \%\ \text{finer No.200 x N (Kombinasi analisis)}$$

UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA 173+400B
Gs : 2.632
Sampel No : 4
Koreksi Meniskus : 0.5

Form No. : 04
Test No. : 04
Tanggal : 19-08-2006
Berat sampel tanah : 43.01 gr
Berat Hidrometer sampel : 39.81 40.20gr

SIEVE ANALYSIS

Sieve No	Sieve Opening (mm)	Wt Sieve (gr)	Wt. Sieve + Soil (gr)	Wt.Soil Retained (gr)	Percent Retained (%)	Cumul Percent (%)	Percent Finer (%)
4	4.75	519.9	519.9	519.90	0.00	0.00	0.00
10	2	442.4	442.4	442.53	0.13	0.30	0.30
16	1.4	433.5	433.5	433.62	0.12	0.28	0.58
20	1	391.9	391.9	392.03	0.13	0.30	0.88
30	0.59	287.4	287.4	287.51	0.11	0.26	1.14
40	0.425	302.2	302.2	302.41	0.21	0.49	1.63
60	0.25	356.8	356.8	357.03	0.23	0.53	2.16
80	0.212	256.7	256.7	257.07	0.37	0.86	3.02
100	0.15	282.9	282.9	283.30	0.40	0.93	3.95
140	0.106	280.4	280.4	281.09	0.69	1.60	5.56
170	0.088	274.6	274.6	275.17	0.57	1.33	6.88
200	0.075	269.5	269.5	269.74	0.24	0.56	7.44

HYDROMETER ANALYSIS

Time	Elapsed Time	Hydrometer Reading (Rh')	T (°C)	Rh	Zr	D(mm)	N(%)	N'(%)
08.50	0.5	23.20	25.8	23.70	10.00	0.058	95.72	88.64
08.51	1	22.80	25.8	23.30	10.10	0.041	94.11	87.14
08.52	2	22.20	25.8	22.70	10.30	0.029	91.68	84.90
08.54	4	21.80	25.8	22.30	10.40	0.021	90.07	83.40
08.58	8	21.00	25.8	21.50	10.60	0.015	86.84	80.41
09.05	15	20.30	25.8	20.80	10.80	0.011	84.01	77.79
09.20	30	19.40	25.8	19.90	11.00	0.008	80.38	74.43
09.50	60	18.50	25.8	19.00	11.30	0.006	76.74	71.06
10.50	120	17.40	26.4	17.90	11.60	0.004	72.28	66.93
12.50	240	15.80	27	16.30	12.00	0.003	65.80	60.93
16.20	450	14.70	27.4	15.20	12.30	0.002	61.36	56.82
08.50	1440	13.00	25	13.50	12.70	0.001	54.53	50.50

$$N = \frac{Gs}{Gs - 1} \times \frac{V}{Ws} \gamma c \times Rh \times 100 \ \% \ ; N' = \%\ \text{finer No.200 x N (Kombinasi analisis)}$$

UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

Sampel Tanah : Lempung Gemuk (Abu-abu Kehitaman)
Lokasi : BM2.STA 172+400
Gs : 2.619
Sampel No : 05
Koreksi Meniskus : 0.5

Form No. : 05
Test No. : 05
Tanggal : 18-08-2006
Berat sampel tanah : 43.59 gr
Berat Hidrometer sampel : 41.82 gr

SIEVE ANALYSIS

Sieve No	Sieve Opening (mm)	Wt Sieve (gr)	Wt. Sieve + Soil (gr)	Wt.Soil Retained (gr)	Percent Retained (%)	Cumul Percent (%)	Percent Finer (%)
4	4.75	519.9	520.08	0.18	0.41	0.41	99.60
10	2	442.4	442.58	0.18	0.41	0.83	99.20
16	1.4	433.5	433.63	0.13	0.30	1.12	98.90
20	1	391.9	392.00	0.10	0.23	1.35	98.60
30	0.59	287.4	287.51	0.11	0.25	1.61	98.40
40	0.425	302.2	302.36	0.16	0.37	1.97	98.00
60	0.25	356.8	356.95	0.15	0.34	2.32	97.70
80	0.212	256.7	256.84	0.14	0.32	2.64	97.40
100	0.15	282.9	283.05	0.15	0.34	2.98	97.00
140	0.106	280.4	280.55	0.15	0.34	3.33	96.70
170	0.088	274.6	274.82	0.22	0.50	3.83	96.20
200	0.075	269.5	269.60	0.10	0.23	4.06	95.90

HYDROMETER ANALYSIS

Time	Elapsed Time	Hydrometer Reading (Rh')	T (°C)	Rh	Zr	D(mm)	N(%)	N'(%)
08.50	0.5	24.90	25	25.40	9.60	4.38	0.057	93.95
08.51	1	24.70	25	25.20	9.60	3.10	0.040	93.21
08.52	2	24.50	25	25.00	9.70	2.20	0.029	92.47
08.54	4	24.20	25	24.70	9.80	1.57	0.020	91.36
08.58	8	23.90	25	24.40	9.80	1.11	0.014	90.25
09.05	15	23.70	25	24.20	9.90	0.81	0.011	89.51
09.20	30	23.60	25	24.10	9.90	0.57	0.007	89.14
09.50	60	23.50	25	24.00	9.90	0.41	0.005	88.77
10.50	120	23.40	25	23.90	10.00	0.29	0.004	88.40
12.50	240	23.10	26	23.60	10.10	0.21	0.003	87.27
16.20	450	22.80	26.5	23.30	10.10	0.15	0.002	86.15
08.50	1440	22.80	24.8	23.30	10.10	0.08	0.001	86.19

$$N = \frac{Gs}{Gs - 1} \times \frac{V}{Ws} \gamma c \times Rh \times 100 \ \% \ ; N' = \%\ \text{finer No.200 x N (Kombinasi analisis)}$$

UNIVERSITAS KRISTEN MARANATHA
Fakultas Teknik Jurusan Teknik Sipil

Sampel Tanah : Lanau Elastis
Lokasi : STA 153+900A
Gs : 2.622
Sampel No : 06
Koreksi Meniskus : 0.5

Form No. : 06
Test No. : 06
Tanggal : 0.7-08-2006
Berat sampel tanah : 43.73gr
Berat Hidrometer sampel : 40.20gr

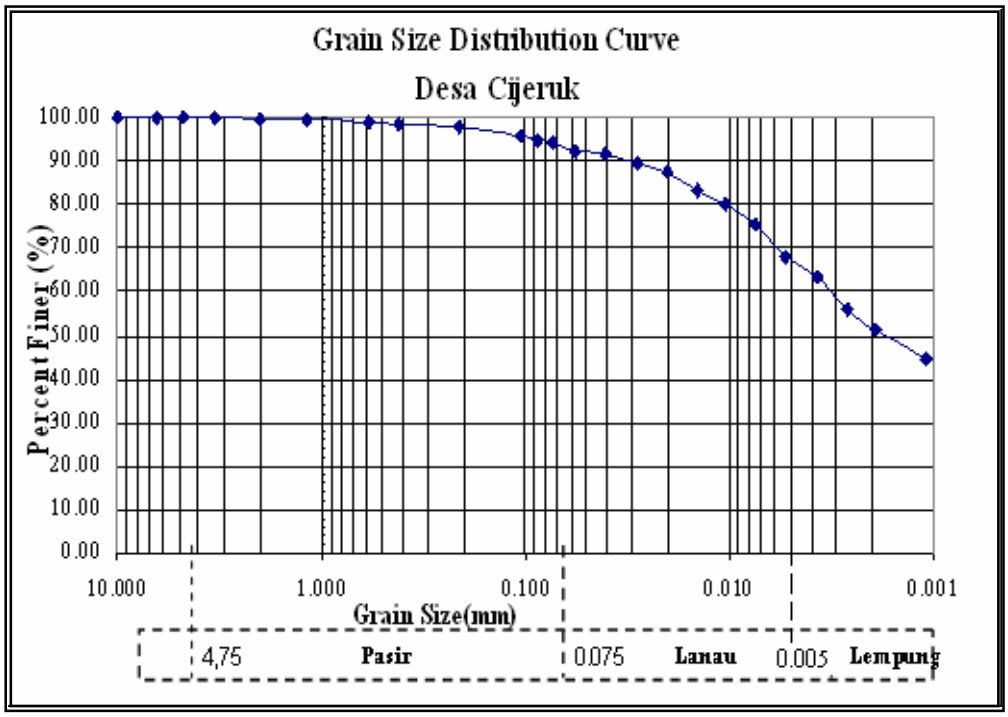
SIEVE ANALYSIS

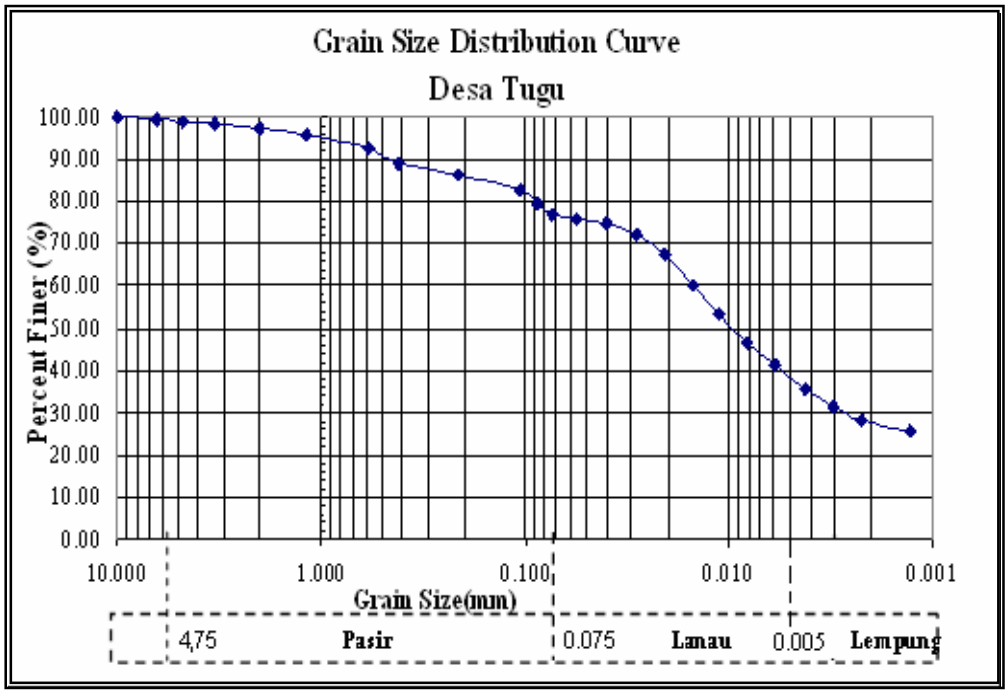
Sieve No	Sieve Opening (mm)	Wt Sieve (gr)	Wt. Sieve + Soil (gr)	Wt.Soil Retained (gr)	Percent Retained (%)	Cumul Percent (%)	Percent Finer (%)
4	4.75	519.9	520.78	0.88	2.01	2.01	98.00
10	2	442.4	443.20	0.80	1.83	3.84	96.20
16	1.4	433.5	433.81	0.31	0.71	4.55	95.40
20	1	391.9	392.14	0.24	0.55	5.10	94.90
30	0.59	287.4	287.53	0.13	0.30	5.40	94.60
40	0.425	302.2	302.32	0.12	0.27	5.67	94.30
60	0.25	356.8	356.90	0.10	0.23	5.90	94.10
80	0.212	256.7	256.84	0.14	0.32	6.22	93.80
100	0.15	282.9	283.04	0.14	0.32	6.54	93.50
140	0.106	280.4	280.67	0.27	0.62	7.16	92.80
170	0.088	274.6	274.87	0.27	0.62	7.77	92.20
200	0.075	269.5	269.63	0.13	0.30	8.07	91.90

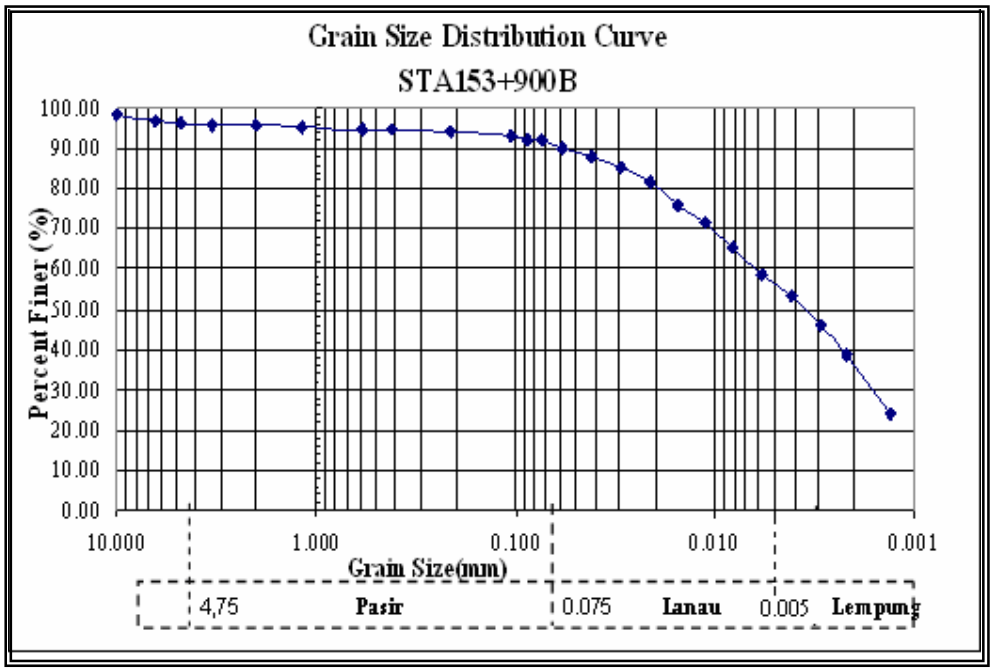
HYDROMETER ANALYSIS

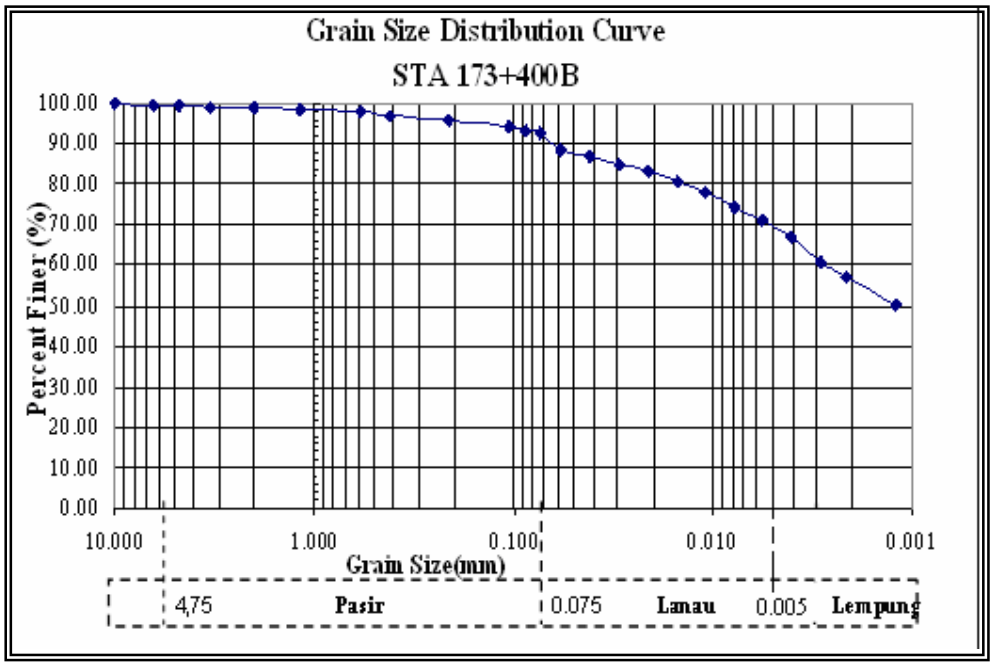
Time	Elapsed Time	Hydrometer Reading (Rh')	T (°C)	Rh	Zr	D(mm)	N(%)	N'(%)
08.50	0.5	24.20	25	24.70	9.80	0.058	99.04	89.07
08.51	1	23.90	25	24.40	9.80	0.041	97.83	87.97
08.52	2	23.00	25	23.50	10.10	0.029	94.22	84.66
08.54	4	22.00	25	22.50	10.30	0.021	90.21	80.98
08.58	8	20.60	25	21.10	10.70	0.015	84.60	75.82
09.05	15	18.70	25	19.20	11.20	0.011	76.98	68.83
09.20	30	17.00	25	17.50	11.70	0.008	70.17	62.57
09.50	60	15.90	25	16.40	12.00	0.006	65.76	58.52
10.50	120	14.00	25.6	14.50	12.50	0.004	58.13	51.53
12.50	240	12.30	26	12.80	12.90	0.003	51.31	45.27
16.20	450	10.20	26.5	10.70	13.50	0.002	42.88	37.54
08.50	1440	8.00	24.8	8.50	14.00	0.001	34.08	29.45

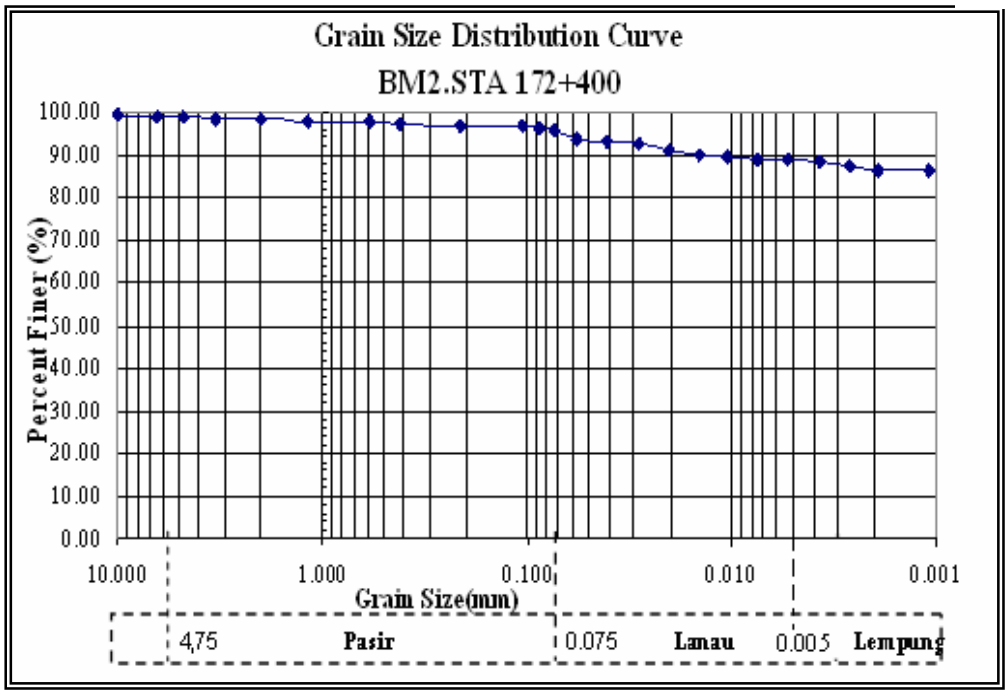
$$N = \frac{Gs}{Gs - 1} \times \frac{V}{Ws} \gamma c \times Rh \times 100 \ \% \ ; N' = \%\ \text{finer No.200 x N (Kombinasi analisis)}$$

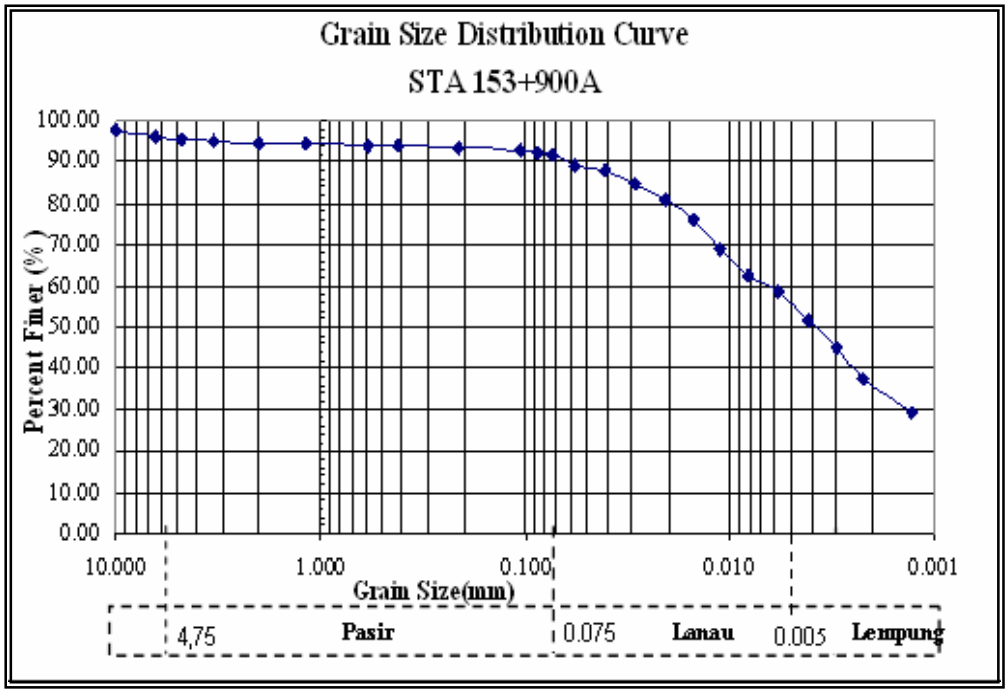

Grain Size Distribution Curve
Desa Cijeruk
Percent Finer (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
10.000
1.000
0.100
0.010
0.001
Grain Size(mm)
4,75
Pasir
0.075
Lanau
0.005
Lempung


Grain Size Distribution Curve
Desa Tugu
Percent Finer (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
10.000
1.000
0.100
0.010
0.001
Grain Size(mm)
4,75
Pasir
0.075
Lanau
0.005
Lempung


Grain Size Distribution Curve
STA153+900B
Percent Finer (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
10.000
1.000
0.100
0.010
0.001
Grain Size(mm)
4,75
Pasir
0.075
Lanau
0.005
Lempung


Grain Size Distribution Curve
STA 173+400B
Percent Finer (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
10.000
1.000
0.100
0.010
0.001
Grain Size(mm)
4,75
Pasir
0.075
Lanau
0.005
Lempung


Grain Size Distribution Curve
BM2.STA 172+400
Percent Finer (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
10.000
1.000
0.100
0.010
0.001
Grain Size(mm)
4,75
Pasir
0.075
Lanau
0.005
Lempung


Grain Size Distribution Curve
STA 153+900A
Percent Finer (%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
10.000
1.000
0.100
0.010
0.001
Grain Size(mm)
4,75
Pasir
0.075
Lanau
0.005
Lempung

TES KONSOLIDASI

Lokasi : Desa Cijeruk Cadas Pangeran
Tes No.: 01

Beban : 50 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
22-08-06	0.00	0.00	3.922
	0.25	0.5	3.92
	0.50	0.7	3.919
	1.00	1.00	3.918
	2.25	1.50	3.918
	4.00	2.00	3.918
	6.25	2.50	3.917
	9.00	3.00	3.917
	12.25	3.50	3.917
	16.00	4.00	3.917
	20.25	4.50	3.917
	25.00	5.00	3.917
	30.25	5.5	3.917
	36.00	6.00	3.917
	42.25	6.50	3.917
	49.00	7.00	3.917
	56.25	7.50	3.917
	64.00	8.00	3.917
	120.00	10.95	3.917
	240.00	15.49	3.917
	480.00	21.91	3.917
	1440.00	37.95	3.917

Beban : 100 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
24-08-06	0.00	0.00	3.78
	0.25	0.5	3.535
	0.50	0.7	3.53
	1.00	1.00	3.529
	2.25	1.50	3.526
	4.00	2.00	3.524
	6.25	2.50	3.522
	9.00	3.00	3.521
	12.25	3.50	3.52
	16.00	4.00	3.52
	20.25	4.50	3.52
	25.00	5.00	3.52
	30.25	5.5	3.519
	36.00	6.00	3.519
	42.25	6.50	3.519
	49.00	7.00	3.519
	56.25	7.50	3.518
	64.00	8.00	3.518
	120.00	10.95	3.517
	240.00	15.49	3.516
	480.00	21.91	3.514
	1440.00	37.95	3.513

Beban : 200 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
29-08-06	0.00	0.00	3.71
	0.25	0.5	3.29
	0.50	0.7	3.275
	1.00	1.00	3.27
	2.25	1.50	3.264
	4.00	2.00	3.26
	6.25	2.50	3.258
	9.00	3.00	3.255
	12.25	3.50	3.252
	16.00	4.00	3.252
	20.25	4.50	3.25
	25.00	5.00	3.25
	30.25	5.5	3.25
	36.00	6.00	3.25
	42.25	6.50	3.25
	49.00	7.00	3.249
	56.25	7.50	3.249
	64.00	8.00	3.248
	120.00	10.95	3.246
	240.00	15.49	3.245
	480.00	21.91	3.244
	1440.00	37.95	3.244

TES KONSOLIDASI

Lokasi : Desa Tugu Cisarua Bogor
TesNo. : 02

Beban : 50 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
31-08-06	0.00	0.00	3.512
	0.25	0.5	3.506
	0.50	0.7	3.48
	1.00	1.00	3.472
	2.25	1.50	3.465
	4.00	2.00	3.46
	6.25	2.50	3.456
	9.00	3.00	3.448
	12.25	3.50	3.431
	16.00	4.00	3.427
	20.25	4.50	3.422
	25.00	5.00	3.42
	30.25	5.5	3.418
	36.00	6.00	3.415
	42.25	6.50	3.413
	49.00	7.00	3.411
	56.25	7.50	3.41
	64.00	8.00	3.408
	120.00	10.95	3.405
	240.00	15.49	3.4
	480.00	21.91	3.4
	1440.00	37.95	3.4

Beban : 100 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
04-09-06	0.00	0.00	3.12
	0.25	0.5	2.85
	0.50	0.7	2.74
	1.00	1.00	2.73
	2.25	1.50	2.672
	4.00	2.00	2.658
	6.25	2.50	2.651
	9.00	3.00	2.65
	12.25	3.50	2.648
	16.00	4.00	2.648
	20.25	4.50	2.648
	25.00	5.00	2.646
	30.25	5.5	2.646
	36.00	6.00	2.646
	42.25	6.50	2.646
	49.00	7.00	2.646
	56.25	7.50	2.645
	64.00	8.00	2.645
	120.00	10.95	2.643
	240.00	15.49	2.643
	480.00	21.91	2.642
	1440.00	37.95	2.642

Beban : 200 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
06-09-06	0.00	0.00	3.41
	0.25	0.5	3.03
	0.50	0.7	2.95
	1.00	1.00	2.94
	2.25	1.50	2.92
	4.00	2.00	2.91
	6.25	2.50	2.906
	9.00	3.00	2.902
	12.25	3.50	2.9
	16.00	4.00	2.9
	20.25	4.50	2.9
	25.00	5.00	2.9
	30.25	5.5	2.9
	36.00	6.00	2.899
	42.25	6.50	2.898
	49.00	7.00	2.898
	56.25	7.50	2.898
	64.00	8.00	2.895
	120.00	10.95	2.893
	240.00	15.49	2.893
	480.00	21.91	2.893
	1440.00	37.95	2.892

TES KONSOLIDASI

Lokasi : Sta 153+900B (Caruban-Ngawi)
Tes No. : 03

Beban : 50 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
07-09-06	0.00	0.00	3.2
	0.25	0.5	2.7
	0.50	0.7	2.686
	1.00	1.00	2.68
	2.25	1.50	2.645
	4.00	2.00	2.62
	6.25	2.50	2.6
	9.00	3.00	2.579
	12.25	3.50	2.56
	16.00	4.00	2.546
	20.25	4.50	2.532
	25.00	5.00	2.522
	30.25	5.5	2.515
	36.00	6.00	2.509
	42.25	6.50	2.502
	49.00	7.00	2.5
	56.25	7.50	2.498
	64.00	8.00	2.484
	120.00	10.95	2.48
	240.00	15.49	2.475
	480.00	21.91	2.473
	1440.00	37.95	2.473

Beban : 100 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
12-09-06	0.00	0.00	5.645
	0.25	0.5	5.301
	0.50	0.7	5.266
	1.00	1.00	5.245
	2.25	1.50	5.203
	4.00	2.00	5.157
	6.25	2.50	5.116
	9.00	3.00	5.083
	12.25	3.50	5.053
	16.00	4.00	5.026
	20.25	4.50	5.003
	25.00	5.00	4.985
	30.25	5.5	4.973
	36.00	6.00	4.956
	42.25	6.50	4.947
	49.00	7.00	4.94
	56.25	7.50	4.935
	64.00	8.00	4.926
	120.00	10.95	4.914
	240.00	15.49	4.907
	480.00	21.91	4.902
	1440.00	37.95	4.902

Beban : 200 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
14-09-06	0.00	0.00	8.335
	0.25	0.5	7.992
	0.50	0.7	7.935
	1.00	1.00	7.89
	2.25	1.50	7.835
	4.00	2.00	7.762
	6.25	2.50	7.698
	9.00	3.00	7.65
	12.25	3.50	7.61
	16.00	4.00	7.573
	20.25	4.50	7.542
	25.00	5.00	7.519
	30.25	5.5	7.5
	36.00	6.00	7.48
	42.25	6.50	7.471
	49.00	7.00	7.462
	56.25	7.50	7.458
	64.00	8.00	7.45
	120.00	10.95	7.438
	240.00	15.49	7.426
	480.00	21.91	7.419
	1440.00	37.95	7.418

TES KONSOLIDASI

Lokasi : Sta 173+900B (Caruban-Ngawi)
Tes No. : 04

Beban : 50 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
19-09-06	0.00	0.00	5
	0.25	0.5	4.92
	0.50	0.7	4.85
	1.00	1.00	4.845
	2.25	1.50	4.785
	4.00	2.00	4732
	6.25	2.50	4.686
	9.00	3.00	4.65
	12.25	3.50	4.612
	16.00	4.00	4.581
	20.25	4.50	4.555
	25.00	5.00	4.53
	30.25	5.5	4.512
	36.00	6.00	4.495
	42.25	6.50	4.484
	49.00	7.00	4.475
	56.25	7.50	4.468
	64.00	8.00	4.461
	120.00	10.95	4.448
	240.00	15.49	4.432
	480.00	21.91	4.42
	1440.00	37.95	4.418

Beban : 100 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
21-09-06	0.00	0.00	5.4
	0.25	0.5	5.21
	0.50	0.7	5.178
	1.00	1.00	5.165
	2.25	1.50	5.128
	4.00	2.00	5.09
	6.25	2.50	5.05
	9.00	3.00	5.02
	12.25	3.50	4.99
	16.00	4.00	4.96
	20.25	4.50	4.934
	25.00	5.00	4.913
	30.25	5.5	4.905
	36.00	6.00	4.879
	42.25	6.50	4.867
	49.00	7.00	4.858
	56.25	7.50	4.85
	64.00	8.00	4.843
	120.00	10.95	4.823
	240.00	15.49	4.82
	480.00	21.91	4.815
	1440.00	37.95	4.815

Beban : 200 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
26-09-06	0.00	0.00	6.405
	0.25	0.5	6.195
	0.50	0.7	6.18
	1.00	1.00	6.179
	2.25	1.50	6.165
	4.00	2.00	6.151
	6.25	2.50	6.14
	9.00	3.00	6.126
	12.25	3.50	6.112
	16.00	4.00	6.1
	20.25	4.50	6.092
	25.00	5.00	6.082
	30.25	5.5	6.074
	36.00	6.00	6.068
	42.25	6.50	6.06
	49.00	7.00	6.058
	56.25	7.50	6.051
	64.00	8.00	6.049
	120.00	10.95	6.035
	240.00	15.49	6.033
	480.00	21.91	6.03
	1440.00	37.95	6.028

TES KONSOLIDASI

Lokasi : Sta 172+400 (Caruban-Ngawi)
Tes No. : 05

Beban : 50 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
28-09-06	0.00	0.00	3.78
	0.25	0.5	3.54
	0.50	0.7	3.53
	1.00	1.00	3.529
	2.25	1.50	3.522
	4.00	2.00	3.52
	6.25	2.50	3.518
	9.00	3.00	3.516
	12.25	3.50	3.514
	16.00	4.00	3.514
	20.25	4.50	3.514
	25.00	5.00	3.513
	30.25	5.5	3.513
	36.00	6.00	3.513
	42.25	6.50	3.513
	49.00	7.00	3.513
	56.25	7.50	3.513
	64.00	8.00	3.513
	120.00	10.95	3.513
	240.00	15.49	3.513
	480.00	21.91	3.513
	1440.00	37.95	3.513

Beban : 100 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
02-10-06	0.00	0.00	6.245
	0.25	0.5	6.012
	0.50	0.7	5.985
	1.00	1.00	5.977
	2.25	1.50	5.949
	4.00	2.00	5.919
	6.25	2.50	5.89
	9.00	3.00	5.868
	12.25	3.50	5.846
	16.00	4.00	5.827
	20.25	4.50	5.812
	25.00	5.00	5.798
	30.25	5.5	5.789
	36.00	6.00	5.776
	42.25	6.50	5.769
	49.00	7.00	5.762
	56.25	7.50	5.757
	64.00	8.00	5.752
	120.00	10.95	5.738
	240.00	15.49	5.732
	480.00	21.91	5.729
	1440.00	37.95	5.728

Beban : 200 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
04-09-06	0.00	0.00	8.4
	0.25	0.5	8.12
	0.50	0.7	8.08
	1.00	1.00	8.07
	2.25	1.50	8.03
	4.00	2.00	7.98
	6.25	2.50	7.935
	9.00	3.00	7.9
	12.25	3.50	7.868
	16.00	4.00	7.84
	20.25	4.50	7.82
	25.00	5.00	7.8
	30.25	5.5	7.782
	36.00	6.00	7.77
	42.25	6.50	7.76
	49.00	7.00	7.749
	56.25	7.50	7.74
	64.00	8.00	7.732
	120.00	10.95	7.71
	240.00	15.49	7.695
	480.00	21.91	7.692
	1440.00	37.95	7.69

TES KONSOLIDASI

Lokasi : Sta 153+900A (Caruban-Ngawi)
Beban : 50 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
22-08-06	0.00	0.00	3.67
	0.25	0.5	3.666
	0.50	0.7	3.632
	1.00	1.00	3.604
	2.25	1.50	3.581
	4.00	2.00	3.559
	6.25	2.50	3.534
	9.00	3.00	3.518
	12.25	3.50	3.503
	16.00	4.00	3.491
	20.25	4.50	3.482
	25.00	5.00	3.473
	30.25	5.5	3.466
	36.00	6.00	3.462
	42.25	6.50	3.459
	49.00	7.00	3.451
	56.25	7.50	3.444
	64.00	8.00	3.436
	120.00	10.95	3.431
	240.00	15.49	3.43
	480.00	21.91	3.42
	1440.00	37.95	3.4

Tes No. : 06
Beban : 100 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
24-08-06	0.00	0.00	4.922
	0.25	0.5	4.691
	0.50	0.7	4.634
	1.00	1.00	4.624
	2.25	1.50	4.583
	4.00	2.00	4.556
	6.25	2.50	4.53
	9.00	3.00	4.513
	12.25	3.50	4.495
	16.00	4.00	4.478
	20.25	4.50	4.465
	25.00	5.00	4.452
	30.25	5.5	4.447
	36.00	6.00	4.434
	42.25	6.50	4.427
	49.00	7.00	4.422
	56.25	7.50	4.417
	64.00	8.00	4.413
	120.00	10.95	4.401
	240.00	15.49	4.398
	480.00	21.91	4.395
	1440.00	37.95	4.395

Beban : 200 kPa

Date & time	Elapsed time (min)	$\sqrt{t}$	Dial reading (.01 mm)
29-08-06	0.00	0.00	6.838
	0.25	0.5	6.551
	0.50	0.7	6.515
	1.00	1.00	6.496
	2.25	1.50	6.462
	4.00	2.00	6.421
	6.25	2.50	6.384
	9.00	3.00	6.355
	12.25	3.50	6.331
	16.00	4.00	6.309
	20.25	4.50	6.292
	25.00	5.00	6.277
	30.25	5.5	6.265
	36.00	6.00	6.254
	42.25	6.50	6.248
	49.00	7.00	6.241
	56.25	7.50	6.237
	64.00	8.00	6.232
	120.00	10.95	6.22
	240.00	15.49	6.211
	480.00	21.91	6.208
	1440.00	37.95	6.207

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

P = $\frac{1}{10} \times \sigma p \times A$; σ_p = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	3.752	0
1	0.8	0.189	175	3.115	112	2.117	39.24	22.82	3.623	-0.129
2	1.6	0.378	184	3.276	121.2	2.291	41.753	24.28	3.595	-0.157
3	2.4	0.567	185.2	3.297	123.2	2.329	42.195	24.54	3.578	-0.174
4	3.2	0.756	185.3	3.299	124.8	2.359	42.435	24.68	3.565	-0.187
5	4	0.945	185.5	3.302	125.2	2.367	42.518	24.72	3.556	-0.196
6	4.8	1.134	185.7	3.306	126	2.382	42.66	24.81	3.548	-0.204
7	5.6	1.323	185.7	3.306	127.2	2.405	42.833	24.91	3.54	-0.212
8	6.4	1.512	186.5	3.32	127	2.401	42.908	24.95	3.532	-0.22
9	7.2	1.7	189.5	3.374	130.2	2.461	43.763	25.45	3.525	-0.227
10	8	1.889	189.5	3.374	130.5	2.467	43.808	25.47	3.52	-0.232
11	8.8	2.078	189.6	3.375	130.7	2.471	43.845	25.5	3.517	-0.235
12	9.6	2.267	189	3.365	130.9	2.475	43.8	25.47	3.514	-0.238
13	10.4	2.456	188.8	3.361	131.4	2.484	43.838	25.49	3.51	-0.242
14	11.2	2.645	188.8	3.361	131.8	2.492	43.898	25.53	3.507	-0.245
15	12	2.834	187.5	3.338	132.6	2.507	43.838	25.49	3.502	-0.25
16	12.8	3.023	185.6	3.304	133.7	2.527	43.733	25.43	3.498	-0.254
17	13.6	3.212	184.5	3.285	135.8	2.567	43.89	25.52	3.495	-0.257
18	14.4	3.4	183.8	3.272	135.9	2.569	43.808	25.47	3.492	-0.26
19	15.2	3.589	183.8	3.272	135.9	2.569	43.808	25.47	3.49	-0.262

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk
CONTOH TANAH
R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N
DATA ALAT
L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	183.6	3.269	136.1	2.573	43.815	25.48	3.488	-0.264
21	16.8	3.967	183.5	3.267	136.5	2.58	43.853	25.5	3.485	-0.267
22	17.6	4.156	183	3.258	137.2	2.594	43.89	25.52	3.482	-0.27
23	18.4	4.345	183.6	3.269	137.2	2.594	43.973	25.57	3.48	-0.272
24	19.2	4.534	183.8	3.272	138.2	2.612	44.13	25.66	3.478	-0.274
25	20	4.723	183	3.258	141.8	2.681	44.543	25.9	3.472	-0.28
26	20.8	4.912	183	3.258	141.8	2.681	44.543	25.9	3.472	-0.28
27	21.6	5.1	183	3.258	141.8	2.681	44.543	25.9	3.47	-0.282
28	22.4	5.289	182.5	3.249	141.8	2.681	44.475	25.86	3.47	-0.282
29	23.2	5.478	182.5	3.249	142.2	2.688	44.528	25.89	3.47	-0.282
30	24	5.667	182.5	3.249	142.5	2.694	44.573	25.92	3.468	-0.284
31	24.8	5.856	182.2	3.244	142.8	2.699	44.573	25.92	3.465	-0.287
32	25.6	6.045	182.2	3.244	145.8	2.756	45	26.17	3.463	-0.289
33	26.4	6.234	182.2	3.244	146	2.76	45.03	26.18	3.46	-0.292
34	27.2	6.423	182.2	3.244	146.2	2.764	45.06	26.2	3.458	-0.294
35	28	6.612	182.2	3.244	146.5	2.769	45.098	26.22	3.458	-0.294
36	28.8	6.8	182.2	3.244	147	2.779	45.173	26.27	3.458	-0.294
37	29.6	6.989	182.2	3.244	147.5	2.788	45.24	26.31	3.456	-0.296
38	30.4	7.178	182.2	3.244	147.8	2.794	45.285	26.33	3.454	-0.298

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
39	31.2	7.367	182	3.24	148.5	2.807	45.353	26.37	3.453	-0.299
40	32	7.556	181.5	3.231	149	2.817	45.36	26.38	3.45	-0.302
41	32.8	7.745	181.8	3.237	150.4	2.843	45.6	26.52	3.448	-0.304
42	33.6	7.934	181.5	3.231	150.5	2.845	45.57	26.5	3.448	-0.304
43	34.4	8.123	181.2	3.226	151	2.854	45.6	26.52	3.446	-0.306
44	35.2	8.312	181	3.222	151.2	2.858	45.6	26.52	3.446	-0.306
45	36	8.5	181	3.222	151.8	2.87	45.69	26.57	3.445	-0.307
46	36.8	8.689	180.8	3.219	152.2	2.877	45.72	26.59	3.443	-0.309
47	37.6	8.878	180	3.204	152.8	2.888	45.69	26.57	3.443	-0.309
48	38.4	9.067	179.5	3.196	154	2.911	45.803	26.63	3.44	-0.312
49	39.2	9.256	180	3.204	155.5	2.939	46.073	26.79	3.44	-0.312
50	40	9.445	180	3.204	156	2.949	46.148	26.83	3.438	-0.314
51	40.8	9.634	179.8	3.201	155.8	2.945	46.095	26.8	3.438	-0.314
52	41.6	9.823	179.5	3.196	155.8	2.945	46.058	26.78	3.436	-0.316
53	42.4	10.012	179.5	3.196	156.2	2.953	46.118	26.82	3.436	-0.316
54	43.2	10.2	179.5	3.196	156.4	2.956	46.14	26.83	3.434	-0.318
55	44	10.389	179	3.187	157	2.968	46.163	26.84	3.432	-0.32
56	44.8	10.578	179	3.187	158	2.987	46.305	26.93	3.43	-0.322
57	45.6	10.767	178.5	3.178	158.5	2.996	46.305	26.93	3.43	-0.322
58	46.4	10.956	178.5	3.178	158.8	3.002	46.35	26.95	3.43	-0.322

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58% ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
59	47.2	11.145	179	3.187	159	3.006	46.448	27.01	3.429	-0.323
60	48	11.334	179	3.187	160	3.024	46.583	27.09	3.429	-0.323
65	52	12.278	178.8	3.183	161.2	3.047	46.725	27.17	3.422	-0.33
70	56	13.223	179	3.187	162	3.062	46.868	27.25	3.42	-0.332
75	60	14.167	179.8	3.201	164	3.1	47.258	27.48	3.415	-0.337
80	64	15.112	179.8	3.201	164	3.1	47.258	27.48	3.41	-0.342
85	68	16.056	180.1	3.206	164.8	3.115	47.408	27.57	3.406	-0.346
90	72	17	180	3.204	166.2	3.142	47.595	27.48	3.398	-0.354
95	76	17.945	184	3.276	167	3.157	48.248	28.06	3.395	-0.357
100	80	18.889	183.6	3.269	166	3.138	48.053	27.94	3.393	-0.359
105	84	19.834	183.8	3.272	166.2	3.142	48.105	27.97	3.385	-0.367
110	88	20.778	185	3.293	165.5	3.128	48.158	28	3.37	-0.382
115	92	21.723	186.8	3.326	164.2	3.104	48.225	28.04	3.368	-0.384
120	96	22.667	188.2	3.35	163	3.081	48.233	28.05	3.362	-0.39
125	100	23.612	190.2	3.386	161.2	3.047	48.248	28.06	3.36	-0.392
130	104	24.556	200	3.56	153	2.892	48.39	28.14	3.358	-0.394
135	108	25.5	202.2	3.6	151	2.854	48.405	28.15	3.353	-0.399
140	112	26.445	204.8	3.646	148.2	2.801	48.353	28.12	3.352	-0.399
145	116	27.389	207	3.685	145.5	2.75	48.263	28.06	3.348	-0.404
150	120	28.334	210.5	3.747	143.5	2.713	48.45	28.17	3.344	-0.408

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
155	124	29.278	214.2	3.813	141	2.665	48.585	28.3	3.343	-0.409
160	128	30.223	216	3.845	139.8	2.643	48.66	28.35	3.335	-0.417
165	132	31.167	218	3.881	137	2.59	48.533	28.14	3.325	-0.427
170	136	32.112	218.5	3.89	134.8	2.548	48.285	28.13	3.336	-0.416
175	140	33.056	222	3.952	132.3	2.501	48.398	28.05	3.333	-0.419
180	144	34	224.7	4	129.6	2.45	48.375	27.96	3.3	-0.452
190	152	35.889	229.1	4.078	124.5	2.354	48.24	28.14	3.085	-0.667
200	160	37.778	233.5	4.157	119.2	2.253	48.075	28.12	3.07	-0.682
210	168	39.667	238	4.237	117.2	2.216	48.398	28.1	3.059	-0.693
220	176	41.556	242.4	4.315	112.8	2.132	48.353	28.08	3.045	-0.707
230	184	43.445	246.8	4.394	108.4	2.049	48.323	28.14	3.032	-0.72
240	192	45.334	251.2	4.472	104	1.966	48.285	28.15	3.023	-0.729

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	3.513	0
1	0.8	0.189	183	3.258	120	2.268	41.445	24.1	3.48	-0.033
2	1.6	0.378	235	4.183	127.2	2.405	49.41	28.73	3.45	-0.063
3	2.4	0.567	256	4.557	130	2.457	52.605	30.59	3.43	-0.083
4	3.2	0.756	280	4.984	130.7	2.471	55.913	32.51	3.425	-0.088
5	4	0.945	286.5	5.1	133.7	2.527	57.203	33.26	3.415	-0.098
6	4.8	1.134	297	5.287	135	2.552	58.793	34.19	3.398	-0.115
7	5.6	1.323	298	5.305	142.5	2.694	59.993	34.88	3.386	-0.127
8	6.4	1.512	300.4	5.348	156	2.949	62.228	36.18	3.376	-0.137
9	7.2	1.7	305	5.429	172.4	3.259	65.16	37.89	3.37	-0.143
10	8	1.889	307	5.465	190.5	3.601	67.995	39.54	3.368	-0.145
11	8.8	2.078	315	5.607	196.4	3.712	69.893	40.64	3.366	-0.147
12	9.6	2.267	317.2	5.647	202	3.818	70.988	41.28	3.36	-0.153
13	10.4	2.456	322	5.732	225	4.253	74.888	43.54	3.357	-0.156
14	11.2	2.645	325	5.785	248	4.688	78.548	45.67	3.354	-0.159
15	12	2.834	328	5.839	260	4.914	80.648	46.89	3.351	-0.162
16	12.8	3.023	334	5.946	272	5.141	83.153	48.35	3.35	-0.163
17	13.6	3.212	338	6.017	276.5	5.226	84.323	49.03	3.349	-0.164
18	14.4	3.4	341.5	6.079	281.2	5.315	85.455	49.69	3.345	-0.168
19	15.2	3.589	345.6	6.152	288	5.444	86.97	50.57	3.34	-0.173

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	348	6.195	299	5.652	88.853	51.66	3.32	-0.193
21	16.8	3.967	348.5	6.204	301	5.689	89.198	51.86	3.31	-0.203
22	17.6	4.156	348.5	6.204	301	5.689	89.198	51.86	3.308	-0.205
23	18.4	4.345	348.5	6.204	302	5.708	89.34	51.95	3.3	-0.213
24	19.2	4.534	348.5	6.204	301.5	5.699	89.273	51.91	3.3	-0.213
25	20	4.723	347	6.177	301.5	5.699	89.07	51.79	3.298	-0.215
26	20.8	4.912	346.2	6.163	301.2	5.693	88.92	51.7	3.29	-0.223
27	21.6	5.1	346	6.159	302	5.708	89.003	51.75	3.286	-0.227
28	22.4	5.289	343.8	6.12	301.8	5.705	88.688	51.57	3.282	-0.231
29	23.2	5.478	343.2	6.109	301.8	5.705	88.605	51.52	3.28	-0.233
30	24	5.667	343	6.106	302.2	5.712	88.635	51.54	3.278	-0.235
31	24.8	5.856	342	6.088	302.2	5.712	88.5	51.46	3.275	-0.238
32	25.6	6.045	341.5	6.079	303.5	5.737	88.62	51.53	3.272	-0.241
33	26.4	6.234	339.2	6.038	302	5.708	88.095	51.22	3.27	-0.243
34	27.2	6.423	339	6.035	302	5.708	88.073	51.21	3.27	-0.243
35	28	6.612	338.5	6.026	302	5.708	88.005	51.17	3.268	-0.245
36	28.8	6.8	338	6.017	303	5.727	88.08	51.21	3.264	-0.249
37	29.6	6.989	337.5	6.008	303.5	5.737	88.088	51.22	3.262	-0.251
38	30.4	7.178	337.2	6.003	303.8	5.742	88.088	51.22	3.26	-0.253
39	31.2	7.367	337	5.999	303.8	5.742	88.058	51.2	3.26	-0.253

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	336.2	5.985	303.8	5.742	87.953	51.14	3.258	-0.255
41	32.8	7.745	336	5.981	303.8	5.742	87.923	51.12	3.258	-0.255
42	33.6	7.934	336	5.981	303.8	5.742	87.923	51.12	3.255	-0.258
43	34.4	8.123	336	5.981	303.8	5.742	87.923	51.12	3.251	-0.262
44	35.2	8.312	335	5.963	305	5.765	87.96	51.14	3.25	-0.263
45	36	8.5	334	5.946	305.5	5.774	87.9	51.11	3.249	-0.264
46	36.8	8.689	333.5	5.937	305.5	5.774	87.833	51.07	3.246	-0.267
47	37.6	8.878	333.5	5.937	305.5	5.774	87.833	51.07	3.245	-0.268
48	38.4	9.067	333.8	5.942	304.5	5.756	87.735	51.01	3.243	-0.27
49	39.2	9.256	333	5.928	304.5	5.756	87.63	50.95	3.242	-0.271
50	40	9.445	333	5.928	304.5	5.756	87.63	50.95	3.241	-0.272
51	40.8	9.634	333	5.928	304.5	5.756	87.63	50.95	3.24	-0.273
52	41.6	9.823	332	5.91	308	5.822	87.99	51.16	3.238	-0.275
53	42.4	10.012	331.5	5.901	309	5.841	88.065	51.2	3.235	-0.278
54	43.2	10.2	331.5	5.901	309.8	5.856	88.178	51.27	3.232	-0.281
55	44	10.389	331	5.892	310	5.859	88.133	51.24	3.23	-0.283
56	44.8	10.578	330.8	5.889	310.2	5.863	88.14	51.25	3.23	-0.283
57	45.6	10.767	330.8	5.889	310	5.859	88.11	51.23	3.23	-0.283
58	46.4	10.956	330.2	5.878	310.8	5.875	88.148	51.25	3.23	-0.283

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
59	47.2	11.145	330	5.874	311	5.878	88.14	51.25	3.228	-0.285
60	48	11.334	329.5	5.866	312.8	5.912	88.335	51.36	3.222	-0.291
65	52	12.278	327	5.821	314.2	5.939	88.2	51.28	3.22	-0.293
70	56	13.223	323.5	5.759	316.5	5.982	88.058	51.2	3.211	-0.302
75	60	14.167	322	5.732	318	6.011	88.073	51.21	3.21	-0.303
80	64	15.112	321.8	5.729	318.6	6.022	88.133	51.24	3.202	-0.311
85	68	16.056	320	5.696	319.2	6.033	87.968	51.15	3.2	-0.313
90	72	17	320.2	5.7	319.2	6.033	87.998	51.17	3.198	-0.315
95	76	17.945	319.5	5.688	320.5	6.058	88.095	51.22	3.191	-0.322
100	80	18.889	318.5	5.67	321.5	6.077	88.103	51.23	3.19	-0.323
105	84	19.834	316.4	5.632	323.5	6.115	88.103	51.23	3.184	-0.329
110	88	20.778	315.8	5.622	324.1	6.126	88.11	51.23	3.18	-0.333
115	92	21.723	314.5	5.599	325.5	6.152	88.133	51.24	3.178	-0.335
120	96	22.667	314.2	5.593	326.8	6.177	88.275	51.33	3.171	-0.342
125	100	23.612	312.8	5.568	328.2	6.203	88.283	51.33	3.168	-0.345
130	104	24.556	311.5	5.545	329	6.219	88.23	51.3	3.163	-0.35
135	108	25.5	309.6	5.511	332.2	6.279	88.425	51.41	3.16	-0.353
140	112	26.445	308.8	5.497	334.2	6.317	88.605	51.52	3.153	-0.335
145	116	27.389	307.2	5.469	334.5	6.323	88.44	51.42	3.151	-0.362
150	120	28.334	306.6	5.458	336.4	6.358	88.62	51.53	3.145	-0.368

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

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Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

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Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
155	124	29.278	306.6	5.458	336.4	6.358	88.62	51.53	3.141	-0.372
160	128	30.223	306	5.447	337.8	6.385	88.74	51.6	3.136	-0.377
165	132	31.167	306.2	5.451	339.5	6.417	89.01	51.75	3.131	-0.382
170	136	32.112	306.2	5.451	339.5	6.417	89.01	51.75	3.13	-0.383
175	140	33.056	306.2	5.451	339.5	6.417	89.01	51.75	3.124	-0.389
180	144	34	306.2	5.451	339	6.408	88.943	51.72	3.12	-0.393
190	152	35.889	308.6	5.494	340.3	6.432	89.445	52.01	3.111	-0.402
200	160	37.778	310.2	5.522	339.5	6.417	89.543	52.06	3.108	-0.405
210	168	39.667	313.2	5.575	338	6.389	89.73	52.17	3.1	-0.413
220	176	41.556	315	5.607	337.6	6.381	89.91	52.28	3.093	-0.42
230	184	43.445	319.5	5.688	334.8	6.328	90.12	52.4	3.085	-0.428
240	192	45.334	324	5.768	331	6.256	90.18	52.43	3.08	-0.433

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

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Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	3.244	0
1	0.8	0.189	350	6.23	340	6.426	94.92	55.19	3.225	-0.019
2	1.6	0.378	580	10.324	560	10.584	156.81	91.17	3.19	-0.054
3	2.4	0.567	663	11.802	640	12.096	179.235	104.21	3.148	-0.096
4	3.2	0.756	677	12.051	653	12.342	182.948	106.37	3.12	-0.124
5	4	0.945	672.5	11.971	652	12.323	182.205	105.94	3.1	-0.144
6	4.8	1.134	666	11.855	649	12.267	180.915	105.19	3.088	-0.156
7	5.6	1.323	659	11.731	646	12.21	179.558	104.4	3.08	-0.164
8	6.4	1.512	655	11.659	644	12.172	178.733	103.92	3.07	-0.174
9	7.2	1.7	652	11.606	642.5	12.144	178.125	103.56	3.062	-0.182
10	8	1.889	648.5	11.544	640	12.096	177.3	103.09	3.053	-0.191
11	8.8	2.078	646	11.499	637	12.04	176.543	102.64	3.046	-0.198
12	9.6	2.267	644	11.464	635.5	12.011	176.063	102.37	3.044	-0.2
13	10.4	2.456	641.5	11.419	635	12.002	175.658	102.13	3.031	-0.213
14	11.2	2.645	640.5	11.401	633.2	11.968	175.268	101.9	3.028	-0.216
15	12	2.834	639	11.375	633	11.964	175.043	101.77	3.02	-0.224
16	12.8	3.023	638.5	11.366	632.6	11.957	174.923	101.7	3.018	-0.226
17	13.6	3.212	638	11.357	631.4	11.934	174.683	101.56	3.014	-0.23

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

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Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
18	14.4	3.4	636.2	11.325	631	11.926	174.383	101.39	3.01	-0.234
19	15.2	3.589	635.5	11.312	629.7	11.902	174.105	101.23	3.005	-0.239
20	16	3.778	634.5	11.295	629.5	11.898	173.948	101.14	3	-0.244
21	16.8	3.967	633	11.268	629.5	11.898	173.745	101.02	2.998	-0.246
22	17.6	4.156	632	11.25	630	11.907	173.678	100.98	2.992	-0.252
23	18.4	4.345	631.4	11.239	631.8	11.942	173.858	101.08	2.99	-0.254
24	19.2	4.534	631	11.232	629.8	11.904	173.52	100.89	2.99	-0.254
25	20	4.723	630.4	11.222	629	11.889	173.333	100.78	2.988	-0.256
26	20.8	4.912	630	11.214	629.5	11.898	173.34	100.78	2.982	-0.262
27	21.6	5.1	629.5	11.206	629	11.889	173.213	100.71	2.98	-0.264
28	22.4	5.289	629	11.197	629	11.889	173.145	100.67	2.978	-0.266
29	23.2	5.478	627.4	11.168	629.2	11.892	172.95	100.56	2.972	-0.272
30	24	5.667	627	11.161	629.8	11.904	172.988	100.58	2.97	-0.274
31	24.8	5.856	627	11.161	630	11.907	173.01	100.59	2.967	-0.277
32	25.6	6.045	626.5	11.152	630.4	11.915	173.003	100.59	2.967	-0.277
33	26.4	6.234	626	11.143	630	11.907	172.875	100.51	2.965	-0.279
34	27.2	6.423	625	11.125	630	11.907	172.74	100.43	2.962	-0.282
35	28	6.612	624.5	11.117	631	11.926	172.823	100.48	2.961	-0.283

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
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Berat = 34,01 gr

LL = 58 % ; PL = 31 %

Tanggal : 22,24,29 Agustus 2006
Di test Oleh : Achmad Novarianda N

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L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
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Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
36	28.8	6.8	624	11.108	631	11.926	172.755	100.44	2.96	-0.284
37	29.6	6.989	623.5	11.099	635.5	12.011	173.325	100.77	2.955	-0.289
38	30.4	7.178	621.5	11.063	634.5	11.993	172.92	100.54	2.952	-0.292
39	31.2	7.367	621	11.054	633	11.964	172.635	100.37	2.95	-0.294
40	32	7.556	621.6	11.065	632	11.945	172.575	100.34	2.949	-0.295
41	32.8	7.745	620	11.036	631.4	11.934	172.275	100.16	2.947	-0.297
42	33.6	7.934	619.5	11.028	631	11.926	172.155	100.09	2.945	-0.299
43	34.4	8.123	618	11.001	630.4	11.915	171.87	99.93	2.943	-0.301
44	35.2	8.312	617.5	10.992	630	11.907	171.743	99.85	2.94	-0.304
45	36	8.5	616.5	10.974	629.5	11.898	171.54	99.74	2.939	-0.305
46	36.8	8.689	616	10.965	629	11.889	171.405	99.66	2.935	-0.309
47	37.6	8.878	615.8	10.962	627.4	11.858	171.15	99.51	2.932	-0.312
48	38.4	9.067	615	10.947	627	11.851	170.985	99.41	2.93	-0.314
49	39.2	9.256	614.6	10.94	627	11.851	170.933	99.38	2.93	-0.314
50	40	9.445	613.5	10.921	626.5	11.841	170.715	99.26	2.929	-0.315
51	40.8	9.634	613	10.912	626	11.832	170.58	99.18	2.925	-0.319
52	41.6	9.823	612	10.894	625	11.813	170.303	99.02	2.923	-0.321
53	42.4	10.012	612	10.894	624.5	11.804	170.235	98.98	2.922	-0.322
54	43.2	10.2	611	10.876	639	12.078	172.155	100.09	2.92	-0.324

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

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Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
55	44	10.389	610	10.858	639	12.078	172.02	100.02	2.92	-0.324
56	44.8	10.578	609.6	10.851	640	12.096	172.103	100.06	2.92	-0.324
57	45.6	10.767	609	10.841	640	12.096	172.028	100.02	2.919	-0.325
58	46.4	10.956	608	10.823	640	12.096	171.893	99.94	2.916	-0.328
59	47.2	11.145	607	10.805	640	12.096	171.758	99.86	2.914	-0.33
60	48	11.334	605.2	10.773	640.8	12.112	171.638	99.79	2.91	-0.334
65	52	12.278	602	10.716	641.5	12.125	171.308	99.6	2.905	-0.339
70	56	13.223	596.5	10.618	642	12.134	170.64	99.21	2.896	-0.348
75	60	14.167	593	10.556	643.2	12.157	170.348	99.04	2.892	-0.352
80	64	15.112	589	10.485	645	12.191	170.07	98.88	2.885	-0.359
85	68	16.056	585	10.413	645.5	12.2	169.598	98.61	2.878	-0.366
90	72	17	581	10.342	646	12.21	169.14	98.34	2.87	-0.374
95	76	17.945	579.5	10.316	646.5	12.219	169.013	98.27	2.865	-0.379
100	80	18.889	578	10.289	646.5	12.219	168.81	98.15	2.86	-0.384
105	84	19.834	577	10.271	647.5	12.238	168.818	98.15	2.855	-0.389
110	88	20.778	577.5	10.28	648	12.248	168.96	98.24	2.848	-0.396
115	92	21.723	577.5	10.28	648.5	12.257	169.028	98.28	2.842	-0.402
120	96	22.667	578	10.289	648.5	12.257	169.095	98.31	2.837	-0.407

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung kecoklatan
Lokasi : Desa Cijeruk

CONTOH TANAH

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Ring Constan.2 = 0.0189 Kg/div
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$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
125	100	23.612	577.5	10.28	649	12.267	169.103	98.32	2.83	-0.414
130	104	24.556	577.2	10.275	649.5	12.276	169.133	98.34	2.824	-0.42
135	108	25.5	577	10.271	649	12.267	169.035	98.28	2.817	-0.427
140	112	26.445	577	10.271	649.5	12.276	169.103	98.32	2.81	-0.402
145	116	27.389	576.5	10.262	648.5	12.257	168.893	98.2	2.806	-0.438
150	120	28.334	576.5	10.262	648.2	12.251	168.848	98.17	2.799	-0.445
155	124	29.278	576	10.253	647	12.229	168.615	98.04	2.795	-0.449
160	128	30.223	576	10.253	647	12.229	168.615	98.04	2.79	-0.454
165	132	31.167	576	10.253	646	12.21	168.473	97.95	2.786	-0.458
170	136	32.112	576	10.253	644.5	12.182	168.263	97.83	2.783	-0.461
175	140	33.056	578	10.289	643.5	12.163	168.39	97.9	2.78	-0.464
180	144	34	578	10.289	642	12.134	168.173	97.78	2.775	-0.469
190	152	35.889	581	10.342	638	12.059	168.008	97.68	2.767	-0.477
200	160	37.778	585	10.413	634	11.983	167.97	97.66	2.76	-0.484
210	168	39.667	589	10.485	628.5	11.879	167.73	97.52	2.752	-0.492
220	176	41.556	593.5	10.565	624	11.794	167.693	97.5	2.746	-0.498
230	184	43.445	597	10.627	618.5	11.69	167.378	97.32	2.74	-0.504
240	192	45.334	603	10.734	611	11.548	167.115	97.16	2.736	-0.508

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	3.4	0
1	0.8	0.189	170	3.026	160	3.024	45.375	26.39	3.355	-0.045
2	1.6	0.378	199	3.543	175	3.308	51.383	29.88	3.32	-0.08
3	2.4	0.567	208	3.703	180	3.402	53.288	30.99	3.31	-0.09
4	3.2	0.756	209.2	3.724	160	3.024	50.61	29.43	3.308	-0.092
5	4	0.945	209.2	3.724	154	2.911	49.763	28.94	3.306	-0.094
6	4.8	1.134	209.2	3.724	153	2.892	49.62	28.85	3.3	-0.1
7	5.6	1.323	209	3.721	154	2.911	49.74	28.92	3.28	-0.12
8	6.4	1.512	208	3.703	156.2	2.953	49.92	29.03	3.272	-0.128
9	7.2	1.7	207	3.685	157.2	2.972	49.928	29.03	3.268	-0.132
10	8	1.889	206.8	3.682	159	3.006	50.16	29.17	3.26	-0.14
11	8.8	2.078	206.5	3.676	159.5	3.015	50.183	29.18	3.255	-0.145
12	9.6	2.267	206	3.667	160	3.024	50.183	29.18	3.25	-0.15
13	10.4	2.456	205.5	3.658	160.6	3.036	50.205	29.19	3.248	-0.152
14	11.2	2.645	204.5	3.641	161.2	3.047	50.16	29.17	3.242	-0.158
15	12	2.834	203.6	3.625	163	3.081	50.295	29.25	3.235	-0.165
16	12.8	3.023	203	3.614	163.8	3.096	50.325	29.26	3.23	-0.17
17	13.6	3.212	202	3.596	164.8	3.115	50.333	29.27	3.225	-0.175
18	14.4	3.4	201	3.578	165.5	3.128	50.295	29.25	3.22	-0.18
19	15.2	3.589	200	3.56	166	3.138	50.235	29.21	3.218	-0.182

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	200	3.56	166	3.138	50.235	29.21	3.212	-0.188
21	16.8	3.967	199	3.543	166.5	3.147	50.175	29.18	3.21	-0.19
22	17.6	4.156	198.8	3.539	167	3.157	50.22	29.2	3.198	-0.202
23	18.4	4.345	198.3	3.53	168.2	3.179	50.318	29.26	3.196	-0.204
24	19.2	4.534	198	3.525	168.6	3.187	50.34	29.27	3.192	-0.208
25	20	4.723	197	3.507	168.6	3.187	50.205	29.19	3.19	-0.21
26	20.8	4.912	196	3.489	168.8	3.191	50.1	29.13	3.185	-0.215
27	21.6	5.1	195.5	3.48	169	3.195	50.063	29.11	3.181	-0.219
28	22.4	5.289	195	3.471	170	3.213	50.13	29.15	3.18	-0.22
29	23.2	5.478	194	3.454	171	3.232	50.145	29.16	3.178	-0.222
30	24	5.667	192	3.418	171	3.232	49.875	29	3.172	-0.228
31	24.8	5.856	191.8	3.415	171.2	3.236	49.883	29.01	3.17	-0.23
32	25.6	6.045	191	3.4	172	3.251	49.883	29.01	3.165	-0.235
33	26.4	6.234	190	3.382	172.5	3.261	49.823	28.97	3.158	-0.242
34	27.2	6.423	189.5	3.374	173	3.27	49.83	28.98	3.155	-0.245
35	28	6.612	189	3.365	173.5	3.28	49.838	28.98	3.152	-0.248
36	28.8	6.8	188	3.347	173.8	3.285	49.74	28.92	3.15	-0.25
37	29.6	6.989	188	3.347	174	3.289	49.77	28.94	3.15	-0.25
38	30.4	7.178	186.5	3.32	174.2	3.293	49.598	28.84	3.148	-0.252
39	31.2	7.367	186	3.311	175	3.308	49.643	28.87	3.146	-0.254

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	185	3.293	176.8	3.342	49.763	28.94	3.145	-0.255
41	32.8	7.745	184.8	3.29	172	3.251	49.058	28.53	3.143	-0.257
42	33.6	7.934	184	3.276	177.8	3.361	49.778	28.95	3.141	-0.259
43	34.4	8.123	183.8	3.272	178	3.365	49.778	28.95	3.139	-0.261
44	35.2	8.312	183	3.258	178	3.365	49.673	28.88	3.138	-0.262
45	36	8.5	183	3.258	178	3.365	49.673	28.88	3.136	-0.264
46	36.8	8.689	182	3.24	178	3.365	49.538	28.81	3.134	-0.266
47	37.6	8.878	181	3.222	179	3.384	49.545	28.81	3.133	-0.267
48	38.4	9.067	179.2	3.19	179.5	3.393	49.373	28.71	3.131	-0.269
49	39.2	9.256	179	3.187	180.5	3.412	49.493	28.78	3.129	-0.271
50	40	9.445	178	3.169	181	3.421	49.425	28.74	3.128	-0.272
51	40.8	9.634	177.8	3.165	181.5	3.431	49.47	28.77	3.126	-0.274
52	41.6	9.823	177.5	3.16	182	3.44	49.5	28.78	3.124	-0.276
53	42.4	10.012	177	3.151	182	3.44	49.433	28.74	3.122	-0.278
54	43.2	10.2	176.5	3.142	182	3.44	49.365	28.71	3.121	-0.279
55	44	10.389	176.2	3.137	182.5	3.45	49.403	28.73	3.119	-0.281
56	44.8	10.578	175	3.115	182.5	3.45	49.238	28.63	3.117	-0.283
57	45.6	10.767	174	3.098	184	3.478	49.32	28.68	3.116	-0.284
58	46.4	10.956	174	3.098	184	3.478	49.32	28.68	3.114	-0.286
59	47.2	11.145	174	3.098	185	3.497	49.463	28.76	3.112	-0.288

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 kg/ cm^2 ; P = 28.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	173	3.08	185.5	3.506	49.395	28.72	3.111	-0.289
65	52	12.278	171	3.044	187	3.535	49.343	28.69	3.102	-0.298
70	56	13.223	170	3.026	178.2	3.368	47.955	27.89	3.094	-0.306
75	60	14.167	168.5	3	181	3.421	48.158	28	3.085	-0.315
80	64	15.112	167.9	2.989	182.8	3.455	48.33	28.1	3.077	-0.323
85	68	16.056	167.2	2.977	184.6	3.489	48.495	28.2	3.068	-0.332
90	72	17	166.4	2.962	186.3	3.522	48.63	28.28	3.06	-0.34
95	76	17.945	165.7	2.95	188.1	3.556	48.795	28.37	3.051	-0.349
100	80	18.889	164.9	2.936	189.9	3.59	48.945	28.46	3.043	-0.357
105	84	19.834	164.2	2.923	181.7	3.435	47.685	27.73	3.034	-0.366
110	88	20.778	163.4	2.909	183.5	3.469	47.835	27.82	3.026	-0.374
115	92	21.723	162.7	2.897	183	3.459	47.67	27.72	3.017	-0.383
120	96	22.667	161.9	2.882	183.4	3.467	47.618	27.69	3.009	-0.391
125	100	23.612	161.2	2.87	182.8	3.455	47.438	27.58	3	-0.4
130	104	24.556	160.4	2.856	182.2	3.444	47.25	27.48	2.992	-0.408
135	108	25.5	159.7	2.843	181.6	3.433	47.07	27.37	2.983	-0.417
140	112	26.445	158.9	2.829	181.1	3.423	46.89	27.27	2.975	-0.425
145	116	27.389	158.2	2.816	180.5	3.412	46.71	27.16	2.966	-0.434
150	120	28.334	157.4	2.802	179.9	3.401	46.523	27.05	2.958	-0.442
155	124	29.278	156.7	2.79	179.3	3.389	46.343	26.95	2.949	-0.451

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0.5 2 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	155.9	2.776	178.8	3.38	46.17	26.85	2.941	-0.459
165	132	31.167	155.2	2.763	178.2	3.368	45.983	26.74	2.932	-0.468
170	136	32.112	154.4	2.749	177.6	3.357	45.795	26.63	2.924	-0.476
175	140	33.056	153.7	2.736	177	3.346	45.615	26.53	2.915	-0.485
180	144	34	152.9	2.722	176.5	3.336	45.435	26.42	2.907	-0.493
190	152	35.889	151.4	2.695	175.3	3.314	45.068	26.21	2.89	-0.51
200	160	37.778	149.9	2.669	174.1	3.291	44.7	25.99	2.873	-0.527
210	168	39.667	148.4	2.642	173	3.27	44.34	25.78	2.856	-0.544
220	176	41.556	146.9	2.615	171.8	3.248	43.973	25.57	2.839	-0.561
230	184	43.445	145.4	2.589	170.7	3.227	43.62	25.37	2.822	-0.578
240	192	45.334	143.9	2.562	169.5	3.204	43.245	25.15	2.805	-0.595

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P =4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	2.642	0
1	0.8	0.189	245	4.361	205	3.8745	61.767	35.92	2.614	-0.028
2	1.6	0.378	327	5.821	292	5.519	85.05	49.45	2.578	-0.064
3	2.4	0.567	361.2	6.43	321	6.067	93.728	54.5	2.56	-0.082
4	3.2	0.756	371	6.604	333	6.294	96.735	56.25	2.546	-0.096
5	4	0.945	373	6.64	337	6.37	97.575	56.73	2.536	-0.106
6	4.8	1.134	374	6.658	338	6.389	97.853	56.9	2.529	-0.113
7	5.6	1.323	375.7	6.688	339	6.408	98.22	57.11	2.521	-0.121
8	6.4	1.512	377.2	6.715	339	6.408	98.423	57.23	2.518	-0.124
9	7.2	1.7	378.7	6.741	340	6.426	98.753	57.42	2.51	-0.132
10	8	1.889	380.2	6.768	340	6.426	98.955	57.54	2.504	-0.138
11	8.8	2.078	381.7	6.795	340.5	6.436	99.233	57.7	2.498	-0.144
12	9.6	2.267	383.2	6.821	342	6.464	99.638	57.93	2.49	-0.152
13	10.4	2.456	384.7	6.848	343	6.483	99.983	58.13	2.486	-0.156
14	11.2	2.645	386.2	6.875	343	6.483	100.185	58.25	2.481	-0.161
15	12	2.834	387.7	6.902	343.5	6.493	100.463	58.41	2.478	-0.164
16	12.8	3.023	389.2	6.928	343.5	6.493	100.658	58.53	2.475	-0.167
17	13.6	3.212	390.7	6.955	344	6.502	100.928	58.68	2.47	-0.172
18	14.4	3.4	392.2	6.982	344	6.502	101.13	58.8	2.465	-0.177
19	15.2	3.589	393.7	7.008	345	6.521	101.468	59	2.46	-0.182

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P =4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	395.2	7.035	346	6.54	101.813	59.2	2.455	-0.187
21	16.8	3.967	396.7	7.062	347	6.559	102.158	59.4	2.45	-0.192
22	17.6	4.156	398.2	7.088	348	6.578	102.495	59.59	2.449	-0.193
23	18.4	4.345	380	6.764	349	6.597	100.208	58.26	2.445	-0.197
24	19.2	4.534	381.5	6.791	350	6.615	100.545	58.46	2.441	-0.201
25	20	4.723	378	6.729	345.8	6.536	99.488	57.85	2.44	-0.202
26	20.8	4.912	369.7	6.581	345.8	6.536	98.378	57.2	2.435	-0.207
27	21.6	5.1	363.8	6.476	345.8	6.536	97.59	56.74	2.43	-0.212
28	22.4	5.289	365.8	6.512	345.5	6.53	97.815	56.87	2.426	-0.216
29	23.2	5.478	362.6	6.455	345.5	6.53	97.388	56.62	2.422	-0.22
30	24	5.667	360.7	6.421	345.5	6.53	97.133	56.48	2.42	-0.222
31	24.8	5.856	358.7	6.385	345.5	6.53	96.863	56.32	2.418	-0.224
32	25.6	6.045	362.8	6.458	345.5	6.53	97.41	56.64	2.415	-0.227
33	26.4	6.234	362	6.444	345.5	6.53	97.305	56.58	2.41	-0.232
34	27.2	6.423	358.9	6.389	345.5	6.53	96.893	56.34	2.405	-0.237
35	28	6.612	357.9	6.371	345.5	6.53	96.758	56.26	2.402	-0.24
36	28.8	6.8	357	6.355	345.5	6.53	96.638	56.19	2.401	-0.241
37	29.6	6.989	357	6.355	345.5	6.53	96.638	56.19	2.4	-0.242
38	30.4	7.178	357.5	6.364	345.5	6.53	96.705	56.23	2.398	-0.244
39	31.2	7.367	357	6.355	345.5	6.53	96.638	56.19	2.395	-0.247

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P =4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	356.5	6.346	345.5	6.53	96.57	56.15	2.393	-0.249
41	32.8	7.745	355.4	6.327	345.5	6.53	96.428	56.07	2.39	-0.252
42	33.6	7.934	354.8	6.316	345.5	6.53	96.345	56.02	2.389	-0.253
43	34.4	8.123	353.5	6.293	345	6.521	96.105	55.88	2.384	-0.258
44	35.2	8.312	352	6.266	345	6.521	95.903	55.76	2.381	-0.261
45	36	8.5	351	6.248	344.8	6.517	95.738	55.67	2.38	-0.262
46	36.8	8.689	350.4	6.238	344.5	6.512	95.625	55.6	2.378	-0.264
47	37.6	8.878	350	6.23	344.3	6.508	95.535	55.55	2.376	-0.266
48	38.4	9.067	349	6.213	344.1	6.504	95.378	55.46	2.375	-0.267
49	39.2	9.256	348.2	6.198	344.1	6.504	95.265	55.39	2.372	-0.27
50	40	9.445	347.8	6.191	343	6.483	95.055	55.27	2.37	-0.272
51	40.8	9.634	347.5	6.186	343	6.483	95.018	55.25	2.368	-0.274
52	41.6	9.823	344.4	6.131	343	6.483	94.605	55.01	2.365	-0.277
53	42.4	10.012	343	6.106	342.6	6.476	94.365	54.87	2.362	-0.28
54	43.2	10.2	342.5	6.097	342.5	6.474	94.283	54.82	2.36	-0.282
55	44	10.389	342	6.088	341.5	6.455	94.073	54.7	2.36	-0.282
56	44.8	10.578	340.8	6.067	341.5	6.455	93.915	54.61	2.359	-0.283
57	45.6	10.767	339.5	6.044	341.3	6.451	93.713	54.49	2.357	-0.285
58	46.4	10.956	338.6	6.028	341.3	6.451	93.593	54.42	2.354	-0.288
59	47.2	11.145	337.8	6.013	339	6.408	93.158	54.17	2.351	-0.291

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P =4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	334.5	5.955	339.5	6.417	92.79	53.95	2.35	-0.292
65	52	12.278	331.4	5.899	337	6.37	92.018	53.5	2.342	-0.3
70	56	13.223	323.8	5.764	335.1	6.334	90.735	52.76	2.333	-0.309
75	60	14.167	319.5	5.688	333.9	6.311	89.993	52.33	2.328	-0.314
80	64	15.112	314.2	5.593	332.2	6.279	89.04	51.77	2.322	-0.32
85	68	16.056	309.8	5.515	330.6	6.249	88.23	51.3	2.316	-0.326
90	72	17	305.4	5.437	328.9	6.217	87.405	50.82	2.31	-0.332
95	76	17.945	301	5.358	327.3	6.186	86.58	50.34	2.304	-0.338
100	80	18.889	296.5	5.278	325.6	6.154	85.74	49.85	2.298	-0.344
105	84	19.834	292.1	5.2	324	6.124	84.93	49.38	2.292	-0.35
110	88	20.778	287.7	5.122	322.3	6.092	84.105	48.9	2.286	-0.356
115	92	21.723	283.3	5.043	320.7	6.062	83.288	48.43	2.28	-0.362
120	96	22.667	278.9	4.965	319	6.03	82.463	47.95	2.274	-0.368
125	100	23.612	274.5	4.887	317.4	5.999	81.645	47.47	2.268	-0.374
130	104	24.556	270	4.806	315.7	5.967	80.798	46.98	2.262	-0.38
135	108	25.5	265.6	4.728	314.1	5.937	79.988	46.51	2.256	-0.386
140	112	26.445	261.2	4.65	312.4	5.905	79.163	46.03	2.25	-0.362
145	116	27.389	256.8	4.572	310.8	5.875	78.353	45.56	2.244	-0.398
150	120	28.334	252.4	4.493	309.1	5.842	77.513	45.07	2.238	-0.404
155	124	29.278	247.9	4.413	307.5	5.812	76.688	44.59	2.232	-0.41

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 1 kg/ cm^2 ; P =4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	243.5	4.335	305.8	5.78	75.863	44.11	2.226	-0.416
164	131.2	30.978	240	4.272	304.5	5.756	75.21	43.73	2.221	-0.421
170	136	32.112	234.7	4.178	302.5	5.718	74.22	43.16	2.214	-0.428
175	140	33.056	230.3	4.1	300.9	5.688	73.41	42.68	2.208	-0.434
180	144	34	225.8	4.02	299.2	5.655	72.563	42.19	2.202	-0.44
190	152	35.889	217	3.863	295.9	5.593	70.92	41.24	2.19	-0.452
200	160	37.778	208.2	3.706	292.6	5.531	69.278	40.28	2.178	-0.464
210	168	39.667	199.3	3.548	289.3	5.468	67.62	39.32	2.166	-0.476
220	176	41.556	190.5	3.391	286	5.406	65.978	38.36	2.154	-0.488
230	184	43.445	181.7	3.235	282.7	5.344	64.343	37.41	2.142	-0.5
240	192	45.334	176.3	3.139	279.4	5.281	63.15	36.72	2.13	-0.512
220	176	41.556	190.5	3.391	286	5.406	65.978	38.36	2.154	-0.488
230	184	43.445	181.7	3.235	282.7	5.344	64.343	37.41	2.142	-0.5
240	192	45.334	176.3	3.139	279.4	5.281	63.15	36.72	2.13	-0.512
190	152	35.889	217	3.863	295.9	5.593	70.92	41.24	2.19	-0.452
200	160	37.778	208.2	3.706	292.6	5.531	69.278	40.28	2.178	-0.464
210	168	39.667	199.3	3.548	289.3	5.468	67.62	39.32	2.166	-0.476
220	176	41.556	190.5	3.391	286	5.406	65.978	38.36	2.154	-0.488
230	184	43.445	181.7	3.235	282.7	5.344	64.343	37.41	2.142	-0.5
240	168	39.667	199.3	3.548	289.3	5.468	67.62	39.32	2.166	-0.476

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	2.892	0
1	0.8	0.189	265	4.717	290	5.481	76.485	44.47	2.885	-0.007
2	1.6	0.378	340	6.052	455	8.6	109.89	63.89	2.85	-0.042
3	2.4	0.567	578	10.289	675	12.758	172.853	100.5	2.81	-0.082
4	3.2	0.756	675	12.015	760	14.364	197.843	115.03	2.81	-0.082
5	4	0.945	681	12.122	778	14.705	201.203	116.98	2.78	-0.112
6	4.8	1.134	690	12.282	787	14.875	203.678	118.42	2.768	-0.124
7	5.6	1.323	691.8	12.315	791	14.95	204.488	118.89	2.752	-0.14
8	6.4	1.512	692.1	12.32	793	14.988	204.81	119.08	2.742	-0.15
9	7.2	1.7	692.1	12.32	793	14.988	204.81	119.08	2.735	-0.157
10	8	1.889	692.1	12.32	793	14.988	204.81	119.08	2.73	-0.162
11	8.8	2.078	692.1	12.32	793	14.988	204.81	119.08	2.724	-0.168
12	9.6	2.267	692.1	12.32	792.5	14.979	204.743	119.04	2.72	-0.172
13	10.4	2.456	692.1	12.32	792.1	14.971	204.683	119	2.713	-0.179
14	11.2	2.645	692	12.318	792	14.969	204.653	118.99	2.708	-0.184
15	12	2.834	690.3	12.288	791.2	14.954	204.315	118.79	2.7	-0.192
16	12.8	3.023	688	12.247	789	14.913	203.7	118.43	2.698	-0.194
17	13.6	3.212	684.5	12.185	786	14.856	202.808	117.91	2.69	-0.202
18	14.4	3.4	680.5	12.113	781	14.761	201.555	117.19	2.689	-0.203
19	15.2	3.589	675	12.015	775	14.648	199.973	116.27	2.682	-0.21

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	670	11.926	769	14.535	198.458	115.39	2.68	-0.212
21	16.8	3.967	661	11.766	753	14.232	194.985	113.37	2.675	-0.217
22	17.6	4.156	653	11.624	748	14.138	193.215	112.34	2.67	-0.222
23	18.4	4.345	648.5	11.544	741.5	14.015	191.693	111.45	2.668	-0.224
24	19.2	4.534	642	11.428	735	13.892	189.9	110.41	2.665	-0.227
25	20	4.723	635	11.303	727	13.741	187.83	109.21	2.662	-0.23
26	20.8	4.912	628.5	11.188	719	13.59	185.835	108.05	2.661	-0.231
27	21.6	5.1	621	11.054	713.5	13.486	184.05	107.01	2.66	-0.232
28	22.4	5.289	615.5	10.956	708	13.382	182.535	106.13	2.658	-0.234
29	23.2	5.478	609.5	10.85	703.2	13.291	181.058	105.27	2.653	-0.239
30	24	5.667	604	10.752	698	13.193	179.588	104.42	2.65	-0.242
31	24.8	5.856	598	10.645	691	13.06	177.788	103.37	2.648	-0.244
32	25.6	6.045	591	10.52	685	12.947	176.003	102.33	2.645	-0.247
33	26.4	6.234	585	10.413	680.3	12.858	174.533	101.48	2.642	-0.25
34	27.2	6.423	581	10.342	676	12.777	173.393	100.81	2.641	-0.251
35	28	6.612	575	10.235	674.5	12.749	172.38	100.22	2.64	-0.252
36	28.8	6.8	571.5	10.173	671	12.682	171.413	99.66	2.638	-0.254
37	29.6	6.989	566	10.075	666	12.588	169.973	98.82	2.635	-0.257
38	30.4	7.178	562	10.004	662.2	12.516	168.9	98.2	2.631	-0.261
39	31.2	7.367	557	9.915	658	12.437	167.64	97.47	2.629	-0.263

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 74 % ; PL = 53 %

Tanggal : 31,04,24 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	552.5	9.835	654	12.361	166.47	96.79	2.627	-0.265
41	32.8	7.745	549	9.773	650.5	12.295	165.51	96.23	2.625	-0.267
42	33.6	7.934	545	9.701	647	12.229	164.475	95.63	2.625	-0.267
43	34.4	8.123	541.5	9.639	644	12.172	163.583	95.11	2.623	-0.269
44	35.2	8.312	538.5	9.586	641	12.115	162.758	94.63	2.622	-0.27
45	36	8.5	534.6	9.516	637.5	12.049	161.738	94.04	2.621	-0.271
46	36.8	8.689	531	9.452	635	12.002	160.905	93.55	2.62	-0.272
47	37.6	8.878	526.5	9.372	631.5	11.936	159.81	92.92	2.619	-0.273
48	38.4	9.067	524	9.328	630	11.907	159.263	92.6	2.617	-0.275
49	39.2	9.256	520.5	9.265	627.5	11.86	158.438	92.12	2.615	-0.277
50	40	9.445	518.8	9.235	625	11.813	157.86	91.78	2.613	-0.279
51	40.8	9.634	514	9.15	622	11.756	156.795	91.16	2.612	-0.28
52	41.6	9.823	511	9.096	619	11.7	155.97	90.68	2.611	-0.281
53	42.4	10.012	507	9.025	616	11.643	155.01	90.13	2.61	-0.282
54	43.2	10.2	505.8	9.004	615	11.624	154.71	89.95	2.609	-0.283
55	44	10.389	503	8.954	613	11.586	154.05	89.57	2.607	-0.285
56	44.8	10.578	501	8.918	611.4	11.556	153.555	89.28	2.604	-0.288
57	45.6	10.767	499	8.883	609	11.511	152.955	88.93	2.602	-0.29
58	46.4	10.956	497.5	8.856	607	11.473	152.468	88.65	2.601	-0.291
59	47.2	11.145	495.5	8.82	605.2	11.439	151.943	88.34	2.6	-0.292

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

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Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	493	8.776	602.7	11.392	151.26	87.95	2.6	-0.292
65	52	12.278	481	8.562	594	11.227	148.418	86.29	2.591	-0.301
70	56	13.223	468.4	8.338	585	11.057	145.463	84.58	2.583	-0.309
75	60	14.167	459	8.171	579.5	10.953	143.43	83.39	2.579	-0.313
80	64	15.112	7.5	0.134	105	1.985	15.893	9.24	1.919	-0.554
85	68	16.056	4.2	0.075	108.3	2.047	15.915	9.26	1.902	-0.571
90	72	17	1.2	0.022	110.7	2.093	15.863	9.23	1.88	-0.593
95	76	17.945	1.2	0.022	114	2.155	16.328	9.5	1.864	-0.609
92	73.6	17.378	1.2	0.022	111.7	2.112	16.005	9.31	1.872	-0.601
93	74.4	17.567	1.2	0.022	112.8	2.132	16.155	9.4	1.87	-0.603
94	75.2	17.756	1.2	0.022	113.5	2.146	16.26	9.46	1.868	-0.605
95	76	17.945	1.2	0.022	114	2.155	16.328	9.5	1.864	-0.609
100	80	18.889	1.2	0.022	116.5	2.202	16.68	9.7	1.845	-0.628
105	84	19.834	1.2	0.022	118	2.231	16.898	9.83	1.83	-0.643
110	88	20.778	1.2	0.022	118	2.231	16.898	9.83	1.812	-0.661
115	92	21.723	1.2	0.022	118	2.231	16.898	9.83	1.794	-0.679
135	108	25.5	363.5	6.471	510.5	9.649	120.9	70.29	135	108
140	112	26.445	358	6.373	506	9.564	119.528	69.5	140	112
145	116	27.389	358	6.373	506	9.564	119.528	69.5	145	116
150	120	28.334	354	6.302	502.8	9.503	118.538	68.92	150	120

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lanau (Tufa Merah)
Lokasi : Desa Tugu Cisarua

CONTOH TANAH

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Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
155	124	29.278	354	6.302	502.8	9.503	118.538	68.92	155	124
160	128	30.223	354	6.302	502.8	9.503	118.538	68.92	160	128
165	132	31.167	352	6.266	502	9.488	118.155	68.7	165	132
170	136	32.112	356	6.337	502.5	9.498	118.763	69.05	170	136
175	140	33.056	351	6.248	496	9.375	117.173	68.13	175	140
180	144	34	350	6.23	494.6	9.348	116.835	67.93	180	144
190	152	35.889	346.8	6.174	492.6	9.311	116.138	67.53	190	152
200	160	37.778	343.8	6.12	490.6	9.273	115.448	67.12	200	160
210	168	39.667	340.8	6.067	488.6	9.235	114.765	66.73	210	168
220	176	41.556	337.8	6.013	486.6	9.197	114.075	66.33	220	176
230	184	43.445	334.8	5.96	484.6	9.159	113.393	65.93	230	184
240	192	45.334	331.8	5.907	482.6	9.122	112.718	65.54	240	192

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0 .5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	2.473	0
1	0.8	0.189	117	2.083	105	1.985	30.51	17.74	2.452	-0.021
2	1.6	0.378	107	1.905	101.5	1.919	28.68	16.68	2.431	-0.042
3	2.4	0.567	99	1.763	96	1.815	26.835	15.61	2.42	-0.053
4	3.2	0.756	95	1.691	95	1.796	26.153	15.21	2.408	-0.065
5	4	0.945	89	1.585	92	1.739	24.93	14.5	2.396	-0.077
6	4.8	1.134	83.5	1.487	90	1.701	23.91	13.91	2.384	-0.089
7	5.6	1.323	81.8	1.457	88.8	1.679	23.52	13.68	2.37	-0.103
8	6.4	1.512	78	1.389	87	1.645	22.755	13.23	2.358	-0.115
9	7.2	1.7	74	1.318	85	1.607	21.938	12.76	2.348	-0.125
10	8	1.889	70.5	1.255	84	1.588	21.323	12.4	2.335	-0.138
11	8.8	2.078	69	1.229	85	1.607	21.27	12.37	2.32	-0.153
12	9.6	2.267	69	1.229	85	1.607	21.27	12.37	2.313	-0.16
13	10.4	2.456	67	1.193	84.5	1.598	20.933	12.17	2.302	-0.171
14	11.2	2.645	63	1.122	82.5	1.56	20.115	11.7	2.295	-0.178
15	12	2.834	62	1.104	83	1.569	20.048	11.66	2.287	-0.186
16	12.8	3.023	61	1.086	83	1.569	19.913	11.58	2.277	-0.196
17	13.6	3.212	58	1.033	82	1.55	19.373	11.27	2.266	-0.207
18	14.4	3.4	56	0.997	81.8	1.547	19.08	11.1	2.255	-0.218
19	15.2	3.589	53	0.944	81.8	1.547	18.683	10.87	2.248	-0.225

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0 .5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	52.5	0.935	82.5	1.56	18.713	10.88	2.24	-0.233
21	16.8	3.967	51.5	0.917	82	1.55	18.503	10.76	2.23	-0.243
22	17.6	4.156	50	0.89	81.3	1.537	18.203	10.59	2.224	-0.249
23	18.4	4.345	50	0.89	81.3	1.537	18.203	10.59	2.215	-0.258
24	19.2	4.534	49.3	0.878	81.3	1.537	18.113	10.54	2.21	-0.263
25	20	4.723	47	0.837	81.2	1.535	17.79	10.35	2.2	-0.273
26	20.8	4.912	46.5	0.828	81	1.531	17.693	10.29	2.191	-0.282
27	21.6	5.1	46	0.819	81	1.531	17.625	10.25	2.184	-0.289
28	22.4	5.289	45	0.801	80.8	1.528	17.468	10.16	2.178	-0.295
29	23.2	5.478	44	0.784	80.8	1.528	17.34	10.09	2.17	-0.303
30	24	5.667	43	0.766	80.8	1.528	17.205	10.01	2.165	-0.308
31	24.8	5.856	42.4	0.755	81	1.531	17.145	9.97	2.16	-0.313
32	25.6	6.045	41	0.73	80.8	1.528	16.935	9.85	2.151	-0.322
33	26.4	6.234	40.5	0.721	81.5	1.541	16.965	9.87	2.145	-0.328
34	27.2	6.423	39	0.695	81.5	1.541	16.77	9.75	2.139	-0.334
35	28	6.612	38.2	0.68	82.5	1.56	16.8	9.77	2.13	-0.343
36	28.8	6.8	37	0.659	82	1.55	16.568	9.64	2.125	-0.348
37	29.6	6.989	37	0.659	82.5	1.56	16.643	9.68	2.12	-0.353
38	30.4	7.178	36	0.641	82.5	1.56	16.508	9.6	2.115	-0.358
39	31.2	7.367	35.4	0.631	83	1.569	16.5	9.6	2.11	-0.363

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0 .5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	34.5	0.615	83	1.569	16.38	9.53	2.104	-0.369
41	32.8	7.745	33	0.588	83.2	1.573	16.208	9.43	2.098	-0.375
42	33.6	7.934	32.5	0.579	83.2	1.573	16.14	9.39	2.09	-0.383
43	34.4	8.123	32	0.57	83.8	1.584	16.155	9.4	2.085	-0.388
44	35.2	8.312	30.8	0.549	84.2	1.592	16.058	9.34	2.08	-0.393
45	36	8.5	30.5	0.543	85.1	1.609	16.14	9.39	2.074	-0.399
46	36.8	8.689	30	0.534	85.1	1.609	16.073	9.35	2.07	-0.403
47	37.6	8.878	29	0.517	85.5	1.616	15.998	9.31	2.067	-0.406
48	38.4	9.067	28.2	0.502	85.4	1.615	15.878	9.24	2.061	-0.412
49	39.2	9.256	27.5	0.49	85.4	1.615	15.788	9.18	2.055	-0.418
50	40	9.445	26.2	0.467	86.2	1.63	15.728	9.15	2.049	-0.424
51	40.8	9.634	25.4	0.453	87.1	1.647	15.75	9.16	2.043	-0.43
52	41.6	9.823	25	0.445	87.1	1.647	15.69	9.13	2.038	-0.435
53	42.4	10.012	25	0.445	88	1.664	15.818	9.2	2.034	-0.439
54	43.2	10.2	24.8	0.442	90	1.701	16.073	9.35	2.026	-0.447
55	44	10.389	24.7	0.44	90.8	1.717	16.178	9.41	2.02	-0.453
56	44.8	10.578	24.5	0.437	92.5	1.749	16.395	9.54	2.014	-0.459
57	45.6	10.767	23.5	0.419	93.2	1.762	16.358	9.52	2.01	-0.463
58	46.4	10.956	21	0.374	93.2	1.762	16.02	9.32	2.004	-0.469
59	47.2	11.145	21	0.374	93	1.758	15.99	9.3	2	-0.473

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0 .5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	20.5	0.365	94	1.777	16.065	9.34	1.997	-0.476
65	52	12.278	15.8	0.282	99.4	1.879	16.208	9.43	1.971	-0.502
70	56	13.223	12.5	0.223	99.8	1.887	15.825	9.21	1.955	-0.518
75	60	14.167	11.3	0.202	103.5	1.957	16.193	9.42	1.939	-0.534
80	64	15.112	7.5	0.134	105	1.985	15.893	9.24	1.919	-0.554
85	68	16.056	4.2	0.075	108.3	2.047	15.915	9.26	1.902	-0.571
90	72	17	1.2	0.022	110.7	2.093	15.863	9.23	1.88	-0.593
95	76	17.945	1.2	0.022	114	2.155	16.328	9.5	1.864	-0.609
100	80	18.889	1.2	0.022	116.5	2.202	16.68	9.7	1.845	-0.628
105	84	19.834	1.2	0.022	118	2.231	16.898	9.83	1.83	-0.643
110	88	20.778	1.2	0.022	118	2.231	16.898	9.83	1.812	-0.661
115	92	21.723	1.2	0.022	118	2.231	16.898	9.83	1.794	-0.679
120	96	22.667	1.2	0.022	116	2.193	16.613	9.66	1.777	-0.696
125	100	23.612	1.2	0.022	116.8	2.208	16.725	9.73	1.762	-0.711
130	104	24.556	1.2	0.022	116.4	2.2	16.665	9.69	1.747	-0.726
135	108	25.5	1.2	0.022	116	2.193	16.613	9.66	1.732	-0.741
140	112	26.445	1.2	0.022	115.6	2.185	16.553	9.63	1.717	-0.756
145	116	27.389	1.25	0.023	115.2	2.178	16.508	9.6	1.702	-0.771
150	120	28.334	1.25	0.023	114.8	2.17	16.448	9.57	1.687	-0.786
155	124	29.278	1.25	0.023	114.4	2.163	16.395	9.54	1.672	-0.801

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp = 0 .5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	1.25	0.023	114	2.155	16.335	9.5	1.657	-0.816
165	132	31.167	1.25	0.023	113.5	2.146	16.268	9.46	1.64	-0.833
170	136	32.112	1.2	0.022	113.1	2.138	16.2	9.42	1.62	-0.853
175	140	33.056	1.2	0.022	112.7	2.131	16.148	9.39	1.6	-0.873
180	144	34	1.3	0.024	112.3	2.123	16.103	9.37	1.58	-0.893
190	152	35.889	1.2	0.022	111.5	2.108	15.975	9.29	1.567	-0.906
200	160	37.778	1.2	0.022	110.7	2.093	15.863	9.23	1.553	-0.92
210	168	39.667	1.3	0.024	109.8	2.076	15.75	9.16	1.54	-0.933
220	176	41.556	1.3	0.024	109.2	2.064	15.66	9.11	1.527	-0.946
230	184	43.445	1.3	0.024	109.2	2.064	15.66	9.11	1.513	-0.96
240	192	45.334	1.3	0.024	107.4	2.03	15.405	8.96	1.5	-0.973
210	168	39.667	1.3	0.024	109.8	2.076	15.75	9.16	1.54	-0.933
220	176	41.556	1.3	0.024	109.2	2.064	15.66	9.11	1.527	-0.946
230	184	43.445	1.3	0.024	109.2	2.064	15.66	9.11	1.513	-0.96
240	192	45.334	1.3	0.024	107.4	2.03	15.405	8.96	1.5	-0.973

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	4.564	0
1	0.8	0.189	215	3.827	196.6	3.71574	56.571	32.89	4.55	-0.014
2	1.6	0.378	213	3.792	201.6	3.811	57.023	33.16	4.538	-0.026
3	2.4	0.567	217	3.863	201.6	3.811	57.555	33.47	4.528	-0.036
4	3.2	0.756	207.8	3.699	194.6	3.678	55.328	32.17	4.515	-0.049
5	4	0.945	198	3.525	187.6	3.546	53.033	30.84	4.51	-0.054
6	4.8	1.134	190.8	3.397	182.1	3.442	51.293	29.83	4.508	-0.056
7	5.6	1.323	185.2	3.297	178	3.365	49.965	29.05	4.507	-0.057
8	6.4	1.512	180.3	3.21	174.1	3.291	48.758	28.35	4.505	-0.059
9	7.2	1.7	175.8	3.13	169.6	3.206	47.52	27.63	4.5	-0.064
10	8	1.889	173.5	3.089	168.6	3.187	47.07	27.37	4.499	-0.065
11	8.8	2.078	167	2.973	162.6	3.074	45.353	26.37	4.495	-0.069
12	9.6	2.267	164.8	2.934	159.4	3.013	44.603	25.94	4.491	-0.073
13	10.4	2.456	161	2.866	157.8	2.983	43.868	25.51	4.488	-0.076
14	11.2	2.645	155.5	2.768	153.3	2.898	42.495	24.71	4.482	-0.082
15	12	2.834	154	2.742	152.5	2.883	42.188	24.53	4.479	-0.085
16	12.8	3.023	152.3	2.711	150.5	2.845	41.67	24.23	4.475	-0.089
17	13.6	3.212	148	2.635	148	2.798	40.748	23.7	4.47	-0.094
18	14.4	3.4	146	2.599	145.7	2.754	40.148	23.35	4.467	-0.097
19	15.2	3.589	144.5	2.573	144.7	2.735	39.81	23.15	4.464	-0.1

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	143.5	2.555	144.5	2.732	39.653	23.06	4.461	-0.103
21	16.8	3.967	143.3	2.551	145.3	2.747	39.735	23.11	4.457	-0.107
22	17.6	4.156	138.8	2.471	144.7	2.735	39.045	22.71	4.453	-0.111
23	18.4	4.345	137.3	2.444	138.7	2.622	37.995	22.09	4.449	-0.115
24	19.2	4.534	135.9	2.42	137.7	2.603	37.673	21.91	4.446	-0.118
25	20	4.723	138	2.457	138.1	2.611	38.01	22.1	4.442	-0.122
26	20.8	4.912	133.5	2.377	135.9	2.569	37.095	21.57	4.438	-0.126
27	21.6	5.1	132.3	2.355	134.8	2.548	36.773	21.38	4.434	-0.13
28	22.4	5.289	131.8	2.347	133.9	2.531	36.585	21.28	4.431	-0.133
29	23.2	5.478	131	2.332	133.4	2.522	36.405	21.17	4.427	-0.137
30	24	5.667	129.5	2.306	132.4	2.503	36.068	20.97	4.423	-0.141
31	24.8	5.856	128.2	2.282	132	2.495	35.828	20.83	4.419	-0.145
32	25.6	6.045	127	2.261	131.4	2.484	35.588	20.7	4.416	-0.148
33	26.4	6.234	126.7	2.256	131	2.476	35.49	20.64	4.412	-0.152
34	27.2	6.423	124.8	2.222	129.7	2.452	35.055	20.39	4.408	-0.156
35	28	6.612	122.6	2.183	129	2.439	34.665	20.16	4.404	-0.16
36	28.8	6.8	123	2.19	128.9	2.437	34.703	20.18	4.401	-0.163
37	29.6	6.989	122.5	2.181	128.3	2.425	34.545	20.09	4.397	-0.167
38	30.4	7.178	121.5	2.163	128	2.42	34.373	19.99	4.393	-0.171
39	31.2	7.367	120.7	2.149	127	2.401	34.125	19.84	4.389	-0.175

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	119.5	2.128	126.8	2.397	33.938	19.74	4.386	-0.178
41	32.8	7.745	117.5	2.092	126.6	2.393	33.638	19.56	4.382	-0.182
42	33.6	7.934	116.5	2.074	127.1	2.403	33.578	19.53	4.378	-0.186
43	34.4	8.123	115.6	2.058	126.1	2.384	33.315	19.37	4.374	-0.19
44	35.2	8.312	115.4	2.055	126.1	2.384	33.293	19.36	4.371	-0.193
45	36	8.5	114.3	2.035	126.1	2.384	33.143	19.27	4.367	-0.197
46	36.8	8.689	113.5	2.021	125.6	2.374	32.963	19.17	4.363	-0.201
47	37.6	8.878	112.6	2.005	125.3	2.369	32.805	19.08	4.359	-0.205
48	38.4	9.067	111.1	1.978	124.7	2.357	32.513	18.91	4.356	-0.208
49	39.2	9.256	110.5	1.967	124.6	2.355	32.415	18.85	4.352	-0.212
50	40	9.445	109.1	1.942	125.3	2.369	32.333	18.8	4.348	-0.216
51	40.8	9.634	108.2	1.926	125.1	2.365	32.183	18.72	4.344	-0.22
52	41.6	9.823	108	1.923	124.7	2.357	32.1	18.67	4.341	-0.223
53	42.4	10.012	108	1.923	125.1	2.365	32.16	18.7	4.337	-0.227
54	43.2	10.2	107.4	1.912	126.1	2.384	32.22	18.74	4.333	-0.231
55	44	10.389	106.4	1.894	126.8	2.397	32.183	18.72	4.329	-0.235
56	44.8	10.578	106.3	1.893	127.3	2.406	32.243	18.75	4.324	-0.24
57	45.6	10.767	105.8	1.884	127.4	2.408	32.19	18.72	4.321	-0.243
58	46.4	10.956	103.9	1.85	127.4	2.408	31.935	18.57	4.321	-0.243
59	47.2	11.145	103	1.834	127	2.401	31.763	18.47	4.317	-0.247

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	102.3	1.821	127	2.401	31.665	18.41	4.312	-0.252
65	52	12.278	96.4	1.716	129.1	2.44	31.17	18.13	4.297	-0.267
70	56	13.223	93	1.656	128.9	2.437	30.698	17.85	4.282	-0.282
75	60	14.167	91.7	1.633	131.3	2.482	30.863	17.95	4.271	-0.293
80	64	15.112	86.3	1.537	131.5	2.486	30.173	17.55	4.26	-0.304
85	68	16.056	82	1.46	132.6	2.507	29.753	17.3	4.248	-0.316
90	72	17	78.6	1.4	133.9	2.531	29.483	17.15	4.236	-0.328
100	80	18.889	74.9	1.334	137.3	2.595	29.468	17.14	4.211	-0.353
105	84	19.834	72.9	1.298	139	2.628	29.445	17.12	4.199	-0.365
110	88	20.778	71.1	1.266	138.5	2.618	29.13	16.94	4.187	-0.377
115	92	21.723	68.6	1.222	139.3	2.633	28.913	16.81	4.173	-0.391
120	96	22.667	67.4	1.2	138	2.609	28.568	16.61	4.16	-0.404
125	100	23.612	66	1.175	137.2	2.594	28.268	16.44	4.146	-0.418
130	104	24.556	64.8	1.154	136.7	2.584	28.035	16.3	4.133	-0.431
135	108	25.5	63.7	1.134	136.5	2.58	27.855	16.2	4.119	-0.445
140	112	26.445	63.6	1.133	135.8	2.567	27.75	16.14	4.106	-0.458
145	116	27.389	63.4	1.129	138	2.609	28.035	16.3	4.092	-0.472
150	120	28.334	63.3	1.127	138.4	2.616	28.073	16.33	4.078	-0.486
155	124	29.278	63.1	1.124	137.2	2.594	27.885	16.22	4.065	-0.499
160	128	30.223	62.9	1.12	135.5	2.561	27.608	16.06	4.051	-0.513

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

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Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
165	132	31.167	62.8	1.118	135.8	2.567	27.638	16.07	4.037	-0.527
170	136	32.112	62.6	1.115	136.6	2.582	27.728	16.13	4.024	-0.54
175	140	33.056	62.4	1.111	135.9	2.569	27.6	16.05	4.01	-0.554
180	144	34	62.4	1.111	136.4	2.578	27.668	16.09	3.996	-0.568
190	152	35.889	62.3	1.109	135.8	2.567	27.57	16.03	3.969	-0.595
200	160	37.778	62.3	1.109	134.9	2.55	27.443	15.96	3.943	-0.621
210	168	39.667	62.3	1.109	134.3	2.539	27.36	15.91	3.92	-0.644
220	176	41.556	62.8	1.118	134.1	2.535	27.398	15.93	3.898	-0.666
230	184	43.445	62.5	1.113	133	2.514	27.203	15.82	3.875	-0.689
240	192	45.334	62.2	1.108	132.2	2.499	27.053	15.73	3.849	-0.715
210	168	39.667	62.3	1.109	134.3	2.539	27.36	15.91	3.92	-0.644
220	176	41.556	62.8	1.118	134.1	2.535	27.398	15.93	3.898	-0.666
230	184	43.445	62.5	1.113	133	2.514	27.203	15.82	3.875	-0.689
240	192	45.334	62.2	1.108	132.2	2.499	27.053	15.73	3.849	-0.715
210	168	39.667	62.3	1.109	134.3	2.539	27.36	15.91	3.92	-0.644
220	176	41.556	62.8	1.118	134.1	2.535	27.398	15.93	3.898	-0.666
230	184	43.445	62.5	1.113	133	2.514	27.203	15.82	3.875	-0.689
240	192	45.334	62.2	1.108	132.2	2.499	27.053	15.73	3.849	-0.715

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	7.418	0
1	0.8	0.189	293	5.216	245	4.631	73.853	42.94	7.414	-0.004
2	1.6	0.378	385	6.853	334.5	6.323	98.82	57.46	7.41	-0.008
3	2.4	0.567	365	6.497	314	5.935	93.24	54.21	7.4	-0.018
4	3.2	0.756	350.5	6.239	301	5.689	89.46	52.02	7.39	-0.028
5	4	0.945	337	5.999	290	5.481	86.1	50.06	7.38	-0.038
6	4.8	1.134	328	5.839	281	5.311	83.625	48.62	7.371	-0.047
7	5.6	1.323	318.5	5.67	274	5.179	81.368	47.31	7.365	-0.053
8	6.4	1.512	312.5	5.563	268	5.066	79.718	46.35	7.36	-0.058
9	7.2	1.7	307.5	5.474	261	4.933	78.053	45.38	7.354	-0.064
10	8	1.889	306.5	5.456	260	4.914	77.775	45.22	7.35	-0.068
11	8.8	2.078	295	5.251	247	4.669	74.4	43.26	7.345	-0.073
12	9.6	2.267	290.5	5.171	240.5	4.546	72.878	42.38	7.34	-0.078
13	10.4	2.456	285	5.073	235	4.442	71.363	41.49	7.332	-0.086
14	11.2	2.645	278	4.949	228	4.31	69.443	40.38	7.319	-0.099
15	12	2.834	276	4.913	226	4.272	68.888	40.06	7.315	-0.103
16	12.8	3.023	273.5	4.869	222	4.196	67.988	39.53	7.31	-0.108
17	13.6	3.212	268	4.771	218	4.121	66.69	38.78	7.308	-0.11
18	14.4	3.4	266	4.735	213.5	4.036	65.783	38.25	7.3	-0.118
19	15.2	3.589	266	4.735	211.5	3.998	65.498	38.08	7.299	-0.119

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
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Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	264.5	4.709	210.5	3.979	65.16	37.89	7.293	-0.125
21	16.8	3.967	265	4.717	212.5	4.017	65.505	38.09	7.29	-0.128
22	17.6	4.156	257.5	4.584	212	4.007	64.433	37.47	7.288	-0.13
23	18.4	4.345	254.5	4.531	200	3.78	62.333	36.24	7.285	-0.133
24	19.2	4.534	252.5	4.495	198	3.743	61.785	35.93	7.28	-0.138
25	20	4.723	259	4.611	199	3.762	62.798	36.51	7.279	-0.139
26	20.8	4.912	250.5	4.459	194.8	3.682	61.058	35.5	7.275	-0.143
27	21.6	5.1	248.5	4.424	192.5	3.639	60.473	35.16	7.27	-0.148
28	22.4	5.289	248.5	4.424	191	3.61	60.255	35.04	7.268	-0.15
29	23.2	5.478	248	4.415	190	3.591	60.045	34.91	7.265	-0.153
30	24	5.667	246	4.379	188	3.554	59.498	34.6	7.262	-0.156
31	24.8	5.856	244	4.344	187	3.535	59.093	34.36	7.26	-0.158
32	25.6	6.045	243	4.326	186	3.516	58.815	34.2	7.258	-0.16
33	26.4	6.234	242.8	4.322	184.5	3.488	58.575	34.06	7.255	-0.163
34	27.2	6.423	240.5	4.281	181.8	3.437	57.885	33.66	7.253	-0.165
35	28	6.612	237	4.219	179.5	3.393	57.09	33.2	7.25	-0.168
36	28.8	6.8	239	4.255	179.8	3.399	57.405	33.38	7.249	-0.169
37	29.6	6.989	238	4.237	178	3.365	57.015	33.15	7.245	-0.173
38	30.4	7.178	237	4.219	177.5	3.355	56.805	33.03	7.242	-0.176
39	31.2	7.367	236	4.201	175	3.308	56.318	32.75	7.24	-0.178

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
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Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	234.5	4.175	174.5	3.299	56.055	32.59	7.238	-0.18
41	32.8	7.745	232	4.13	174	3.289	55.643	32.35	7.235	-0.183
42	33.6	7.934	230.5	4.103	175	3.308	55.583	32.32	7.232	-0.186
43	34.4	8.123	229.2	4.08	172.3	3.257	55.028	32	7.23	-0.188
44	35.2	8.312	230	4.094	172	3.251	55.088	32.03	7.225	-0.193
45	36	8.5	228	4.059	171	3.232	54.683	31.8	7.223	-0.195
46	36.8	8.689	227	4.041	170	3.213	54.405	31.64	7.222	-0.196
47	37.6	8.878	226.2	4.027	169	3.195	54.165	31.5	7.22	-0.198
48	38.4	9.067	224	3.988	168	3.176	53.73	31.24	7.219	-0.199
49	39.2	9.256	223.5	3.979	167.8	3.172	53.633	31.19	7.217	-0.201
50	40	9.445	222	3.952	168.3	3.181	53.498	31.11	7.214	-0.204
51	40.8	9.634	221	3.934	167	3.157	53.183	30.92	7.21	-0.208
52	41.6	9.823	221	3.934	166.2	3.142	53.07	30.86	7.209	-0.209
53	42.4	10.012	221	3.934	166.2	3.142	53.07	30.86	7.207	-0.211
54	43.2	10.2	220	3.916	166.2	3.142	52.935	30.78	7.205	-0.213
55	44	10.389	218	3.881	166.8	3.153	52.755	30.68	7.201	-0.217
56	44.8	10.578	218	3.881	166	3.138	52.643	30.61	7.2	-0.218
57	45.6	10.767	218	3.881	165.5	3.128	52.568	30.57	7.199	-0.219
58	46.4	10.956	216.8	3.86	165.5	3.128	52.41	30.48	7.195	-0.223
59	47.2	11.145	215	3.827	165	3.119	52.095	30.29	7.193	-0.225

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
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Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

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Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	214	3.81	164	3.1	51.825	30.14	7.19	-0.228
65	52	12.278	207	3.685	162.7	3.076	50.708	29.49	7.183	-0.235
70	56	13.223	203.4	3.621	162	3.062	50.123	29.15	7.173	-0.245
75	60	14.167	202	3.596	163	3.081	50.078	29.12	7.168	-0.25
80	64	15.112	195	3.471	162	3.062	48.998	28.49	7.158	-0.26
85	68	16.056	189.8	3.379	160.8	3.04	48.143	27.99	7.149	-0.269
90	72	17	186	3.311	161	3.043	47.655	27.71	7.14	-0.278
95	76	17.945	179.5	3.196	159.5	3.015	46.583	27.09	7.13	-0.288
100	80	18.889	178.5	3.178	162	3.062	46.8	27.21	7.119	-0.299
105	84	19.834	174.5	3.107	164	3.1	46.553	27.07	7.108	-0.31
110	88	20.778	171	3.044	163	3.081	45.938	26.71	7.098	-0.32
115	92	21.723	166	2.955	164.5	3.11	45.488	26.45	7.088	-0.33
120	96	22.667	163.5	2.911	164	3.1	45.083	26.22	7.0757	-0.3423
125	100	23.612	160.8	2.863	161.5	3.053	44.37	25.8	7.0637	-0.3543
130	104	24.556	158.3	2.818	161	3.043	43.958	25.56	7.0517	-0.3663
135	108	25.5	156.1	2.779	161	3.043	43.665	25.39	7.045	-0.373
140	112	26.445	155.9	2.776	160	3.024	43.5	25.3	7.037	-0.381
145	116	27.389	155.5	2.768	164.8	3.115	44.123	25.66	7.03	-0.388
150	120	28.334	155.2	2.763	166	3.138	44.258	25.74	7.022	-0.396
155	124	29.278	154.9	2.758	164	3.1	43.935	25.55	7.014	-0.404

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 89 % ; PL = 35 %

Tanggal :07,1214September Agustus 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	154.5	2.751	161	3.043	43.455	25.27	7.006	-0.412
165	132	31.167	154.2	2.745	162	3.062	43.553	25.33	6.999	-0.419
170	136	32.112	153.9	2.74	164	3.1	43.8	25.47	6.99	-0.428
175	140	33.056	153.5	2.733	163	3.081	43.605	25.36	6.981	-0.437
180	144	34	153.4	2.731	164.5	3.11	43.808	25.47	6.972	-0.446
190	152	35.889	153.4	2.731	164	3.1	43.733	25.43	6.954	-0.464
200	160	37.778	153.4	2.731	163	3.081	43.59	25.35	6.942	-0.476
210	168	39.667	153.3	2.729	162.7	3.076	43.538	25.32	6.934	-0.484
220	176	41.556	154.3	2.747	163	3.081	43.71	25.42	6.922	-0.496
230	184	43.445	153.7	2.736	160.8	3.04	43.32	25.19	6.909	-0.509
240	192	45.334	153	2.724	161	3.043	43.253	25.15	6.89	-0.528

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	4.418	0
1	0.8	0.189	90	1.602	92	1.739	25.058	14.57	4.41	-0.008
2	1.6	0.378	88	1.567	91	1.72	24.653	14.34	4.4	-0.018
3	2.4	0.567	85.6	1.524	89.8	1.698	24.165	14.05	4.365	-0.053
4	3.2	0.756	84	1.496	88	1.664	23.7	13.78	4.361	-0.057
5	4	0.945	82.5	1.469	85	1.607	23.07	13.42	4.35	-0.068
6	4.8	1.134	78	1.389	82	1.55	22.043	12.82	4.341	-0.077
7	5.6	1.323	75	1.335	83	1.569	21.78	12.67	4.34	-0.078
8	6.4	1.512	75.4	1.343	80	1.512	21.413	12.45	4.33	-0.088
9	7.2	1.7	73.2	1.303	79.8	1.509	21.09	12.27	4.314	-0.104
10	8	1.889	65.2	1.161	79	1.494	19.913	11.58	4.305	-0.113
11	8.8	2.078	63	1.122	79	1.494	19.62	11.41	4.297	-0.121
12	9.6	2.267	58	1.033	78.5	1.484	18.878	10.98	4.286	-0.132
13	10.4	2.456	50	0.89	78	1.475	17.738	10.32	4.279	-0.139
14	11.2	2.645	42.8	0.762	78.5	1.484	16.845	9.8	4.26	-0.158
15	12	2.834	41	0.73	78	1.475	16.538	9.62	4.252	-0.166
16	12.8	3.023	47	0.837	77	1.456	17.198	10	4.245	-0.173
17	13.6	3.212	43	0.766	75.2	1.422	16.41	9.55	4.24	-0.178
18	14.4	3.4	40.5	0.721	78	1.475	16.47	9.58	4.239	-0.179
19	15.2	3.589	39	0.695	75	1.418	15.848	9.22	4.236	-0.182

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	41.8	0.745	77	1.456	16.508	9.6	4.226	-0.192
21	16.8	3.967	38	0.677	78.3	1.48	16.178	9.41	4.22	-0.198
22	17.6	4.156	46.2	0.823	78.3	1.48	17.273	10.05	4.215	-0.203
23	18.4	4.345	46.2	0.823	76	1.437	16.95	9.86	4.21	-0.208
24	19.2	4.534	45.4	0.809	76.2	1.441	16.875	9.82	4.202	-0.216
25	20	4.723	45.2	0.805	74	1.399	16.53	9.62	4.2	-0.218
26	20.8	4.912	44	0.784	75	1.418	16.515	9.61	4.191	-0.227
27	21.6	5.1	35	0.623	77	1.456	15.593	9.07	4.187	-0.231
28	22.4	5.289	35	0.623	80	1.512	16.013	9.31	4.18	-0.238
29	23.2	5.478	36.2	0.645	75	1.418	15.473	9	4.175	-0.243
30	24	5.667	34	0.606	78	1.475	15.608	9.08	4.17	-0.248
31	24.8	5.856	34	0.606	79	1.494	15.75	9.16	4.165	-0.253
32	25.6	6.045	34	0.606	78.5	1.484	15.675	9.12	4.16	-0.258
33	26.4	6.234	35	0.623	79	1.494	15.878	9.24	4.157	-0.261
34	27.2	6.423	36	0.641	75	1.418	15.443	8.98	4.151	-0.267
35	28	6.612	30	0.534	76	1.437	14.783	8.6	4.145	-0.273
36	28.8	6.8	41	0.73	78.8	1.49	16.65	9.69	4.14	-0.278
37	29.6	6.989	32.5	0.579	75	1.418	14.978	8.71	4.135	-0.283
38	30.4	7.178	35.5	0.632	77	1.456	15.66	9.11	4.13	-0.288
39	31.2	7.367	33	0.588	77.8	1.471	15.443	8.98	4.125	-0.293

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	34	0.606	77	1.456	15.465	9	4.121	-0.297
41	32.8	7.745	31	0.552	77	1.456	15.06	8.76	4.12	-0.298
42	33.6	7.934	32	0.57	83.8	1.584	16.155	9.4	4.114	-0.304
43	34.4	8.123	32	0.57	80	1.512	15.615	9.08	4.11	-0.308
44	35.2	8.312	30	0.534	76	1.437	14.783	8.6	4.105	-0.313
45	36	8.5	32.5	0.579	76.5	1.446	15.188	8.83	4.1	-0.318
46	36.8	8.689	31.8	0.567	75	1.418	14.888	8.66	4.098	-0.32
47	37.6	8.878	29.6	0.527	74.2	1.403	14.475	8.42	4.091	-0.327
48	38.4	9.067	32.3	0.575	74.2	1.403	14.835	8.63	4.089	-0.329
49	39.2	9.256	30.4	0.542	74	1.399	14.558	8.47	4.085	-0.333
50	40	9.445	28.8	0.513	73	1.38	14.198	8.26	4.081	-0.337
51	40.8	9.634	30	0.534	74	1.399	14.498	8.43	4.075	-0.343
52	41.6	9.823	29	0.517	76	1.437	14.655	8.53	4.072	-0.346
53	42.4	10.012	31	0.552	74.5	1.409	14.708	8.56	4.07	-0.348
54	43.2	10.2	32	0.57	75	1.418	14.91	8.67	4.065	-0.353
55	44	10.389	31	0.552	74	1.399	14.633	8.51	4.06	-0.358
56	44.8	10.578	32	0.57	75	1.418	14.91	8.67	4.06	-0.358
57	45.6	10.767	28.5	0.508	72	1.361	14.018	8.15	4.055	-0.363
58	46.4	10.956	28.5	0.508	73	1.38	14.16	8.24	4.051	-0.367
59	47.2	11.145	30.5	0.543	74.5	1.409	14.64	8.52	4.048	-0.37

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	32	0.57	75	1.418	14.91	8.67	4.042	-0.376
65	52	12.278	39	0.695	82.5	1.56	16.913	9.84	4.03	-0.388
70	56	13.223	40.8	0.727	84.5	1.598	17.438	10.14	4.007	-0.411
75	60	14.167	36	0.641	81	1.531	16.29	9.48	3.986	-0.432
80	64	15.112	32	0.57	73	1.38	14.625	8.51	3.966	-0.452
85	68	16.056	32.7	0.583	74	1.399	14.865	8.65	3.945	-0.473
90	72	17	32.3	0.575	75	1.418	14.948	8.7	3.925	-0.493
95	76	17.945	31.9	0.568	74	1.399	14.753	8.58	3.909	-0.509
100	80	18.889	32	0.57	75	1.418	14.91	8.67	3.897	-0.521
105	84	19.834	35.3	0.629	74.7	1.412	15.308	8.9	3.886	-0.532
110	88	20.778	38.3	0.682	74	1.399	15.608	9.08	3.874	-0.544
115	92	21.723	36	0.641	75	1.418	15.443	8.98	3.863	-0.555
120	96	22.667	35	0.623	75.2	1.422	15.338	8.92	3.852	-0.566
125	100	23.612	34.1	0.607	75.5	1.427	15.255	8.87	3.838	-0.58
130	104	24.556	33	0.588	76	1.437	15.188	8.83	3.824	-0.594
135	108	25.5	32.9	0.586	76	1.437	15.173	8.83	3.81	-0.608
140	112	26.445	33	0.588	74	1.399	14.903	8.67	3.796	-0.622
145	116	27.389	32.7	0.583	74	1.399	14.865	8.65	3.782	-0.636
150	120	28.334	32.4	0.577	73.9	1.397	14.805	8.61	3.768	-0.65
155	124	29.278	34.7	0.618	75.2	1.422	15.3	8.9	3.754	-0.664

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	36	0.641	75.5	1.427	15.51	9.02	3.74	-0.678
165	132	31.167	37.2	0.663	76	1.437	15.75	9.16	3.726	-0.692
170	136	32.112	38.4	0.684	74.9	1.416	15.75	9.16	3.713	-0.705
175	140	33.056	35	0.623	77.72	1.469	15.69	9.13	3.701	-0.717
180	144	34	35	0.623	80.67	1.525	16.11	9.37	3.688	-0.73
190	152	35.889	32.4	0.577	81.5	1.541	15.885	9.24	3.663	-0.755
200	160	37.778	32.4	0.577	79.6	1.505	15.615	9.08	3.638	-0.78
210	168	39.667	32	0.57	77.9	1.473	15.323	8.91	3.615	-0.803
220	176	41.556	35.7	0.636	76.6	1.448	15.63	9.09	3.593	-0.825
230	184	43.445	36.2	0.645	75.6	1.429	15.555	9.05	3.571	-0.847
240	192	45.334	32.5	0.579	75.1	1.42	14.993	8.72	3.552	-0.866

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	4.815	0
1	0.8	0.189	163	2.902	181	3.4209	47.422	27.58	4.8	-0.015
2	1.6	0.378	156	2.777	164	3.1	44.078	25.63	4.788	-0.027
3	2.4	0.567	142	2.528	159	3.006	41.505	24.14	4.778	-0.037
4	3.2	0.756	137	2.439	154	2.911	40.125	23.33	4.767	-0.048
5	4	0.945	129	2.297	146	2.76	37.928	22.06	4.755	-0.06
6	4.8	1.134	125	2.225	141	2.665	36.675	21.33	4.748	-0.067
7	5.6	1.323	120	2.136	137	2.59	35.445	20.61	4.738	-0.077
8	6.4	1.512	116.5	2.074	140	2.646	35.4	20.59	4.73	-0.085
9	7.2	1.7	112	1.994	133.5	2.524	33.885	19.71	4.73	-0.085
10	8	1.889	108.2	1.926	132.4	2.503	33.218	19.32	4.713	-0.102
11	8.8	2.078	107.9	1.921	128.4	2.427	32.61	18.96	4.705	-0.11
12	9.6	2.267	106.3	1.893	130	2.457	32.625	18.97	4.698	-0.117
13	10.4	2.456	102.2	1.82	127	2.401	31.658	18.41	4.69	-0.125
14	11.2	2.645	103.5	1.843	132	2.495	32.535	18.92	4.682	-0.133
15	12	2.834	99	1.763	122	2.306	30.518	17.75	4.678	-0.137
16	12.8	3.023	101	1.798	117	2.212	30.075	17.49	4.674	-0.141
17	13.6	3.212	104	1.852	119	2.25	30.765	17.89	4.662	-0.153
18	14.4	3.4	104	1.852	119	2.25	30.765	17.89	4.659	-0.156
19	15.2	3.589	105	1.869	117	2.212	30.608	17.8	4.65	-0.165

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	103	1.834	114	2.155	29.918	17.4	4.643	-0.172
21	16.8	3.967	97.5	1.736	113	2.136	29.04	16.89	4.635	-0.18
22	17.6	4.156	98	1.745	113	2.136	29.108	16.93	4.629	-0.186
23	18.4	4.345	94.4	1.681	112.5	2.127	28.56	16.61	4.622	-0.193
24	19.2	4.534	94	1.674	113.5	2.146	28.65	16.66	4.619	-0.196
25	20	4.723	94	1.674	112.5	2.127	28.508	16.58	4.613	-0.202
26	20.8	4.912	93.5	1.665	113	2.136	28.508	16.58	4.61	-0.205
27	21.6	5.1	92	1.638	112.6	2.129	28.253	16.43	4.6	-0.215
28	22.4	5.289	90.7	1.615	116	2.193	28.56	16.61	4.595	-0.22
29	23.2	5.478	91	1.62	111	2.098	27.885	16.22	4.59	-0.225
30	24	5.667	87	1.549	111	2.098	27.353	15.91	4.582	-0.233
31	24.8	5.856	87	1.549	112	2.117	27.495	15.99	4.579	-0.236
32	25.6	6.045	91	1.62	111	2.098	27.885	16.22	4.575	-0.24
33	26.4	6.234	90	1.602	112.2	2.121	27.923	16.24	4.571	-0.244
34	27.2	6.423	91.8	1.635	113	2.136	28.283	16.45	4.567	-0.248
35	28	6.612	90.8	1.617	113	2.136	28.148	16.37	4.56	-0.255
36	28.8	6.8	87	1.549	111	2.098	27.353	15.91	4.555	-0.26
37	29.6	6.989	87	1.549	114	2.155	27.78	16.16	4.55	-0.265
38	30.4	7.178	86	1.531	113	2.136	27.503	15.99	4.545	-0.27
39	31.2	7.367	92	1.638	115.4	2.182	28.65	16.66	4.54	-0.275

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	84	1.496	112.8	2.132	27.21	15.82	4.538	-0.277
41	32.8	7.745	84	1.496	112.8	2.132	27.21	15.82	4.531	-0.284
42	33.6	7.934	82.5	1.469	112.8	2.132	27.008	15.71	4.528	-0.287
43	34.4	8.123	82	1.46	113	2.136	26.97	15.69	4.521	-0.294
44	35.2	8.312	81.5	1.451	116	2.193	27.33	15.89	4.515	-0.3
45	36	8.5	82	1.46	113	2.136	26.97	15.69	4.51	-0.305
46	36.8	8.689	83	1.478	115	2.174	27.39	15.93	4.507	-0.308
47	37.6	8.878	79.5	1.416	112.4	2.125	26.558	15.45	4.502	-0.313
48	38.4	9.067	78	1.389	113	2.136	26.438	15.38	4.5	-0.315
49	39.2	9.256	77	1.371	113	2.136	26.303	15.3	4.495	-0.32
50	40	9.445	84	1.496	113	2.136	27.24	15.84	4.491	-0.324
51	40.8	9.634	84	1.496	114	2.155	27.383	15.92	4.488	-0.327
52	41.6	9.823	78	1.389	115	2.174	26.723	15.54	4.482	-0.333
53	42.4	10.012	77	1.371	118	2.231	27.015	15.71	4.478	-0.337
54	43.2	10.2	76	1.353	111	2.098	25.883	15.05	4.475	-0.34
55	44	10.389	79	1.407	111.5	2.108	26.363	15.33	4.47	-0.345
56	44.8	10.578	72.5	1.291	117.4	2.219	26.325	15.31	4.467	-0.348
57	45.6	10.767	73.5	1.309	116	2.193	26.265	15.28	4.466	-0.349
58	46.4	10.956	77	1.371	113	2.136	26.303	15.3	4.462	-0.353
59	47.2	11.145	72	1.282	112.5	2.127	25.568	14.87	4.456	-0.359

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	70	1.246	111	2.098	25.08	14.59	4.45	-0.365
65	52	12.278	69	1.229	111	2.098	24.953	14.51	4.438	-0.377
70	56	13.223	69	1.229	111	2.098	24.953	14.51	4.419	-0.396
75	60	14.167	68	1.211	114.8	2.17	25.358	14.75	4.408	-0.407
80	64	15.112	71	1.264	118	2.231	26.213	15.24	4.388	-0.427
85	68	16.056	79	1.407	129	2.439	28.845	16.78	4.37	-0.445
90	72	17	64.2	1.143	114	2.155	24.735	14.39	4.357	-0.458
95	76	17.945	70	1.246	121	2.287	26.498	15.41	4.34	-0.475
100	80	18.889	72	1.282	121.8	2.303	26.888	15.64	4.324	-0.491
105	84	19.834	72	1.282	121	2.287	26.768	15.57	4.312	-0.503
110	88	20.778	68	1.211	119.4	2.257	26.01	15.13	4.3	-0.515
115	92	21.723	66.5	1.184	114	2.155	25.043	14.56	4.289	-0.526
120	96	22.667	74	1.318	114	2.155	26.048	15.15	4.28	-0.535
125	100	23.612	82	1.46	118	2.231	27.683	16.1	4.267	-0.548
130	104	24.556	83.5	1.487	118	2.231	27.885	16.22	4.258	-0.557
135	108	25.5	89	1.585	126	2.382	29.753	17.3	4.245	-0.57
140	112	26.445	83	1.478	123	2.325	28.523	16.59	4.235	-0.58
145	116	27.389	87	1.549	117	2.212	28.208	16.4	4.228	-0.587
150	120	28.334	87.5	1.558	117	2.212	28.275	16.44	4.216	-0.599
155	124	29.278	90	1.602	120	2.268	29.025	16.88	4.206	-0.609

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	84	1.496	110	2.079	26.813	15.59	4.198	-0.617
165	132	31.167	88	1.567	110	2.079	27.345	15.9	4.185	-0.63
170	136	32.112	95	1.691	111.5	2.108	28.493	16.57	4.173	-0.642
175	140	33.056	91	1.62	115	2.174	28.455	16.55	4.161	-0.654
180	144	34	84.4	1.503	107.9	2.04	26.573	15.45	4.15	-0.665
190	152	35.889	81	1.442	95.6	1.807	24.368	14.17	4.133	-0.682
199	159.2	37.589	84.1	1.497	95.2	1.8	24.728	14.38	4.118	-0.697
210	168	39.667	87.4	1.556	95.1	1.798	25.155	14.63	4.098	-0.717
230	184	43.445	83.6	1.489	108.7	2.055	26.58	15.46	4.063	-0.752
240	192	45.334	86.9	1.547	109.6	2.072	27.143	15.79	4.045	-0.77

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

P = $\frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	6.028	0
1	0.8	0.189	330	5.874	340	6.426	92.25	53.64	6.018	-0.01
2	1.6	0.378	318	5.661	329	6.219	89.1	51.81	5.99	-0.038
3	2.4	0.567	308.5	5.492	319.5	6.039	86.483	50.28	5.964	-0.064
4	3.2	0.756	300	5.34	312	5.897	84.278	49	5.94	-0.088
5	4	0.945	293	5.216	306.2	5.788	82.53	47.99	5.93	-0.098
6	4.8	1.134	287	5.109	302	5.708	81.128	47.17	5.89	-0.138
7	5.6	1.323	280	4.984	297	5.614	79.485	46.22	5.882	-0.146
8	6.4	1.512	276	4.913	294	5.557	78.525	45.66	5.868	-0.16
9	7.2	1.7	272.5	4.851	291	5.5	77.633	45.14	5.851	-0.177
10	8	1.889	270	4.806	288	5.444	76.875	44.7	5.838	-0.19
11	8.8	2.078	262	4.664	279	5.274	74.535	43.34	5.827	-0.201
12	9.6	2.267	258	4.593	276.5	5.226	73.643	42.82	5.809	-0.219
13	10.4	2.456	254	4.522	273	5.16	72.615	42.22	5.793	-0.235
14	11.2	2.645	251	4.468	270.4	5.111	71.843	41.77	5.78	-0.248
15	12	2.834	250	4.45	268	5.066	71.37	41.5	5.768	-0.26
16	12.8	3.023	243	4.326	265	5.009	70.013	40.71	5.757	-0.271
17	13.6	3.212	238.5	4.246	261.5	4.943	68.918	40.07	5.745	-0.283
18	14.4	3.4	235	4.183	257	4.858	67.808	39.43	5.731	-0.297
19	15.2	3.589	233.5	4.157	257	4.858	67.613	39.31	5.722	-0.306

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	237.5	4.228	257	4.858	68.145	39.62	5.71	-0.318
21	16.8	3.967	229	4.077	253	4.782	66.443	38.63	5.7	-0.328
22	17.6	4.156	229.8	4.091	254	4.801	66.69	38.78	5.688	-0.34
23	18.4	4.345	224	3.988	250	4.725	65.348	38	5.679	-0.349
24	19.2	4.534	223	3.97	248.5	4.697	65.003	37.8	5.688	-0.34
25	20	4.723	220	3.916	247.5	4.678	64.455	37.48	5.658	-0.37
26	20.8	4.912	218	3.881	244	4.612	63.698	37.04	5.649	-0.379
27	21.6	5.1	213.6	3.803	240	4.536	62.543	36.37	5.64	-0.388
28	22.4	5.289	213	3.792	241	4.555	62.603	36.4	5.634	-0.394
29	23.2	5.478	213	3.792	241	4.555	62.603	36.4	5.62	-0.408
30	24	5.667	214.5	3.819	243	4.593	63.09	36.68	5.61	-0.418
31	24.8	5.856	207.2	3.689	237	4.48	61.268	35.63	5.6	-0.428
32	25.6	6.045	207.2	3.689	237	4.48	61.268	35.63	5.59	-0.438
33	26.4	6.234	208	3.703	237	4.48	61.373	35.69	5.581	-0.447
34	27.2	6.423	205.5	3.658	236	4.461	60.893	35.41	5.575	-0.453
35	28	6.612	206.8	3.682	239	4.518	61.5	35.76	5.568	-0.46
36	28.8	6.8	209	3.721	241.8	4.571	62.19	36.16	5.56	-0.468
37	29.6	6.989	211	3.756	239	4.518	62.055	36.08	5.55	-0.478
38	30.4	7.178	202	3.596	234.8	4.438	60.255	35.04	5.54	-0.488
39	31.2	7.367	201	3.578	234.2	4.427	60.038	34.91	5.532	-0.496

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

P = $\frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	199	3.543	233	4.404	59.603	34.66	5.524	-0.504
41	32.8	7.745	201.5	3.587	235	4.442	60.218	35.01	5.518	-0.51
42	33.6	7.934	199.2	3.546	233.2	4.408	59.655	34.69	5.51	-0.518
43	34.4	8.123	197.3	3.512	231	4.366	59.085	34.36	5.502	-0.526
44	35.2	8.312	204	3.632	237	4.48	60.84	35.38	5.495	-0.533
45	36	8.5	202	3.596	235	4.442	60.285	35.05	5.489	-0.539
46	36.8	8.689	197.5	3.516	233	4.404	59.4	34.54	5.48	-0.548
47	37.6	8.878	203.4	3.621	237	4.48	60.758	35.33	5.472	-0.556
48	38.4	9.067	192.8	3.432	230.2	4.351	58.373	33.94	5.465	-0.563
49	39.2	9.256	194	3.454	231.8	4.382	58.77	34.17	5.46	-0.568
50	40	9.445	199	3.543	235.5	4.451	59.955	34.86	5.459	-0.569
51	40.8	9.634	197	3.507	232.5	4.395	59.265	34.46	5.447	-0.581
52	41.6	9.823	191	3.4	229.5	4.338	58.035	33.75	5.44	-0.588
53	42.4	10.012	191	3.4	231	4.366	58.245	33.87	5.432	-0.596
54	43.2	10.2	195	3.471	233	4.404	59.063	34.34	5.424	-0.604
55	44	10.389	193.2	3.439	232	4.385	58.68	34.12	5.419	-0.609
56	44.8	10.578	191	3.4	234	4.423	58.673	34.12	5.412	-0.616
57	45.6	10.767	190	3.382	230	4.347	57.968	33.71	5.408	-0.62
58	46.4	10.956	190.5	3.391	233.4	4.412	58.523	34.03	5.402	-0.626
59	47.2	11.145	194	3.454	237	4.48	59.505	34.6	5.395	-0.633

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

P = $\frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	192	3.418	231	4.366	58.38	33.95	5.39	-0.638
65	52	12.278	182	3.24	228	4.31	56.625	32.93	5.357	-0.671
70	56	13.223	187	3.329	232.6	4.397	57.945	33.69	5.322	-0.706
75	60	14.167	195	3.471	231	4.366	58.778	34.18	5.306	-0.722
80	64	15.112	179	3.187	230	4.347	56.505	32.86	5.281	-0.747
85	68	16.056	175.5	3.124	230	4.347	56.033	32.58	5.258	-0.77
90	72	17	185	3.293	232	4.385	57.585	33.48	5.238	-0.79
95	76	17.945	185	3.293	228	4.31	57.023	33.16	5.212	-0.816
100	76.8	18.134	184	3.276	229	4.329	57.038	33.17	5.21	-0.818
105	84	19.834	183.9	3.274	231	4.366	57.3	33.32	5.165	-0.863
110	88	20.778	184.7	3.288	230.7	4.361	57.368	33.36	5.142	-0.886
115	92	21.723	185.5	3.302	230.7	4.361	57.473	33.42	5.119	-0.909
120	96	22.667	186.3	3.317	230.7	4.361	57.585	33.48	5.095	-0.933
125	100	23.612	187	3.329	230.7	4.361	57.675	33.54	5.072	-0.956
130	104	24.556	187.8	3.343	230.7	4.361	57.78	33.6	5.062	-0.966
135	108	25.5	187	3.329	232.3	4.391	57.9	33.67	5.051	-0.977
140	112	26.445	177	3.151	234	4.423	56.805	33.03	5.041	-0.987
145	116	27.389	177.2	3.155	230.7	4.361	56.37	32.78	5.03	-0.998
150	120	28.334	176.9	3.149	228.6	4.321	56.025	32.58	5.02	-1.008
155	124	29.278	175.1	3.117	233.5	4.414	56.483	32.84	5.009	-1.019

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.173+400B Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL = 104 % ; PL =39 %

Tanggal :19,21, 26 September 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	173.3	3.085	232.1	4.387	56.04	32.59	4.999	-1.029
165	132	31.167	171.5	3.053	233.4	4.412	55.988	32.56	4.985	-1.043
170	136	32.112	174.5	3.107	234.8	4.438	56.588	32.9	4.971	-1.057
175	140	33.056	171	3.044	233.7	4.417	55.958	32.54	4.956	-1.072
180	144	34	171.2	3.048	233.8	4.419	56.003	32.56	4.941	-1.087
190	152	35.889	170.7	3.039	233.1	4.406	55.838	32.47	4.92	-1.108
200	160	37.778	170.2	3.03	230.8	4.363	55.448	32.24	4.9	-1.128
210	168	39.667	169	3.009	233.5	4.414	55.673	32.37	4.88	-1.148
220	176	41.556	172.3	3.067	233.4	4.412	56.093	32.62	4.862	-1.166
230	184	43.445	166.3	2.961	232.6	4.397	55.185	32.09	4.845	-1.183
240	192	45.334	160.7	2.861	231.7	4.38	54.308	31.58	4.828	-1.2

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	3.513	0
1	0.8	0.189	79	1.407	82	1.55	22.178	12.9	3.48	-0.033
2	1.6	0.378	78.5	1.398	81	1.531	21.968	12.78	3.45	-0.063
3	2.4	0.567	75.5	1.344	80.5	1.522	21.495	12.5	3.429	-0.084
4	3.2	0.756	70	1.246	78.8	1.49	20.52	11.94	3.405	-0.108
5	4	0.945	68	1.211	78.4	1.482	20.198	11.75	3.39	-0.123
6	4.8	1.134	65	1.157	78	1.475	19.74	11.48	3.381	-0.132
7	5.6	1.323	62	1.104	77.5	1.465	19.268	11.21	3.37	-0.143
8	6.4	1.512	67	1.193	77.2	1.46	19.898	11.57	3.36	-0.153
9	7.2	1.7	68.5	1.22	76	1.437	19.928	11.59	3.349	-0.164
10	8	1.889	58	1.033	74.5	1.409	18.315	10.65	3.338	-0.175
11	8.8	2.078	56	0.997	74	1.399	17.97	10.45	3.328	-0.185
12	9.6	2.267	50	0.89	74	1.399	17.168	9.99	3.318	-0.195
13	10.4	2.456	52	0.926	74	1.399	17.438	10.14	3.309	-0.204
14	11.2	2.645	41.8	0.745	74	1.399	16.08	9.35	3.3	-0.213
15	12	2.834	36.5	0.65	74	1.399	15.368	8.94	3.295	-0.218
16	12.8	3.023	35.2	0.627	75	1.418	15.338	8.92	3.288	-0.225
17	13.6	3.212	33.3	0.593	74	1.399	14.94	8.69	3.278	-0.235
18	14.4	3.4	32.6	0.581	73.5	1.39	14.783	8.6	3.27	-0.243
19	15.2	3.589	32.5	0.579	74	1.399	14.835	8.63	3.261	-0.252

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	31.5	0.561	73.5	1.39	14.633	8.51	3.255	-0.258
21	16.8	3.967	28.8	0.513	74.5	1.409	14.415	8.39	3.248	-0.265
22	17.6	4.156	27.6	0.492	73.5	1.39	14.115	8.21	3.24	-0.273
23	18.4	4.345	25	0.445	75	1.418	13.973	8.13	3.232	-0.281
24	19.2	4.534	24.3	0.433	74.8	1.414	13.853	8.06	3.228	-0.285
25	20	4.723	23.5	0.419	74.5	1.409	13.71	7.98	3.22	-0.293
26	20.8	4.912	22.2	0.396	73.5	1.39	13.395	7.79	3.21	-0.303
27	21.6	5.1	21	0.374	75.5	1.427	13.508	7.86	3.2	-0.313
28	22.4	5.289	20.2	0.36	76.5	1.446	13.545	7.88	3.198	-0.315
29	23.2	5.478	18.5	0.33	74.8	1.414	13.08	7.61	3.185	-0.328
30	24	5.667	18.4	0.328	74.8	1.414	13.065	7.6	3.17	-0.343
31	24.8	5.856	18	0.321	75.5	1.427	13.11	7.63	3.165	-0.348
32	25.6	6.045	17.5	0.312	75	1.418	12.975	7.55	3.162	-0.351
33	26.4	6.234	16.8	0.3	75	1.418	12.885	7.5	3.155	-0.358
34	27.2	6.423	16.2	0.289	75	1.418	12.803	7.45	3.15	-0.363
35	28	6.612	15.6	0.278	75	1.418	12.72	7.4	3.138	-0.375
36	28.8	6.8	15.3	0.273	75	1.418	12.683	7.38	3.13	-0.383
37	29.6	6.989	15.2	0.271	75	1.418	12.668	7.37	3.122	-0.391
38	30.4	7.178	14.8	0.264	75	1.418	12.615	7.34	3.114	-0.399
39	31.2	7.367	14.1	0.251	75	1.418	12.518	7.28	3.106	-0.407

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	15.2	0.271	75	1.418	12.668	7.37	3.098	-0.415
41	32.8	7.745	15.2	0.271	75	1.418	12.668	7.37	3.09	-0.423
42	33.6	7.934	15.2	0.271	75	1.418	12.668	7.37	3.082	-0.431
43	34.4	8.123	15.2	0.271	75	1.418	12.668	7.37	3.074	-0.439
44	35.2	8.312	15.2	0.271	76	1.437	12.81	7.45	3.066	-0.447
45	36	8.5	15.2	0.271	75	1.418	12.668	7.37	3.058	-0.455
46	36.8	8.689	15.2	0.271	74	1.399	12.525	7.29	3.05	-0.463
47	37.6	8.878	15.2	0.271	74.8	1.414	12.638	7.35	3.042	-0.471
48	38.4	9.067	15.2	0.271	73.2	1.384	12.413	7.22	3.034	-0.479
49	39.2	9.256	15.2	0.271	70	1.323	11.955	6.96	3.026	-0.487
50	40	9.445	15.2	0.271	73.1	1.382	12.398	7.21	3.018	-0.495
51	40.8	9.634	15.2	0.271	72.9	1.378	12.368	7.2	3.01	-0.503
52	41.6	9.823	15.2	0.271	72.7	1.375	12.345	7.18	3.002	-0.511
53	42.4	10.012	15.2	0.271	72.5	1.371	12.315	7.16	2.994	-0.519
54	43.2	10.2	15.2	0.271	72.3	1.367	12.285	7.15	2.986	-0.527
55	44	10.389	15.2	0.271	72.1	1.363	12.255	7.13	2.978	-0.535
56	44.8	10.578	15.2	0.271	71.9	1.359	12.225	7.11	2.97	-0.543
57	45.6	10.767	15.2	0.271	71.7	1.356	12.203	7.1	2.968	-0.545
58	46.4	10.956	15.2	0.271	71.5	1.352	12.173	7.08	2.967	-0.546
59	47.2	11.145	15.2	0.271	71.3	1.348	12.143	7.06	2.962	-0.551

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	15.2	0.271	71.1	1.344	12.113	7.05	2.959	-0.554
65	52	12.278	15.2	0.271	70.1	1.325	11.97	6.96	2.941	-0.572
70	56	13.223	15.2	0.271	69.1	1.306	11.828	6.88	2.924	-0.589
75	60	14.167	15.8	0.282	68.1	1.288	11.775	6.85	2.906	-0.607
80	64	15.112	22.1	0.394	62.6	1.184	11.835	6.89	2.889	-0.624
85	68	16.056	21.4	0.381	57.8	1.093	11.055	6.43	2.871	-0.642
90	72	17	21.4	0.381	52.7	0.997	10.335	6.01	2.854	-0.659
95	76	17.945	22.5	0.401	47.4	0.896	9.728	5.66	2.845	-0.668
100	80	18.889	23.6	0.421	41.9	0.792	9.098	5.29	2.83	-0.683
105	84	19.834	24.7	0.44	37.2	0.704	8.58	4.99	2.817	-0.696
110	88	20.778	25.8	0.46	31.9	0.603	7.973	4.64	2.804	-0.709
115	92	21.723	26.9	0.479	30.5	0.577	7.92	4.61	2.791	-0.722
120	96	22.667	28	0.499	31.5	0.596	8.213	4.78	2.778	-0.735
125	100	23.612	29.1	0.518	28.5	0.539	7.928	4.61	2.765	-0.748
130	104	24.556	30.2	0.538	27.4	0.518	7.92	4.61	2.751	-0.762
135	108	25.5	31.3	0.558	26.4	0.499	7.928	4.61	2.738	-0.775
140	112	26.445	32.4	0.577	27.1	0.513	8.175	4.76	2.725	-0.788
145	116	27.389	33.5	0.597	27.3	0.516	8.348	4.86	2.712	-0.801
150	120	28.334	34.6	0.616	27.45	0.519	8.513	4.95	2.698	-0.815
155	124	29.278	35.7	0.636	29	0.549	8.888	5.17	2.685	-0.828

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH
R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT
L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =0.5 kg/ cm^2 ; P = 2 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	36.8	0.656	30.55	0.578	9.255	5.39	2.671	-0.842
165	132	31.167	37.9	0.675	32.1	0.607	9.615	5.6	2.658	-0.855
170	136	32.112	39	0.695	33.65	0.636	9.983	5.81	2.644	-0.869
175	140	33.056	40.1	0.714	35.2	0.666	10.35	6.02	2.631	-0.882
180	144	34.001	41.2	0.734	36.75	0.695	10.718	6.24	2.617	-0.896
190	152	35.889	42.3	0.753	38.3	0.724	11.078	6.45	2.59	-0.923
200	160	37.778	43.4	0.773	39.85	0.754	11.453	6.66	2.562	-0.951
210	168	39.667	44.5	0.793	41.4	0.783	11.82	6.88	2.534	-0.979
220	176	41.556	45.6	0.812	42.95	0.812	12.18	7.09	2.506	-1.007
230	184	43.445	46.7	0.832	44.5	0.842	12.555	7.3	2.478	-1.035
240	192	45.334	47.5	0.846	46.1	0.872	12.885	7.5	2.45	-1.063

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	5.729	0
1	0.8	0.189	163	2.902	150	2.835	43.028	25.02	5.707	-0.022
2	1.6	0.378	123.7	2.202	145.2	2.745	37.103	21.58	5.683	-0.046
3	2.4	0.567	148.4	2.642	142.3	2.69	39.99	23.25	5.669	-0.06
4	3.2	0.756	134.5	2.395	140	2.646	37.808	21.99	5.657	-0.072
5	4	0.945	134.4	2.393	138.5	2.618	37.583	21.86	5.646	-0.083
6	4.8	1.134	130.9	2.331	134.2	2.537	36.51	21.23	5.639	-0.09
7	5.6	1.323	127	2.261	130	2.457	35.385	20.58	5.63	-0.099
8	6.4	1.512	123.5	2.199	128.6	2.431	34.725	20.19	5.624	-0.105
9	7.2	1.7	120	2.136	125	2.363	33.743	19.62	5.62	-0.109
10	8	1.889	117.1	2.085	122.5	2.316	33.008	19.2	5.609	-0.12
11	8.8	2.078	116.3	2.071	121.2	2.291	32.715	19.03	5.602	-0.127
12	9.6	2.267	113.8	2.026	120	2.268	32.205	18.73	5.594	-0.135
13	10.4	2.456	112.3	1.999	118	2.231	31.725	18.45	5.588	-0.141
14	11.2	2.645	112.7	2.007	116.5	2.202	31.568	18.36	5.582	-0.147
15	12	2.834	111	1.976	105.5	1.994	29.775	17.32	5.578	-0.151
16	12.8	3.023	110.7	1.971	102.4	1.936	29.303	17.04	5.575	-0.154
17	13.6	3.212	110.2	1.962	102.4	1.936	29.235	17	5.566	-0.163
18	14.4	3.4	110.9	1.975	94.2	1.781	28.17	16.38	5.562	-0.167
19	15.2	3.589	111.6	1.987	90.5	1.711	27.735	16.13	5.555	-0.174

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	108.5	1.932	90.2	1.705	27.278	15.86	5.549	-0.18
21	16.8	3.967	105.5	1.878	87.5	1.654	26.49	15.41	5.543	-0.186
22	17.6	4.156	106.4	1.894	84	1.588	26.115	15.19	5.539	-0.19
23	18.4	4.345	104.2	1.855	80	1.512	25.253	14.69	5.534	-0.195
24	19.2	4.534	103	1.834	82.3	1.556	25.425	14.79	5.53	-0.199
25	20	4.723	102.7	1.829	78.2	1.478	24.803	14.42	5.527	-0.202
26	20.8	4.912	102.5	1.825	76.5	1.446	24.533	14.27	5.523	-0.206
27	21.6	5.1	101.5	1.807	75.2	1.422	24.218	14.08	5.515	-0.214
28	22.4	5.289	101.6	1.809	75	1.418	24.203	14.08	5.511	-0.218
29	23.2	5.478	101.7	1.811	74.8	1.414	24.188	14.07	5.506	-0.223
30	24	5.667	99.7	1.775	74.6	1.41	23.888	13.89	5.501	-0.228
31	24.8	5.856	98.7	1.757	74.1	1.401	23.685	13.78	5.499	-0.23
32	25.6	6.045	99.4	1.77	73.2	1.384	23.655	13.76	5.495	-0.234
33	26.4	6.234	98.7	1.757	70	1.323	23.1	13.44	5.491	-0.238
34	27.2	6.423	99.6	1.773	70.9	1.341	23.355	13.58	5.486	-0.243
35	28	6.612	99.3	1.768	70.1	1.325	23.198	13.49	5.481	-0.248
36	28.8	6.8	98	1.745	69.4	1.312	22.928	13.33	5.478	-0.251
37	29.6	6.989	97	1.727	68.6	1.297	22.68	13.19	5.475	-0.254
38	30.4	7.178	96.4	1.716	67.9	1.284	22.5	13.09	5.472	-0.257
39	31.2	7.367	101	1.798	67.1	1.269	23.003	13.38	5.468	-0.261

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	96.4	1.716	66.4	1.255	22.283	12.96	5.466	-0.263
41	32.8	7.745	97.7	1.74	65.6	1.24	22.35	13	5.461	-0.268
42	33.6	7.934	97.5	1.736	64.9	1.227	22.223	12.92	5.459	-0.27
43	34.4	8.123	95.7	1.704	64.1	1.212	21.87	12.72	5.453	-0.276
44	35.2	8.312	95.5	1.7	63.3	1.197	21.728	12.64	5.448	-0.281
45	36	8.5	95	1.691	62.6	1.184	21.563	12.54	5.445	-0.284
46	36.8	8.689	95	1.691	61.8	1.169	21.45	12.48	5.443	-0.286
47	37.6	8.878	94.2	1.677	61.1	1.155	21.24	12.35	5.439	-0.29
48	38.4	9.067	93.7	1.668	60.3	1.14	21.06	12.25	5.438	-0.291
49	39.2	9.256	92.7	1.651	59.6	1.127	20.835	12.12	5.434	-0.295
50	40	9.445	95.4	1.699	58.8	1.112	21.083	12.26	5.431	-0.298
51	40.8	9.634	96.4	1.716	58.1	1.099	21.113	12.28	5.428	-0.301
52	41.6	9.823	94.4	1.681	57.3	1.083	20.73	12.06	5.424	-0.305
53	42.4	10.012	94	1.674	56.6	1.07	20.58	11.97	5.42	-0.309
54	43.2	10.2	92.4	1.645	55.8	1.055	20.25	11.78	5.418	-0.311
55	44	10.389	93.7	1.668	55	1.04	20.31	11.81	5.415	-0.314
56	44.8	10.578	91.5	1.629	54.3	1.027	19.92	11.59	5.413	-0.316
57	45.6	10.767	92.2	1.642	53.5	1.012	19.905	11.58	5.412	-0.317
58	46.4	10.956	94.7	1.686	52.8	0.998	20.13	11.71	5.408	-0.321
59	47.2	11.145	93.7	1.668	52	0.983	19.883	11.56	5.404	-0.325

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	93.4	1.663	51.3	0.97	19.748	11.49	5.4	-0.329
65	52	12.278	95	1.691	50.5	0.955	19.845	11.54	5.39	-0.339
70	56	13.223	100.4	1.788	51.2	0.968	20.67	12.02	5.376	-0.353
75	60	14.167	103.4	1.841	49.7	0.94	20.858	12.13	5.368	-0.361
80	64	15.112	106.3	1.893	48	0.908	21.008	12.22	5.355	-0.374
85	68	16.056	110.6	1.969	51	0.964	21.998	12.79	5.343	-0.386
90	72	17	107.3	1.91	46.4	0.877	20.903	12.16	5.334	-0.395
95	76	17.945	109.5	1.95	48	0.908	21.435	12.47	5.322	-0.407
100	80	18.889	109.7	1.953	49	0.927	21.6	12.56	5.311	-0.418
105	84	19.834	109.3	1.946	48.9	0.925	21.533	12.52	5.302	-0.427
110	88	20.778	107.7	1.918	47.4	0.896	21.105	12.28	5.293	-0.436
115	92	21.723	107	1.905	47.2	0.893	20.985	12.21	5.285	-0.444
120	96	22.667	108.2	1.926	49.8	0.942	21.51	12.51	5.277	-0.452
125	100	23.612	109.5	1.95	52.5	0.993	22.073	12.84	5.268	-0.461
130	104	24.556	112.9	2.01	53.2	1.006	22.62	13.16	5.26	-0.469
135	108	25.5	115.7	2.06	55	1.04	23.25	13.52	5.251	-0.478
140	112	26.445	113	2.012	52.4	0.991	22.523	13.1	5.243	-0.478
145	116	27.389	113.7	2.024	53.7	1.015	22.793	13.26	5.236	-0.493
150	120	28.334	113.2	2.015	53.8	1.017	22.74	13.23	5.227	-0.502
155	124	29.278	113.7	2.024	55.1	1.042	22.995	13.37	5.219	-0.51

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH
R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT
L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	111.5	1.985	53.2	1.006	22.433	13.05	5.212	-0.517
165	132	31.167	112.7	2.007	54.7	1.034	22.808	13.27	5.203	-0.526
170	136	32.112	114.8	2.044	56.7	1.072	23.37	13.59	5.194	-0.535
175	140	33.056	113.3	2.017	56.3	1.065	23.115	13.44	5.185	-0.544
180	144	34	110.9	1.975	55.1	1.042	22.628	13.16	5.176	-0.553
190	152	35.889	109.6	1.951	54.2	1.025	22.32	12.98	5.162	-0.567
200	160	37.778	110.9	1.975	54.8	1.036	22.583	13.13	5.147	-0.582
210	168	39.667	111.9	1.992	55.1	1.042	22.755	13.23	5.132	-0.597
220	176	41.556	111.5	1.985	54.3	1.027	22.59	13.14	5.117	-0.612
230	184	43.445	110.8	1.973	53.1	1.004	22.328	12.99	5.103	-0.626
240	192	45.334	112	1.994	54	1.021	22.613	13.15	5.08	-0.649

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P =8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	7.69	0
1	0.8	0.189	215	3.827	295	5.576	70.523	41.01	7.685	-0.005
2	1.6	0.378	303	5.394	291	5.5	81.705	47.51	7.665	-0.025
3	2.4	0.567	266.5	4.744	275	5.198	74.565	43.36	7.638	-0.052
4	3.2	0.756	274	4.878	263	4.971	73.868	42.95	7.614	-0.076
5	4	0.945	267.5	4.762	254.5	4.811	71.798	41.75	7.594	-0.096
6	4.8	1.134	261	4.646	249	4.707	70.148	40.79	7.577	-0.113
7	5.6	1.323	254	4.522	243	4.593	68.363	39.75	7.56	-0.13
8	6.4	1.512	248	4.415	239	4.518	66.998	38.96	7.545	-0.145
9	7.2	1.7	243	4.326	234	4.423	65.618	38.15	7.537	-0.153
10	8	1.889	241	4.29	234	4.423	65.348	38	7.51	-0.18
11	8.8	2.078	235	4.183	227	4.291	63.555	36.96	7.492	-0.198
12	9.6	2.267	234.5	4.175	226	4.272	63.353	36.84	7.48	-0.21
13	10.4	2.456	234.5	4.175	225	4.253	63.21	36.75	7.468	-0.222
14	11.2	2.645	233.8	4.162	222	4.196	62.685	36.45	7.453	-0.237
15	12	2.834	231	4.112	220	4.158	62.025	36.07	7.44	-0.25
16	12.8	3.023	226.5	4.032	218	4.121	61.148	35.56	7.43	-0.26
17	13.6	3.212	228.5	4.068	216	4.083	61.133	35.55	7.42	-0.27
18	14.4	3.4	229.8	4.091	216.8	4.098	61.418	35.71	7.407	-0.283
19	15.2	3.589	222.5	3.961	213.8	4.041	60.015	34.9	7.392	-0.298

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P =8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	219	3.899	209	3.951	58.875	34.23	7.38	-0.31
21	16.8	3.967	221	3.934	212.5	4.017	59.633	34.67	7.37	-0.32
22	17.6	4.156	218	3.881	207.5	3.922	58.523	34.03	7.361	-0.329
23	18.4	4.345	215	3.827	207	3.913	58.05	33.75	7.354	-0.336
24	19.2	4.534	214	3.81	206	3.894	57.78	33.6	7.345	-0.345
25	20	4.723	214	3.81	206	3.894	57.78	33.6	7.335	-0.355
26	20.8	4.912	212.5	3.783	206	3.894	57.578	33.48	7.325	-0.365
27	21.6	5.1	214	3.81	204.5	3.866	57.57	33.48	7.317	-0.373
28	22.4	5.289	214	3.81	201	3.799	57.068	33.18	7.306	-0.384
29	23.2	5.478	212	3.774	199.5	3.771	56.588	32.9	7.3	-0.39
30	24	5.667	209	3.721	196	3.705	55.695	32.39	7.29	-0.4
31	24.8	5.856	207	3.685	197	3.724	55.568	32.31	7.287	-0.403
32	25.6	6.045	206	3.667	205	3.875	56.565	32.89	7.27	-0.42
33	26.4	6.234	207	3.685	209	3.951	57.27	33.3	7.26	-0.43
34	27.2	6.423	207	3.685	210	3.969	57.405	33.38	7.25	-0.44
35	28	6.612	207	3.685	205	3.875	56.7	32.97	7.245	-0.445
36	28.8	6.8	204	3.632	205	3.875	56.303	32.74	7.239	-0.451
37	29.6	6.989	203	3.614	203	3.837	55.883	32.49	7.23	-0.46
38	30.4	7.178	211	3.756	202	3.818	56.805	33.03	7.225	-0.465
39	31.2	7.367	205	3.649	203	3.837	56.145	32.65	7.22	-0.47

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P =8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	209	3.721	203	3.837	56.685	32.96	7.21	-0.48
41	32.8	7.745	210	3.738	201	3.799	56.528	32.87	7.201	-0.489
42	33.6	7.934	205	3.649	202	3.818	56.003	32.56	7.192	-0.498
43	34.4	8.123	205	3.649	205	3.875	56.43	32.81	7.188	-0.502
44	35.2	8.312	203	3.614	205	3.875	56.168	32.66	7.18	-0.51
45	36	8.5	202	3.596	205	3.875	56.033	32.58	7.175	-0.515
46	36.8	8.689	203	3.614	202	3.818	55.74	32.41	7.17	-0.52
47	37.6	8.878	203	3.614	202	3.818	55.74	32.41	7.163	-0.527
48	38.4	9.067	201	3.578	203	3.837	55.613	32.34	7.157	-0.533
49	39.2	9.256	202	3.596	207	3.913	56.318	32.75	7.151	-0.539
50	40	9.445	205	3.649	209	3.951	57	33.14	7.146	-0.544
51	40.8	9.634	205	3.649	210	3.969	57.135	33.22	7.14	-0.55
52	41.6	9.823	205	3.649	208.5	3.941	56.925	33.1	7.135	-0.555
53	42.4	10.012	201	3.578	209.1	3.952	56.475	32.84	7.13	-0.56
54	43.2	10.2	202	3.596	208	3.932	56.46	32.83	7.127	-0.563
55	44	10.389	202	3.596	207.5	3.922	56.385	32.79	7.122	-0.568
56	44.8	10.578	203	3.614	206	3.894	56.31	32.74	7.116	-0.574
57	45.6	10.767	207	3.685	207.5	3.922	57.053	33.17	7.11	-0.58
58	46.4	10.956	209	3.721	204	3.856	56.828	33.04	7.104	-0.586
59	47.2	11.145	210	3.738	203.8	3.852	56.925	33.1	7.1	-0.59

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

P = $\frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P =8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	210	3.738	203.2	3.841	56.843	33.05	7.092	-0.598
65	52	12.278	219	3.899	198.9	3.76	57.443	33.4	7.069	-0.621
70	56	13.223	232	4.13	194.6	3.678	58.56	34.05	7.055	-0.635
75	60	14.167	245	4.361	190.1	3.593	59.655	34.69	7.028	-0.662
80	64	15.112	248.7	4.427	185.6	3.508	59.513	34.6	7.004	-0.686
85	68	16.056	253.7	4.516	181.1	3.423	59.543	34.62	6.981	-0.709
90	72	17	258.7	4.605	177.6	3.357	59.715	34.72	6.957	-0.733
95	76	17.945	258.5	4.602	174.8	3.304	59.295	34.48	6.933	-0.757
100	80	18.889	256.7	4.57	172.1	3.253	58.673	34.12	6.91	-0.78
105	84	19.834	255.7	4.552	169.3	3.2	58.14	33.81	6.886	-0.804
110	88	20.778	253.2	4.507	166.6	3.149	57.42	33.39	6.863	-0.827
115	92	21.723	253.5	4.513	162.7	3.076	56.918	33.1	6.839	-0.851
120	96	22.667	249.7	4.445	158.6	2.998	55.823	32.46	6.815	-0.875
125	100	23.612	248	4.415	154.3	2.917	54.99	31.98	6.792	-0.898
130	104	24.556	256.5	4.566	150	2.835	55.508	32.28	6.768	-0.922
135	108	25.5	257.5	4.584	145.7	2.754	55.035	32	6.745	-0.945
140	112	26.445	255.5	4.548	141.4	2.673	54.158	31.49	6.721	-0.969
145	116	27.389	253.6	4.515	137.1	2.592	53.303	30.99	6.697	-0.993
150	120	28.334	251.6	4.479	132.8	2.51	52.418	30.48	6.673	-1.017
155	124	29.278	250.9	4.467	128.8	2.435	51.765	30.1	6.649	-1.041

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi :BM.2 STA.172+400 Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =122% ; PL =39 %

Tanggal : 28,02,10 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P =8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	250.4	4.458	124.7	2.357	51.113	29.72	6.625	-1.065
165	132	31.167	249.8	4.447	120.6	2.28	50.453	29.34	6.601	-1.089
170	136	32.112	249.2	4.436	116.5	2.202	49.785	28.95	6.577	-1.113
175	140	33.056	248.6	4.426	112.4	2.125	49.133	28.57	6.553	-1.137
180	144	34	248	4.415	111.5	2.108	48.923	28.45	6.529	-1.161
190	152	35.889	247.7	4.41	107.1	2.025	48.263	28.06	6.481	-1.209
200	160	37.778	247.9	4.413	107.1	2.025	48.285	28.08	6.433	-1.257
210	168	39.667	248.2	4.418	107.1	2.025	48.323	28.1	6.385	-1.305
220	176	41.556	248.4	4.422	107.5	2.032	48.405	28.15	6.337	-1.353
230	184	43.445	248.7	4.427	107.5	2.032	48.443	28.17	6.289	-1.401
240	192	45.334	248.9	4.431	107.4	2.03	48.458	28.18	6.241	-1.449

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900A Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =98 % ; PL =44 %

Tanggal : 10,12,17 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	108.5	1.932	90.2	1.705	27.278	15.86	4.922	-0.108
21	16.8	3.967	105.5	1.878	87.5	1.654	26.49	15.41	4.918	-0.112
22	17.6	4.156	106.4	1.894	84	1.588	26.115	15.19	4.914	-0.116
23	18.4	4.345	104.2	1.855	80	1.512	25.253	14.69	4.911	-0.119
24	19.2	4.534	103	1.834	82.3	1.556	25.425	14.79	4.909	-0.121
25	20	4.723	102.7	1.829	78.2	1.478	24.803	14.42	4.905	-0.125
26	20.8	4.912	102.5	1.825	76.5	1.446	24.533	14.27	4.902	-0.128
27	21.6	5.1	101.5	1.807	75.2	1.422	24.218	14.08	4.897	-0.133
28	22.4	5.289	101.6	1.809	75	1.418	24.203	14.08	4.894	-0.136
29	23.2	5.478	101.7	1.811	74.8	1.414	24.188	14.07	4.891	-0.139
30	24	5.667	99.7	1.775	74.6	1.41	23.888	13.89	4.887	-0.143
31	24.8	5.856	98.7	1.757	74.1	1.401	23.685	13.78	4.885	-0.145
32	25.6	6.045	99.4	1.77	73.2	1.384	23.655	13.76	4.881	-0.149
33	26.4	6.234	98.7	1.757	70	1.323	23.1	13.44	4.878	-0.152
34	27.2	6.423	99.6	1.773	70.9	1.341	23.355	13.58	4.876	-0.154
35	28	6.612	99.3	1.768	70.1	1.325	23.198	13.49	4.872	-0.158
36	28.8	6.8	98	1.745	69.4	1.312	22.928	13.33	4.869	-0.161
37	29.6	6.989	97	1.727	68.6	1.297	22.68	13.19	4.866	-0.164
38	30.4	7.178	96.4	1.716	67.9	1.284	22.5	13.09	4.863	-0.167
39	31.2	7.367	101	1.798	67.1	1.269	23.003	13.38	4.86	-0.17

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900A Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =98 % ; PL =44 %

Tanggal : 10,12,17 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	96.4	1.716	66.4	1.255	22.283	12.96	4.858	-0.172
41	32.8	7.745	97.7	1.74	65.6	1.24	22.35	13	4.853	-0.177
42	33.6	7.934	97.5	1.736	64.9	1.227	22.223	12.92	4.851	-0.179
43	34.4	8.123	95.7	1.704	64.1	1.212	21.87	12.72	4.847	-0.183
44	35.2	8.312	95.5	1.7	63.3	1.197	21.728	12.64	4.844	-0.186
45	36	8.5	95	1.691	62.6	1.184	21.563	12.54	4.842	-0.188
46	36.8	8.689	95	1.691	61.8	1.169	21.45	12.48	4.839	-0.191
47	37.6	8.878	94.2	1.677	61.1	1.155	21.24	12.35	4.836	-0.194
48	38.4	9.067	93.7	1.668	60.3	1.14	21.06	12.25	4.834	-0.196
49	39.2	9.256	92.7	1.651	59.6	1.127	20.835	12.12	4.831	-0.199
50	40	9.445	95.4	1.699	58.8	1.112	21.083	12.26	4.828	-0.202
51	40.8	9.634	96.4	1.716	58.1	1.099	21.113	12.28	4.825	-0.205
52	41.6	9.823	94.4	1.681	57.3	1.083	20.73	12.06	4.822	-0.208
53	42.4	10.012	94	1.674	56.6	1.07	20.58	11.97	4.819	-0.211
54	43.2	10.2	92.4	1.645	55.8	1.055	20.25	11.78	4.817	-0.213
55	44	10.389	93.7	1.668	55	1.04	20.31	11.81	4.814	-0.216
56	44.8	10.578	91.5	1.629	54.3	1.027	19.92	11.59	4.811	-0.219
57	45.6	10.767	92.2	1.642	53.5	1.012	19.905	11.58	4.81	-0.22
58	46.4	10.956	94.7	1.686	52.8	0.998	20.13	11.71	4.806	-0.224
59	47.2	11.145	93.7	1.668	52	0.983	19.883	11.56	4.803	-0.227

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900A Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =98 % ; PL =44 %

Tanggal : 10,12,17 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	93.4	1.663	51.3	0.97	19.748	11.49	4.799	-0.231
65	52	12.278	95	1.691	50.5	0.955	19.845	11.54	4.789	-0.241
70	56	13.223	100.4	1.788	51.2	0.968	20.67	12.02	4.777	-0.253
75	60	14.167	103.4	1.841	51.4	0.972	21.098	12.27	4.768	-0.262
80	64	15.112	106.3	1.893	51.2	0.968	21.458	12.48	4.759	-0.271
85	68	16.056	110.6	1.969	50.9	0.963	21.99	12.79	4.748	-0.282
90	72	17	107.3	1.91	50.7	0.959	21.518	12.52	4.739	-0.291
95	76	17.945	109.5	1.95	50.4	0.953	21.773	12.66	4.732	-0.298
100	80	18.889	109.7	1.953	50.2	0.949	21.765	12.66	4.722	-0.308
105	84	19.834	109.3	1.946	48.9	0.925	21.533	12.52	5.302	-0.4265
110	88	20.778	107.7	1.918	47.4	0.896	21.105	12.28	4.705	-0.325
115	92	21.723	107	1.905	47.2	0.893	20.985	12.21	4.694	-0.336
120	96	22.667	108.2	1.926	49.8	0.942	21.51	12.51	4.684	-0.346
125	100	23.612	109.5	1.95	52.5	0.993	22.073	12.84	4.673	-0.357
130	104	24.556	112.9	2.01	53.2	1.006	22.62	13.16	4.663	-0.367
135	108	25.5	115.7	2.06	55	1.04	23.25	13.52	4.656	-0.374
140	112	26.445	113	2.012	52.4	0.991	22.523	13.1	4.648	-0.374
145	116	27.389	113.7	2.024	53.7	1.015	22.793	13.26	4.639	-0.391
150	120	28.334	113.2	2.015	53.8	1.017	22.74	13.23	4.631	-0.399
155	124	29.278	113.7	2.024	55.1	1.042	22.995	13.37	4.624	-0.406

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900A Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =98 % ; PL =44 %

Tanggal : 10,12,17 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =1 kg/ cm^2 ; P = 4 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	111.5	1.985	53.2	1.006	22.433	13.05	4.615	-0.415
165	132	31.167	112.7	2.007	54.7	1.034	22.808	13.27	4.607	-0.423
170	136	32.112	114.8	2.044	56.7	1.072	23.37	13.59	4.599	-0.431
175	140	33.056	113.3	2.017	56.3	1.065	23.115	13.44	4.591	-0.439
180	144	34	110.9	1.975	55.1	1.042	22.628	13.16	4.583	-0.447
190	152	35.889	109.6	1.951	54.2	1.025	22.32	12.98	4.563	-0.467
200	160	37.778	110.9	1.975	54.8	1.036	22.583	13.13	4.545	-0.485
210	168	39.667	111.9	1.992	55.1	1.042	22.755	13.23	4.524	-0.506
220	176	41.556	111.5	1.985	54.3	1.027	22.59	13.14	4.504	-0.526
230	184	43.445	110.8	1.973	53.1	1.004	22.328	12.99	4.484	-0.546
240	192	45.334	112	1.994	54	1.021	22.613	13.15	4.463	-0.567

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900A Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =98 % ; PL =44 %

Tanggal : 10,12,17 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
0	0	0	0	0	0	0	0	0	7.69	0
1	0.8	0.189	215	3.827	295	5.576	70.523	41.01	7.685	-0.005
2	1.6	0.378	303	5.394	291	5.5	81.705	47.51	7.665	-0.025
3	2.4	0.567	266.5	4.744	275	5.198	74.565	43.36	7.638	-0.052
4	3.2	0.756	274	4.878	263	4.971	73.868	42.95	7.614	-0.076
5	4	0.945	267.5	4.762	254.5	4.811	71.798	41.75	7.594	-0.096
6	4.8	1.134	261	4.646	249	4.707	70.148	40.79	7.577	-0.113
7	5.6	1.323	254	4.522	243	4.593	68.363	39.75	7.56	-0.13
8	6.4	1.512	248	4.415	239	4.518	66.998	38.96	7.545	-0.145
9	7.2	1.7	243	4.326	234	4.423	65.618	38.15	7.537	-0.153
10	8	1.889	241	4.29	234	4.423	65.348	38	7.51	-0.18
11	8.8	2.078	235	4.183	227	4.291	63.555	36.96	7.492	-0.198
12	9.6	2.267	234.5	4.175	226	4.272	63.353	36.84	7.48	-0.21
13	10.4	2.456	234.5	4.175	225	4.253	63.21	36.75	7.468	-0.222
14	11.2	2.645	233.8	4.162	222	4.196	62.685	36.45	7.453	-0.237
15	12	2.834	231	4.112	220	4.158	62.025	36.07	7.44	-0.25
16	12.8	3.023	226.5	4.032	218	4.121	61.148	35.56	7.43	-0.26
17	13.6	3.212	228.5	4.068	216	4.083	61.133	35.55	7.42	-0.27
18	14.4	3.4	229.8	4.091	216.8	4.098	61.418	35.71	7.407	-0.283
19	15.2	3.589	222.5	3.961	213.8	4.041	60.015	34.9	7.392	-0.298

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900A Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =98 % ; PL =44 %

Tanggal : 10,12,17 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

σp =2 kg/ cm^2 ; P = 8.11 kg

Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
20	16	3.778	219	3.899	209	3.951	58.875	34.23	7.38	-0.31
21	16.8	3.967	221	3.934	212.5	4.017	59.633	34.67	7.37	-0.32
22	17.6	4.156	218	3.881	207.5	3.922	58.523	34.03	7.361	-0.329
23	18.4	4.345	215	3.827	207	3.913	58.05	33.75	7.354	-0.336
24	19.2	4.534	214	3.81	206	3.894	57.78	33.6	7.345	-0.345
25	20	4.723	214	3.81	206	3.894	57.78	33.6	7.335	-0.355
26	20.8	4.912	212.5	3.783	206	3.894	57.578	33.48	7.325	-0.365
27	21.6	5.1	214	3.81	204.5	3.866	57.57	33.48	7.317	-0.373
28	22.4	5.289	214	3.81	201	3.799	57.068	33.18	7.306	-0.384
29	23.2	5.478	212	3.774	199.5	3.771	56.588	32.9	7.3	-0.39
30	24	5.667	209	3.721	196	3.705	55.695	32.39	7.29	-0.4
31	24.8	5.856	207	3.685	197	3.724	55.568	32.31	7.287	-0.403
32	25.6	6.045	206	3.667	205	3.875	56.565	32.89	7.27	-0.42
33	26.4	6.234	207	3.685	209	3.951	57.27	33.3	7.26	-0.43
34	27.2	6.423	207	3.685	210	3.969	57.405	33.38	7.25	-0.44
35	28	6.612	207	3.685	205	3.875	56.7	32.97	7.245	-0.445
36	28.8	6.8	204	3.632	205	3.875	56.303	32.74	7.239	-0.451
37	29.6	6.989	203	3.614	203	3.837	55.883	32.49	7.23	-0.46
38	30.4	7.178	211	3.756	202	3.818	56.805	33.03	7.225	-0.465
39	31.2	7.367	205	3.649	203	3.837	56.145	32.65	7.22	-0.47

BROMHEAD RING SHEAR

Cohesive Soil

Sampel Tanah : Lempung Gemuk (Abu-abu)
Lokasi : STA.153+900A Caruban-Ngawi

CONTOH TANAH

R.1 = 5cm ; R.2 = 3,5cm
Luas, A = 40,055 cm^2 ; Ht = 0,5 cm
Vol, V = 20,03 cm^3
Berat = 34,01 gr

LL =98 % ; PL =44 %

Tanggal : 10,12,17 Oktober 2006
Di test Oleh : Achmad Novarianda N

DATA ALAT

L = 15 cm
Ring Constan.1 = 0.0178 Kg/div
Ring Constan.2 = 0.0189 Kg/div
Rasio beban 10 : 1

$P = \frac{1}{10} \times \sigma p \times A$; σp = Applied pressure (kPa)

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Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
40	32	7.556	209	3.721	203	3.837	56.685	32.96	7.21	-0.48
41	32.8	7.745	210	3.738	201	3.799	56.528	32.87	7.201	-0.489
42	33.6	7.934	205	3.649	202	3.818	56.003	32.56	7.192	-0.498
43	34.4	8.123	205	3.649	205	3.875	56.43	32.81	7.188	-0.502
44	35.2	8.312	203	3.614	205	3.875	56.168	32.66	7.18	-0.51
45	36	8.5	202	3.596	205	3.875	56.033	32.58	7.175	-0.515
46	36.8	8.689	203	3.614	202	3.818	55.74	32.41	7.17	-0.52
47	37.6	8.878	203	3.614	202	3.818	55.74	32.41	7.163	-0.527
48	38.4	9.067	201	3.578	203	3.837	55.613	32.34	7.157	-0.533
49	39.2	9.256	202	3.596	207	3.913	56.318	32.75	7.151	-0.539
50	40	9.445	205	3.649	209	3.951	57	33.14	7.146	-0.544
51	40.8	9.634	205	3.649	210	3.969	57.135	33.22	7.14	-0.55
52	41.6	9.823	205	3.649	208.5	3.941	56.925	33.1	7.135	-0.555
53	42.4	10.012	201	3.578	209.1	3.952	56.475	32.84	7.13	-0.56
54	43.2	10.2	202	3.596	208	3.932	56.46	32.83	7.127	-0.563
55	44	10.389	202	3.596	207.5	3.922	56.385	32.79	7.122	-0.568
56	44.8	10.578	203	3.614	206	3.894	56.31	32.74	7.116	-0.574
57	45.6	10.767	207	3.685	207.5	3.922	57.053	33.17	7.11	-0.58
58	46.4	10.956	209	3.721	204	3.856	56.828	33.04	7.104	-0.586
59	47.2	11.145	210	3.738	203.8	3.852	56.925	33.1	7.1	-0.59

BROMHEAD RING SHEAR

Cohesive Soil

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Ring Constan.2 = 0.0189 Kg/div
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Elapsed Time (min)	Average Displacement		Shear Resitance						Vertical dial (0,01mm)	Vertical Displacement (mm)
	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
60	48	11.334	210	3.738	203.2	3.841	56.843	33.05	7.092	-0.598
65	52	12.278	219	3.899	198.9	3.76	57.443	33.4	7.069	-0.621
70	56	13.223	232	4.13	194.6	3.678	58.56	34.05	7.055	-0.635
75	60	14.167	245	4.361	190.1	3.593	59.655	34.69	7.028	-0.662
80	64	15.112	248.7	4.427	185.6	3.508	59.513	34.6	7.004	-0.686
85	68	16.056	253.7	4.516	181.1	3.423	59.543	34.62	6.981	-0.709
90	72	17	258.7	4.605	177.6	3.357	59.715	34.72	6.957	-0.733
95	76	17.945	258.5	4.602	174.8	3.304	59.295	34.48	6.933	-0.757
100	80	18.889	256.7	4.57	172.1	3.253	58.673	34.12	6.91	-0.78
105	84	19.834	255.7	4.552	169.3	3.2	58.14	33.81	6.886	-0.804
110	88	20.778	253.2	4.507	166.6	3.149	57.42	33.39	6.863	-0.827
115	92	21.723	253.5	4.513	162.7	3.076	56.918	33.1	6.839	-0.851
120	96	22.667	249.7	4.445	158.6	2.998	55.823	32.46	6.815	-0.875
125	100	23.612	248	4.415	154.3	2.917	54.99	31.98	6.792	-0.898
130	104	24.556	256.5	4.566	150	2.835	55.508	32.28	6.768	-0.922
135	108	25.5	257.5	4.584	145.7	2.754	55.035	32	6.745	-0.945
140	112	26.445	255.5	4.548	141.4	2.673	54.158	31.49	6.721	-0.969
145	116	27.389	253.6	4.515	137.1	2.592	53.303	30.99	6.697	-0.993
150	120	28.334	251.6	4.479	132.8	2.51	52.418	30.48	6.673	-1.017
155	124	29.278	250.9	4.467	128.8	2.435	51.765	30.1	6.649	-1.041

BROMHEAD RING SHEAR

Cohesive Soil

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	ω (deg)	D (mm)	Dial reading F1 (div)	F1 (Kg)	Dial reading F2 (div)	F2 (Kg)	M	Shear Stress (kPa)		
160	128	30.223	250.4	4.458	124.7	2.357	51.113	29.72	6.625	-1.065
165	132	31.167	249.8	4.447	120.6	2.28	50.453	29.34	6.601	-1.089
170	136	32.112	249.2	4.436	116.5	2.202	49.785	28.95	6.577	-1.113
175	140	33.056	248.6	4.426	112.4	2.125	49.133	28.57	6.553	-1.137
180	144	34	248	4.415	111.5	2.108	48.923	28.45	6.529	-1.161
190	152	35.889	247.7	4.41	107.1	2.025	48.263	28.06	6.481	-1.209
200	160	37.778	247.9	4.413	107.1	2.025	48.285	28.08	6.433	-1.257
210	168	39.667	248.2	4.418	107.1	2.025	48.323	28.1	6.385	-1.305
220	176	41.556	248.4	4.422	107.5	2.032	48.405	28.15	6.337	-1.353
230	184	43.445	248.7	4.427	107.5	2.032	48.443	28.17	6.289	-1.401
240	192	45.334	248.9	4.431	107.4	2.03	48.458	28.18	6.241	-1.449