



**L - 01**  
**UJI FISIS**



**L - 01 - 1**

**UJI INDEKS PROPERTIS**

## KADAR AIR ALAMI

No. Uji	1	2
No. Ring	1	2
Berat Ring (gr)	16.20	17.20
Berat Ring + tanah bsh (gr)	41.50	44.00
Berat Ring + tanah krg (gr)	34.30	36.60
Berat Tanah basah (gr)	25.30	26.80
Berat Tanah kering (gr)	18.10	19.40
Berat Air (gr)	7.20	7.40
Kadar Air (%)	39.78	38.14

## BERAT JENIS TANAH

No. Uji	1	2
Picnometer	Kecil	Kecil
Berat tanah kering (gr)	33.8	32
Berat air (gr)	102.1	101.5
Berat pic kosong (gr)	37.6	39.2
berat pic + aquades (gr)	139.7	140.7
Temperatur, T <sub>1</sub> ( ° )	29	29
Berat pic + tanah kering (gr)	71.4	71.2
Berat pic + aquades + sample tanah (gr)	160.9	161.2
Temperatur, T <sub>2</sub> ( ° )	29	29
Faktor koreksi berat jenis air, (Gt)	0.996	0.996
G <sub>s</sub> (spesific gravity)	2.672	2.771
G <sub>s</sub> (spesific gravity) rata-rata	2.722	



**L - 01 - 2**

**UJI ATTERBERG LIMIT**

### BATAS SUSUT KADAR KAPUR 0%

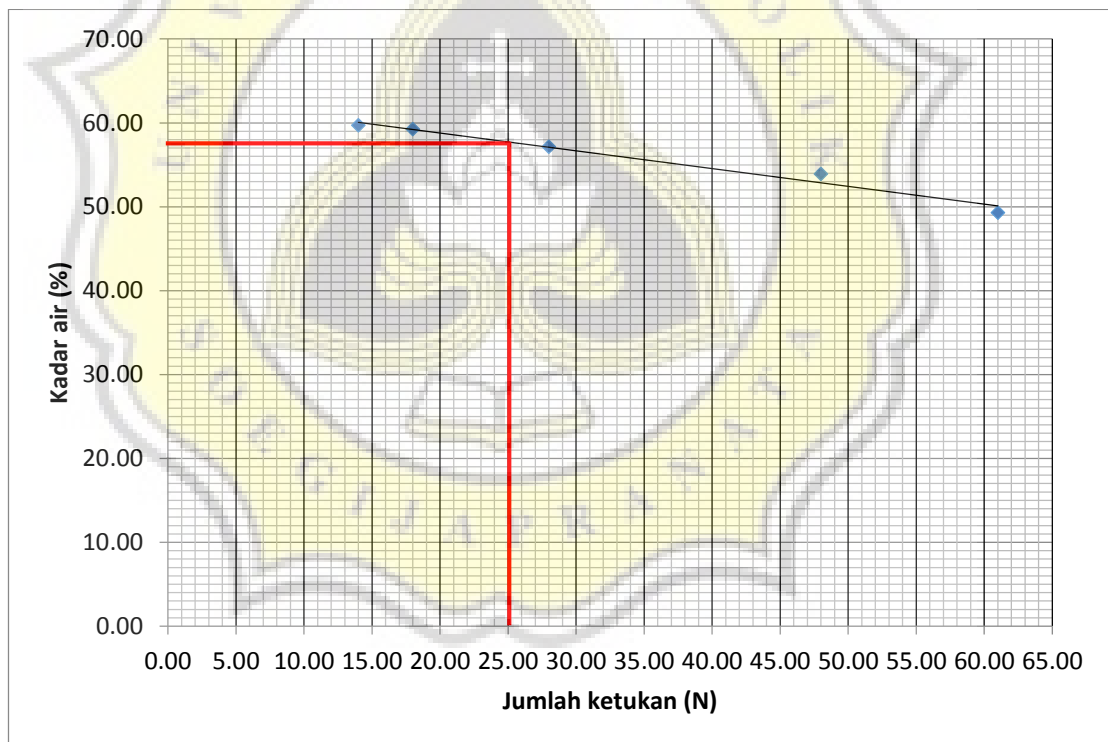
No. Uji	1	2
No. Ring	1	2
Tinggi Ring (cm)	1.50	1.65
Diameter Ring (cm)	3.50	3.55
Volume Ring (cm <sup>3</sup> )	14.43	16.33
Berat Ring (gr)	16.20	17.20
Berat Ring + tanah bsh (gr)	41.50	44.00
Berat Ring + tanah krg (gr)	34.30	36.60
Berat Tanah basah (gr)	25.30	26.80
Berat Tanah kering (gr)	18.10	19.40
Berat Air (gr)	7.20	7.40
Kadar Air (%)	39.78	38.14
Volume tanah basah (cm <sup>3</sup> )	14.43	16.33
Berat Piring (gr)	67.70	67.70
Berat Piring + Air Raksa (gr)	238.90	209.90
Berat Air Raksa Tumpah (gr)	171.20	142.20
$\gamma$ Air Raksa (gr/cm <sup>3</sup> )	13.56	13.56
Volume Tanah kering (cm <sup>3</sup> )	12.63	10.49
Batas Susut, ws (%)	29.80	8.02
Berat Susut, Ws (%)	32.99	17.29
Kesalahan Relative (%)	3.19	9.27
Shrinkage Ratio, SR	1.43	1.85
Gs	2.72	

### BATAS PLASTIS KADAR KAPUR 0%

No. Uji	1	2	3
No. Container	1	2	3
Berat Container (gr)	4.80	4.90	4.8
Berat Container + Tanah Basah (gr)	6.00	5.80	5.5
Berat Container + Tanah Kering (gr)	5.70	5.60	5.3
Berat Tanah Basah (gr)	1.20	0.90	0.70
Berat Tanah Kering (gr)	0.90	0.70	0.50
Berat Air (gr)	0.30	0.20	0.20
Kadar Air (%)	33.33	28.57	40.00
Plastis Limit (PL)	33.97		

### BATAS CAIR KADAR KAPUR 0%

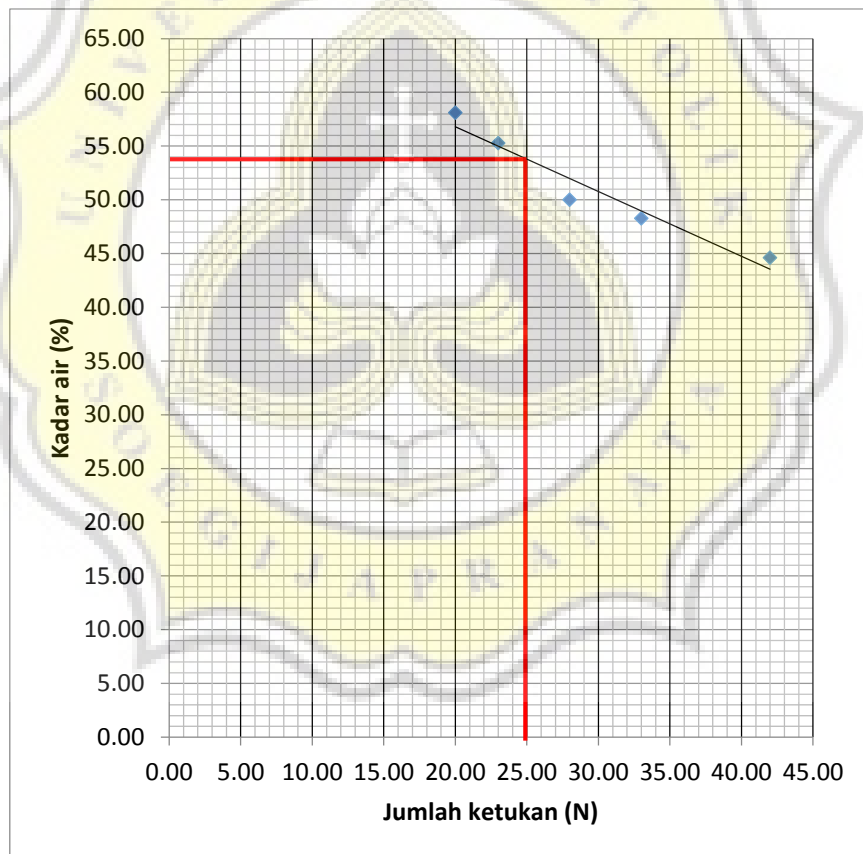
No. Uji	1	2	3	4	5
No. Container	1	2	3	4	5
Berat Container, W1 (gr)	4.80	4.90	5.10	4.90	4.90
Berat tanah basah + Container, W2 (gr)	15.70	20.60	13.90	17.80	15.60
Berat tanah kering + Container, W3 (gr)	12.10	15.10	10.70	13.00	11.60
Berat tanah basah, W4 = W2 - W1 (gr)	10.90	15.70	8.80	12.90	10.70
Berat tanah kering, W5 = W3 - W1 (gr)	7.30	10.20	5.60	8.10	6.70
Berat air, W6 = W4 - W5 (gr)	3.60	5.50	3.20	4.80	4.00
Kadar air, w = (W6/W5) X 100% (%)	49.32	53.92	57.14	59.26	59.70
Banyak ketukan, N	61.00	48.00	28.00	18.00	14.00
Batas cair, LL (%)	57.90				



Batas air standar pada ketukan ke-25, sehingga diperoleh kadar air sebesar 57,9%

### BATAS CAIR KADAR KAPUR 2,5%

No. Uji	1	2	3	4	5
No. Container	1	2	3	4	5
Berat Container, W1 (gr)	4.80	4.90	4.80	5.00	4.80
Berat tanah basah + Container, W2 (gr)	14.20	13.50	13.20	10.90	16.50
Berat tanah kering + Container, W3 (gr)	11.30	10.70	10.40	8.80	12.20
Berat tanah basah, W4 = W2 - W1 (gr)	9.40	8.60	8.40	5.90	11.70
Berat tanah kering, W5 = W3 - W1 (gr)	6.50	5.80	5.60	3.80	7.40
Berat air, W6 = W4 - W5 (gr)	2.90	2.80	2.80	2.10	4.30
Kadar air, w = (W6/W5) X 100% (%)	44.62	48.28	50.00	55.26	58.11
Banyak ketukan, N	42.00	33.00	28.00	23.00	20.00
Batas cair, LL (%)	54.00				



### BATAS PLASTIS KADAR KAPUR 2,5%

No. Uji	1	2	3
No. Container	1	2	3
Berat Container (gr)	4.70	4.80	4.9
Berat Container + Tanah Basah (gr)	5.50	5.60	5.4
Berat Container + Tanah Kering (gr)	5.35	5.40	5.28
Berat Tanah Basah (gr)	0.80	0.80	0.50
Berat Tanah Kering (gr)	0.65	0.60	0.38
Berat Air (gr)	0.15	0.20	0.12
Kadar Air (%)	23.08	33.33	31.58
Plastis Limit (PL)	29.33		

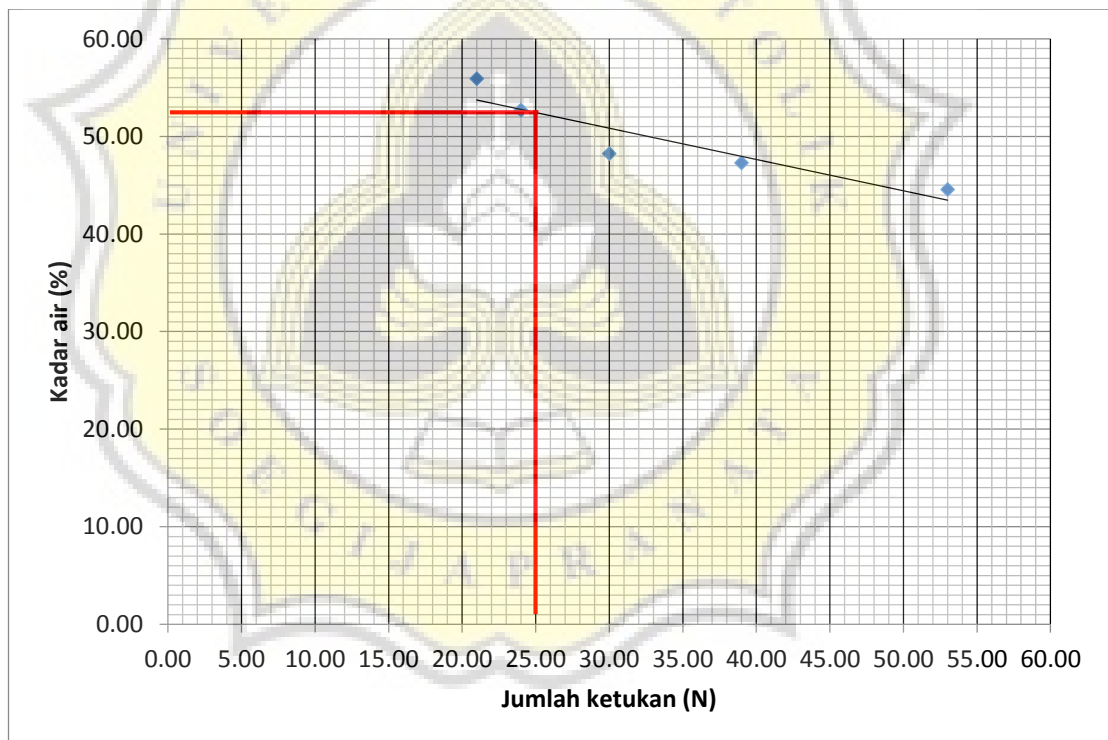
### BATAS PLASTIS KADAR KAPUR 5%

No. Uji	1	2	3
No. Container	1	2	3
Berat Container (gr)	4.70	4.70	4.9
Berat Container + Tanah Basah (gr)	5.30	5.50	5.5
Berat Container + Tanah Kering (gr)	5.17	5.35	5.38
Berat Tanah Basah (gr)	0.60	0.80	0.60
Berat Tanah Kering (gr)	0.47	0.65	0.48
Berat Air (gr)	0.13	0.15	0.12
Kadar Air (%)	27.66	23.08	25.00
Plastis Limit (PL)	25.25		



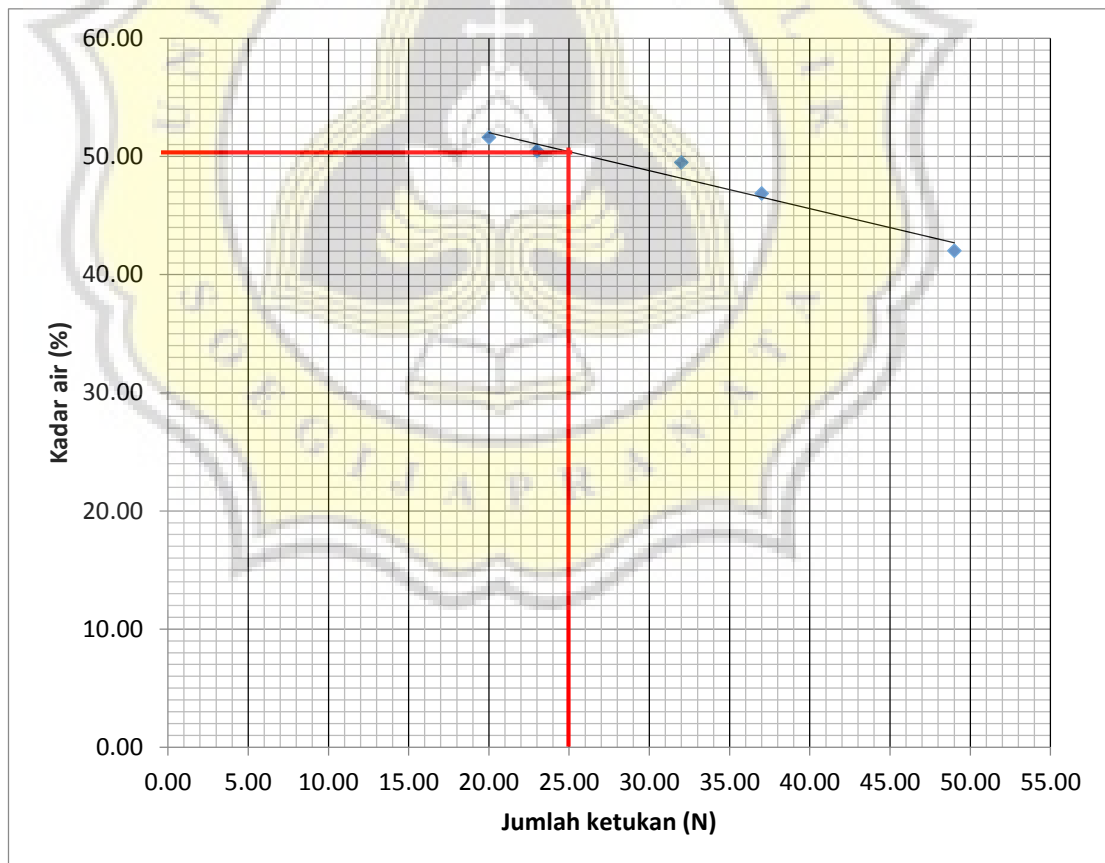
### BATAS CAIR KADAR KAPUR 5%

No. Uji	1	2	3	4	5
No. Container	1	2	3	4	5
Berat Container, W1 (gr)	5.00	4.80	4.90	4.80	4.70
Berat tanah basah + Container, W2 (gr)	18.30	18.50	15.50	13.20	19.20
Berat tanah kering + Container, W3 (gr)	14.20	14.10	12.05	10.30	14.00
Berat tanah basah, W4 = W2 - W1 (gr)	13.30	13.70	10.60	8.40	14.50
Berat tanah kering, W5 = W3 - W1 (gr)	9.20	9.30	7.15	5.50	9.30
Berat air, W6 = W4 - W5 (gr)	4.10	4.40	3.45	2.90	5.20
Kadar air, $w = (W6/W5) \times 100\%$ (%)	44.57	47.31	48.25	52.73	55.91
Banyak ketukan, N	53.00	39.00	30.00	24.00	21.00
Batas cair, LL (%)	52.50				



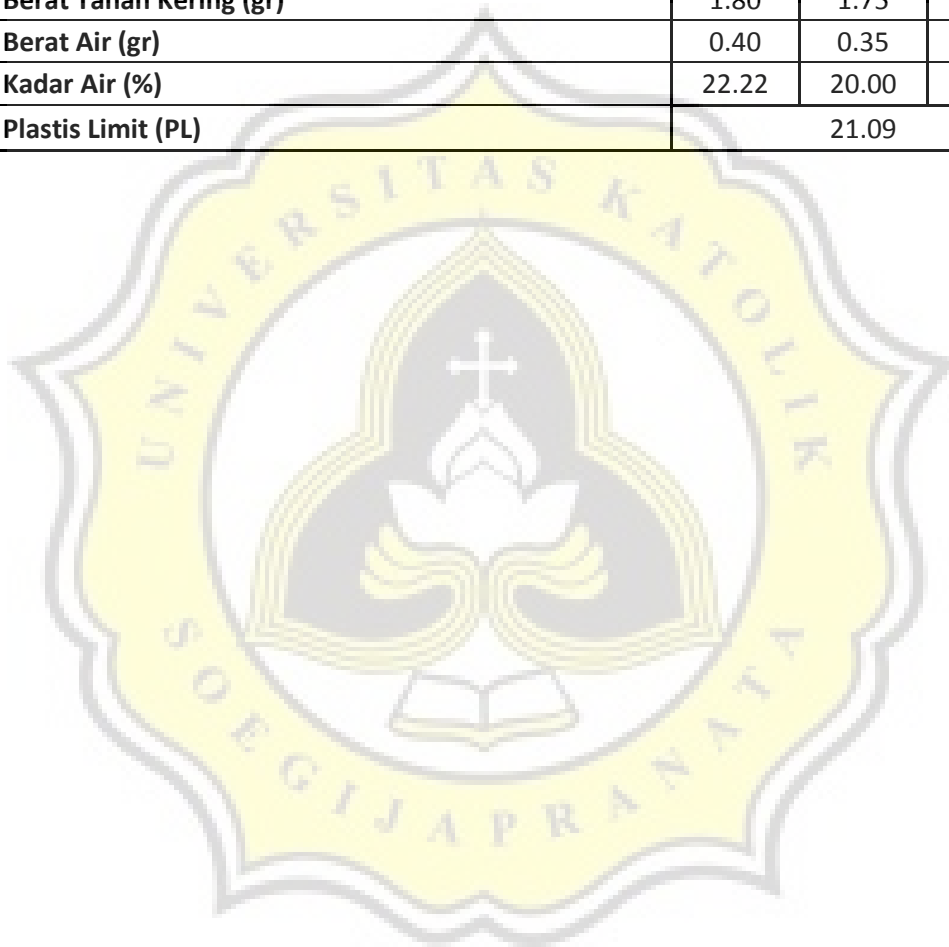
## BATAS CAIR KADAR KAPUR 7,5%

No. Uji	1	2	3	4	5
No. Container	1	2	3	4	5
Berat Container, W1 (gr)	4.70	4.90	4.70	4.90	4.90
Berat tanah basah + Container, W2 (gr)	14.50	23.70	19.50	20.70	14.30
Berat tanah kering + Container, W3 (gr)	11.60	17.70	14.60	15.40	11.10
Berat tanah basah, W4 = W2 - W1 (gr)	9.80	18.80	14.80	15.80	9.40
Berat tanah kering, W5 = W3 - W1 (gr)	6.90	12.80	9.90	10.50	6.20
Berat air, W6 = W4 - W5 (gr)	2.90	6.00	4.90	5.30	3.20
Kadar air, $w = (W6/W5) \times 100\%$ (%)	42.03	46.88	49.49	50.48	51.61
Banyak ketukan, N	49.00	37.00	32.00	23.00	20.00
Batas cair, LL (%)	50.50				



### BATAS PLASTIS KADAR KAPUR 7,5%

No. Uji	1	2	3
No. Container	1	2	3
Berat Container (gr)	4.80	4.90	4.8
Berat Container + Tanah Basah (gr)	7.00	7.00	7.1
Berat Container + Tanah Kering (gr)	6.60	6.65	6.7
Berat Tanah Basah (gr)	2.20	2.10	2.30
Berat Tanah Kering (gr)	1.80	1.75	1.90
Berat Air (gr)	0.40	0.35	0.40
Kadar Air (%)	22.22	20.00	21.05
Plastis Limit (PL)	21.09		





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**ANALISIS BUTIRAN TANAH**

### DATA HASIL UJI SARINGAN

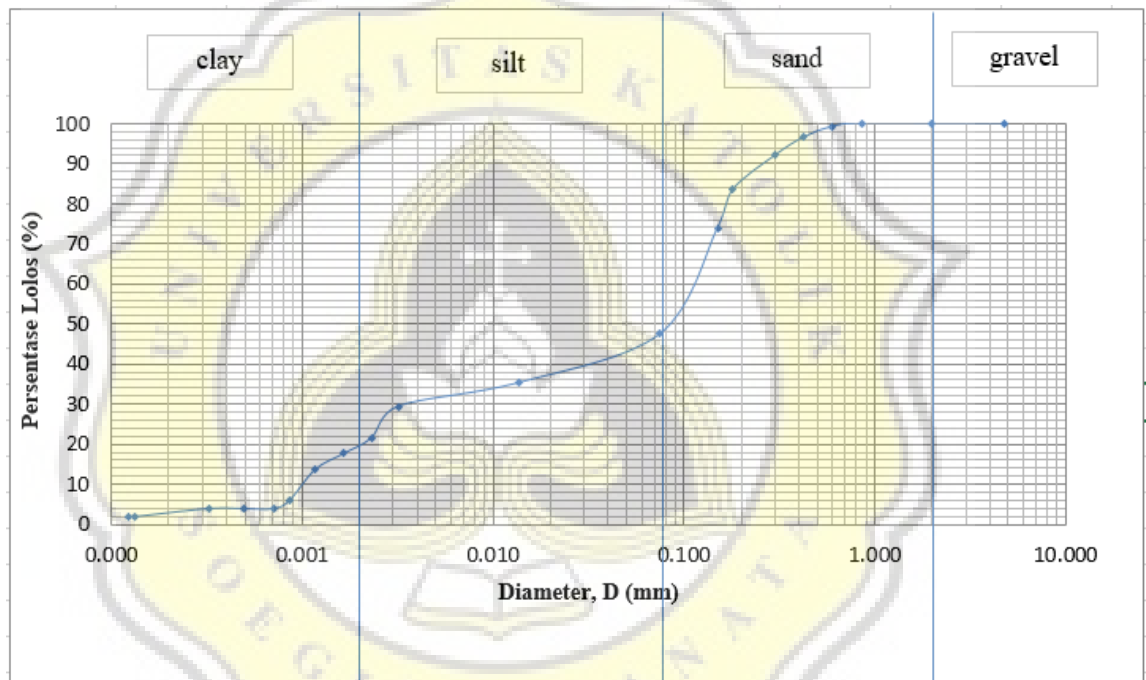
No. Saringan	Diameter	Berat	Berat Tanah	Berat	% Tertahan	% Lolos
	Saringan	Saringan	dan Saringan	Tertahan		
	(mm)	(gram)	(gram)	(gram)		
4	4,750	441,0	441,0	0,0	0,00	100,00
10	2,000	317,4	317,4	0,0	0,00	100,00
20	0,850	315,2	315,2	0,0	0,00	100,00
30	0,600	419,6	423,7	4,1	0,82	99,18
40	0,425	304,4	317,8	13,4	2,68	96,50
50	0,300	407,0	429,6	22,6	4,52	91,98
80	0,180	289,4	332,1	42,7	8,54	83,44
100	0,150	401,0	448,5	47,5	9,50	73,94
200	0,075	284,0	416,2	132,2	26,44	47,50
Pan	-	471,0	708,5	237,5	47,50	0,00
Jumlah				500,0	100,00	

### DATA HASIL UJI HIDROMETER

Elapsed Time t (minute)	I		II		III		Average	
	Temp	Actual Hyd. Reading	Temp	Actual Hyd. Reading	Temp	Actual Hyd. Reading	Temp	Actual Hyd. Reading
	(°C)	Ra	(°C)	Ra	(°C)	Ra	(°C)	Ra
0	29	21	29	23	29	24	29	22.6667
1	29	19	29	18	29	20	29	19
2	29	12	29	14	29	14	29	13.3333
3	29	9	29	10	29	9	29	9.33333

Elapsed Time t (minute)	Temp. (°C)	Actual Hyd. Reading Ra	Corr. Hyd. Reading Rc	% Finer	Hyd. Corr. Only for Meniscus R	L cm	L/t cm/mnt	K	Diameter D (mm)
0	29	24	20.95	41.26	24	12.9	-	0.20767	-
1	29	21	16.95	33.39	21.1	12.9	12.90	0.03809	0.01368
2	29	18	17.00	33.48	18.1	14	7.00	0.01205	0.00319
4	29	14	13.00	25.61	14.1	14.8	3.70	0.01205	0.00232
8	29	12	11.00	21.67	12.1	15	1.88	0.01205	0.00165
16	29	10	9.00	17.73	10.1	15.2	0.95	0.01205	0.00117
30	29	9	3.00	5.91	9.1	15.3	0.51	0.01205	0.00086
45	29	7	2.00	3.94	7.1	15.5	0.34	0.01205	0.00071

Elapsed Time	Temp.	Actual Hyd. Reading	Corr. Hyd. Reading	% Finer	Hyd. Corr. Only for Meniscus	L	L/t	K	Diameter
t (minute)	(°C)	Ra	Rc		R	cm	cm/mnt		D (mm)
90	30	6	2.00	3.94	6.1	15.5	0.17	0.01192	0.00049
210	30	5	2.00	3.94	4.6	15.5	0.07	0.01192	0.00032
1290	28	5	1.00	1.97	5.1	15.6	0.01	0.00000	0.00000
1440	30	4	1.00	1.97	4.1	15.6	0.01	0.00000	0.00000





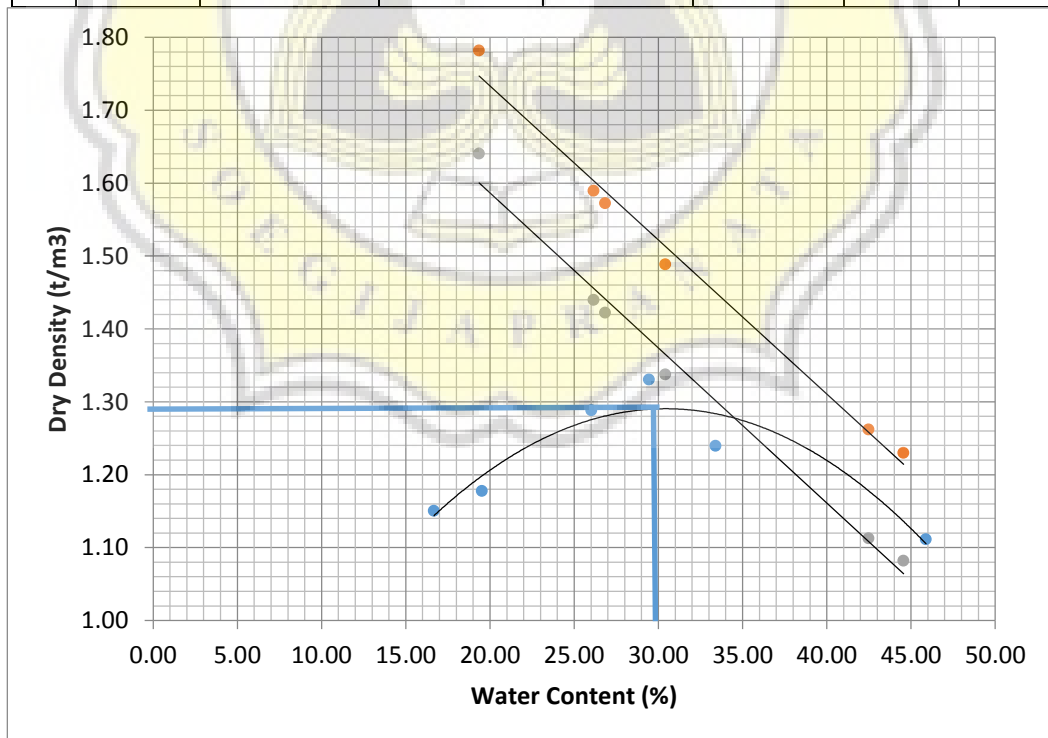
**L-02**

**UJI PEMADATAN TANAH**

**TABEL HASIL UJI PEMADATAN TANAH ASLI**

Percobaan Ke-	1			2			3			4			5			6		
Berat tanah asli (gr)	4500			4500			4500			4500			4500			4500		
Banyak air yang disemprot (cc)	500			700			900			1100			1300			1500		
Berat mold (gr)	5540			5540			5540			5540			5540			5540		
Berat mold + tanah basah (gr)	8400			8540			9000			9210			9064			8995		
Berat tanah basah (gr)	2860			3000			3460			3670			3524			3455		
Diameter mold (cm)	15.24			15.24			15.24			15.24			15.24			15.24		
Tinggi mold (cm)	11.68			11.68			11.68			11.68			11.68			11.68		
Volume (mold)	2131.46			2131.46			2131.46			2131.46			2131.46			2131.46		
Berat jenis isi tanah (gr/cm <sup>3</sup> )	1.34			1.41			1.62			1.72			1.65			1.62		
Berat jenis isi kering (gr/cm <sup>3</sup> )	1.15			1.18			1.29			1.33			1.24			1.11		
No. Container	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah
Berat container (gr)	4.80	5.10	4.90	4.90	4.80	4.90	4.80	4.80	6.70	4.90	6.60	4.40	10.50	9.50	11.50	4.80	4.80	4.90
Berat container + tanah basah (gr)	18.40	18.50	19.90	21.10	25.70	22.10	26.00	26.90	31.10	24.70	46.00	23.60	50.60	56.00	51.00	34.20	45.00	35.50
Berat container + tanah kering (gr)	16.90	17.00	16.90	19.00	22.10	18.90	21.80	22.30	25.90	20.40	36.70	19.20	40.10	44.80	41.20	24.10	31.40	27.70
Berat tanah basah (gr)	13.60	13.40	15.00	16.20	20.90	17.20	21.20	22.10	24.40	19.80	39.40	19.20	40.10	46.50	39.50	29.40	40.20	30.60
Berat tanah kering (gr)	12.10	11.90	12.00	14.10	17.80	14.00	17.00	17.50	19.20	15.50	30.10	14.80	29.60	35.30	29.70	19.30	26.60	22.80
Kadar air (%)	12.40	12.61	25.00	14.89	20.81	22.86	24.71	26.29	27.08	27.74	30.90	29.73	35.47	31.73	33.00	52.33	51.13	34.21
Kadar air rata-rata (%)	16.67			19.52			26.02			29.46			33.40			45.89		

No	Kadar	Berat Isi Kering		$\gamma_{wet}$ (gr/cm <sup>3</sup> )	$\gamma_d$ (gr/cm <sup>3</sup> )	e	n
	Air	$\gamma_{dry}$ (gram / cm <sup>3</sup> )					
	w (%)	Sr = 100 %	Sr = 80 %				
1	16.67	1.872	1.736	1.34	1.15	1.027	0.507
2	19.52	1.777	1.635	1.41	1.18	0.933	0.483
3	26.02	1.593	1.443	1.62	1.29	0.676	0.403
4	29.46	1.510	1.359	1.72	1.33	0.580	0.367
5	33.40	1.425	1.274	1.65	1.24	0.645	0.392
6	45.89	1.210	1.062	1.62	1.11	0.678	0.404

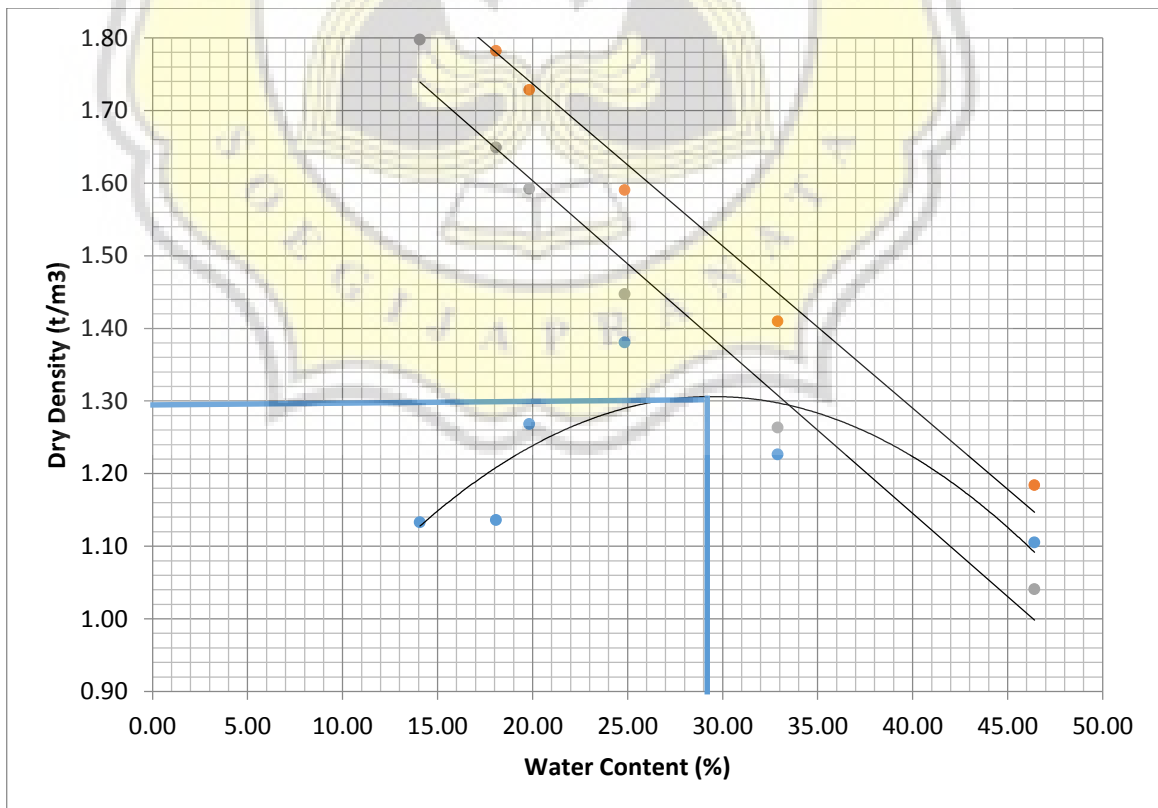




**TABEL HASIL UJI PROKTOR TANAH + KAPUR 2,5%**

Percobaan Ke-	1			2			3			4			5			6		
Berat tanah asli (gr)	4000			4000			4000			4000			4000			4000		
Banyak air yang disemprot (cc)	500			700			900			1100			1300			1500		
Berat mold (gr)	5540			5540			5540			5540			5540			5540		
Berat mold + tanah basah (gr)	8295			8400			8780			9215			9015			8990		
Berat tanah basah (gr)	2755			2860			3240			3675			3475			3450		
Diameter mold (cm)	15.24			15.24			15.24			15.24			15.24			15.24		
Tinggi mold (cm)	11.68			11.68			11.68			11.68			11.68			11.68		
Volume (mold)	2131.46			2131.46			2131.46			2131.46			2131.46			2131.46		
Berat jenis isi tanah (gr/cm <sup>3</sup> )	1.29			1.34			1.52			1.72			1.63			1.62		
Berat jenis isi kering (gr/cm <sup>3</sup> )	1.13			1.14			1.27			1.38			1.23			1.11		
No. Container	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah
Berat container (gr)	6.90	6.90	7.00	13.20	4.90	4.90	4.80	4.90	4.90	4.80	4.70	4.80	11.90	12.10	12.00	4.60	4.80	5.10
Berat container + tanah basah (gr)	35.00	32.30	36.10	23.10	15.30	25.10	16.90	27.90	21.80	23.40	20.60	20.80	52.60	45.60	52.40	34.10	34.70	51.30
Berat container + tanah kering (gr)	32.10	29.30	31.80	21.50	13.60	22.40	14.60	25.00	18.80	19.80	17.90	17.10	41.20	41.50	39.70	24.90	25.30	36.30
Berat tanah basah (gr)	28.10	25.40	29.10	9.90	10.40	20.20	12.10	23.00	16.90	18.60	15.90	16.00	40.70	33.50	40.40	29.50	29.90	46.20
Berat tanah kering (gr)	25.20	22.40	24.80	8.30	8.70	17.50	9.80	20.10	13.90	15.00	13.20	12.30	29.30	29.40	27.70	20.30	20.50	31.20
Kadar air (%)	11.51	13.39	17.34	19.28	19.54	15.43	23.47	14.43	21.58	24.00	20.45	30.08	38.91	13.95	45.85	45.32	45.85	48.08
Kadar air rata-rata (%)	14.08			18.08			19.83			24.85			32.90			46.42		

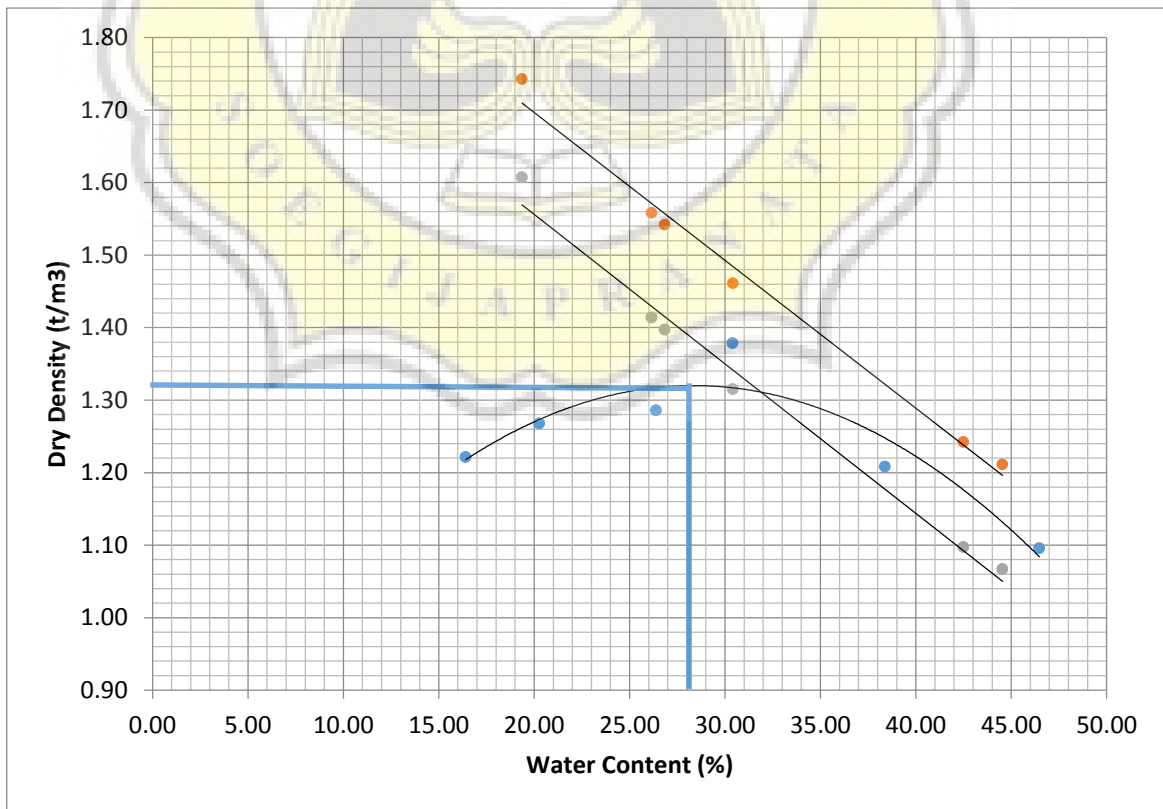
No	Kadar	Berat Isi Kering		$\gamma_{wet}$ (gr/cm <sup>3</sup> )	$\gamma_d$ (gr/cm <sup>3</sup> )	e	n
	Air	$\gamma_{dry}$ (gram / cm <sup>3</sup> )					
	w (%)	Sr = 100 %	Sr = 80 %				
1	14.08	1.967	1.839	1.29	1.13	1.104	0.525
2	18.08	1.823	1.684	1.34	1.14	1.027	0.507
3	19.83	1.767	1.625	1.52	1.27	0.789	0.441
4	24.85	1.623	1.474	1.72	1.38	0.578	0.366
5	32.90	1.435	1.284	1.63	1.23	0.668	0.401
6	46.42	1.202	1.055	1.62	1.11	0.680	0.405



**TABEL HASIL UJI PROKTOR TANAH + KAPUR 5%**

Percobaan Ke-	1			2			3			4			5			6		
Berat tanah asli (gr)	4000			4000			4000			4000			4000			4000		
Banyak air yang disemprot (cc)	500			700			900			1100			1300			1500		
Berat mold (gr)	5540			5540			5540			5540			5540			5540		
Berat mold + tanah basah (gr)	8570			8790			9004			9372			9104			8960		
Berat tanah basah (gr)	3030			3250			3464			3832			3564			3420		
Diameter mold (cm)	15.24			15.24			15.24			15.24			15.24			15.24		
Tinggi mold (cm)	11.68			11.68			11.68			11.68			11.68			11.68		
Volume (mold)	2131.46			2131.46			2131.46			2131.46			2131.46			2131.46		
Berat jenis isi tanah (gr/cm <sup>3</sup> )	1.42			1.52			1.63			1.80			1.67			1.60		
Berat jenis isi kering (gr/cm <sup>3</sup> )	1.22			1.27			1.29			1.38			1.21			1.10		
No. Container	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah
Berat container (gr)	6.90	7.00	7.00	4.90	5.10	5.00	4.80	4.80	4.90	5.00	6.90	4.40	11.90	12.10	12.00	4.90	5.00	4.90
Berat container + tanah basah (gr)	26.00	34.80	35.70	12.10	18.20	17.10	18.80	32.20	30.00	24.20	44.50	33.50	41.90	37.50	45.40	37.60	38.60	38.60
Berat container + tanah kering (gr)	23.40	31.00	31.40	10.80	15.90	15.30	15.90	26.50	24.70	19.70	35.80	26.70	34.82	28.90	37.10	28.10	27.60	27.40
Berat tanah basah (gr)	19.10	27.80	28.70	7.20	13.10	12.10	14.00	27.40	25.10	19.20	37.60	29.10	30.00	25.40	33.40	32.70	33.60	33.70
Berat tanah kering (gr)	16.50	24.00	24.40	5.90	10.80	10.30	11.10	21.70	19.80	14.70	28.90	22.30	22.92	16.80	25.10	23.20	22.60	22.50
Kadar air (%)	15.76	15.83	17.62	22.03	21.30	17.48	26.13	26.27	26.77	30.61	30.10	30.49	30.89	51.19	33.07	40.95	48.67	49.78
Kadar air rata-rata (%)	16.40			20.27			26.39			30.40			38.38			46.47		

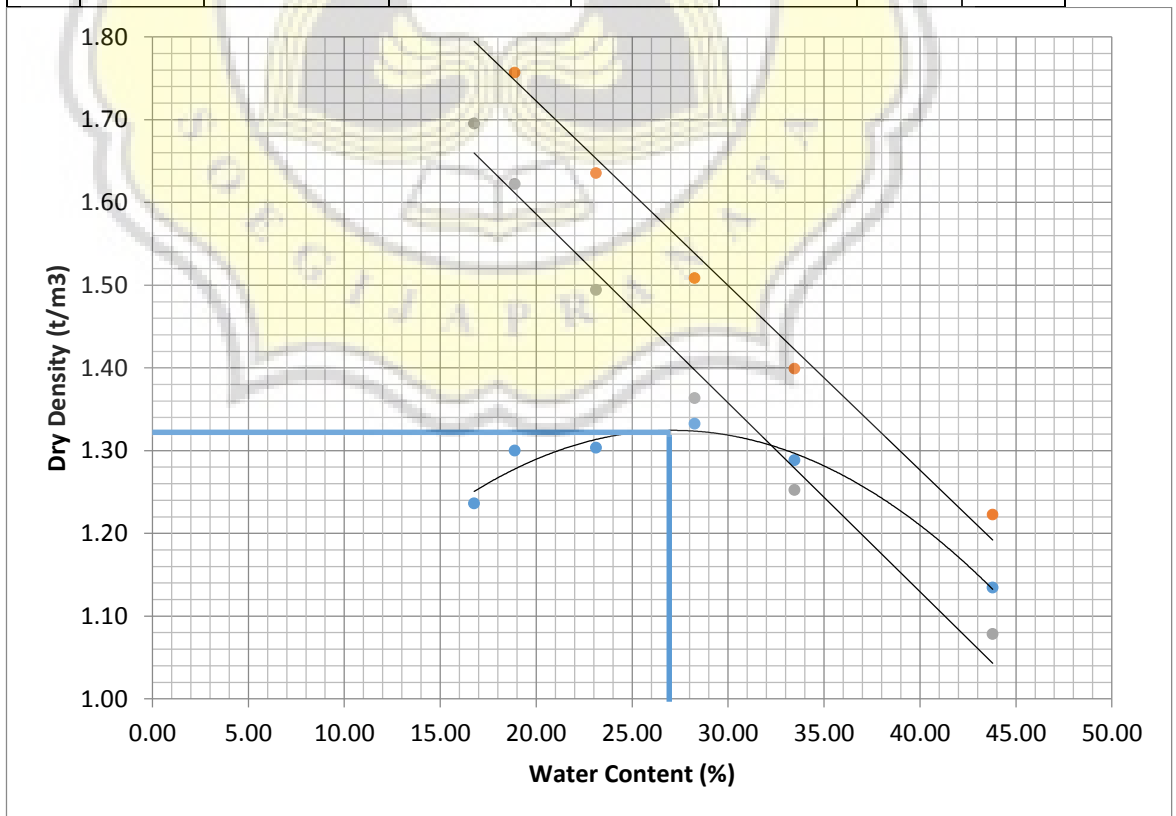
No	Kadar	Berat Isi Kering		$\gamma_{wet}$ (gr/cm <sup>3</sup> )	$\gamma_d$ (gr/cm <sup>3</sup> )	e	n
	Air	$\gamma_{dry}$ (gram / cm <sup>3</sup> )					
	w (%)	Sr = 100 %	Sr = 80 %				
1	16.40	1.881	1.746	1.42	1.22	0.913	0.477
2	20.27	1.753	1.610	1.52	1.27	0.784	0.439
3	26.39	1.583	1.434	1.63	1.29	0.674	0.403
4	30.40	1.489	1.337	1.80	1.38	0.513	0.339
5	38.38	1.331	1.180	1.67	1.21	0.627	0.385
6	46.47	1.201	1.054	1.60	1.10	0.695	0.410



**TABEL HASIL UJI PROKTOR TANAH + KAPUR 7,5%**

Percobaan Ke-	1			2			3			4			5			6		
Berat tanah asli (gr)	4000			4000			4000			4000			4000			4000		
Banyak air yang disemprot (cc)	500			700			900			1100			1300			1500		
Berat mold (gr)	5540			5540			5540			5540			5540			5540		
Berat mold + tanah basah (gr)	8617			8834			8961			9183			9205			9017		
Berat tanah basah (gr)	3077			3294			3421			3643			3665			3477		
Diameter mold (cm)	15.24			15.24			15.24			15.24			15.24			15.24		
Tinggi mold (cm)	11.68			11.68			11.68			11.68			11.68			11.68		
Volume (mold)	2131.46			2131.46			2131.46			2131.46			2131.46			2131.46		
Berat jenis isi tanah (gr/cm <sup>3</sup> )	1.44			1.55			1.61			1.71			1.72			1.63		
Berat jenis isi kering (gr/cm <sup>3</sup> )	1.24			1.30			1.30			1.33			1.29			1.13		
No. Container	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah
Berat container (gr)	4.90	4.90	4.80	12.30	4.80	4.90	4.70	9.50	6.70	4.80	4.70	4.80	10.50	4.80	11.50	4.80	4.80	4.90
Berat container + tanah basah (gr)	30.20	26.20	29.60	38.70	32.60	27.00	28.60	41.50	40.80	29.20	29.20	33.70	35.10	30.70	42.00	43.10	41.00	46.70
Berat container + tanah kering (gr)	28.40	22.80	26.10	34.50	28.30	23.40	24.10	35.50	34.40	23.85	23.80	27.30	28.90	24.20	34.40	31.40	29.90	34.10
Berat tanah basah (gr)	27.00	21.30	24.80	26.40	27.80	22.10	23.90	32.00	34.10	24.40	24.50	28.90	24.60	25.90	30.50	38.30	36.20	41.80
Berat tanah kering (gr)	23.50	17.90	21.30	22.20	23.50	18.50	19.40	26.00	27.70	19.05	19.10	22.50	18.40	19.40	22.90	26.60	25.10	29.20
Kadar air (%)	14.89	18.99	16.43	18.92	18.30	19.46	23.20	23.08	23.10	28.08	28.27	28.44	33.70	33.51	33.19	43.98	44.22	43.15
Kadar air rata-rata (%)	16.77			18.89			23.13			28.27			33.46			43.79		

No	Kadar	Berat Isi Kering		$\gamma_{wet}$ (gr/cm <sup>3</sup> )	$\gamma_d$ (gr/cm <sup>3</sup> )	e	n
	Air	$\gamma_{dry}$ (gram / cm <sup>3</sup> )					
	w (%)	Sr = 100 %	Sr = 80 %				
1	16.77	1.868	1.732	1.44	1.24	0.884	0.469
2	18.89	1.797	1.656	1.55	1.30	0.760	0.432
3	23.13	1.670	1.523	1.61	1.30	0.695	0.410
4	28.27	1.538	1.387	1.71	1.33	0.591	0.372
5	33.46	1.424	1.272	1.72	1.29	0.582	0.368
6	43.79	1.241	1.093	1.63	1.13	0.667	0.400





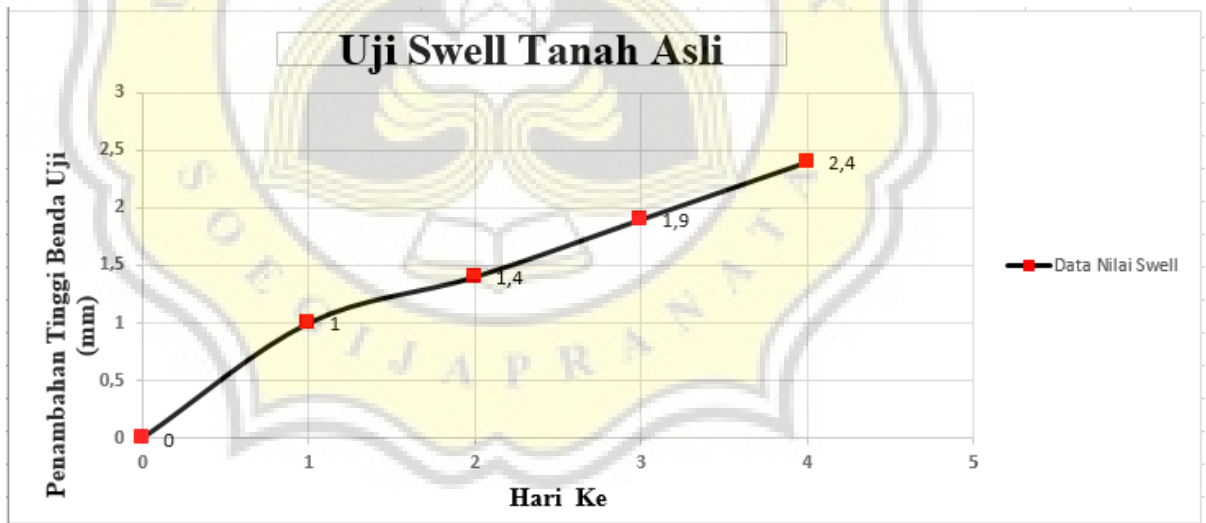
**L-03**

**UJI PENGEMBANGAN  
(*SWELL*)**

**TABEL HASIL UJI SWELLING  
DATA SWELLING Data 1**

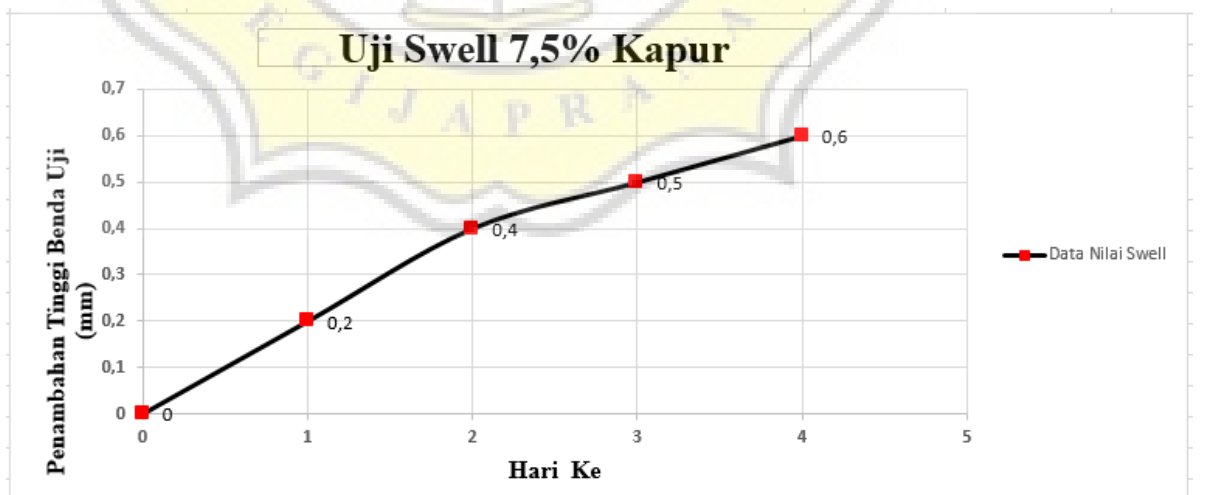
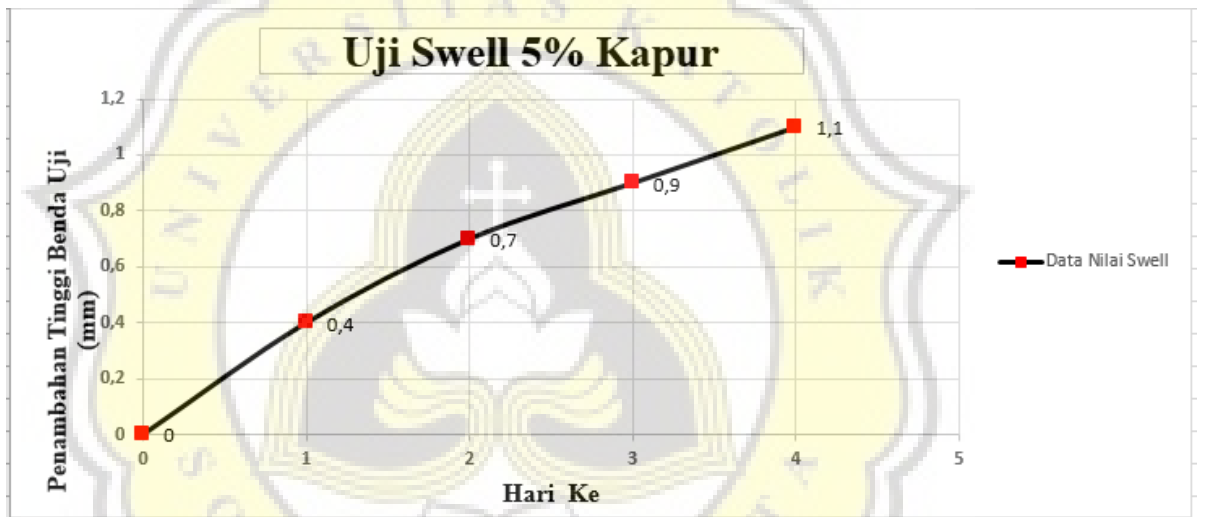
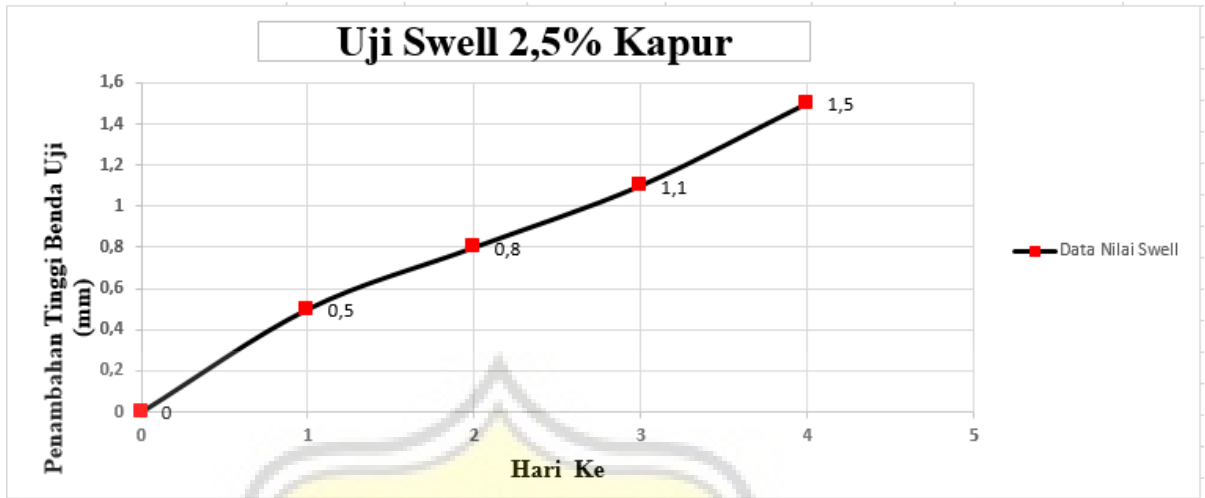
SWELLING POTENTIAL		Kalibrasi	0,1 mm			
SWELLING POTENTIAL (div)						
Persen Kapur	Mold	Tanggal				
		30 Juli '16	31 Juli '16	1 Agustus '16	2 Agustus '16	3 Agustus '16
Tanah Asli (0%)	5	0	10	14	19	24
2.5%	6	0	5	8	11	15
5%	7	0	4	7	9	11
7.5%	11	0	2	4	5	6
HARI KE		0	1	2	3	4

Tinggi benda uji setelah perendaman							
Persen Kapur	Mold	Tinggi Benda Uji (cm)					Δh (%)
		Tanggal					
		30 Juli '16	31 Juli '16	1 Agustus '16	2 Agustus '16	3 Agustus '16	
Tanah Asli (0%)	5	17,8	17,90	17,94	17,99	18,04	<b>1,348</b>
2.5%	6	17,8	17,85	17,88	17,91	17,95	<b>0,843</b>
5%	7	17,8	17,84	17,87	17,89	17,91	<b>0,618</b>
7.5%	11	17,8	17,82	17,84	17,85	17,86	<b>0,337</b>
HARI KE		0	1	2	3	4	

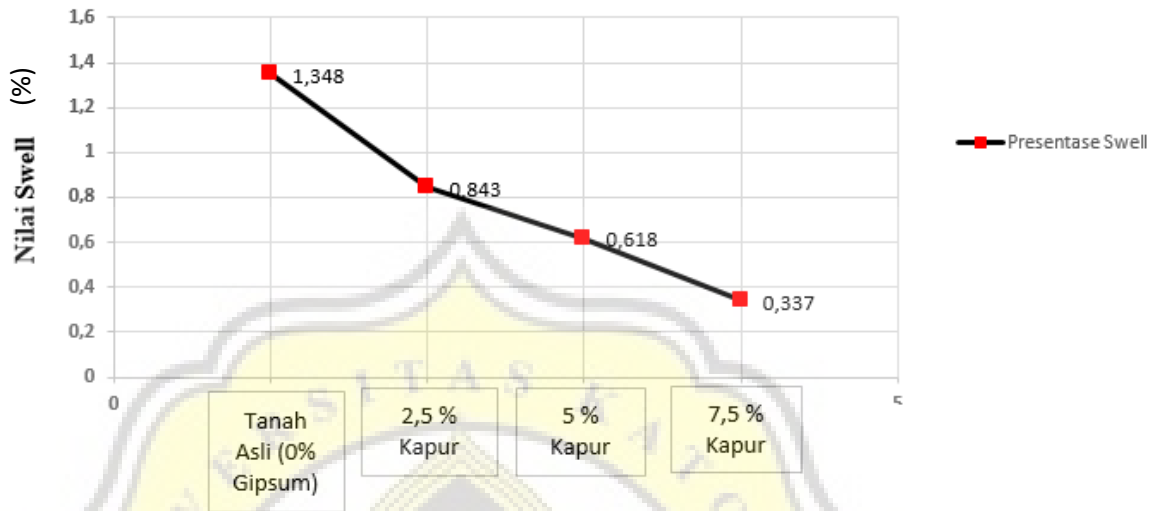


Contoh Perhitungan :

$$\begin{aligned}
 \text{Penambahan Tinggi Benda Uji} &= \text{Swelling Potential} \times \text{Kalibrasi} \\
 &= 10 \text{ Div} \times 0,1 \text{ mm} \\
 &= 1 \text{ mm}
 \end{aligned}$$



## Hasil Presentase Swelling

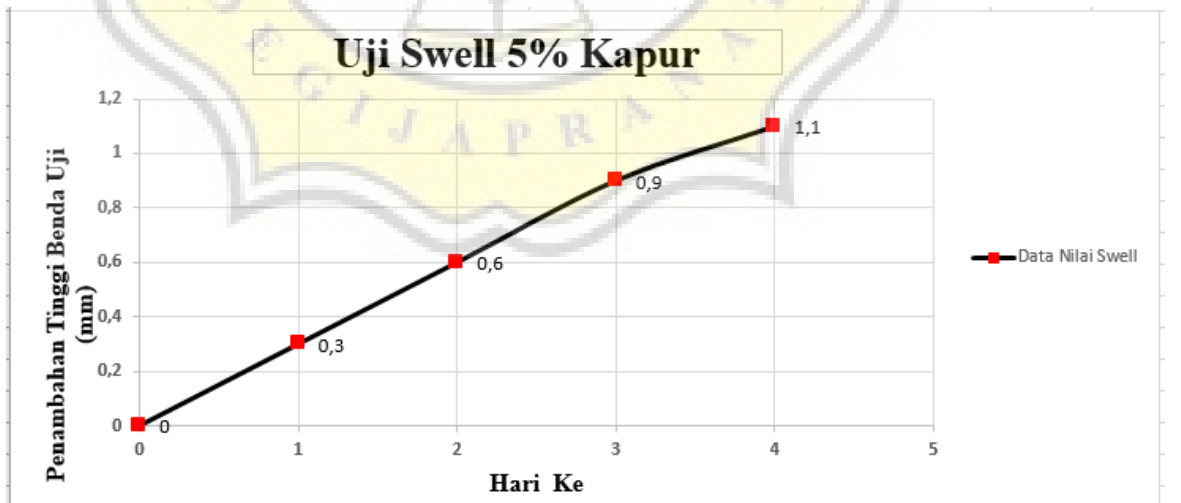
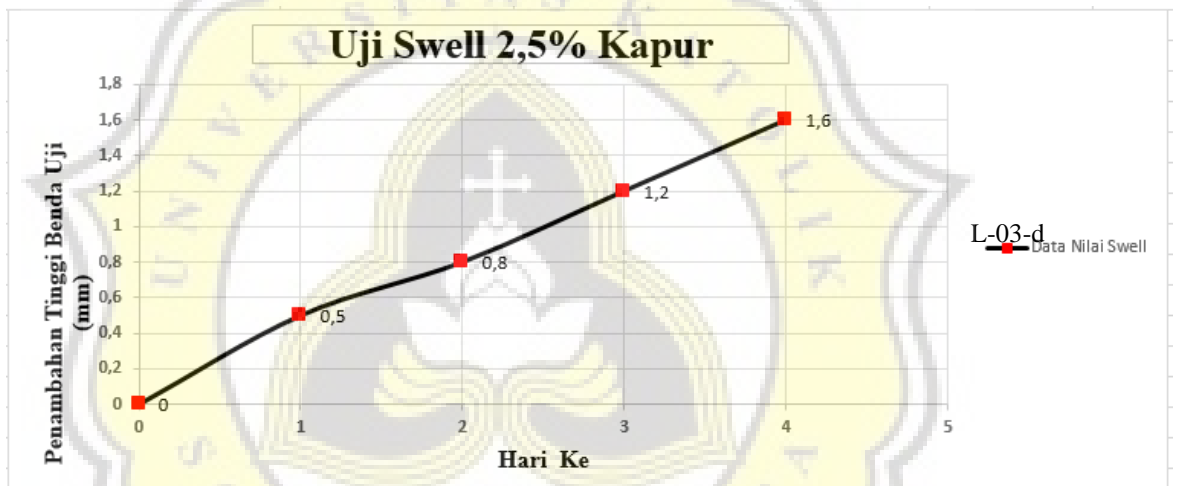
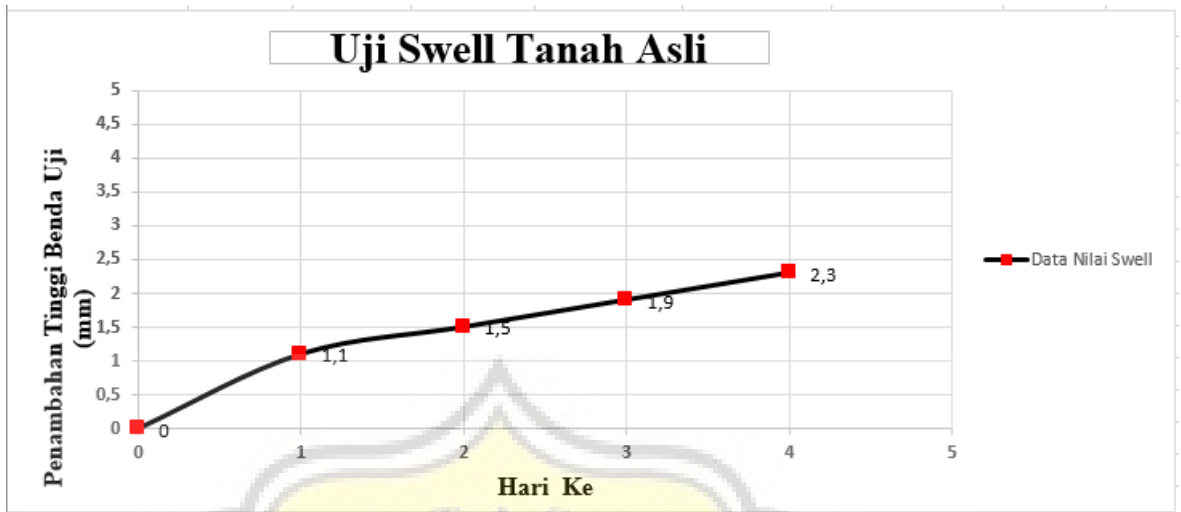


Sampel Tanah

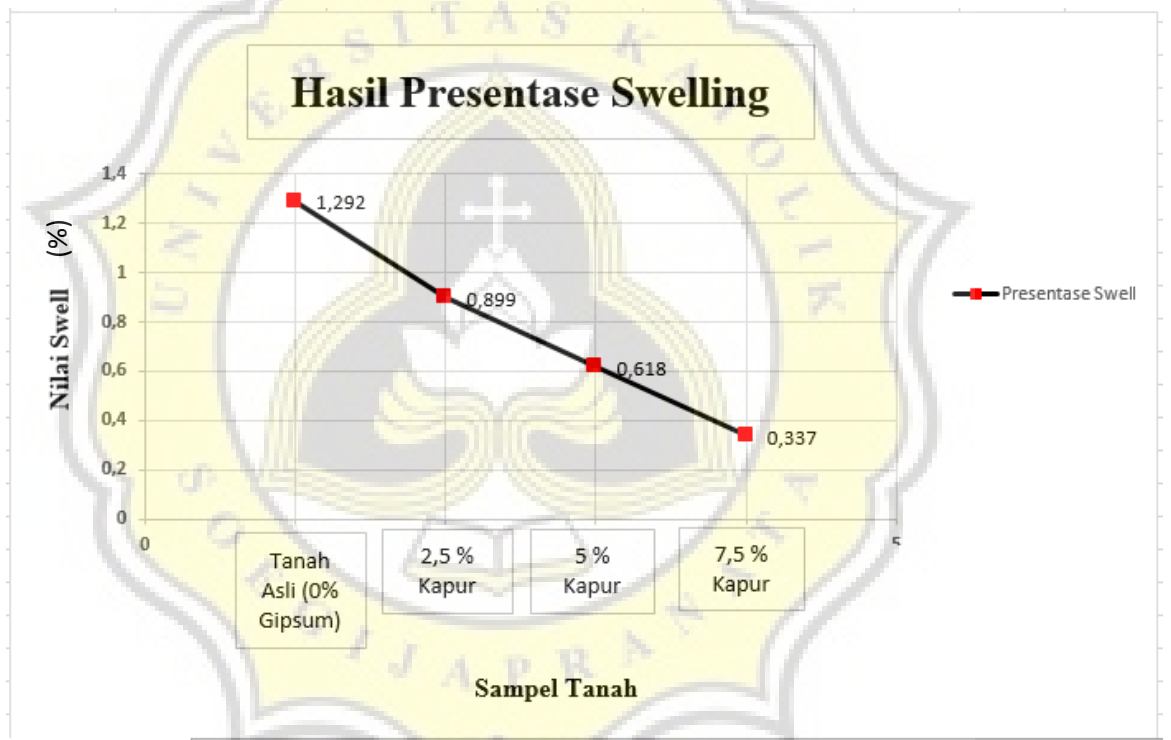
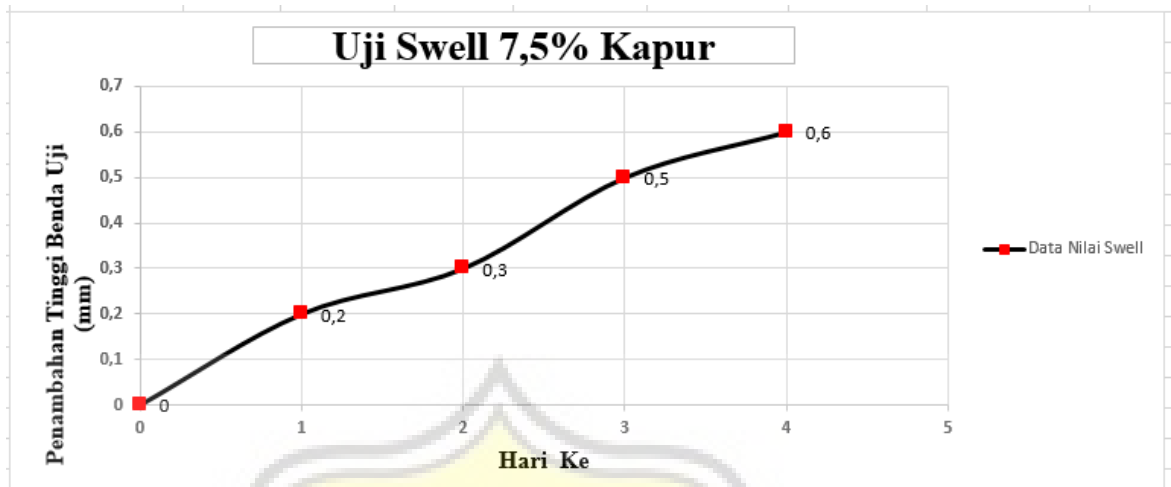
### DATA SWELLING SAMPEL 2

SWELLING POTENTIAL		Kalibrasi 0,1 mm				
SWELLING POTENTIAL (div)						
Persen Kapur	Mold	Tanggal				
		30 Juli '16	31 Juli '16	1 Agustus '16	2 Agustus '16	3 Agustus '16
Tanah Asli (0%)	8	0	11	15	19	23
2.5%	9	0	5	8	12	16
5%	10	0	3	6	9	11
7.5%	12	0	2	3	5	6
HARI KE		0	1	2	3	4

Tinggi benda uji setelah perendaman							
Persen Kapur	Mold	Tinggi Benda Uji (cm)					Δh (%)
		Tanggal					
		30 Juli '16	31 Juli '16	1 Agustus '16	2 Agustus '16	3 Agustus '16	
Tanah Asli (0%)	8	17,8	17,91	17,95	17,99	18,03	1,292
2.5%	9	17,8	17,85	17,88	17,92	17,96	0,899
5%	10	17,8	17,83	17,86	17,89	17,91	0,618
7.5%	12	17,8	17,82	17,83	17,85	17,86	0,337
HARI KE		0	1	2	3	4	

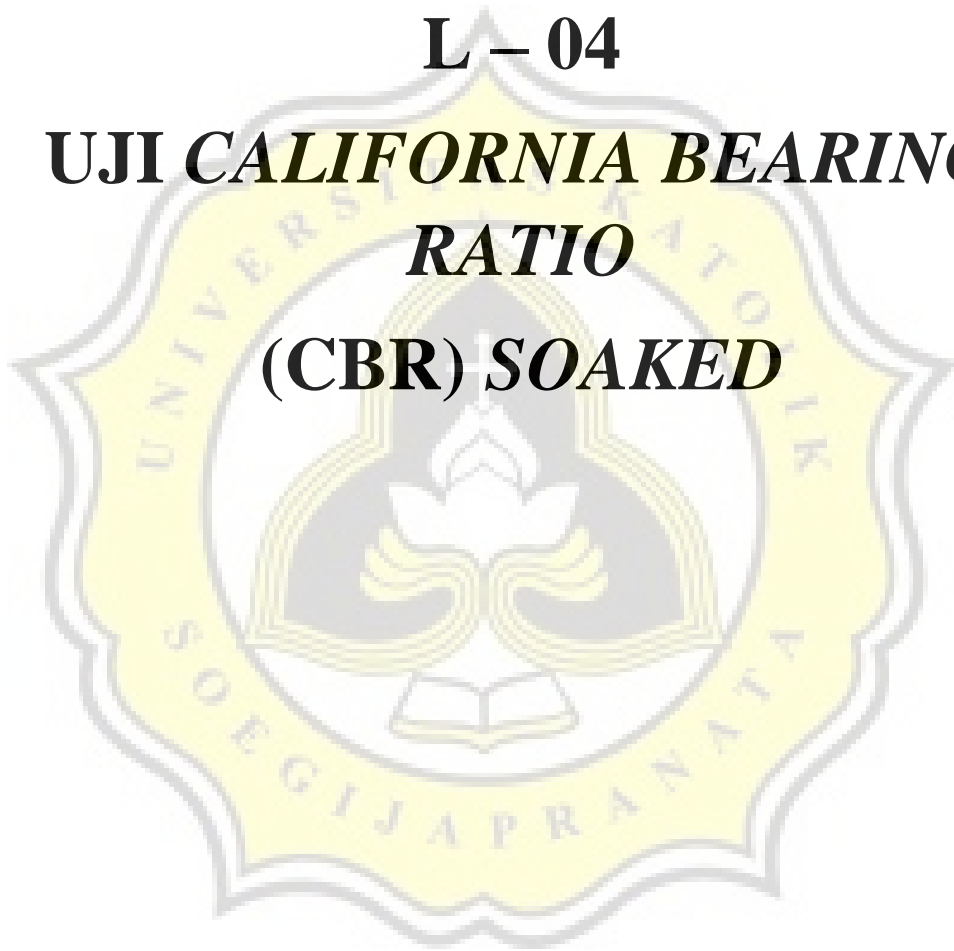






**L – 04**

***UJI CALIFORNIA BEARING  
RATIO  
(CBR) SOAKED***

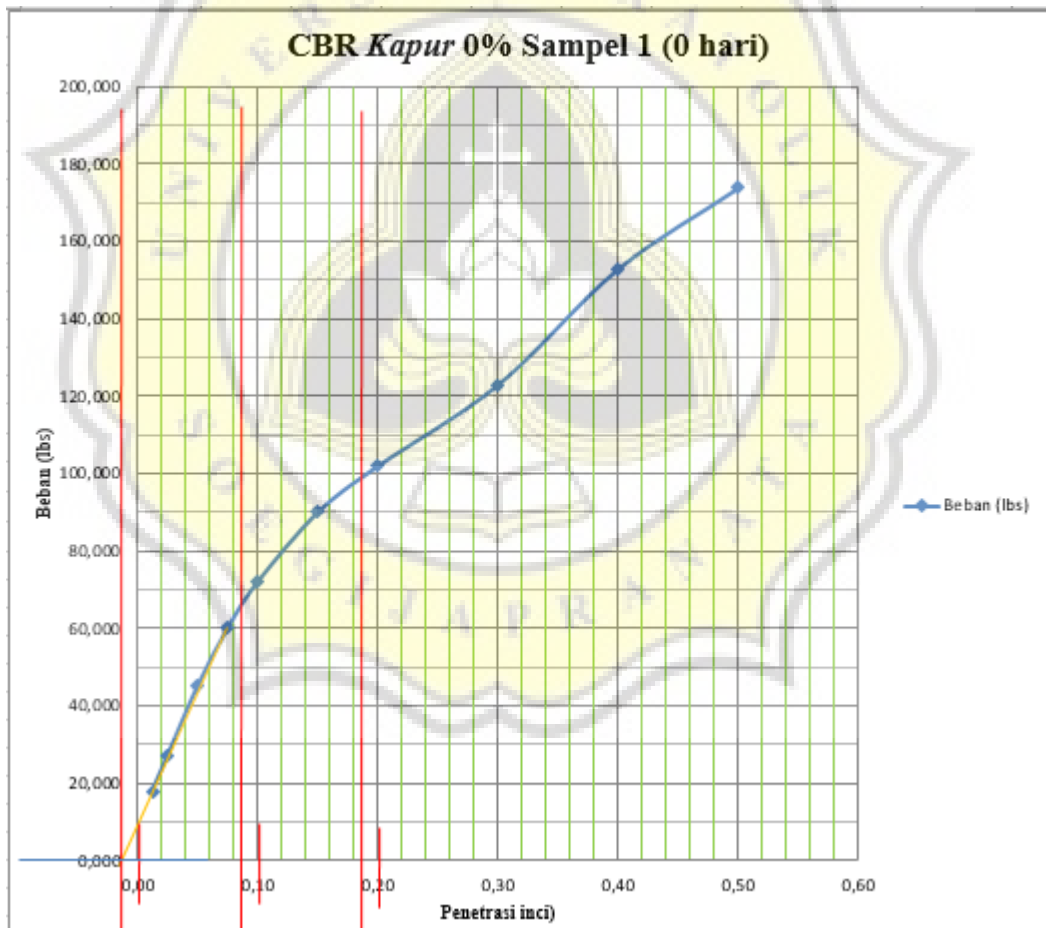


**TABEL HASIL UJI CBR TANAH ASLI SAMPEL 1**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	3		17,982	
0,0250	4,5		26,972	
0,0500	7,5		44,954	
0,0750	10		59,939	
0,1000	12	3000	71,926	65
0,1500	15		89,908	
0,2000	17	4500	101,896	99
0,3000	20,5		122,874	
0,4000	25,5		152,844	
0,5000	29		173,822	

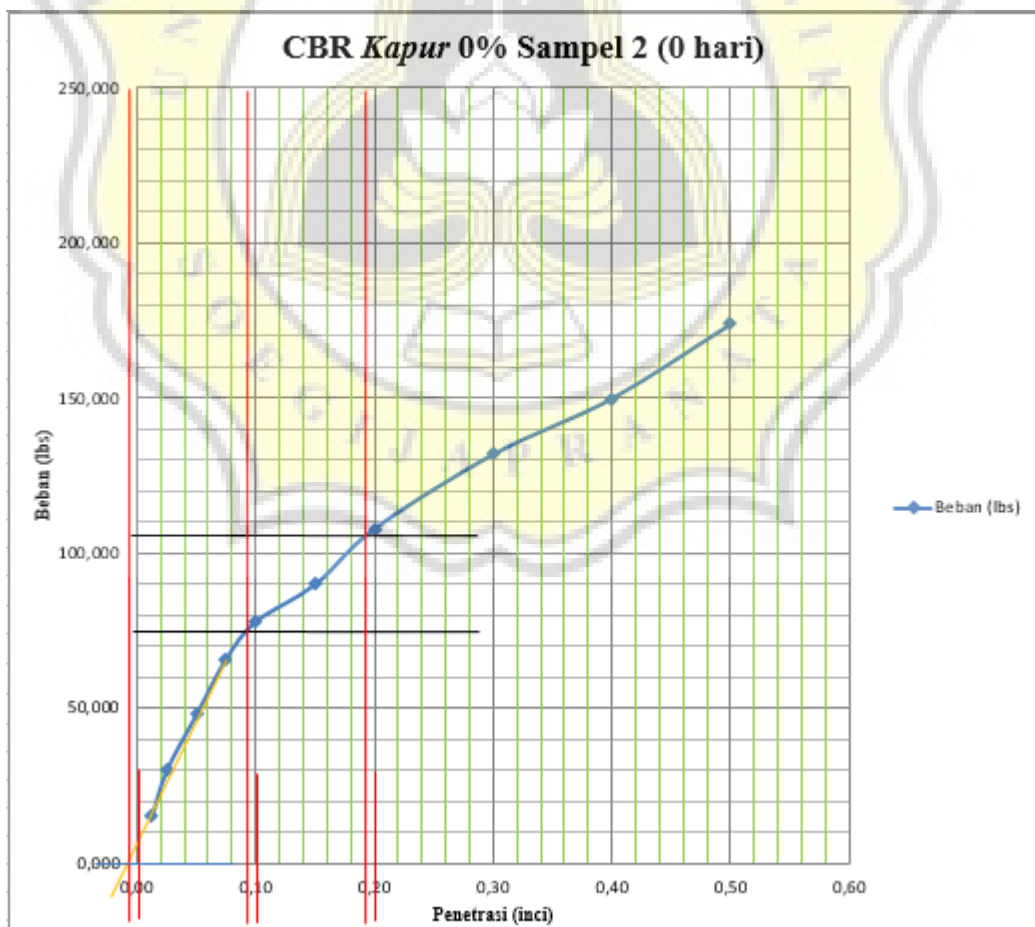
Penurunan ( inch )	Nilai CBR ( % )
0,1	2,167
0,2	2,200



**TABEL HASIL UJI CBR TANAH ASLI SAMPEL 2**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	2,5		14,985	
0,0250	5		29,969	
0,0500	8		47,951	
0,0750	11		65,933	
0,1000	13	3000	77,920	75
0,1500	15		89,908	
0,2000	18	4500	107,890	107
0,3000	22		131,865	
0,4000	25		149,847	
0,5000	29		173,822	

Penurunan ( inch )	Nilai CBR ( % )
0,1	2,500
0,2	2,378

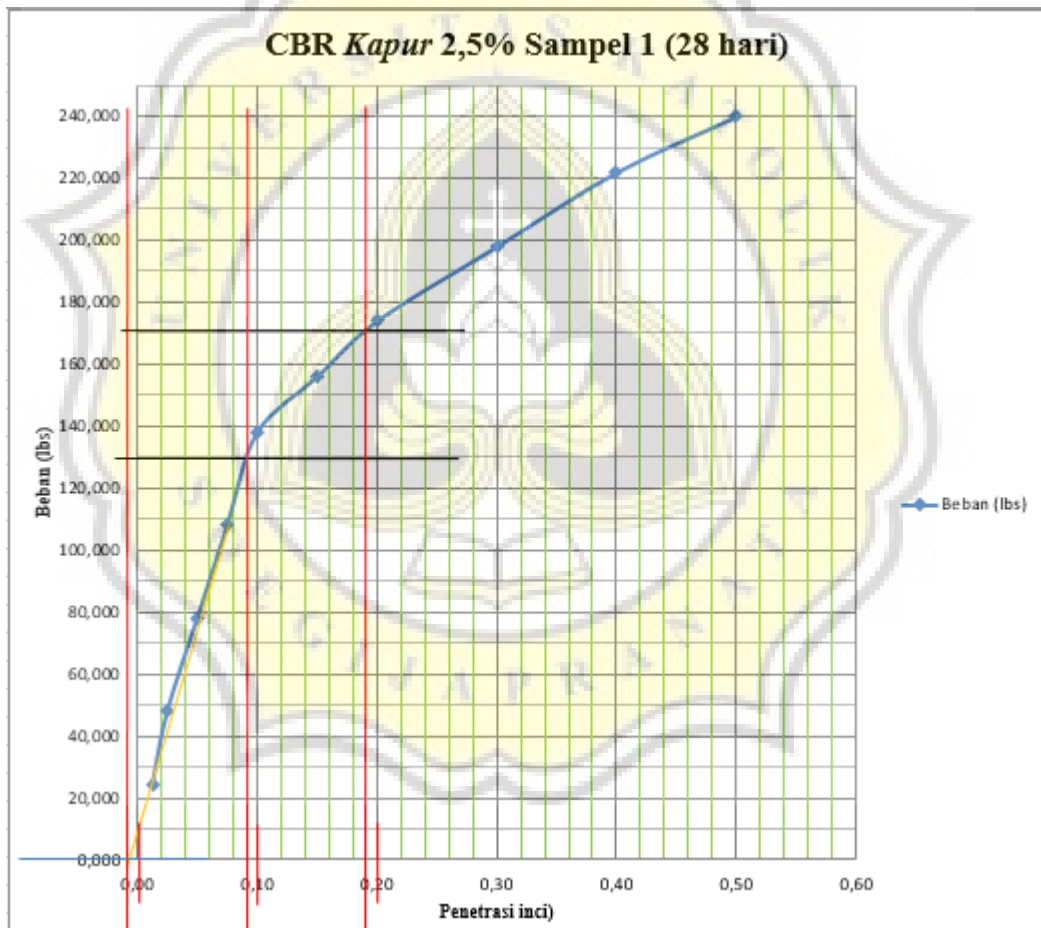


**TABEL HASIL UJI CBR TANAH + KAPUR 2,5% SAMPEL 1**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	4		23,975	
0,0250	8		47,951	
0,0500	13		77,920	
0,0750	18		107,890	
0,1000	23	3000	137,859	130
0,1500	26		155,841	
0,2000	29	4500	173,822	171
0,3000	33		197,798	
0,4000	37		221,773	
0,5000	40		239,755	

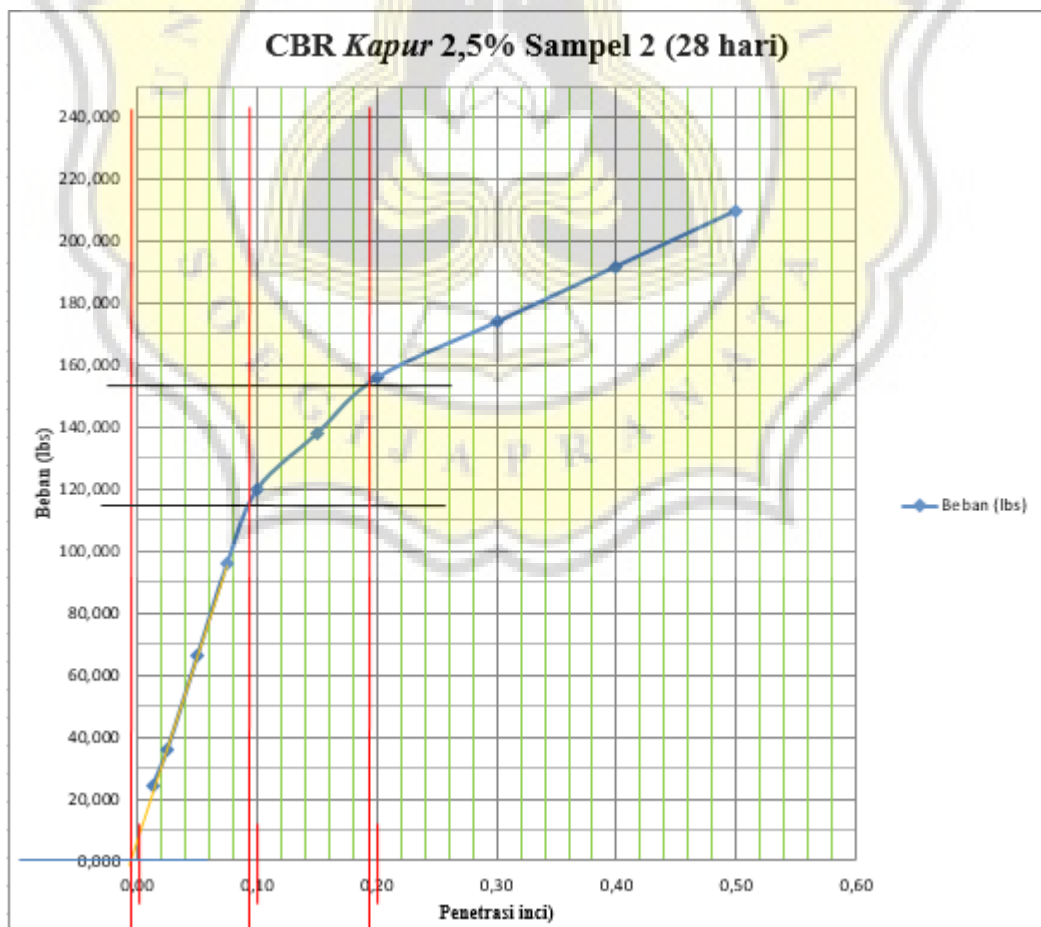
Penurunan ( inch )	Nilai CBR ( % )
0,1	4,333
0,2	3,800



**TABEL HASIL UJI CBR TANAH + KAPUR 2,5% SAMPEL 2**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	4		23,975	
0,0250	6		35,963	
0,0500	11		65,933	
0,0750	16		95,902	
0,1000	20	3000	119,877	117
0,1500	23		137,859	
0,2000	26	4500	155,841	153
0,3000	29		173,822	
0,4000	32		191,804	
0,5000	35		209,785	

Penurunan ( inch )	Nilai CBR ( % )
0,1	3,900
0,2	3,400

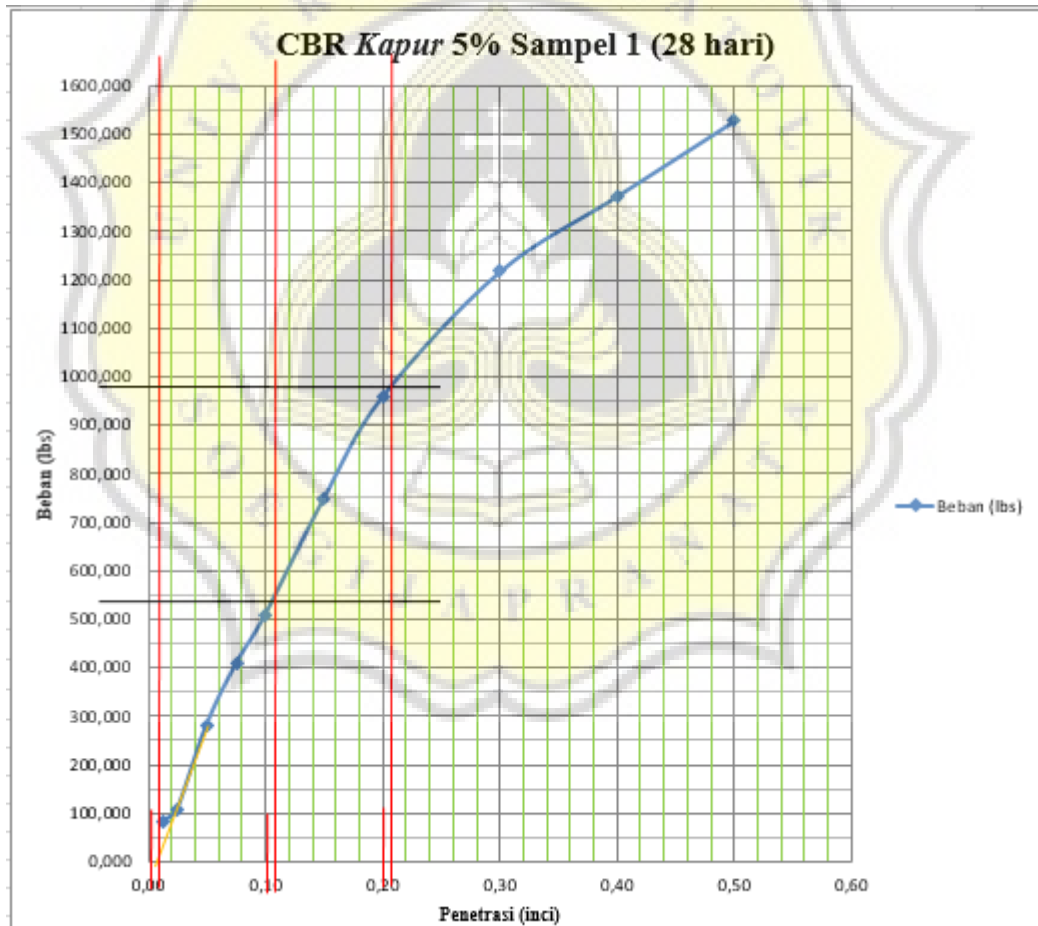


**TABEL HASIL UJI CBR TANAH + KAPUR 5% SAMPEL 1**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	14		83,914	
0,0250	18		107,890	
0,0500	47		281,712	
0,0750	68		407,583	
0,1000	85	3000	509,479	540
0,1500	125		749,234	
0,2000	160	4500	959,019	980
0,3000	203		1216,756	
0,4000	229		1372,596	
0,5000	255		1528,437	

Penurunan ( inch )	Nilai CBR ( % )
0,1	18,000
0,2	21,778

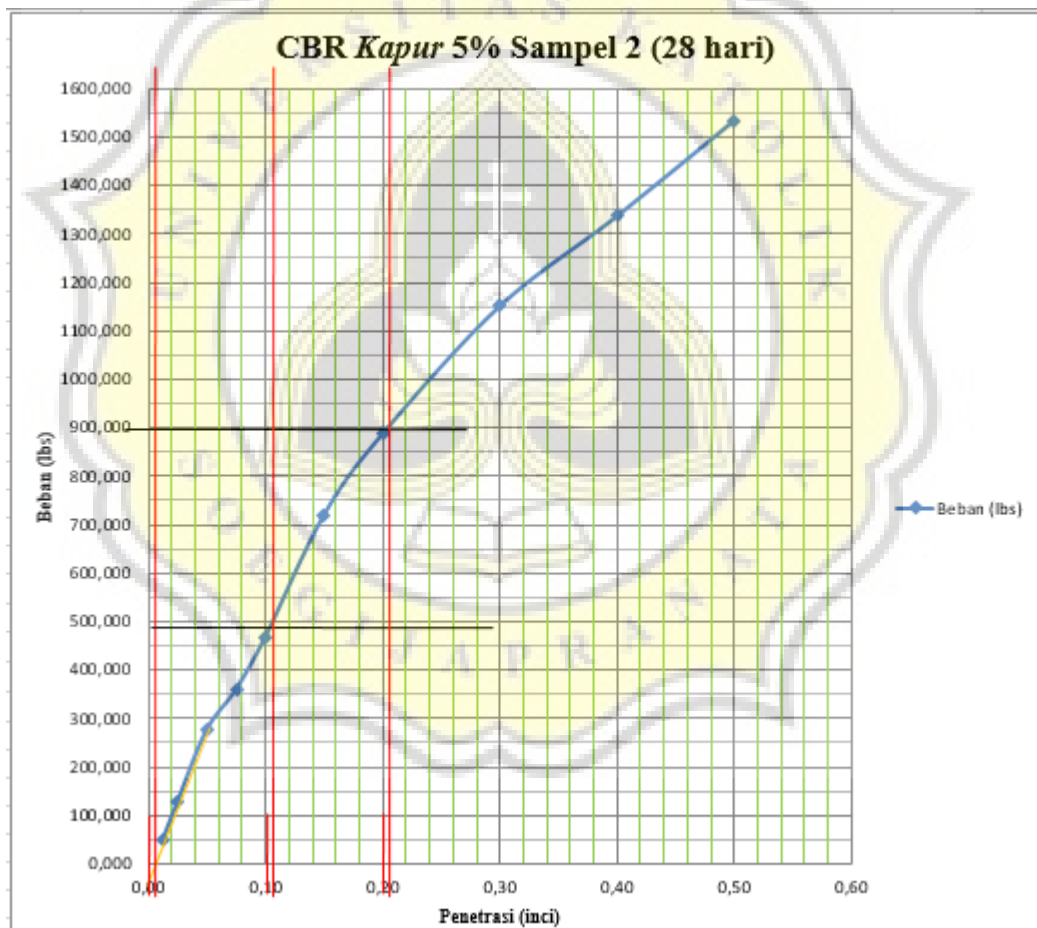


**TABEL HASIL UJI CBR TANAH + KAPUR 5% SAMPEL 2**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	8		47,951	
0,0250	21		125,871	
0,0500	46		275,718	
0,0750	60		359,632	
0,1000	78	3000	467,522	490
0,1500	120		719,264	
0,2000	148	4500	887,093	900
0,3000	192		1150,823	
0,4000	223		1336,633	
0,5000	256		1534,431	

Penurunan ( inch )	Nilai CBR ( % )
0,1	16,333
0,2	20,000



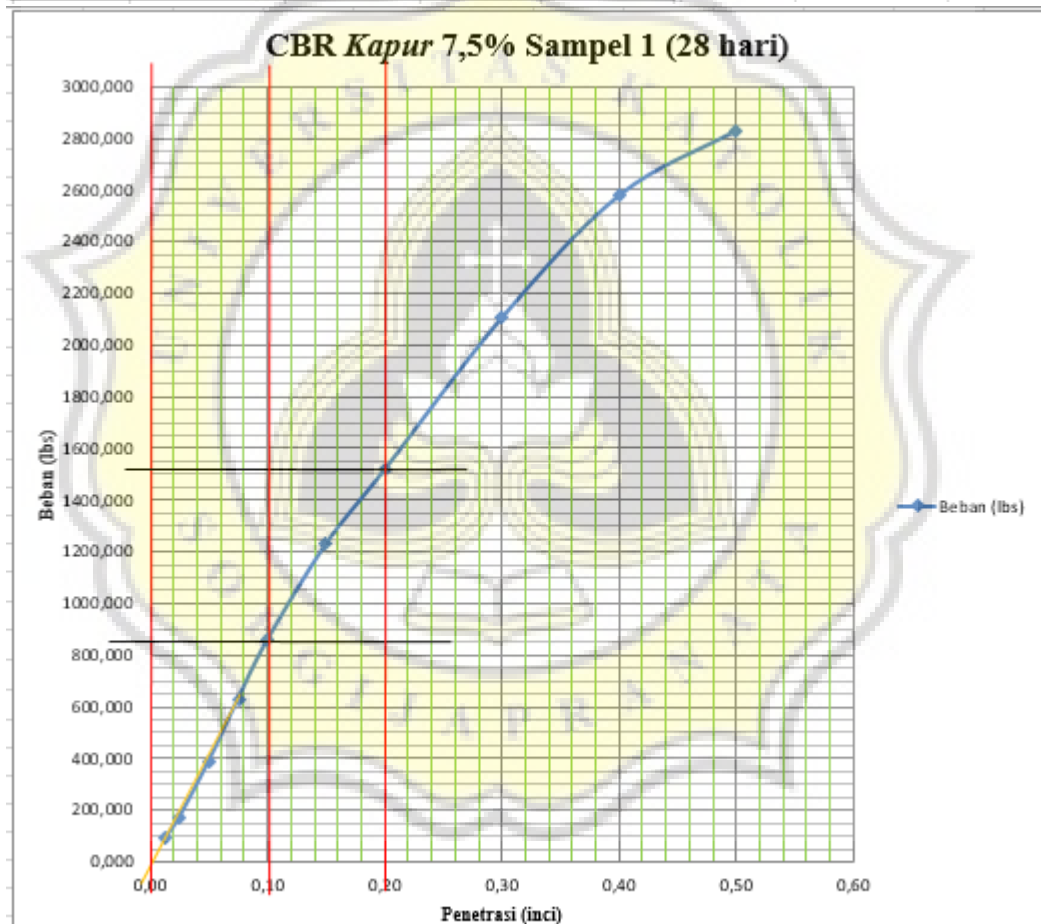


**TABEL HASIL UJI CBR TANAH + KAPUR 7,5% SAMPEL 1**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	15		89,908	
0,0250	29		173,822	
0,0500	65		389,602	
0,0750	105		629,356	
0,1000	143	3000	857,123	857,123
0,1500	205		1228,743	
0,2000	253	4500	1518,449	1518,449
0,3000	351		2103,848	
0,4000	430		2577,364	
0,5000	472		2829,107	

Penurunan ( inch )	Nilai CBR ( % )
0,1	28,571
0,2	33,699

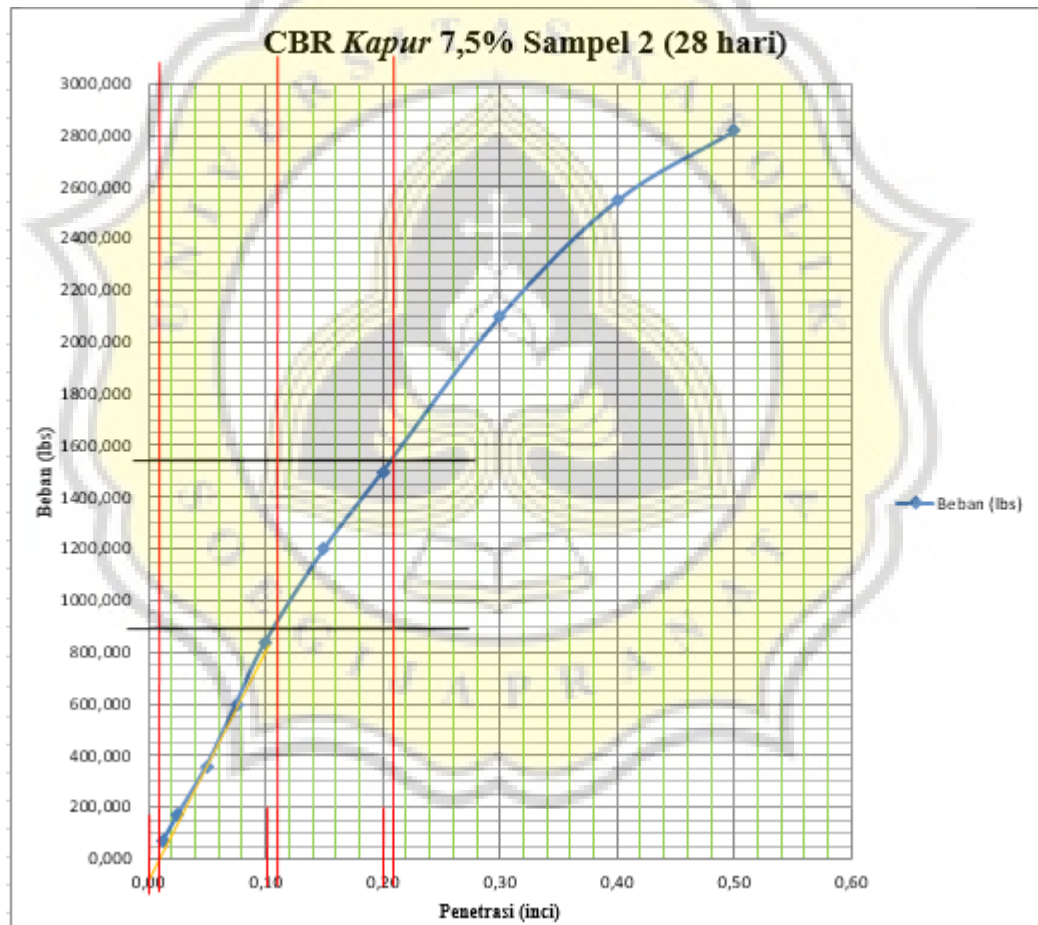


**TABEL HASIL UJI CBR TANAH + KAPUR 7,5% SAMPEL 2**

Penurunan ( inch )	Bacaan Dial	Standar Beban ( lb )	Beban ( lb )	Koreksi Beban ( lb )
0,0125	11		65,933	
0,0250	28		167,828	
0,0500	60		359,632	
0,0750	100		599,387	
0,1000	140	3000	839,142	900
0,1500	200		1198,774	
0,2000	250	4500	1498,468	1545
0,3000	350		2097,855	
0,4000	425		2547,395	
0,5000	470		2817,119	




  



Penurunan ( inch )	Nilai CBR ( % )
0,1	30,000
0,2	34,333



The logo of Universitas Katolik Soegijapranata is a yellow shield-shaped emblem with a scalloped border. Inside the shield, there is a central figure of a dove with its wings spread, perched on an open book. Above the dove's head is a white cross. The text "UNIVERSITAS KATOLIK" is written in a semi-circle along the top edge of the shield, and "SOEGIJAPRANATA" is written along the bottom edge.

**L-05**  
**DOKUMENTASI PENELITIAN**

No	Gambar	Keterangan
1		<p>Satu set <i>sieve analysis</i></p> <p>(Sumber: Dokumentasi Pribadi, 2016)</p>
2		<p>Proses pembuatan benda uji rawatan (<i>curing</i>)</p> <p>(Sumber: Dokumentasi Pribadi, 2016)</p>
3		<p>Proses memasukan kapur kedalam plastik</p> <p>(Sumber: Dokumentasi Pribadi, 2016)</p>

4		<p>Proses mencampur aquades dengan tanah</p> <p>(Sumber: Dokumentasi Pribadi, 2016)</p>
5		<p>Proses pengujian <i>California Bearing Ratio</i> (CBR)</p> <p>(Sumber: Dokumentasi Pribadi, 2016)</p>
6		<p>Proses pengujian <i>Swelling</i></p> <p>(Sumber: Dokumentasi Pribadi, 2016)</p>

