LAMPIRAN B

DATA HASIL UJI TEKAN BEBAS

1. Benda uji dengan umur pemeraman 0 hari (langsung diuji)

a. Kadar semen 3% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.23	cm
Tinggi	10.51	cm
Berat	315.89	g

Benda Uji 1

Luas	21.48292	cm2
Volume	225.7855	cm3
Berat vol.	1.399071	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u : 648.6567 kPa e_f : 5.423406 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.482917	0	0.0000	0
30	30	0.03	0.2854	21.544414	1	1.5810	7.1989
60	60	0.06	0.5709	21.606264	3.5	5.5335	25.1240
90	90	0.09	0.8563	21.66847	4.5	7.1145	32.2096
120	120	0.12	1.1418	21.731036	6	9.4860	42.8225
150	150	0.15	1.4272	21.793964	8	12.6480	56.9318
180	180	0.18	1.7127	21.857257	11.5	18.1815	81.6024
210	210	0.21	1.9981	21.920919	17	26.8770	120.2793
240	240	0.24	2.2835	21.984952	23	36.3630	162.2569
270	270	0.27	2.5690	22.049362	31	49.0110	218.0553
300	300	0.3	2.8544	22.114149	39	61.6590	273.5239
330	330	0.33	3.1399	22.179318	48	75.8880	335.6556
360	360	0.36	3.4253	22.244873	57.5	90.9075	400.9025
390	390	0.39	3.7108	22.310816	68	107.5080	472.7095
420	420	0.42	3.9962	22.377152	76	120.1560	526.7562
450	450	0.45	4.2816	22.443883	83	131.2230	573.5628
480	480	0.48	4.5671	22.511013	87.5	138.3375	602.8564
510	510	0.51	4.8525	22.578546	93	147.0330	638.8337
540	540	0.54	5.1380	22.646486	94	148.6140	643.7658
570	570	0.57	5.4234	22.714835	95	150.1950	648.6567
600	600	0.6	5.7088	22.783599	84	132.8040	571.8180
630	630	0.63	5.9943	22.85278	78	123.3180	529.3665
660	660	0.66	6.2797	22.922382	73	115.4130	493.9284
690	690	0.69	6.5652	22.99241	70	110.6700	472.1874

720	720	0.72	6.8506	23.062866	67	105.9270	450.5701
750	750	0.75	7.1361	23.133756	64.5	101.9745	432.4286
780	780	0.78	7.4215	23.205083	63	99.6030	421.0739
810	810	0.81	7.7069	23.276852	62	98.0220	413.1125
840	840	0.84	7.9924	23.349065	60	94.8600	398.5498
870	870	0.87	8.2778	23.421728	59	93.2790	390.6915
900	900	0.9	8.5633	23.494845	58	91.6980	382.8744
930	930	0.93	8.8487	23.56842	57	90.1170	375.0984
960	960	0.96	9.1342	23.642457	56	88.5360	367.3638
990	990	0.99	9.4196	23.71696	55	86.9550	359.6703
1020	1020	1.02	9.7050	23.791935	54	85.3740	352.0180
1050	1050	1.05	9.9905	23.867385	53	83.7930	344.4070
1080	1080	1.08	10.2759	23.943315	52	82.2120	336.8371
1110	1110	1.11	10.5614	24.01973	51.5	81.4215	332.5370

Data Benda Uji Sebelum Pengujian :

Diameter	5.25	cm
Tinggi	10.7	cm
Berat	322.73	g

Benda Uji 2

Luas	21.67503	cm2
Volume	231.9229	cm3
Berat vol.	1.39154	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 688.2605 kPa e_f 4.766355 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm2)	Beban Aksial		Tegangan P/A (kPa)
	arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			arloji Ukur	Beban (P) (kg)	
0	0	0	0.0000	21.6750345	0	0.0000	0
30	30	0.03	0.2804	21.7359765	1	1.5810	7.1355
60	60	0.06	0.5607	21.7972622	2	3.1620	14.2308
90	90	0.09	0.8411	21.8588944	3.5	5.5335	24.8337
120	120	0.12	1.1215	21.9208761	5	7.9050	35.3763
150	150	0.15	1.4019	21.9832104	8	12.6480	56.4417
180	180	0.18	1.6822	22.0459002	15	23.7150	105.5272
210	210	0.21	1.9626	22.1089485	22	34.7820	154.3318
240	240	0.24	2.2430	22.1723585	30	47.4300	209.8506
270	270	0.27	2.5234	22.2361332	39	61.6590	272.0234
300	300	0.3	2.8037	22.3002759	50	79.0500	347.7448
330	330	0.33	3.0841	22.3647897	62	98.0220	429.9597
360	360	0.36	3.3645	22.4296779	72	113.8320	497.8636
390	390	0.39	3.6449	22.4949437	82	129.6420	565.3662
420	420	0.42	3.9252	22.5605904	90	142.2900	618.7182
450	450	0.45	4.2056	22.6266214	97	153.3570	664.8947

480	480	0.48	4.4860	22.6930401	100	158.1000	683.4523
510	510	0.51	4.7664	22.7598498	101	159.6810	688.2605
540	540	0.54	5.0467	22.8270541	96	151.7760	652.2622
570	570	0.57	5.3271	22.8946564	88	139.1280	596.1416
600	600	0.6	5.6075	22.9626604	80	126.4800	540.3419
630	630	0.63	5.8879	23.0310695	73	115.4130	491.5975
660	660	0.66	6.1682	23.0998874	63	99.6030	422.9914
690	690	0.69	6.4486	23.1691178	57	90.1170	381.5630
720	720	0.72	6.7290	23.2387645	53	83.7930	353.7233
750	750	0.75	7.0093	23.3088311	47	74.3070	312.7363
780	780	0.78	7.2897	23.3793215	43	67.9830	285.2577
810	810	0.81	7.5701	23.4502396	39	61.6590	257.9397
840	840	0.84	7.8505	23.5215892	37	58.4970	243.9697
870	870	0.87	8.1308	23.5933743	35	55.3350	230.0800
900	900	0.9	8.4112	23.6655989	33	52.1730	216.2705
930	930	0.93	8.6916	23.7382671	32	50.5920	209.0749
960	960	0.96	8.9720	23.8113829	31	49.0110	201.9194
990	990	0.99	9.2523	23.8849505	30	47.4300	194.8040
1020	1020	1.02	9.5327	23.9589741	30	47.4300	194.2021

Data Benda Uji Sebelum Pengujian :

Diameter 5.22 cm

Tinggi 10.6 cm

Berat 320.63 g

Benda Uji 3

Luas 21.42818 cm2

Volume 227.1387 cm3

Berat vol. 1.411604 g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 738.2708 kPa

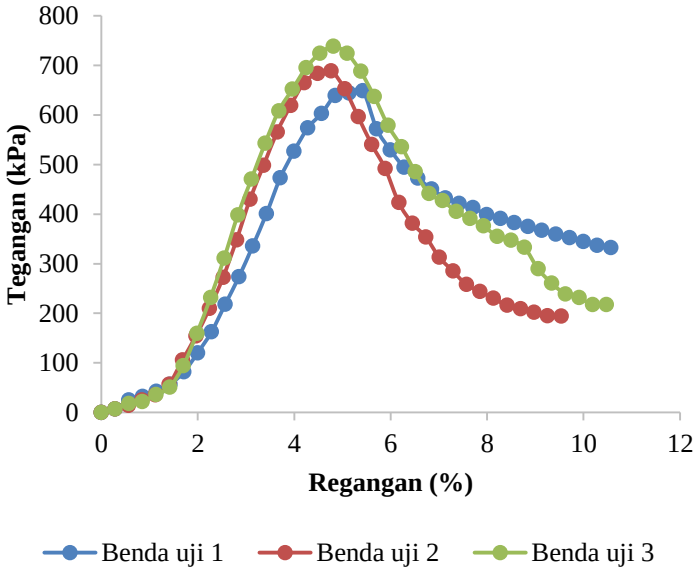
e_f 4.811321 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm2)	Beban Aksial		Tegangan P/A (kPa)
	arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			arloji Ukur	Beban (P) (kg)	
0	0	0	0.0000	21.4281839	0	0.0000	0.0000
30	30	0.03	0.2830	21.43	1	1.5810	7.2379
60	60	0.06	0.5660	21.43	2.5	3.9525	18.0949
90	90	0.09	0.8491	21.43	3	4.7430	21.7138
120	120	0.12	1.1321	21.43	5	7.9050	36.1897
150	150	0.15	1.4151	21.43	7	11.0670	50.6656
180	180	0.18	1.6981	21.43	13	20.5530	94.0933
210	210	0.21	1.9811	21.43	22	34.7820	159.2349
240	240	0.24	2.2642	21.43	32	50.5920	231.6144
270	270	0.27	2.5472	21.43	43	67.9830	311.2318
300	300	0.3	2.8302	21.43	55	86.9550	398.0872

330	330	0.33	3.1132	21.43	65	102.7650	470.4667
360	360	0.36	3.3962	21.43	75	118.5750	542.8462
390	390	0.39	3.6792	21.43	84	132.8040	607.9877
420	420	0.42	3.9623	21.43	90	142.2900	651.4154
450	450	0.45	4.2453	21.43	96	151.7760	694.8431
480	480	0.48	4.5283	21.43	100	158.1000	723.7949
510	510	0.51	4.8113	21.43	102	161.2620	738.2708
540	540	0.54	5.0943	21.43	100	158.1000	723.7949
570	570	0.57	5.3774	21.43	95	150.1950	687.6051
600	600	0.6	5.6604	21.43	88	139.1280	636.9395
630	630	0.63	5.9434	21.43	80	126.4800	579.0359
660	660	0.66	6.2264	21.43	74	116.9940	535.6082
690	690	0.69	6.5094	21.43	67	105.9270	484.9426
720	720	0.72	6.7925	21.43	61	96.4410	441.5149
750	750	0.75	7.0755	21.43	59	93.2790	427.0390
780	780	0.78	7.3585	21.43	56	88.5360	405.3251
810	810	0.81	7.6415	21.43	54	85.3740	390.8492
840	840	0.84	7.9245	21.43	52	82.2120	376.3733
870	870	0.87	8.2075	21.43	49	77.4690	354.6595
900	900	0.9	8.4906	21.43	48	75.8880	347.4215
930	930	0.93	8.7736	21.43	46	72.7260	332.9456
960	960	0.96	9.0566	21.43	40	63.2400	289.5180
990	990	0.99	9.3396	21.43	36	56.9160	260.5662
1020	1020	1.02	9.6226	21.43	33	52.1730	238.8523
1050	1050	1.05	9.9057	21.43	32	50.5920	231.6144
1080	1080	1.08	10.1887	21.43	30	47.4300	217.1385
1110	1110	1.11	10.4717	21.43	30	47.4300	217.1385

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.23	5.25	5.22
Tinggi, H_o (cm)	10.51	10.7	10.59
Luas penampang, A (cm^2)	21.48	21.67	21.42
Volume benda uji, V_1 (cm^3)	225.74	231.88	226.88
Berat tanah, W_1 (g)	315.89	322.73	320.63
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.2	9.06	9.38	9.39	9.37	9.45	9.18	9.12	9.58
Berat cawan + tanah, W_2 (g)	29.2	29.06	29.38	29.39	29.37	29.45	29.18	29.12	29.58
Berat cawan + tanah kering, W_3 (g)	24.99	24.93	25.12	24.24	25	26.28	24.99	24.7	25.46
Kadar air, W (%)	26.7	26.0	27.1	34.7	28.0	18.8	26.5	28.4	25.9
Kadar air rata-rata, W_f (%)	26.6			27.2			26.9		
Berat tanah kering, W_d (g)	249.55			253.80			252.59		



Gambar 1 Kurva Tegangan-Regangan

b. Kadar semen 5% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.24	cm
Tinggi	10.5	cm
Berat	328.6	g

Benda Uji 1

Luas	21.53772	cm2
Volume	226.1461	cm3
Berat vol.	1.453043	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 696.741 kPa e_f 5.142857 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.537721	0	0.0000	0
30	30	0.03	0.2857	21.599433	3	4.7430	21.5417
60	60	0.06	0.5714	21.661501	8	12.6480	57.2799
90	90	0.09	0.8571	21.723926	13	20.5530	92.8124
120	120	0.12	1.1429	21.786712	19	30.0390	135.2579

150	150	0.15	1.4286	21.849862	25	39.5250	177.4566
180	180	0.18	1.7143	21.913379	32	50.5920	226.4861
210	210	0.21	2.0000	21.977266	41	64.8210	289.3417
240	240	0.24	2.2857	22.041527	51	80.6310	358.8636
270	270	0.27	2.5714	22.106165	60	94.8600	420.9580
300	300	0.3	2.8571	22.171183	69	109.0890	482.6820
330	330	0.33	3.1429	22.236585	78	123.3180	544.0357
360	360	0.36	3.4286	22.302374	85	134.3850	591.1106
390	390	0.39	3.7143	22.368553	90.5	143.0805	627.4969
420	420	0.42	4.0000	22.435126	94	148.6140	649.8307
450	450	0.45	4.2857	22.502096	97	153.3570	668.5742
480	480	0.48	4.5714	22.569468	100	158.1000	687.1943
510	510	0.51	4.8571	22.637244	101.5	160.4715	695.4139
540	540	0.54	5.1429	22.705429	102	161.2620	696.7410
570	570	0.57	5.4286	22.774025	101	159.6810	687.8321
600	600	0.6	5.7143	22.843037	99	156.5190	672.1748
630	630	0.63	6.0000	22.912469	94	148.6140	636.2926
660	660	0.66	6.2857	22.982324	85	134.3850	573.6221
690	690	0.69	6.5714	23.052606	79	124.8990	531.5057
720	720	0.72	6.8571	23.12332	73.5	116.2035	492.9899
750	750	0.75	7.1429	23.194469	70.5	111.4605	471.4174
780	780	0.78	7.4286	23.266056	68	107.5080	453.3014
810	810	0.81	7.7143	23.338088	67	105.9270	445.2567
840	840	0.84	8.0000	23.410566	66	104.3460	437.2531
870	870	0.87	8.2857	23.483496	65.5	103.5555	432.5929
900	900	0.9	8.5714	23.556882	65	102.7650	427.9533
930	930	0.93	8.8571	23.630728	64.5	101.9745	423.3343
960	960	0.96	9.1429	23.705039	64	101.1840	418.7359
990	990	0.99	9.4286	23.779818	63	99.6030	410.8969
1020	1020	1.02	9.7143	23.85507	61	96.4410	396.5975
1050	1050	1.05	10.0000	23.930801	55	86.9550	356.4563
1080	1080	1.08	10.2857	24.007014	52	82.2120	335.9434
1110	1110	1.11	10.5714	24.083713	51	80.6310	328.4336
1140	1140	1.14	10.8571	24.160905	49.5	78.2595	317.7554
1170	1170	1.17	11.1429	24.238592	48	75.8880	307.1388
1200	1200	1.2	11.4286	24.316782	46.5	73.5165	296.5840
1230	1230	1.23	11.7143	24.395477	45	71.1450	286.0909
1260	1260	1.26	12.0000	24.474683	44	69.5640	278.8281
1290	1290	1.29	12.2857	24.554405	43	67.9830	271.6064

Data Benda Uji Sebelum Pengujian : Benda Uji 2

Diameter	5.23	cm	Luas	21.48292	cm2
Tinggi	10.59	cm	Volume	227.5041	cm3
Berat	329.48	g	Berat vol.	1.448238	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 693.3182 kPa e_f 3.966006 %

Waktu (detik)	deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm2)	Beban Aksial		tegangan P/A (kPa)
	arloji ukur (a)	ΔH = a x 10^{-3} (cm)			arloji Ukur	Beban (P) (kg)	
0	0	0	0.0000	21.482917	0	0.0000	0
30	30	0.03	0.2833	21.543948	1	1.5810	7.1991
60	60	0.06	0.5666	21.605327	4	6.3240	28.7144
90	90	0.09	0.8499	21.667057	7	11.0670	50.1071
120	120	0.12	1.1331	21.72914	11	17.3910	78.5147
150	150	0.15	1.4164	21.79158	18	28.4580	128.1105
180	180	0.18	1.6997	21.85438	25	39.5250	177.4199
210	210	0.21	1.9830	21.917543	35	55.3350	247.6721
240	240	0.24	2.2663	21.981072	45	71.1450	317.5152
270	270	0.27	2.5496	22.04497	54	85.3740	379.9138
300	300	0.3	2.8329	22.109242	67	105.9270	470.0043
330	330	0.33	3.1161	22.173888	78	123.3180	545.5739
360	360	0.36	3.3994	22.238915	90	142.2900	627.6677
390	390	0.39	3.6827	22.304323	98	154.9380	681.4561
420	420	0.42	3.9660	22.370118	100	158.1000	693.3182
450	450	0.45	4.2493	22.436301	94	148.6140	649.7966
480	480	0.48	4.5326	22.502878	89	140.7090	613.4128
510	510	0.51	4.8159	22.569851	84	132.8040	577.2334
540	540	0.54	5.0992	22.637223	80	126.4800	548.1100
570	570	0.57	5.3824	22.705	75	118.5750	512.3192
600	600	0.6	5.6657	22.773183	73	115.4130	497.1644
630	630	0.63	5.9490	22.841777	71	112.2510	482.0914
660	660	0.66	6.2323	22.910785	68	107.5080	460.3306
690	690	0.69	6.5156	22.980212	64	101.1840	431.9434
720	720	0.72	6.7989	23.05006	63	99.6030	423.9058
750	750	0.75	7.0822	23.120335	62	98.0220	415.9091
780	780	0.78	7.3654	23.191039	61	96.4410	407.9533
810	810	0.81	7.6487	23.262177	60	94.8600	400.0385
840	840	0.84	7.9320	23.333753	57	90.1170	378.8708
870	870	0.87	8.2153	23.405771	56	88.5360	371.0786
900	900	0.9	8.4986	23.478235	53	83.7930	350.1155

930	930	0.93	8.7819	23.551149	51	80.6310	335.8605
960	960	0.96	9.0652	23.624517	48	75.8880	315.1223
990	990	0.99	9.3484	23.698343	44	69.5640	287.9623
1020	1020	1.02	9.6317	23.772633	39	61.6590	254.4416
1050	1050	1.05	9.9150	23.847389	32	50.5920	208.1182
1080	1080	1.08	10.1983	23.922618	26	41.1060	168.5643
1110	1110	1.11	10.4816	23.998322	24.5	38.7345	158.3383

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter 5.23 cm Luas 21.48292 cm2

Tinggi 10.71 cm Volume 230.082 cm3

Berat 329.68 g Berat vol. 1.43288 g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

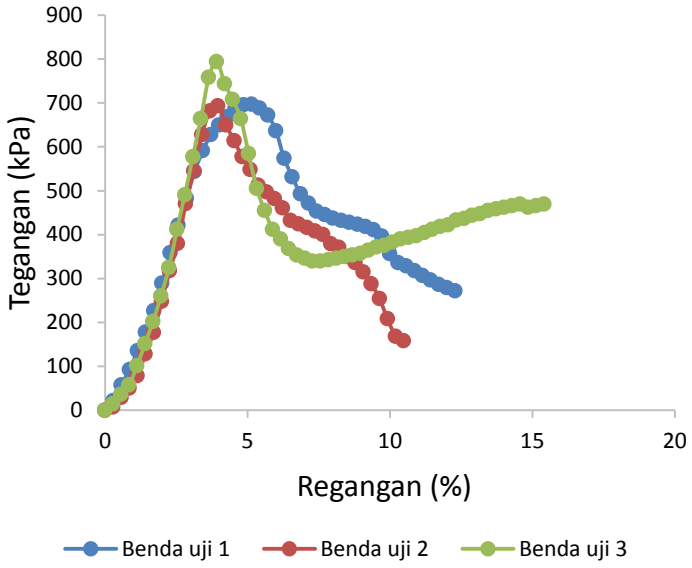
q_u 794.1459 kPa e_f 3.921569 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm2)	Beban Aksial		Tegangan P/A (kPa)
	arloji ukur (a)	ΔH = a x 10 (cm)			arloji Ukur	Beban (P) (kg)	
0	0	0	0.0000	21.482917	0	0.0000	0.0000
30	30	0.03	0.2801	21.48	2	3.1620	14.4390
60	60	0.06	0.5602	21.48	5	7.9050	36.0975
90	90	0.09	0.8403	21.48	8	12.6480	57.7561
120	120	0.12	1.1204	21.48	14	22.1340	101.0731
150	150	0.15	1.4006	21.48	21	33.2010	151.6097
180	180	0.18	1.6807	21.48	28	44.2680	202.1462
210	210	0.21	1.9608	21.48	36	56.9160	259.9023
240	240	0.24	2.2409	21.48	45	71.1450	324.8779
270	270	0.27	2.5210	21.48	57	90.1170	411.5120
300	300	0.3	2.8011	21.48	68	107.5080	490.9266
330	330	0.33	3.0812	21.48	80	126.4800	577.5607
360	360	0.36	3.3613	21.48	92	145.4520	664.1948
390	390	0.39	3.6415	21.48	105	166.0050	758.0484
420	420	0.42	3.9216	21.48	110	173.9100	794.1459
450	450	0.45	4.2017	21.48	103	162.8430	743.6094
480	480	0.48	4.4818	21.48	98	154.9380	707.5118
510	510	0.51	4.7619	21.48	92	145.4520	664.1948
540	540	0.54	5.0420	21.48	81	128.0610	584.7802
570	570	0.57	5.3221	21.48	70	110.6700	505.3656
600	600	0.6	5.6022	21.48	63	99.6030	454.8290
630	630	0.63	5.8824	21.48	57	90.1170	411.5120
660	660	0.66	6.1625	21.48	54	85.3740	389.8534

690	690	0.69	6.4426	21.48	51	80.6310	368.1949
720	720	0.72	6.7227	21.48	49	77.4690	353.7559
750	750	0.75	7.0028	21.48	48	75.8880	346.5364
780	780	0.78	7.2829	21.48	47	74.3070	339.3169
810	810	0.81	7.5630	21.48	47	74.3070	339.3169
840	840	0.84	7.8431	21.48	47.5	75.0975	342.9266
870	870	0.87	8.1232	21.48	48	75.8880	346.5364
900	900	0.9	8.4034	21.48	48.5	76.6785	350.1462
930	930	0.93	8.6835	21.48	49	77.4690	353.7559
960	960	0.96	8.9636	21.48	49.5	78.2595	357.3657
990	990	0.99	9.2437	21.48	50.5	79.8405	364.5852
1020	1020	1.02	9.5238	21.48	51.5	81.4215	371.8047
1050	1050	1.05	9.8039	21.48	52	82.2120	375.4144
1080	1080	1.08	10.0840	21.48	53	83.7930	382.6339
1110	1110	1.11	10.3641	21.48	54	85.3740	389.8534
1140	1140	1.14	10.6443	21.48	54.5	86.1645	393.4632
1170	1170	1.17	10.9244	21.48	55	86.9550	397.0730
1200	1200	1.2	11.2045	21.48	56	88.5360	404.2925
1230	1230	1.23	11.4846	21.48	57	90.1170	411.5120
1260	1260	1.26	11.7647	21.48	58	91.6980	418.7315
1290	1290	1.29	12.0448	21.48	58.5	92.4885	422.3412
1320	1320	1.32	12.3249	21.48	60	94.8600	433.1705
1350	1350	1.35	12.6050	21.48	60.5	95.6505	436.7803
1380	1380	1.38	12.8852	21.48	61.5	97.2315	443.9998
1410	1410	1.41	13.1653	21.48	62	98.0220	447.6095
1440	1440	1.44	13.4454	21.48	63	99.6030	454.8290
1470	1470	1.47	13.7255	21.48	63.5	100.3935	458.4388
1500	1500	1.5	14.0056	21.48	64	101.1840	462.0485
1530	1530	1.53	14.2857	21.48	64.5	101.9745	465.6583
1560	1560	1.56	14.5658	21.48	65	102.7650	469.2680
1590	1590	1.59	14.8459	21.48	64	101.1840	462.0485
1620	1620	1.62	15.1261	21.48	64.5	101.9745	465.6583
1650	1650	1.65	15.4062	21.48	65	102.7650	469.2680

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.24	5.23	5.23
Tinggi, H_o (cm)	10.5	10.59	10.71
Luas penampang, A (cm^2)	21.53	21.48	21.48
Volume benda uji, V_1 (cm^3)	226.10	227.46	230.04
Berat tanah, W_1 (g)	328.6	329.48	329.68
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.58	9.39	9.58	9.36	9.11	9.78	9.2	9.28	9.06
Berat cawan + tanah, W_2 (g)	29.58	29.39	29.58	29.36	29.11	29.78	29.2	29.28	29.06
Berat cawan + tanah kering, W_3 (g)	25.14	25.07	25.18	25.07	24.9	25.53	25.09	25.11	24.98
Kadar air, W (%)	28.5	27.6	28.2	27.3	26.7	27.0	25.9	26.3	25.6
Kadar air rata-rata, W_f (%)	28.1			27.0			25.9		
Berat tanah kering, W_d (g)	256.52			259.46			261.76		



Gambar 2 Kurva Tegangan-Regangan

c. Kadar semen 8% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.20	cm
Tinggi	10.4	cm
Berat	316.35	g

Benda Uji 1

Luas	21.23717	cm2
Volume	220.8665	cm3
Berat vol.	1.432313	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 810.0909 kPa ε_f 5.192308 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.237166	0	0.0000	0
30	30	0.03	0.2885	21.298605	1	1.5810	7.2820
60	60	0.06	0.5769	21.360399	3.5	5.5335	25.4132
90	90	0.09	0.8654	21.422554	5.5	8.6955	39.8192

120	120	0.12	1.1538	21.485071	7	11.0670	50.5315
150	150	0.15	1.4423	21.547954	9	14.2290	64.7795
180	180	0.18	1.7308	21.611206	12.5	19.7625	89.7081
210	210	0.21	2.0192	21.674831	18	28.4580	128.8005
240	240	0.24	2.3077	21.738832	24	37.9440	171.2284
270	270	0.27	2.5962	21.803211	32	50.5920	227.6305
300	300	0.3	2.8846	21.867973	40	63.2400	283.6954
330	330	0.33	3.1731	21.933121	49	77.4690	346.4946
360	360	0.36	3.4615	21.998658	58.5	92.4885	412.4398
390	390	0.39	3.7500	22.064588	69	109.0890	485.0138
420	420	0.42	4.0385	22.130915	80	126.4800	560.6496
450	450	0.45	4.3269	22.197641	91	143.8710	635.8218
480	480	0.48	4.6154	22.264771	103	162.8430	717.4966
510	510	0.51	4.9038	22.332308	112	177.0720	777.8311
540	540	0.54	5.1923	22.400257	117	184.9770	810.0909
570	570	0.57	5.4808	22.46862	116	183.3960	800.7233
600	600	0.6	5.7692	22.537401	102	161.2620	701.9355
630	630	0.63	6.0577	22.606605	80	126.4800	548.8523
660	660	0.66	6.3462	22.676235	71	112.2510	485.6107
690	690	0.69	6.6346	22.746296	61	96.4410	415.9298
720	720	0.72	6.9231	22.81679	57.5	90.9075	390.8536
750	750	0.75	7.2115	22.887723	53.5	84.5835	362.5368
780	780	0.78	7.5000	22.959099	50.5	79.8405	341.1438
810	810	0.81	7.7885	23.030921	48	75.8880	323.2443
840	840	0.84	8.0769	23.103194	46	72.7260	308.8067
870	870	0.87	8.3654	23.175921	45	71.1450	301.1455
900	900	0.9	8.6538	23.249108	43	67.9830	286.8554
930	930	0.93	8.9423	23.322759	41.5	65.6115	275.9746
960	960	0.96	9.2308	23.396878	40	63.2400	265.1569
990	990	0.99	9.5192	23.47147	38	60.0780	251.0985
1020	1020	1.02	9.8077	23.546538	35	55.3350	230.5376
1050	1050	1.05	10.0962	23.622089	33	52.1730	216.6689
1080	1080	1.08	10.3846	23.698126	32.5	51.3825	212.7013
1110	1110	1.11	10.6731	23.774653	31.5	49.8015	205.4931

Data Benda Uji Sebelum Pengujian : Benda Uji 2

Diameter	5.24	cm	Luas	21.59259	cm2
Tinggi	10.6	cm	Volume	228.8815	cm3
Berat	315.29	g	Berat vol.	1.377525	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 752.0973 kPa e_f 4.811321 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm2)	Beban Aksial		Tegangan P/A (kPa)
	arloji ukur (a)	ΔH = a x 10^{-3} (cm)			arloji Ukur	Beban (P) (kg)	
0	0	0	0.0000	21.592594	0	0.0000	0
30	30	0.03	0.2830	21.653878	2	3.1620	14.3250
60	60	0.06	0.5660	21.715512	5	7.9050	35.7109
90	90	0.09	0.8491	21.777497	6.5	10.2765	46.2920
120	120	0.12	1.1321	21.839837	9	14.2290	63.9137
150	150	0.15	1.4151	21.902535	12	18.9720	84.9743
180	180	0.18	1.6981	21.965595	19	30.0390	134.1564
210	210	0.21	1.9811	22.029018	26	41.1060	183.0539
240	240	0.24	2.2642	22.092808	34	53.7540	238.6871
270	270	0.27	2.5472	22.15697	43.5	68.7735	304.4947
300	300	0.3	2.8302	22.221504	54	85.3740	376.8957
330	330	0.33	3.1132	22.286416	66	104.3460	459.3086
360	360	0.36	3.3962	22.351709	76.5	120.9465	530.8253
390	390	0.39	3.6792	22.417384	86	135.9660	594.9965
420	420	0.42	3.9623	22.483447	94	148.6140	648.4341
450	450	0.45	4.2453	22.549901	103	162.8430	708.4243
480	480	0.48	4.5283	22.616749	108	170.7480	740.6183
510	510	0.51	4.8113	22.683994	110	173.9100	752.0973
540	540	0.54	5.0943	22.75164	102	161.2620	695.3258
570	570	0.57	5.3774	22.81969	92	145.4520	625.2864
600	600	0.6	5.6604	22.88815	84	132.8040	569.2060
630	630	0.63	5.9434	22.957021	77	121.7370	520.2069
660	660	0.66	6.2264	23.026307	67	105.9270	451.2855
690	690	0.69	6.5094	23.096014	61	96.4410	409.6318
720	720	0.72	6.7925	23.166143	57	90.1170	381.6120
750	750	0.75	7.0755	23.2367	51	80.6310	340.4055
780	780	0.78	7.3585	23.307688	47	74.3070	312.7516
810	810	0.81	7.6415	23.379111	43.5	68.7735	288.5773
840	840	0.84	7.9245	23.450973	41	64.8210	271.1589
870	870	0.87	8.2075	23.523278	39	61.6590	257.1388
900	900	0.9	8.4906	23.59603	37.5	59.2875	246.4865
930	930	0.93	8.7736	23.669234	37	58.4970	242.4479

960	960	0.96	9.0566	23.742894	35.5	56.1255	231.8972
990	990	0.99	9.3396	23.817013	35	55.3350	227.9196
1020	1020	1.02	9.6226	23.891597	35	55.3350	227.2081
1050	1050	1.05	9.9057	23.966649	35	55.3350	226.4966

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter	5.20	cm	Luas	21.23717	cm2
Tinggi	10.7	cm	Volume	227.2377	cm3
Berat	316.5	g	Berat vol.	1.392815	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

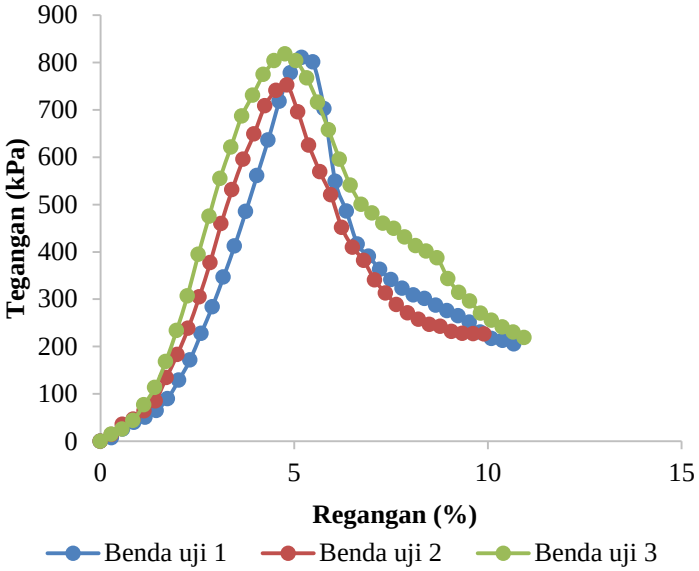
q_u 817.9417 kPa e_f 4.766355 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	luas terkoreksi A (cm2)	Beban Aksial		Tegangan P/A (kPa)
	arloji ukur (a)	ΔH = a x 10^(-3)			arloji Ukur	Beban (P) (kg)	
0	0	0	0.0000	21.237166	0	0.0000	0.0000
30	30	0.03	0.2804	21.24	2	3.1620	14.6061
60	60	0.06	0.5607	21.24	3.5	5.5335	25.5607
90	90	0.09	0.8411	21.24	6	9.4860	43.8183
120	120	0.12	1.1215	21.24	10.5	16.6005	76.6820
150	150	0.15	1.4019	21.24	15.5	24.5055	113.1973
180	180	0.18	1.6822	21.24	23	36.3630	167.9702
210	210	0.21	1.9626	21.24	32	50.5920	233.6976
240	240	0.24	2.2430	21.24	42	66.4020	306.7281
270	270	0.27	2.5234	21.24	54	85.3740	394.3647
300	300	0.3	2.8037	21.24	65	102.7650	474.6983
330	330	0.33	3.0841	21.24	76	120.1560	555.0318
360	360	0.36	3.3645	21.24	85	134.3850	620.7593
390	390	0.39	3.6449	21.24	94	148.6140	686.4868
420	420	0.42	3.9252	21.24	100	158.1000	730.3051
450	450	0.45	4.2056	21.24	106	167.5860	774.1234
480	480	0.48	4.4860	21.24	110	173.9100	803.3356
510	510	0.51	4.7664	21.24	112	177.0720	817.9417
540	540	0.54	5.0467	21.24	110	173.9100	803.3356
570	570	0.57	5.3271	21.24	105	166.0050	766.8203
600	600	0.6	5.6075	21.24	98	154.9380	715.6990
630	630	0.63	5.8879	21.24	90	142.2900	657.2746
660	660	0.66	6.1682	21.24	81.5	128.8515	595.1986
690	690	0.69	6.4486	21.24	74	116.9940	540.4257
720	720	0.72	6.7290	21.24	68.5	108.2985	500.2590
750	750	0.75	7.0093	21.24	66	104.3460	482.0013
780	780	0.78	7.2897	21.24	63	99.6030	460.0922

810	810	0.81	7.5701	21.24	61.5	97.2315	449.1376
840	840	0.84	7.8505	21.24	59	93.2790	430.8800
870	870	0.87	8.1308	21.24	56.5	89.3265	412.6224
900	900	0.9	8.4112	21.24	55	86.9550	401.6678
930	930	0.93	8.6916	21.24	53	83.7930	387.0617
960	960	0.96	8.9720	21.24	47	74.3070	343.2434
990	990	0.99	9.2523	21.24	43	67.9830	314.0312
1020	1020	1.02	9.5327	21.24	40.5	64.0305	295.7735
1050	1050	1.05	9.8131	21.24	37	58.4970	270.2129
1080	1080	1.08	10.0935	21.24	35	55.3350	255.6068
1110	1110	1.11	10.3738	21.24	33	52.1730	241.0007
1140	1140	1.14	10.6542	21.24	31.5	49.8015	230.0461
1170	1170	1.17	10.9346	21.24	30	47.4300	219.0915

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.20	5.24	5.20
Tinggi, H_o (cm)	10.4	10.6	10.7
Luas penampang, A (cm^2)	21.23	21.59	21.23
Volume benda uji, V_1 (cm^3)	220.82	228.84	227.19
Berat tanah, W_1 (g)	316.35	315.29	316.5
Berat jenis, G_s	2.65	2.65	2.65

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.14	9.38	9.3	9.12	9.37	9.73	9.34	9.4	9.39
Berat cawan + tanah, W_2 (g)	29.14	29.38	29.3	29.12	29.37	29.73	29.34	29.4	29.39
Berat cawan + tanah kering, W_3 (g)	24.87	25.17	24.95	25.16	25.33	25.81	25.43	25.55	25.54
Kadar air, W (%)	27.1	26.7	27.8	24.7	25.3	24.4	24.3	23.8	23.8
Kadar air rata-rata, W_f (%)	27.2			24.8			24.0		
Berat tanah kering, W_d (g)	248.70			252.65			255.26		



Gambar 3 Kurva Tegangan-Regangan

2. Benda uji dengan umur pemeraman 1 hari

a. Kadar semen 3% dan serat 0,4%

Data Benda Uji Sebelum Pengujian : Benda Uji 1

Diameter	5.23	cm	Luas	21.48292	cm2
Tinggi	10.38	cm	Volume	222.9927	cm3
Berat	318.12	g	Berat vol.	1.426594	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 794.1459 kPa e_f 5.780347 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	21.48	0	0.0000	0
30	30	0.03	0.2890	21.48	1	1.5810	7.2195
60	60	0.06	0.5780	21.48	3.5	5.5335	25.2683
90	90	0.09	0.8671	21.48	6	9.4860	43.3170
120	120	0.12	1.1561	21.48	8.5	13.4385	61.3658
150	150	0.15	1.4451	21.48	12	18.9720	86.6341
180	180	0.18	1.7341	21.48	17	26.8770	122.7316
210	210	0.21	2.0231	21.48	22	34.7820	158.8292
240	240	0.24	2.3121	21.48	27	42.6870	194.9267
270	270	0.27	2.6012	21.48	34	53.7540	245.4633
300	300	0.3	2.8902	21.48	40	63.2400	288.7803

330	330	0.33	3.1792	21.48	48.5	76.6785	350.1462
360	360	0.36	3.4682	21.48	58	91.6980	418.7315
390	390	0.39	3.7572	21.48	67	105.9270	483.7071
420	420	0.42	4.0462	21.48	76	120.1560	548.6826
450	450	0.45	4.3353	21.48	85	134.3850	613.6582
480	480	0.48	4.6243	21.48	92	145.4520	664.1948
510	510	0.51	4.9133	21.48	99	156.5190	714.7313
540	540	0.54	5.2023	21.48	104	164.4240	750.8289
570	570	0.57	5.4913	21.48	108.5	171.5385	783.3166
600	600	0.6	5.7803	21.48	110	173.9100	794.1459
630	630	0.63	6.0694	21.48	108.5	171.5385	783.3166
660	660	0.66	6.3584	21.48	104	164.4240	750.8289
690	690	0.69	6.6474	21.48	92	145.4520	664.1948
720	720	0.72	6.9364	21.48	69	109.0890	498.1461
750	750	0.75	7.2254	21.48	50	79.0500	360.9754
780	780	0.78	7.5145	21.48	45	71.1450	324.8779
810	810	0.81	7.8035	21.48	34	53.7540	245.4633
840	840	0.84	8.0925	21.48	30	47.4300	216.5852
870	870	0.87	8.3815	21.48	25	39.5250	180.4877
900	900	0.9	8.6705	21.48	21	33.2010	151.6097
930	930	0.93	8.9595	21.48	17	26.8770	122.7316
960	960	0.96	9.2486	21.48	15	23.7150	108.2926
990	990	0.99	9.5376	21.48	14	22.1340	101.0731
1020	1020	1.02	9.8266	21.48	12	18.9720	86.6341
1050	1050	1.05	10.1156	21.48	11	17.3910	79.4146
1080	1080	1.08	10.4046	21.48	10	15.8100	72.1951
1110	1110	1.11	10.6936	21.48	9	14.2290	64.9756
1140	1140	1.14	10.9827	21.48	9	14.2290	64.9756
1170	1170	1.17	11.2717	21.48	9	14.2290	64.9756
1200	1200	1.2	11.5607	21.48	9	14.2290	64.9756
1230	1230	1.23	11.8497	21.48	9	14.2290	64.9756

Data Benda Uji Sebelum Pengujian :

Diameter	5.23	cm
Tinggi	10.35	cm
Berat	319.87	g

Benda Uji 2

Luas	21.48292	cm2
Volume	222.3482	cm3
Berat vol.	1.438599	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 866.5293 kPa $\square_f$ 6.956522 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.482917	0	0.0000	0.0000
30	30	0.03	0.2899	21.545368	1	1.5810	7.1986
60	60	0.06	0.5797	21.608182	2	3.1620	14.3553
90	90	0.09	0.8696	21.671364	4	6.3240	28.6269
120	120	0.12	1.1594	21.734916	6	9.4860	42.8148
150	150	0.15	1.4493	21.798843	8	12.6480	56.9190
180	180	0.18	1.7391	21.863146	10	15.8100	70.9395
210	210	0.21	2.0290	21.92783	12	18.9720	84.8763
240	240	0.24	2.3188	21.992898	17	26.8770	119.8857
270	270	0.27	2.6087	22.058353	22	34.7820	154.6858
300	300	0.3	2.8986	22.124199	28	44.2680	196.2869
330	330	0.33	3.1884	22.190439	35	55.3350	244.6262
360	360	0.36	3.4783	22.257077	41	64.8210	285.7042
390	390	0.39	3.7681	22.324116	49	77.4690	340.4260
420	420	0.42	4.0580	22.39156	58	91.6980	401.7395
450	450	0.45	4.3478	22.459414	70	110.6700	483.3932
480	480	0.48	4.6377	22.527679	80	126.4800	550.7752
510	510	0.51	4.9275	22.596361	89	140.7090	610.8750
540	540	0.54	5.2174	22.665463	97	153.3570	663.7553
570	570	0.57	5.5072	22.734989	105	166.0050	716.3008
600	600	0.6	5.7971	22.804943	112	177.0720	761.7104
630	630	0.63	6.0870	22.875329	118	186.5580	800.0471
660	660	0.66	6.3768	22.94615	124	196.0440	838.1326
690	690	0.69	6.6667	23.017412	127	200.7870	855.7524
720	720	0.72	6.9565	23.089117	129	203.9490	866.5293
750	750	0.75	7.2464	23.16127	128	202.3680	857.1335
780	780	0.78	7.5362	23.233876	124	196.0440	827.7532
810	810	0.81	7.8261	23.306939	115	181.8150	765.2679
840	840	0.84	8.1159	23.380462	110	173.9100	729.6935
870	870	0.87	8.4058	23.454451	105	166.0050	694.3284
900	900	0.9	8.6957	23.52891	101	159.6810	665.7642

930	930	0.93	8.9855	23.603842	98	154.9380	643.9383
960	960	0.96	9.2754	23.679254	93	147.0330	609.1382
990	990	0.99	9.5652	23.755149	89.5	141.4995	584.3407
1020	1020	1.02	9.8551	23.831532	86	135.9660	559.6898
1050	1050	1.05	10.1449	23.908408	83	131.2230	538.4288
1080	1080	1.08	10.4348	23.985782	79.5	125.6895	514.0604
1110	1110	1.11	10.7246	24.063658	76.5	120.9465	493.0610
1140	1140	1.14	11.0145	24.142041	73.5	116.2035	472.1872
1170	1170	1.17	11.3043	24.220936	71	112.2510	454.6407
1200	1200	1.2	11.5942	24.300349	69	109.0890	440.3900
1230	1230	1.23	11.8841	24.380285	65.5	103.5555	416.6807
1260	1260	1.26	12.1739	24.460748	63	99.6030	399.4585
1290	1290	1.29	12.4638	24.541743	60	94.8600	379.1811
1320	1320	1.32	12.7536	24.623277	56	88.5360	352.7305
1350	1350	1.35	13.0435	24.705355	52	82.2120	326.4473
1380	1380	1.38	13.3333	24.787982	49	77.4690	306.5885
1410	1410	1.41	13.6232	24.871163	46	72.7260	286.8551
1440	1440	1.44	13.9130	24.954904	43.5	68.7735	270.3549
1470	1470	1.47	14.2029	25.039211	41	64.8210	253.9593
1500	1500	1.5	14.4928	25.12409	38	60.0780	234.5817
1530	1530	1.53	14.7826	25.209546	35	55.3350	215.3297
1560	1560	1.56	15.0725	25.295585	30	47.4300	183.9405
1590	1590	1.59	15.3623	25.382214	28	44.2680	171.0919
1620	1620	1.62	15.6522	25.469438	25	39.5250	152.2375
1650	1650	1.65	15.9420	25.557264	23.5	37.1535	142.6114
1680	1680	1.68	16.2319	25.645697	22.5	35.5725	136.0720
1710	1710	1.71	16.5217	25.734745	22	34.7820	132.5878
1740	1740	1.74	16.8116	25.824413	23	36.3630	138.1333
1770	1770	1.77	17.1014	25.914708	23.5	37.1535	140.6444
1800	1800	1.8	17.3913	26.005637	24.5	38.7345	146.1166
1830	1830	1.83	17.6812	26.097206	25	39.5250	148.5754
1860	1860	1.86	17.9710	26.189422	26.5	41.8965	156.9354
1890	1890	1.89	18.2609	26.282293	28	44.2680	165.2326
1920	1920	1.92	18.5507	26.375824	29	45.8490	170.5269
1950	1950	1.95	18.8406	26.470023	30	47.4300	175.7793
1980	1980	1.98	19.1304	26.564898	30	47.4300	175.1515
2010	2010	2.01	19.4203	26.660455	30	47.4300	174.5238
2040	2040	2.04	19.7101	26.756702	30	47.4300	173.8960

Data Benda Uji Sebelum Pengujian :

Diameter	5.24	cm
Tinggi	10.44	cm
Berat	323.96	g

Benda Uji 3

Luas	21.56515	cm2
Volume	225.1402	cm3
Berat vol.	1.438926	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 986.8335 kPa e_f 6.376812 %

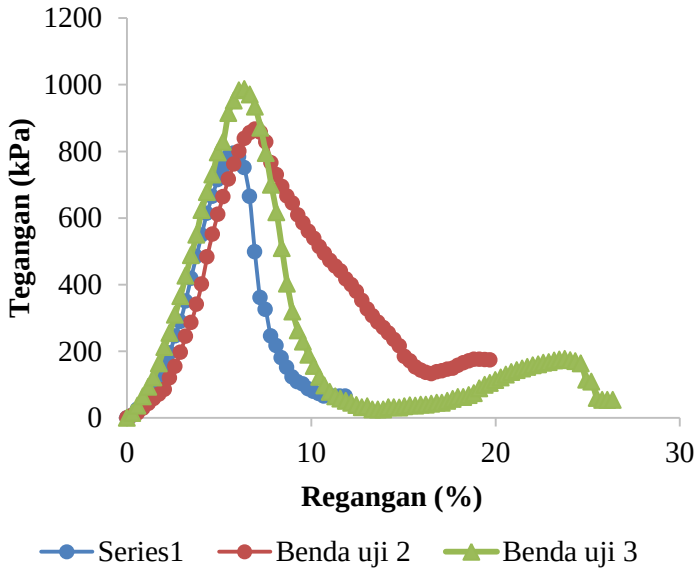
Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.482917	0	0.0000	0.0000
30	30	0.03	0.2899	21.545368	2	3.1620	14.3972
60	60	0.06	0.5797	21.608182	5	7.9050	35.8883
90	90	0.09	0.8696	21.671364	9	14.2290	64.4106
120	120	0.12	1.1594	21.734916	13	20.5530	92.7654
150	150	0.15	1.4493	21.798843	17	26.8770	120.9529
180	180	0.18	1.7391	21.863146	23	36.3630	163.1609
210	210	0.21	2.0290	21.92783	30	47.4300	212.1908
240	240	0.24	2.3188	21.992898	36	56.9160	253.8756
270	270	0.27	2.6087	22.058353	44	69.5640	309.3716
300	300	0.3	2.8986	22.124199	52	82.2120	364.5329
330	330	0.33	3.1884	22.190439	61	96.4410	426.3486
360	360	0.36	3.4783	22.257077	70	110.6700	487.7876
390	390	0.39	3.7681	22.324116	79	124.8990	548.8500
420	420	0.42	4.0580	22.39156	90	142.2900	623.3888
450	450	0.45	4.3478	22.459414	98	154.9380	676.7504
480	480	0.48	4.6377	22.527679	106	167.5860	729.7772
510	510	0.51	4.9275	22.596361	116	183.3960	796.1967
540	540	0.54	5.2174	22.665463	121	191.3010	827.9834
570	570	0.57	5.5072	22.734989	134	211.8540	914.1362
600	600	0.6	5.7971	22.804943	140	221.3400	952.1380
630	630	0.63	6.0870	22.875329	145	229.2450	983.1087
660	660	0.66	6.3768	22.94615	146	230.8260	986.8335
690	690	0.69	6.6667	23.017412	144	227.6640	970.3019
720	720	0.72	6.9565	23.089117	139	219.7590	933.7021
750	750	0.75	7.2464	23.16127	130	205.5300	870.5262
780	780	0.78	7.5362	23.233876	119	188.1390	794.3761
810	810	0.81	7.8261	23.306939	105	166.0050	698.7228
840	840	0.84	8.1159	23.380462	93	147.0330	616.9227
870	870	0.87	8.4058	23.454451	77	121.7370	509.1741
900	900	0.9	8.6957	23.52891	61	96.4410	402.0952

930	930	0.93	8.9855	23.603842	48.5	76.6785	318.6837
960	960	0.96	9.2754	23.679254	40	63.2400	261.9949
990	990	0.99	9.5652	23.755149	35	55.3350	228.5131
1020	1020	1.02	9.8551	23.831532	29	45.8490	188.7326
1050	1050	1.05	10.1449	23.908408	24	37.9440	155.6903
1080	1080	1.08	10.4348	23.985782	19	30.0390	122.8572
1110	1110	1.11	10.7246	24.063658	15	23.7150	96.6786
1140	1140	1.14	11.0145	24.142041	12	18.9720	77.0918
1170	1170	1.17	11.3043	24.220936	10	15.8100	64.0339
1200	1200	1.2	11.5942	24.300349	9	14.2290	57.4422
1230	1230	1.23	11.8841	24.380285	8	12.6480	50.8923
1260	1260	1.26	12.1739	24.460748	7	11.0670	44.3843
1290	1290	1.29	12.4638	24.541743	6	9.4860	37.9181
1320	1320	1.32	12.7536	24.623277	5	7.9050	31.4938
1350	1350	1.35	13.0435	24.705355	5.5	8.6955	34.5281
1380	1380	1.38	13.3333	24.787982	4	6.3240	25.0276
1410	1410	1.41	13.6232	24.871163	4	6.3240	24.9439
1440	1440	1.44	13.9130	24.954904	4	6.3240	24.8602
1470	1470	1.47	14.2029	25.039211	5	7.9050	30.9706
1500	1500	1.5	14.4928	25.12409	5	7.9050	30.8660
1530	1530	1.53	14.7826	25.209546	5	7.9050	30.7614
1560	1560	1.56	15.0725	25.295585	5.5	8.6955	33.7224
1590	1590	1.59	15.3623	25.382214	6	9.4860	36.6625
1620	1620	1.62	15.6522	25.469438	6	9.4860	36.5370
1650	1650	1.65	15.9420	25.557264	6.5	10.2765	39.4457
1680	1680	1.68	16.2319	25.645697	6.5	10.2765	39.3097
1710	1710	1.71	16.5217	25.734745	7	11.0670	42.1870
1740	1740	1.74	16.8116	25.824413	7.5	11.8575	45.0435
1770	1770	1.77	17.1014	25.914708	7.5	11.8575	44.8865
1800	1800	1.8	17.3913	26.005637	8.5	13.4385	50.6935
1830	1830	1.83	17.6812	26.097206	9.5	15.0195	56.4586
1860	1860	1.86	17.9710	26.189422	10.5	16.6005	62.1819
1890	1890	1.89	18.2609	26.282293	10.5	16.6005	61.9622
1920	1920	1.92	18.5507	26.375824	11.5	18.1815	67.6227
1950	1950	1.95	18.8406	26.470023	12.5	19.7625	73.2414
1980	1980	1.98	19.1304	26.564898	15	23.7150	87.5758
2010	2010	2.01	19.4203	26.660455	17	26.8770	98.8968
2040	2040	2.04	19.7101	26.756702	18	28.4580	104.3376
2070	2070	2.07	20.0000	26.853647	19.5	30.8295	112.6243
2100	2100	2.1	20.2899	26.951296	21	33.2010	120.8483
2130	2130	2.13	20.5797	27.049659	22.5	35.5725	129.0095
2160	2160	2.16	20.8696	27.148742	24	37.9440	137.1079
2190	2190	2.19	21.1594	27.248553	25	39.5250	142.2976

2220	2220	2.22	21.4493	27.349102	26	41.1060	147.4454
2250	2250	2.25	21.7391	27.450394	27	42.6870	152.5513
2280	2280	2.28	22.0290	27.552441	28	44.2680	157.6155
2310	2310	2.31	22.3188	27.655248	28.5	45.0585	159.8336
2340	2340	2.34	22.6087	27.758826	29.5	46.6395	164.8245
2370	2370	2.37	22.8986	27.863182	30	47.4300	166.9904
2400	2400	2.4	23.1884	27.968326	31	49.0110	171.9080
2430	2430	2.43	23.4783	28.074267	31.5	49.8015	174.0215
2460	2460	2.46	23.7681	28.181013	32	50.5920	176.1141
2490	2490	2.49	24.0580	28.288574	31.5	49.8015	172.7032
2520	2520	2.52	24.3478	28.39696	31	49.0110	169.3132
2550	2550	2.55	24.6377	28.506179	30	47.4300	163.2237
2580	2580	2.58	24.9275	28.616241	21	33.2010	113.8171
2610	2610	2.61	25.2174	28.727157	20	31.6200	107.9787
2640	2640	2.64	25.5072	28.838936	11	17.3910	59.1581
2670	2670	2.67	25.7971	28.951588	10	15.8100	53.5708
2700	2700	2.7	26.0870	29.065124	10	15.8100	53.3616
2730	2730	2.73	26.3768	29.179553	10	15.8100	53.1523

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.23	5.23	5.24
Tinggi, H_o (cm)	10.38	10.35	10.44
Luas penampang, A (cm^2)	21.48	21.48	21.56
Volume benda uji, V_1 (cm^3)	222.95	222.31	225.10
Berat tanah, W_1 (g)	318.12	319.87	323.96
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.34	9.17	9.12	9.17	9.36	9.35	9.81	9.17	9.2
Berat cawan + tanah, W_2 (g)	29.34	29.17	29.12	29.17	29.36	29.35	29.81	29.17	29.2
Berat cawan + tanah kering, W_3 (g)	24.79	24.71	24.72	24.87	24.89	25	25.2	24.78	24.86
Kadar air, W (%)	29.4	28.7	28.2	27.4	28.8	27.8	30.0	28.1	27.7
Kadar air rata-rata, W_f (%)	28.8			28.0			28.6		
Berat tanah kering, W_d (g)	247.02			249.92			251.92		



Gambar 4 Kurva Tegangan-Regangan

b. Kadar semen 5% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.23	cm
Tinggi	10.38	cm
Berat	318.12	g

Benda Uji 1

Luas	21.48292	cm2
Volume	222.9927	cm3
Berat vol.	1.426594	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 974.6336 kPa e_f 5.491329 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	21.48	0	0.0000	0
30	30	0.03	0.2890	21.48	1	1.5810	7.2195
60	60	0.06	0.5780	21.48	3	4.7430	21.6585
90	90	0.09	0.8671	21.48	5	7.9050	36.0975
120	120	0.12	1.1561	21.48	9	14.2290	64.9756
150	150	0.15	1.4451	21.48	12	18.9720	86.6341
180	180	0.18	1.7341	21.48	14.5	22.9245	104.6829
210	210	0.21	2.0231	21.48	18	28.4580	129.9511
240	240	0.24	2.3121	21.48	22	34.7820	158.8292
270	270	0.27	2.6012	21.48	29	45.8490	209.3657
300	300	0.3	2.8902	21.48	34	53.7540	245.4633
330	330	0.33	3.1792	21.48	42	66.4020	303.2193
360	360	0.36	3.4682	21.48	55	86.9550	397.0730
390	390	0.39	3.7572	21.48	70	110.6700	505.3656

420	420	0.42	4.0462	21.48	86	135.9660	620.8777
450	450	0.45	4.3353	21.48	100	158.1000	721.9508
480	480	0.48	4.6243	21.48	113	178.6530	815.8044
510	510	0.51	4.9133	21.48	122	192.8820	880.7800
540	540	0.54	5.2023	21.48	131	207.1110	945.7556
570	570	0.57	5.4913	21.48	135	213.4350	974.6336
600	600	0.6	5.7803	21.48	133	210.2730	960.1946
630	630	0.63	6.0694	21.48	125	197.6250	902.4385
660	660	0.66	6.3584	21.48	119	188.1390	859.1215
690	690	0.69	6.6474	21.48	115	181.8150	830.2435
720	720	0.72	6.9364	21.48	109	172.3290	786.9264
750	750	0.75	7.2254	21.48	104	164.4240	750.8289
780	780	0.78	7.5145	21.48	100	158.1000	721.9508
810	810	0.81	7.8035	21.48	97	153.3570	700.2923
840	840	0.84	8.0925	21.48	93	147.0330	671.4143
870	870	0.87	8.3815	21.48	90	142.2900	649.7557
900	900	0.9	8.6705	21.48	88	139.1280	635.3167
930	930	0.93	8.9595	21.48	85	134.3850	613.6582
960	960	0.96	9.2486	21.48	82.5	130.4325	595.6094
990	990	0.99	9.5376	21.48	80	126.4800	577.5607
1020	1020	1.02	9.8266	21.48	77	121.7370	555.9021
1050	1050	1.05	10.1156	21.48	74	116.9940	534.2436
1080	1080	1.08	10.4046	21.48	70	110.6700	505.3656
1110	1110	1.11	10.6936	21.48	64	101.1840	462.0485
1140	1140	1.14	10.9827	21.48	60	94.8600	433.1705
1170	1170	1.17	11.2717	21.48	56	88.5360	404.2925
1200	1200	1.2	11.5607	21.48	55	86.9550	397.0730
1230	1230	1.23	11.8497	21.48	54	85.3740	389.8534
1260	1260	1.26	12.1387	21.48	53.5	84.5835	386.2437
1290	1290	1.29	12.4277	21.48	53	83.7930	382.6339
1320	1320	1.32	12.7168	21.48	53	83.7930	382.6339
1350	1350	1.35	13.0058	21.48	53	83.7930	382.6339
1380	1380	1.38	13.2948	21.48	53	83.7930	382.6339
1410	1410	1.41	13.5838	21.48	53	83.7930	382.6339

Data Benda Uji Sebelum Pengujian :

Diameter	5.23	cm
Tinggi	10.35	cm
Berat	319.87	g

Benda Uji 2

Luas	21.48292	cm2
Volume	222.3482	cm3
Berat vol.	1.438599	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1034.1475 kPa e_f 6.376812 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.482917	0	0.0000	0.0000
30	30	0.03	0.2899	21.545368	2	3.1620	14.3972
60	60	0.06	0.5797	21.608182	4	6.3240	28.7106
90	90	0.09	0.8696	21.671364	6	9.4860	42.9404
120	120	0.12	1.1594	21.734916	10	15.8100	71.3580
150	150	0.15	1.4493	21.798843	13	20.5530	92.4934
180	180	0.18	1.7391	21.863146	15.5	24.5055	109.9562
210	210	0.21	2.0290	21.92783	19	30.0390	134.3875
240	240	0.24	2.3188	21.992898	23	36.3630	162.1983
270	270	0.27	2.6087	22.058353	30	47.4300	210.9352
300	300	0.3	2.8986	22.124199	35	55.3350	245.3587
330	330	0.33	3.1884	22.190439	43	67.9830	300.5408
360	360	0.36	3.4783	22.257077	52	82.2120	362.3565
390	390	0.39	3.7681	22.324116	65	102.7650	451.5855
420	420	0.42	4.0580	22.39156	78	123.3180	540.2703
450	450	0.45	4.3478	22.459414	95	150.1950	656.0336
480	480	0.48	4.6377	22.527679	110	173.9100	757.3160
510	510	0.51	4.9275	22.596361	121	191.3010	830.5155
540	540	0.54	5.2174	22.665463	132	208.6920	903.2547
570	570	0.57	5.5072	22.734989	141	222.9210	961.8896
600	600	0.6	5.7971	22.804943	148	233.9880	1006.5459
630	630	0.63	6.0870	22.875329	152	240.3120	1030.5691
660	660	0.66	6.3768	22.94615	153	241.8930	1034.1475
690	690	0.69	6.6667	23.017412	149	235.5690	1003.9930
720	720	0.72	6.9565	23.089117	141	222.9210	947.1367
750	750	0.75	7.2464	23.16127	131	207.1110	877.2226
780	780	0.78	7.5362	23.233876	122	192.8820	814.4024
810	810	0.81	7.8261	23.306939	114	180.2340	758.6134
840	840	0.84	8.1159	23.380462	106	167.5860	703.1592
870	870	0.87	8.4058	23.454451	101	159.6810	667.8778
900	900	0.9	8.6957	23.52891	97	153.3570	639.3973
930	930	0.93	8.9855	23.603842	93	147.0330	611.0843

960	960	0.96	9.2754	23.679254	88	139.1280	576.3888
990	990	0.99	9.5652	23.755149	84	132.8040	548.4315
1020	1020	1.02	9.8551	23.831532	80	126.4800	520.6416
1050	1050	1.05	10.1449	23.908408	74	116.9940	480.0450
1080	1080	1.08	10.4348	23.985782	66	104.3460	426.7671
1110	1110	1.11	10.7246	24.063658	60	94.8600	386.7145
1140	1140	1.14	11.0145	24.142041	55	86.9550	353.3374
1170	1170	1.17	11.3043	24.220936	51	80.6310	326.5729
1200	1200	1.2	11.5942	24.300349	46	72.7260	293.5933
1230	1230	1.23	11.8841	24.380285	42	66.4020	267.1846
1260	1260	1.26	12.1739	24.460748	37	58.4970	234.6026
1290	1290	1.29	12.4638	24.541743	35	55.3350	221.1890
1320	1320	1.32	12.7536	24.623277	33	52.1730	207.8591

Data Benda Uji Sebelum Pengujian :

Diameter	5.24	cm
Tinggi	10.44	cm
Berat	323.96	g

Benda Uji 3

Luas	21.56515	cm2
Volume	225.1402	cm3
Berat vol.	1.438926	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

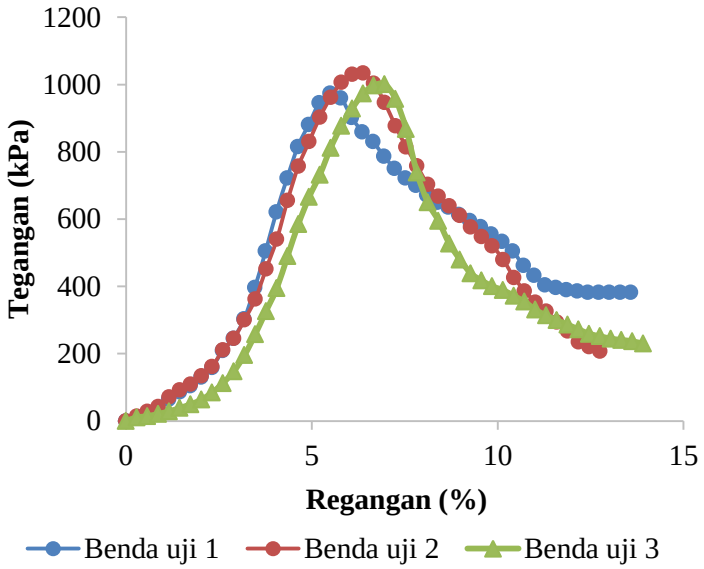
q_u 1000.8750 kPa e_f 6.956522 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.482917	0	0.0000	0.0000
30	30	0.03	0.2899	21.545368	1.5	2.3715	10.7979
60	60	0.06	0.5797	21.608182	2	3.1620	14.3553
90	90	0.09	0.8696	21.671364	3	4.7430	21.4702
120	120	0.12	1.1594	21.734916	4	6.3240	28.5432
150	150	0.15	1.4493	21.798843	5.5	8.6955	39.1318
180	180	0.18	1.7391	21.863146	7	11.0670	49.6577
210	210	0.21	2.0290	21.92783	9	14.2290	63.6572
240	240	0.24	2.3188	21.992898	12	18.9720	84.6252
270	270	0.27	2.6087	22.058353	16	25.2960	112.4988
300	300	0.3	2.8986	22.124199	21	33.2010	147.2152
330	330	0.33	3.1884	22.190439	28	44.2680	195.7010
360	360	0.36	3.4783	22.257077	37	58.4970	257.8306
390	390	0.39	3.7681	22.324116	47	74.3070	326.5310
420	420	0.42	4.0580	22.39156	57	90.1170	394.8129
450	450	0.45	4.3478	22.459414	71	112.2510	490.2988
480	480	0.48	4.6377	22.527679	85	134.3850	585.1987
510	510	0.51	4.9275	22.596361	97	153.3570	665.7851

540	540	0.54	5.2174	22.665463	107	169.1670	732.1837
570	570	0.57	5.5072	22.734989	119	188.1390	811.8075
600	600	0.6	5.7971	22.804943	129	203.9490	877.3272
630	630	0.63	6.0870	22.875329	137	216.5970	928.8682
660	660	0.66	6.3768	22.94615	144	227.6640	973.3153
690	690	0.69	6.6667	23.017412	148	233.9880	997.2547
720	720	0.72	6.9565	23.089117	149	235.5690	1000.8750
750	750	0.75	7.2464	23.16127	143	226.0830	957.5788
780	780	0.78	7.5362	23.233876	130	205.5300	867.8058
810	810	0.81	7.8261	23.306939	111	175.4910	738.6499
840	840	0.84	8.1159	23.380462	98	154.9380	650.0906
870	870	0.87	8.4058	23.454451	90	142.2900	595.1386
900	900	0.9	8.6957	23.52891	80	126.4800	527.3380
930	930	0.93	8.9855	23.603842	73	115.4130	479.6683
960	960	0.96	9.2754	23.679254	67	105.9270	438.8415
990	990	0.99	9.5652	23.755149	64	101.1840	417.8526
1020	1020	1.02	9.8551	23.831532	61.5	97.2315	400.2433
1050	1050	1.05	10.1449	23.908408	60	94.8600	389.2257
1080	1080	1.08	10.4348	23.985782	57.5	90.9075	371.8047
1110	1110	1.11	10.7246	24.063658	55	86.9550	354.4883
1140	1140	1.14	11.0145	24.142041	51.5	81.4215	330.8523
1170	1170	1.17	11.3043	24.220936	49	77.4690	313.7661
1200	1200	1.2	11.5942	24.300349	47	74.3070	299.9758
1230	1230	1.23	11.8841	24.380285	45	71.1450	286.2692
1260	1260	1.26	12.1739	24.460748	43	67.9830	272.6463
1290	1290	1.29	12.4638	24.541743	41	64.8210	259.1071
1320	1320	1.32	12.7536	24.623277	40	63.2400	251.9504
1350	1350	1.35	13.0435	24.705355	39	61.6590	244.8355
1380	1380	1.38	13.3333	24.787982	38.5	60.8685	240.8909
1410	1410	1.41	13.6232	24.871163	38	60.0780	236.9673
1440	1440	1.44	13.9130	24.954904	37	58.4970	229.9570

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.23	5.23	5.24
Tinggi, H_o (cm)	10.38	10.35	10.44
Luas penampang, A (cm^2)	21.48	21.48	21.56
Volume benda uji, V_1 (cm^3)	222.95	222.31	225.10
Berat tanah, W_1 (g)	318.12	319.87	323.96
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.35	9.11	9.45	9.39	9.58	9.17	9.22	9.32	9.11
Berat cawan + tanah, W_2 (g)	29.35	29.11	29.45	29.39	29.58	29.17	29.22	29.32	29.11
Berat cawan + tanah kering, W_3 (g)	24.74	24.59	24.9	24.95	25.25	24.66	24.76	24.92	24.61
Kadar air, W (%)	30.0	29.2	29.4	28.5	27.6	29.1	28.7	28.2	29.0
Kadar air rata-rata, W_f (%)	29.5			28.4			28.6		
Berat tanah kering, W_d (g)	245.59			249.07			251.82		



Gambar 5 Kurva Tegangan-Regangan

c. Kadar semen 8% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diamete 5.24 cm
Tinggi 10.55 cm
Berat 316.45 g

Benda Uji 1

Luas 21.53772 cm2
Volume 227.223 cm3
Berat vol. 1.392685 g/cm3
Kalibrasi proving ring 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1310.607 kPa e_f 5.687204 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	21.54	0	0.0000	0
30	30	0.03	0.2844	21.54	2	3.1620	14.4023
60	60	0.06	0.5687	21.54	3	4.7430	21.6034
90	90	0.09	0.8531	21.54	5	7.9050	36.0057

120	120	0.12	1.1374	21.54	8	12.6480	57.6091
150	150	0.15	1.4218	21.54	11.5	18.1815	82.8131
180	180	0.18	1.7062	21.54	17	26.8770	122.4193
210	210	0.21	1.9905	21.54	23	36.3630	165.6262
240	240	0.24	2.2749	21.54	31	49.0110	223.2353
270	270	0.27	2.5592	21.54	37.5	59.2875	270.0427
300	300	0.3	2.8436	21.54	48	75.8880	345.6546
330	330	0.33	3.1280	21.54	60	94.8600	432.0683
360	360	0.36	3.4123	21.54	76	120.1560	547.2865
390	390	0.39	3.6967	21.54	91	143.8710	655.3036
420	420	0.42	3.9810	21.54	105	166.0050	756.1195
450	450	0.45	4.2654	21.54	123	194.4630	885.7400
480	480	0.48	4.5498	21.54	141	222.9210	1015.3605
510	510	0.51	4.8341	21.54	156	246.6360	1123.3775
540	540	0.54	5.1185	21.54	168	265.6080	1209.7912
570	570	0.57	5.4028	21.54	177	279.8370	1274.6014
600	600	0.6	5.6872	21.54	182	287.7420	1310.6071
630	630	0.63	5.9716	21.54	179	282.9990	1289.0037
660	660	0.66	6.2559	21.54	174	275.0940	1252.9980
690	690	0.69	6.5403	21.54	164	259.2840	1180.9866
720	720	0.72	6.8246	21.54	149	235.5690	1072.9696
750	750	0.75	7.1090	21.54	125	197.6250	900.1423
780	780	0.78	7.3934	21.54	112	177.0720	806.5275
810	810	0.81	7.6777	21.54	104	164.4240	748.9184
840	840	0.84	7.9621	21.54	96	151.7760	691.3093
870	870	0.87	8.2464	21.54	91	143.8710	655.3036
900	900	0.9	8.5308	21.54	86	135.9660	619.2979
930	930	0.93	8.8152	21.54	84	132.8040	604.8956
960	960	0.96	9.0995	21.54	82	129.6420	590.4933
990	990	0.99	9.3839	21.54	80	126.4800	576.0910
1020	1020	1.02	9.6682	21.54	81	128.0610	583.2922
1050	1050	1.05	9.9526	21.54	79	124.8990	568.8899
1080	1080	1.08	10.2370	21.54	78	123.3180	561.6888
1110	1110	1.11	10.5213	21.54	77.5	122.5275	558.0882

Data Benda Uji Sebelum Pengujian :

Diameter	5.19	cm
Tinggi	10.33	cm
Berat	318.29	g

Benda Uji 2

Luas	21.15556	cm2
Volume	218.537	cm3
Berat vol.	1.456458	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1345.1122 kPa e_f 6.389158 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.155563	0	0.0000	0.0000
30	30	0.03	0.2904	21.217182	1.5	2.3715	10.9649
60	60	0.06	0.5808	21.27916	4	6.3240	29.1546
90	90	0.09	0.8712	21.341501	8	12.6480	58.1388
120	120	0.12	1.1617	21.404209	10	15.8100	72.4606
150	150	0.15	1.4521	21.467286	14.5	22.9245	104.7591
180	180	0.18	1.7425	21.530736	19	30.0390	136.8660
210	210	0.21	2.0329	21.594562	25	39.5250	179.5546
240	240	0.24	2.3233	21.658768	30	47.4300	214.8268
270	270	0.27	2.6137	21.723357	36	56.9160	257.0256
300	300	0.3	2.9042	21.788332	44	69.5640	313.2056
330	330	0.33	3.1946	21.853697	55	86.9550	390.3360
360	360	0.36	3.4850	21.919455	66	104.3460	466.9980
390	390	0.39	3.7754	21.985611	76	120.1560	536.1372
420	420	0.42	4.0658	22.052167	87	137.5470	611.8837
450	450	0.45	4.3562	22.119127	100	158.1000	701.1855
480	480	0.48	4.6467	22.186494	114	180.2340	796.9242
510	510	0.51	4.9371	22.254274	130	205.5300	906.0054
540	540	0.54	5.2275	22.322469	147	232.4070	1021.3533
570	570	0.57	5.5179	22.391083	162	256.1220	1122.1238
600	600	0.6	5.8083	22.46012	176	278.2560	1215.3503
630	630	0.63	6.0987	22.529585	189	298.8090	1301.0965
660	660	0.66	6.3892	22.59948	196	309.8760	1345.1122
690	690	0.69	6.6796	22.66981	192	303.5520	1313.5730
720	720	0.72	6.9700	22.74058	172	271.9320	1173.0804
750	750	0.75	7.2604	22.811792	153	241.8930	1040.2384
780	780	0.78	7.5508	22.883452	130	205.5300	881.0949
810	810	0.81	7.8412	22.955564	103	162.8430	695.9053
840	840	0.84	8.1317	23.028132	87	137.5470	585.9512
870	870	0.87	8.4221	23.10116	80	126.4800	537.1024
900	900	0.9	8.7125	23.174652	77	121.7370	515.3216
930	930	0.93	9.0029	23.248614	74	116.9940	493.6686

960	960	0.96	9.2933	23.323049	72	113.8320	478.7933
990	990	0.99	9.5837	23.397963	71	112.2510	470.6317
1020	1020	1.02	9.8742	23.473359	71	112.2510	469.1200
1050	1050	1.05	10.1646	23.549243	70	110.6700	461.0223
1080	1080	1.08	10.4550	23.625618	66	104.3460	433.2730
1110	1110	1.11	10.7454	23.702491	60	94.8600	392.6071
1140	1140	1.14	11.0358	23.779866	55	86.9550	358.7188
1170	1170	1.17	11.3262	23.857748	51	80.6310	331.5443
1200	1200	1.2	11.6167	23.936141	46	72.7260	298.0606
1230	1230	1.23	11.9071	24.015052	42	66.4020	271.2481
1260	1260	1.26	12.1975	24.094484	37	58.4970	238.1689
1290	1290	1.29	12.4879	24.174444	35	55.3350	224.5497
1320	1320	1.32	12.7783	24.254936	33	52.1730	211.0157

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter	5.31	cm	Luas	22.11737	cm2
Tinggi	10.43	cm	Volume	230.6842	cm3
Berat	315.41	g	Berat vol.	1.367281	g/cm3
			Kalibrasi proving ring :	1.581	kg/div

Hasil Uji Kuat Tekan Bebas:

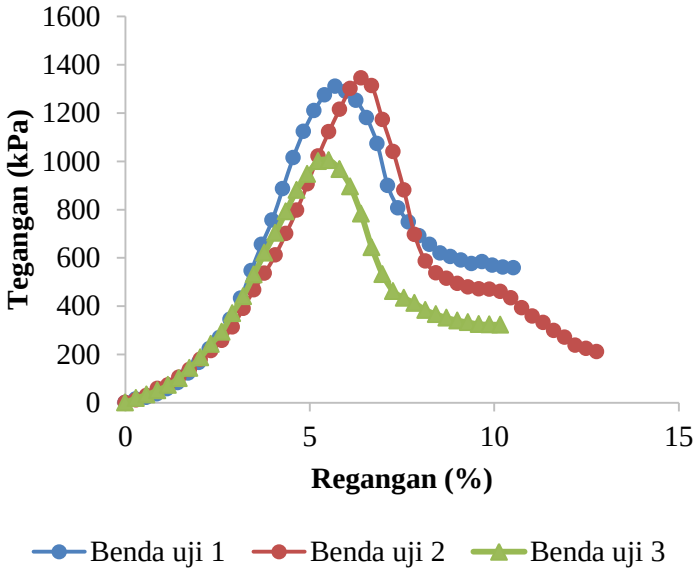
q_u 1004.3701 kPa e_f 5.517909 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.155563	0	0.0000	0.0000
30	30	0.03	0.2904	21.217182	2.5	3.9525	18.2748
60	60	0.06	0.5808	21.27916	4.5	7.1145	32.7989
90	90	0.09	0.8712	21.341501	7	11.0670	50.8714
120	120	0.12	1.1617	21.404209	10	15.8100	72.4606
150	150	0.15	1.4521	21.467286	14	22.1340	101.1467
180	180	0.18	1.7425	21.530736	20	31.6200	144.0695
210	210	0.21	2.0329	21.594562	26	41.1060	186.7368
240	240	0.24	2.3233	21.658768	34	53.7540	243.4703
270	270	0.27	2.6137	21.723357	41	64.8210	292.7236
300	300	0.3	2.9042	21.788332	52	82.2120	370.1521
330	330	0.33	3.1946	21.853697	62	98.0220	440.0152
360	360	0.36	3.4850	21.919455	75	118.5750	530.6796
390	390	0.39	3.7754	21.985611	88	139.1280	620.7904
420	420	0.42	4.0658	22.052167	100	158.1000	703.3146
450	450	0.45	4.3562	22.119127	113	178.6530	792.3396
480	480	0.48	4.6467	22.186494	126	199.2060	880.8110
510	510	0.51	4.9371	22.254274	136	215.0160	947.8211

540	540	0.54	5.2275	22.322469	144	227.6640	1000.5093
570	570	0.57	5.5179	22.391083	145	229.2450	1004.3701
600	600	0.6	5.8083	22.46012	140	221.3400	966.7559
630	630	0.63	6.0987	22.529585	130	205.5300	894.9341
660	660	0.66	6.3892	22.59948	114	180.2340	782.3612
690	690	0.69	6.6796	22.66981	94	148.6140	643.1035
720	720	0.72	6.9700	22.74058	78	123.3180	531.9783
750	750	0.75	7.2604	22.811792	68	107.5080	462.3282
780	780	0.78	7.5508	22.883452	64	101.1840	433.7698
810	810	0.81	7.8412	22.955564	61	96.4410	412.1381
840	840	0.84	8.1317	23.028132	57	90.1170	383.8990
870	870	0.87	8.4221	23.10116	54.5	86.1645	365.9010
900	900	0.9	8.7125	23.174652	52.5	83.0025	351.3557
930	930	0.93	9.0029	23.248614	51	80.6310	340.2311
960	960	0.96	9.2933	23.323049	50	79.0500	332.4953
990	990	0.99	9.5837	23.397963	49	77.4690	324.8022
1020	1020	1.02	9.8742	23.473359	49	77.4690	323.7589
1050	1050	1.05	10.1646	23.549243	49	77.4690	322.7156

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.24	5.19	5.31
Tinggi, H_o (cm)	10.55	10.33	10.43
Luas penampang, A (cm^2)	21.53	21.15	22.11
Volume benda uji, V_1 (cm^3)	227.18	218.50	230.64
Berat tanah, W_1 (g)	316.5	318.29	315.41
Berat jenis, G_s	2.65	2.65	2.65

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.33	9.73	9.46	9.28	9.57	9.37	9.28	9.41	9.44
Berat cawan + tanah, W_2 (g)	29.33	29.73	29.46	29.28	29.57	29.37	29.28	29.41	29.44
Berat cawan + tanah kering, W_3 (g)	24.98	25.3	25.11	25.2	25	24.77	24.89	25.11	25.2
Kadar air, W (%)	27.8	28.5	27.8	25.6	29.6	29.9	28.1	27.4	26.9
Kadar air rata-rata, W_f (%)	28.0			28.4			27.5		
Berat tanah kering, W_d (g)	247.24			247.94			247.44		



Gambar 6 Kurva Tegangan-Regangan

3. Benda uji dengan umur pemeraman 3 hari

a. Kadar semen 3% dan serat 0,4%

Data Benda Uji Sebelum Pengujian : Benda Uji 1

Diameter	5.22	cm	Luas	21.42818	cm2
Tinggi	10.3	cm	Volume	220.7103	cm3
Berat	318.64	g	Berat vol.	1.443702	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 931.9246 kPa e_f 6.699029 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.428184	0	0.0000	0.0000
30	30	0.03	0.2913	21.490778	4	6.3240	28.8675
60	60	0.06	0.5825	21.55374	8	12.6480	57.5663
90	90	0.09	0.8738	21.617071	12	18.9720	86.0965
120	120	0.12	1.1650	21.680775	15	23.7150	107.3043
150	150	0.15	1.4563	21.744857	22	34.7820	156.9159
180	180	0.18	1.7476	21.809318	26	41.1060	184.8980
210	210	0.21	2.0388	21.874162	32	50.5920	226.8921
240	240	0.24	2.3301	21.939393	37	58.4970	261.5640

270	270	0.27	2.6214	22.005014	44	69.5640	310.1215
300	300	0.3	2.9126	22.071029	51	80.6310	358.3839
330	330	0.33	3.2039	22.137442	56	88.5360	392.3390
360	360	0.36	3.4951	22.204255	57	90.1170	398.1434
390	390	0.39	3.7864	22.271473	61	96.4410	424.7973
420	420	0.42	4.0777	22.339099	74	116.9940	513.7679
450	450	0.45	4.3689	22.407136	82	129.6420	567.5817
480	480	0.48	4.6602	22.47559	93	147.0330	641.7601
510	510	0.51	4.9515	22.544463	102	161.2620	701.7156
540	540	0.54	5.2427	22.61376	110	173.9100	754.4332
570	570	0.57	5.5340	22.683483	119	188.1390	813.6509
600	600	0.6	5.8252	22.753639	123	194.4630	838.4075
630	630	0.63	6.1165	22.824229	133	210.2730	903.7668
660	660	0.66	6.4078	22.895259	136	215.0160	921.2855
690	690	0.69	6.6990	22.966732	138	218.1780	931.9246
720	720	0.72	6.9903	23.038653	135	213.4350	908.8194
750	750	0.75	7.2816	23.111026	120	189.7200	805.3097
780	780	0.78	7.5728	23.183854	110	173.9100	735.8816
810	810	0.81	7.8641	23.257144	108	170.7480	720.2251
840	840	0.84	8.1553	23.330898	98	154.9380	651.4716
870	870	0.87	8.4466	23.405121	94	148.6140	622.8993
900	900	0.9	8.7379	23.479819	89	140.7090	587.8901
930	930	0.93	9.0291	23.554994	84	132.8040	553.0917
960	960	0.96	9.3204	23.630652	79	124.8990	518.5042
990	990	0.99	9.6117	23.706799	76	120.1560	497.2120
1020	1020	1.02	9.9029	23.783437	70	110.6700	456.4827
1050	1050	1.05	10.1942	23.860572	65	102.7650	422.5065
1080	1080	1.08	10.4854	23.93821	65	102.7650	421.1362
1110	1110	1.11	10.7767	24.016354	62	98.0220	400.3921
1140	1140	1.14	11.0680	24.09501	54	85.3740	347.5902
1170	1170	1.17	11.3592	24.174183	54	85.3740	346.4518
1200	1200	1.2	11.6505	24.253878	54	85.3740	345.3134
1230	1230	1.23	11.9417	24.334101	54	85.3740	344.1750

Data Benda Uji Sebelum Pengujian :

Diameter	5.24	cm
Tinggi	10.59	cm
Berat	322.04	g

Benda Uji 2

Luas	21.59259	cm2
Volume	228.6656	cm3
Berat vol.	1.408345	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 955.9889 kPa e_f 4.249292 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	21.592594	0	0.0000	0
30	30	0.03	0.2833	21.653937	4	6.3240	28.6500
60	60	0.06	0.5666	21.715629	7	11.0670	49.9950
90	90	0.09	0.8499	21.777673	10	15.8100	71.2179
120	120	0.12	1.1331	21.840074	14	22.1340	99.4202
150	150	0.15	1.4164	21.902832	17	26.8770	120.3787
180	180	0.18	1.6997	21.965953	26	41.1060	183.5795
210	210	0.21	1.9830	22.029438	40	63.2400	281.6161
240	240	0.24	2.2663	22.093292	53	83.7930	372.0629
270	270	0.27	2.5496	22.157516	70	110.6700	489.9794
300	300	0.3	2.8329	22.222116	85	134.3850	593.2454
330	330	0.33	3.1161	22.287093	99	156.5190	688.9420
360	360	0.36	3.3994	22.352451	111	175.4910	770.1915
390	390	0.39	3.6827	22.418193	123	194.4630	850.9526
420	420	0.42	3.9660	22.484323	134	211.8540	924.3275
450	450	0.45	4.2493	22.550845	139	219.7590	955.9889
480	480	0.48	4.5326	22.617762	134	211.8540	918.8742
510	510	0.51	4.8159	22.685076	104	164.4240	711.0399
540	540	0.54	5.0992	22.752793	89	140.7090	606.6751
570	570	0.57	5.3824	22.820915	76	120.1560	516.5132
600	600	0.6	5.6657	22.889446	67	105.9270	453.9838
630	630	0.63	5.9490	22.958391	62	98.0220	418.8429
660	660	0.66	6.2323	23.027751	60	94.8600	404.1109
690	690	0.69	6.5156	23.097532	56	88.5360	376.0307
720	720	0.72	6.7989	23.167738	54	85.3740	361.5023
750	750	0.75	7.0822	23.238371	53	83.7930	353.7293
780	780	0.78	7.3654	23.309436	53	83.7930	352.6509
810	810	0.81	7.6487	23.380938	53	83.7930	351.5724
840	840	0.84	7.9320	23.452879	53	83.7930	350.4940

Data Benda Uji Sebelum Pengujian :

Diameter	5.20	cm
Tinggi	10.6	cm
Berat	323.53	g

Benda Uji 3

Luas	21.23717	cm2
Volume	225.114	cm3
Berat vol.	1.437183	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

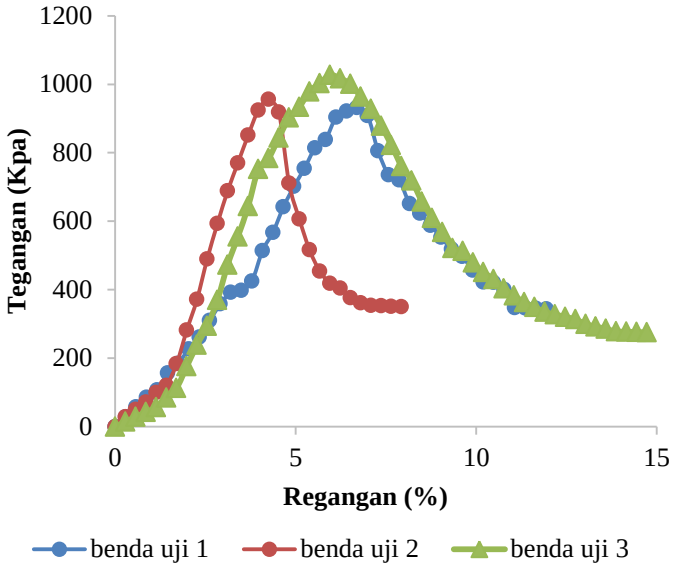
q_u 1026.841 kPa e_f 5.949008 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	21.592594	0	0.0000	0
30	30	0.03	0.2833	21.653937	2	3.1620	14.3250
60	60	0.06	0.5666	21.715629	4	6.3240	28.5686
90	90	0.09	0.8499	21.777673	6	9.4860	42.7308
120	120	0.12	1.1331	21.840074	8	12.6480	56.8116
150	150	0.15	1.4164	21.902832	12	18.9720	84.9732
180	180	0.18	1.6997	21.965953	16	25.2960	112.9720
210	210	0.21	1.9830	22.029438	25	39.5250	176.0100
240	240	0.24	2.2663	22.093292	34	53.7540	238.6818
270	270	0.27	2.5496	22.157516	42	66.4020	293.9877
300	300	0.3	2.8329	22.222116	53	83.7930	369.9060
330	330	0.33	3.1161	22.287093	68	107.5080	473.2127
360	360	0.36	3.3994	22.352451	80	126.4800	555.0930
390	390	0.39	3.6827	22.418193	93	147.0330	643.4032
420	420	0.42	3.9660	22.484323	109	172.3290	751.8783
450	450	0.45	4.2493	22.550845	114	180.2340	784.0485
480	480	0.48	4.5326	22.617762	123	194.4630	843.4442
510	510	0.51	4.8159	22.685076	132	208.6920	902.4737
540	540	0.54	5.0992	22.752793	137	216.5970	933.8707
570	570	0.57	5.3824	22.820915	144	227.6640	978.6566
600	600	0.6	5.6657	22.889446	148	233.9880	1002.8300
630	630	0.63	5.9490	22.958391	152	240.3120	1026.8406
660	660	0.66	6.2323	23.027751	151	238.7310	1017.0125
690	690	0.69	6.5156	23.097532	149	235.5690	1000.5103
720	720	0.72	6.7989	23.167738	144	227.6640	964.0060
750	750	0.75	7.0822	23.238371	139	219.7590	927.7052
780	780	0.78	7.3654	23.309436	132	208.6920	878.3003
810	810	0.81	7.6487	23.380938	124	196.0440	822.5468
840	840	0.84	7.9320	23.452879	115	181.8150	760.5058
870	870	0.87	8.2153	23.525264	109	172.3290	718.6093
900	900	0.9	8.4986	23.598098	100	158.1000	657.2398

930	930	0.93	8.7819	23.671384	93	147.0330	609.3407
960	960	0.96	9.0652	23.745127	87	137.5470	568.2581
990	990	0.99	9.3484	23.81933	80	126.4800	520.9084
1020	1020	1.02	9.6317	23.893999	79	124.8990	512.7895
1050	1050	1.05	9.9150	23.969137	74	116.9940	478.8287
1080	1080	1.08	10.1983	24.04475	70	110.6700	451.5217
1110	1110	1.11	10.4816	24.120841	67	105.9270	430.8075
1140	1140	1.14	10.7649	24.197415	63	99.6030	403.8057
1170	1170	1.17	11.0482	24.274477	60	94.8600	383.3560
1200	1200	1.2	11.3314	24.352031	57	90.1170	363.0284
1230	1230	1.23	11.6147	24.430082	55	86.9550	349.1714
1260	1260	1.26	11.8980	24.508636	53	83.7930	335.3958
1290	1290	1.29	12.1813	24.587696	52	82.2120	328.0095
1320	1320	1.32	12.4646	24.667267	51	80.6310	320.6639
1350	1350	1.35	12.7479	24.747356	50	79.0500	313.3589
1380	1380	1.38	13.0312	24.827966	48	75.8880	299.8479
1410	1410	1.41	13.3144	24.909103	47	74.3070	292.6447
1440	1440	1.44	13.5977	24.990773	46	72.7260	285.4822
1470	1470	1.47	13.8810	25.072979	45	71.1450	278.3604
1500	1500	1.5	14.1643	25.155728	45	71.1450	277.4447
1530	1530	1.53	14.4476	25.239025	45	71.1450	276.5291
1560	1560	1.56	14.7309	25.322876	45	71.1450	275.6134

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.22	5.24	5.20
Tinggi, H_o (cm)	10.3	10.59	10.6
Luas penampang, A (cm^2)	21.42	21.59	21.23
Volume benda uji, V_1 (cm^3)	220.67	228.62	225.07
Berat tanah, W_1 (g)	318.64	322.04	323.53
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.74	9.96	9.28	9.2	9.26	9.46	9.05	9.17	9.12
Berat cawan + tanah, W_2 (g)	29.74	29.96	29.28	29.2	29.26	29.46	29.05	29.17	29.12
Berat cawan + tanah kering, W_3 (g)	25.2	25.57	24.92	24.75	24.81	25.1	24.7	24.94	24.8
Kadar air, W (%)	29.4	28.1	27.9	28.6	28.6	27.9	27.8	26.8	27.6
Kadar air rata-rata, W_f (%)	28.5			28.4			27.4		
Berat tanah kering, W_d (g)	248.05			250.87			253.97		



Gambar 7 Kurva Tegangan-Regangan

b. Kadar semen 5% dan serat 0,4%

Data Benda Uji Sebelum Pengujian : Benda Uji 1

Diameter	5.22	cm	Luas	21.42818	cm2
Tinggi	10.3	cm	Volume	220.7103	cm3
Berat	318.64	g	Berat vol.	1.443702	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1196.545 kPa e_f 5.533981 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.428184	0	0.0000	0.0000
30	30	0.03	0.2913	21.490778	2.5	3.9525	18.0422
60	60	0.06	0.5825	21.55374	5.5	8.6955	39.5768
90	90	0.09	0.8738	21.617071	8	12.6480	57.3976
120	120	0.12	1.1650	21.680775	12	18.9720	85.8435
150	150	0.15	1.4563	21.744857	17	26.8770	121.2532
180	180	0.18	1.7476	21.809318	24	37.9440	170.6751
210	210	0.21	2.0388	21.874162	32.5	51.3825	230.4373
240	240	0.24	2.3301	21.939393	42.5	67.1925	300.4452
270	270	0.27	2.6214	22.005014	53	83.7930	373.5555
300	300	0.3	2.9126	22.071029	66	104.3460	463.7909
330	330	0.33	3.2039	22.137442	81	128.0610	567.4903
360	360	0.36	3.4951	22.204255	95	150.1950	663.5723

390	390	0.39	3.7864	22.271473	110	173.9100	766.0280
420	420	0.42	4.0777	22.339099	126	199.2060	874.7940
450	450	0.45	4.3689	22.407136	139	219.7590	962.1202
480	480	0.48	4.6602	22.47559	154	243.4740	1062.6995
510	510	0.51	4.9515	22.544463	167	264.0270	1148.8874
540	540	0.54	5.2427	22.61376	173	273.5130	1186.5177
570	570	0.57	5.5340	22.683483	175	276.6750	1196.5454
600	600	0.6	5.8252	22.753639	169	267.1890	1151.9582
630	630	0.63	6.1165	22.824229	151	238.7310	1026.0811
660	660	0.66	6.4078	22.895259	138	218.1780	934.8338
690	690	0.69	6.6990	22.966732	122	192.8820	823.8753
720	720	0.72	6.9903	23.038653	115	181.8150	774.1794
750	750	0.75	7.2816	23.111026	108	170.7480	724.7787
780	780	0.78	7.5728	23.183854	102.5	162.0525	685.7078
810	810	0.81	7.8641	23.257144	100	158.1000	666.8751
840	840	0.84	8.1553	23.330898	98	154.9380	651.4716
870	870	0.87	8.4466	23.405121	94	148.6140	622.8993
900	900	0.9	8.7379	23.479819	92	145.4520	607.7066
930	930	0.93	9.0291	23.554994	90	142.2900	592.5983

Data Benda Uji Sebelum Pengujian :

Diameter	5.24	cm
Tinggi	10.59	cm
Berat	322.04	g

Benda Uji 2

Luas	21.59259	cm2
Volume	228.6656	cm3
Berat vol.	1.408345	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1060.211 kPa e_f 5.382436 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	21.592594	0	0.0000	0
30	30	0.03	0.2833	21.653937	3	4.7430	21.4875
60	60	0.06	0.5666	21.715629	6.5	10.2765	46.4239
90	90	0.09	0.8499	21.777673	10	15.8100	71.2179
120	120	0.12	1.1331	21.840074	14	22.1340	99.4202
150	150	0.15	1.4164	21.902832	19	30.0390	134.5409
180	180	0.18	1.6997	21.965953	26.5	41.8965	187.1099
210	210	0.21	1.9830	22.029438	35	55.3350	246.4141
240	240	0.24	2.2663	22.093292	45	71.1450	315.9024
270	270	0.27	2.5496	22.157516	55.5	87.7455	388.4837
300	300	0.3	2.8329	22.222116	67	105.9270	467.6170

330	330	0.33	3.1161	22.287093	79	124.8990	549.7618
360	360	0.36	3.3994	22.352451	92.5	146.2425	641.8262
390	390	0.39	3.6827	22.418193	105	166.0050	726.4230
420	420	0.42	3.9660	22.484323	117	184.9770	807.0620
450	450	0.45	4.2493	22.550845	128	202.3680	880.3351
480	480	0.48	4.5326	22.617762	140	221.3400	960.0178
510	510	0.51	4.8159	22.685076	147	232.4070	1005.0276
540	540	0.54	5.0992	22.752793	154	243.4740	1049.7524
570	570	0.57	5.3824	22.820915	156	246.6360	1060.2113
600	600	0.6	5.6657	22.889446	152	240.3120	1029.9335
630	630	0.63	5.9490	22.958391	141	222.9210	952.5298
660	660	0.66	6.2323	23.027751	125	197.6250	841.8978
690	690	0.69	6.5156	23.097532	115	181.8150	772.2059
720	720	0.72	6.7989	23.167738	106	167.5860	709.6155
750	750	0.75	7.0822	23.238371	100	158.1000	667.4138
780	780	0.78	7.3654	23.309436	94	148.6140	625.4563
810	810	0.81	7.6487	23.380938	90	142.2900	597.0098
840	840	0.84	7.9320	23.452879	87	137.5470	575.3392
870	870	0.87	8.2153	23.525264	84	132.8040	553.7907
900	900	0.9	8.4986	23.598098	81	128.0610	532.3643
930	930	0.93	8.7819	23.671384	79	124.8990	517.6120
960	960	0.96	9.0652	23.745127	76	120.1560	496.4094

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter 5.20 cm Luas 21.23717 cm2

Tinggi 10.6 cm Volume 225.114 cm3

Berat 323.53 g Berat vol. 1.437183 g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

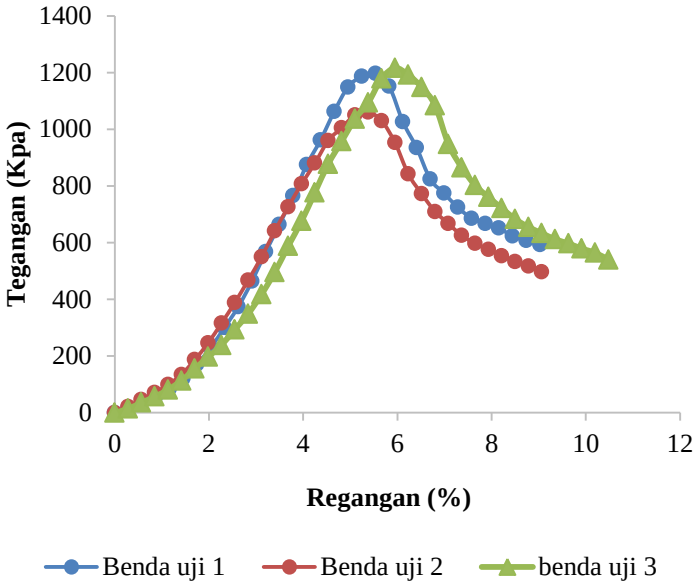
q_u 1215.995 kPa e_f 5.949008 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	21.592594	0	0.0000	0
30	30	0.03	0.2833	21.653937	2	3.1620	14.3250
60	60	0.06	0.5666	21.715629	5	7.9050	35.7107
90	90	0.09	0.8499	21.777673	8	12.6480	56.9744
120	120	0.12	1.1331	21.840074	11.5	18.1815	81.6666
150	150	0.15	1.4164	21.902832	16	25.2960	113.2976
180	180	0.18	1.6997	21.965953	22	34.7820	155.3365
210	210	0.21	1.9830	22.029438	28	44.2680	197.1313

240	240	0.24	2.2663	22.093292	34	53.7540	238.6818
270	270	0.27	2.5496	22.157516	42	66.4020	293.9877
300	300	0.3	2.8329	22.222116	50	79.0500	348.9679
330	330	0.33	3.1161	22.287093	60	94.8600	417.5406
360	360	0.36	3.3994	22.352451	71.5	113.0415	496.1143
390	390	0.39	3.6827	22.418193	85	134.3850	588.0567
420	420	0.42	3.9660	22.484323	98	154.9380	676.0007
450	450	0.45	4.2493	22.550845	113	178.6530	777.1708
480	480	0.48	4.5326	22.617762	128	202.3680	877.7306
510	510	0.51	4.8159	22.685076	140	221.3400	957.1691
540	540	0.54	5.0992	22.752793	152	240.3120	1036.1193
570	570	0.57	5.3824	22.820915	161	254.5410	1094.1924
600	600	0.6	5.6657	22.889446	174	275.0940	1179.0028
630	630	0.63	5.9490	22.958391	180	284.5800	1215.9954
660	660	0.66	6.2323	23.027751	177	279.8370	1192.1272
690	690	0.69	6.5156	23.097532	171	270.3510	1148.2367
720	720	0.72	6.7989	23.167738	162	256.1220	1084.5068
750	750	0.75	7.0822	23.238371	142	224.5020	947.7276
780	780	0.78	7.3654	23.309436	130	205.5300	864.9927
810	810	0.81	7.6487	23.380938	121	191.3010	802.6465
840	840	0.84	7.9320	23.452879	115	181.8150	760.5058
870	870	0.87	8.2153	23.525264	109.5	173.1195	721.9057
900	900	0.9	8.4986	23.598098	104	164.4240	683.5294
930	930	0.93	8.7819	23.671384	100	158.1000	655.2050
960	960	0.96	9.0652	23.745127	97	153.3570	633.5751
990	990	0.99	9.3484	23.81933	94	148.6140	612.0673
1020	1020	1.02	9.6317	23.893999	92	145.4520	597.1726
1050	1050	1.05	9.9150	23.969137	89.5	141.4995	579.1239
1080	1080	1.08	10.1983	24.04475	87.5	138.3375	564.4022
1110	1110	1.11	10.4816	24.120841	84	132.8040	540.1168

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.22	5.24	5.20
Tinggi, H_o (cm)	10.3	10.59	10.6
Luas penampang, A (cm^2)	21.42	21.59	21.23
Volume benda uji, V_1 (cm^3)	220.67	228.62	225.07
Berat tanah, W_1 (g)	318.64	322.04	323.53
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.34	9.33	9.18	9.29	9.38	9.24	9.19	9.3	9.23
Berat cawan + tanah, W_2 (g)	29.34	29.33	29.18	29.29	29.38	29.24	29.19	29.3	29.23
Berat cawan + tanah kering, W_3 (g)	25.9	25.88	25.73	25.5	25.64	25.9	25.84	25.89	25.84
Kadar air, W (%)	20.8	20.8	20.8	23.4	23.0	20.0	20.1	20.6	20.4
Kadar air rata-rata, W_f (%)	20.8			22.1			20.4		
Berat tanah kering, W_d (g)	263.73			263.66			268.80		



Gambar 8 Kurva Tegangan-Regangan

c. Kadar semen 8% dan serat 0,4%

Data Benda Uji Sebelum Pengujian : Benda Uji 1

Diameter	5.20	cm	Luas	21.20995	cm2
Tinggi	10.58	cm	Volume	224.4012	cm3
Berat	315.49	g	Berat vol.	1.405919	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1326.3269 kPa e_f 4.536862 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.209948	0	0.0000	0.0000
30	30	0.03	0.2836	21.270261	4	6.3240	29.1668
60	60	0.06	0.5671	21.330917	11	17.3910	79.9805

90	90	0.09	0.8507	21.391921	20	31.6200	145.0044
120	120	0.12	1.1342	21.453274	31	49.0110	224.1140
150	150	0.15	1.4178	21.514981	42	66.4020	302.7675
180	180	0.18	1.7013	21.577043	56	88.5360	402.5288
210	210	0.21	1.9849	21.639465	70	110.6700	501.7096
240	240	0.24	2.2684	21.702248	86	135.9660	614.6029
270	270	0.27	2.5520	21.765398	102	161.2620	726.8327
300	300	0.3	2.8355	21.828915	117	184.9770	831.2939
330	330	0.33	3.1191	21.892805	132	208.6920	935.1330
360	360	0.36	3.4026	21.957069	150	237.1500	1059.5410
390	390	0.39	3.6862	22.021712	165	260.8650	1162.0739
420	420	0.42	3.9698	22.086737	178	281.4180	1249.9404
450	450	0.45	4.2533	22.152147	186	294.0660	1302.2609
480	480	0.48	4.5369	22.217945	190	300.3900	1326.3269
510	510	0.51	4.8204	22.284136	187	295.6470	1301.5075
540	540	0.54	5.1040	22.350722	179	282.9990	1242.1166
570	570	0.57	5.3875	22.417707	166	262.4460	1148.4650
600	600	0.6	5.6711	22.485095	151	238.7310	1041.5571
630	630	0.63	5.9546	22.552889	143	226.0830	983.4102
660	660	0.66	6.2382	22.621094	136	215.0160	932.4514
690	690	0.69	6.5217	22.689712	130	205.5300	888.6183
720	720	0.72	6.8053	22.758747	120	189.7200	817.7749
750	750	0.75	7.0888	22.828204	110	173.9100	747.3462
780	780	0.78	7.3724	22.898087	102	161.2620	690.8788
810	810	0.81	7.6560	22.968398	99	156.5190	668.5061
840	840	0.84	7.9395	23.039143	88	139.1280	592.4030
870	870	0.87	8.2231	23.110324	80	126.4800	536.8894

Data Benda Uji Sebelum Pengujian : Benda Uji 2

Diameter	5.17	cm	Luas	20.96577	cm2
Tinggi	10.51	cm	Volume	220.3502	cm3
Berat	315.8	g	Berat vol.	1.433173	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1469.8042 kPa e_f 6.279734 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	20.965768	0	0.0000	0
30	30	0.03	0.2854	21.025784	2	3.1620	14.7529

60	60	0.06	0.5709	21.086145	5	7.9050	36.7768
90	90	0.09	0.8563	21.146854	8	12.6480	58.6739
120	120	0.12	1.1418	21.207913	12	18.9720	87.7575
150	150	0.15	1.4272	21.269326	18	28.4580	131.2561
180	180	0.18	1.7127	21.331096	28	44.2680	203.5850
210	210	0.21	1.9981	21.393225	37	58.4970	268.2417
240	240	0.24	2.2835	21.455717	46.5	73.5165	336.1327
270	270	0.27	2.5690	21.518576	60	94.8600	432.4527
300	300	0.3	2.8544	21.581804	72	113.8320	517.4229
330	330	0.33	3.1399	21.645405	86	135.9660	616.2169
360	360	0.36	3.4253	21.709381	101.5	160.4715	725.1360
390	390	0.39	3.7108	21.773737	117	184.9770	833.4005
420	420	0.42	3.9962	21.838476	135	213.4350	958.7653
450	450	0.45	4.2816	21.9036	151	238.7310	1069.2083
480	480	0.48	4.5671	21.969114	165	260.8650	1164.8561
510	510	0.51	4.8525	22.035022	178	281.4180	1252.8740
540	540	0.54	5.1380	22.101326	190	300.3900	1333.3254
570	570	0.57	5.4234	22.16803	200	316.2000	1399.2772
600	600	0.6	5.7088	22.235138	206	325.6860	1436.9057
630	630	0.63	5.9943	22.302654	210.5	332.8005	1463.8495
660	660	0.66	6.2797	22.37058	212	335.1720	1469.8042
690	690	0.69	6.5652	22.438922	209	330.4290	1444.5919
720	720	0.72	6.8506	22.507683	190	300.3900	1309.2533
750	750	0.75	7.1361	22.576867	158	249.7980	1085.4112
780	780	0.78	7.4215	22.646477	144	227.6640	986.1948
810	810	0.81	7.7069	22.716517	133	210.2730	908.0521
840	840	0.84	7.9924	22.786993	126	199.2060	857.5993
870	870	0.87	8.2778	22.857906	119	188.1390	807.4421
900	900	0.9	8.5633	22.929263	109	172.3290	737.2882
930	930	0.93	8.8487	23.001067	101	159.6810	681.0426
960	960	0.96	9.1342	23.073321	97	153.3570	652.0224
990	990	0.99	9.4196	23.146031	92	145.4520	616.4703
1020	1020	1.02	9.7050	23.219201	88	139.1280	587.8091
1050	1050	1.05	9.9905	23.292835	86	135.9660	572.6338
1080	1080	1.08	10.2759	23.366937	83	131.2230	550.9056

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter	5.20	cm	Luas	21.2644	cm2
Tinggi	10.53	cm	Volume	223.9142	cm3
Berat	315.55	g	Berat vol.	1.409245	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

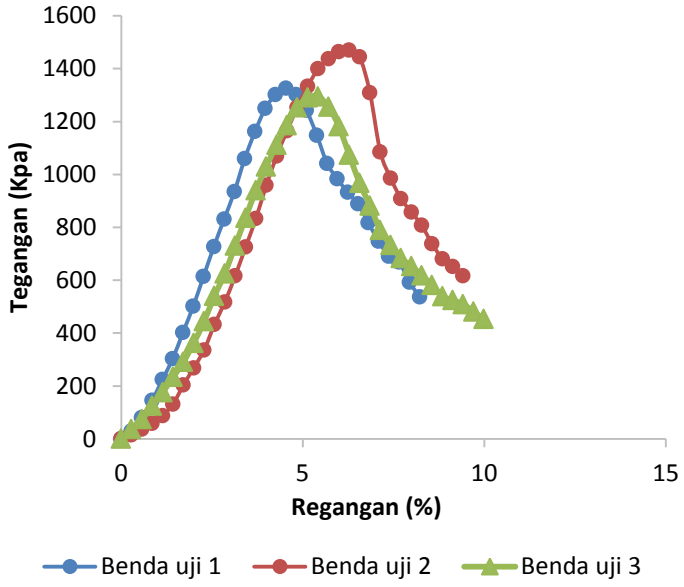
q_u 1294.3315 kPa e_f 5.423406 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0	20.965768	0	0.0000	0
30	30	0.03	0.2854	21.025784	5	7.9050	36.8824
60	60	0.06	0.5709	21.086145	10	15.8100	73.5536
90	90	0.09	0.8563	21.146854	17	26.8770	124.6821
120	120	0.12	1.1418	21.207913	24	37.9440	175.5150
150	150	0.15	1.4272	21.269326	32	50.5920	233.3443
180	180	0.18	1.7127	21.331096	40	63.2400	290.8357
210	210	0.21	1.9981	21.393225	50	79.0500	362.4888
240	240	0.24	2.2835	21.455717	61.5	97.2315	444.5626
270	270	0.27	2.5690	21.518576	75	118.5750	540.5659
300	300	0.3	2.8544	21.581804	87	137.5470	625.2193
330	330	0.33	3.1399	21.645405	102	161.2620	730.8619
360	360	0.36	3.4253	21.709381	117	184.9770	835.8711
390	390	0.39	3.7108	21.773737	132	208.6920	940.2467
420	420	0.42	3.9962	21.838476	145	229.2450	1029.7850
450	450	0.45	4.2816	21.9036	157	248.2170	1111.6934
480	480	0.48	4.5671	21.969114	168	265.6080	1186.0353
510	510	0.51	4.8525	22.035022	178	281.4180	1252.8740
540	540	0.54	5.1380	22.101326	184	290.9040	1291.2204
570	570	0.57	5.4234	22.16803	185	292.4850	1294.3315
600	600	0.6	5.7088	22.235138	180	284.5800	1255.5487
630	630	0.63	5.9943	22.302654	170	268.7700	1182.2063
660	660	0.66	6.2797	22.37058	155	245.0550	1074.6210
690	690	0.69	6.5652	22.438922	140	221.3400	967.6692
720	720	0.72	6.8506	22.507683	128	202.3680	882.0233
750	750	0.75	7.1361	22.576867	115	181.8150	790.0145
780	780	0.78	7.4215	22.646477	107	169.1670	732.7976
810	810	0.81	7.7069	22.716517	100	158.1000	682.7459
840	840	0.84	7.9924	22.786993	96	151.7760	653.4090
870	870	0.87	8.2778	22.857906	91	143.8710	617.4557
900	900	0.9	8.5633	22.929263	86	135.9660	581.7136

930	930	0.93	8.8487	23.001067	80	126.4800	539.4397
960	960	0.96	9.1342	23.073321	78	123.3180	524.3067
990	990	0.99	9.4196	23.146031	76	120.1560	509.2581
1020	1020	1.02	9.7050	23.219201	72	113.8320	480.9347
1050	1050	1.05	9.9905	23.292835	68	107.5080	452.7802

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.20	5.17	5.20
Tinggi, H_o (cm)	10.58	10.51	10.53
Luas penampang, A (cm^2)	21.21	20.96	21.26
Volume benda uji, V_1 (cm^3)	224.36	220.31	223.87
Berat tanah, W_1 (g)	315.49	315.8	315.55
Berat jenis, G_s	2.65	2.65	2.65

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.2	9.24	9.41	9.75	9.39	9.29	9.21	9.93	9.04
Berat cawan + tanah, W_2 (g)	29.2	29.24	29.41	29.75	29.39	29.29	29.21	29.93	29.04
Berat cawan + tanah kering, W_3 (g)	25.4	25.4	25.72	25.96	25.61	25.44	25.33	25.65	25.05
Kadar air, W (%)	23.5	23.8	22.6	23.4	23.3	23.8	24.1	27.2	24.9
Kadar air rata-rata, W_f (%)	23.3			23.5			25.4		
Berat tanah kering, W_d (g)	255.91			255.69			251.62		



Gambar 9 Kurva Tegangan – Regangan

4. Benda uji dengan umur pemeraman 7 hari

a. Kadar semen 3% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.21	cm
Tinggi	10.49	cm
Berat	320.44	g

Benda Uji 1

Luas	21.34621	cm2
Volume	223.9218	cm3
Berat vol.	1.431035	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1099.0873 kPa e_f 5.14776 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.346215	0	0.0000	0
30	30	0.03	0.2860	21.407437	1	1.5810	7.2450
60	60	0.06	0.5720	21.469012	2	3.1620	14.4484
90	90	0.09	0.8580	21.530941	6	9.4860	43.2204
120	120	0.12	1.1439	21.59323	9	14.2290	64.6436
150	150	0.15	1.4299	21.655879	12	18.9720	85.9422
180	180	0.18	1.7159	21.718893	17	26.8770	121.3982
210	210	0.21	2.0019	21.782275	27	42.6870	192.2478
240	240	0.24	2.2879	21.846028	40	63.2400	284.8116
270	270	0.27	2.5739	21.910156	56	88.5360	397.5726
300	300	0.3	2.8599	21.97466	73	115.4130	516.7474
330	330	0.33	3.1459	22.039546	90	142.2900	635.2157
360	360	0.36	3.4318	22.104816	105	166.0050	738.9032
390	390	0.39	3.7178	22.170474	120	189.7200	841.9673
420	420	0.42	4.0038	22.236523	130	205.5300	909.4299
450	450	0.45	4.2898	22.302967	142	224.5020	990.4267
480	480	0.48	4.5758	22.369809	152	240.3120	1057.0166
510	510	0.51	4.8618	22.437053	157	248.2170	1088.5246
540	540	0.54	5.1478	22.504703	159	251.3790	1099.0873
570	570	0.57	5.4337	22.572761	150	237.1500	1033.7579
600	600	0.6	5.7197	22.641233	120	189.7200	824.5129
630	630	0.63	6.0057	22.710121	90	142.2900	616.5145
660	660	0.66	6.2917	22.779429	80	126.4800	546.3506
690	690	0.69	6.5777	22.849162	67	105.927	456.1764
720	720	0.72	6.8637	22.919323	54	85.3740	366.5425
750	750	0.75	7.1497	22.989917	45	71.1450	304.5170
780	780	0.78	7.4357	23.060946	41	64.8210	276.5969
810	810	0.81	7.7216	23.132416	37	58.4970	248.8430

840	840	0.84	8.0076	23.204331	35	55.3350	234.6648
870	870	0.87	8.2936	23.276693	32	50.5920	213.8857
900	900	0.9	8.5796	23.349509	30	47.4300	199.8945
930	930	0.93	8.8656	23.422781	28	44.2680	185.9864
960	960	0.96	9.1516	23.496515	26	41.1060	172.1614
990	990	0.99	9.4376	23.570715	25	39.5250	165.0203
1020	1020	1.02	9.7235	23.645384	23.5	37.1535	154.6308
1050	1050	1.05	10.0095	23.720529	22.5	35.5725	147.5832
1080	1080	1.08	10.2955	23.796152	21	33.2010	137.3080
1110	1110	1.11	10.5815	23.872259	20	31.6200	130.3539
1140	1140	1.14	10.8675	23.948855	18.5	29.2485	120.1930
1170	1170	1.17	11.1535	24.025943	17	26.8770	110.0944
1200	1200	1.2	11.4395	24.10353	16.5	26.0865	106.5134
1230	1230	1.23	11.7255	24.181619	16	25.2960	102.9533
1260	1260	1.26	12.0114	24.260216	15.5	24.5055	99.4139
1290	1290	1.29	12.2974	24.339325	15	23.7150	95.8953
1320	1320	1.32	12.5834	24.418952	14.5	22.9245	92.3975
1350	1350	1.35	12.8694	24.499102	14	22.1340	88.9205
1380	1380	1.38	13.1554	24.579779	13.5	21.3435	85.4642
1410	1410	1.41	13.4414	24.66099	13	20.5530	82.0288
1440	1440	1.44	13.7274	24.742739	13	20.5530	81.7587
1470	1470	1.47	14.0133	24.825032	13	20.5530	81.4885
1500	1500	1.5	14.2993	24.907874	13	20.5530	81.2184

Data Benda Uji Sebelum Pengujian :

Diameter	5.20	cm
Tinggi	10.23	cm
Berat	320.63	g

Benda Uji 2

Luas	21.20995	cm2
Volume	216.9778	cm3
Berat vol.	1.477709	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1148.0503 kPa e_f 8.797654 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.21	0	0.0000	0.0000
30	30	0.03	0.2933	21.21	1.5	2.3715	10.9686
60	60	0.06	0.5865	21.21	2	3.1620	14.6248
90	90	0.09	0.8798	21.21	3	4.7430	21.9373
120	120	0.12	1.1730	21.21	5	7.9050	36.5621
150	150	0.15	1.4663	21.21	7	11.0670	51.1870
180	180	0.18	1.7595	21.21	10.5	16.6005	76.7804
210	210	0.21	2.0528	21.21	13	20.5530	95.0615

240	240	0.24	2.3460	21.21	17	26.8770	124.3112
270	270	0.27	2.6393	21.21	23.5	37.1535	171.8419
300	300	0.3	2.9326	21.21	28.5	45.0585	208.4040
330	330	0.33	3.2258	21.21	33	52.1730	241.3099
360	360	0.36	3.5191	21.21	39	61.6590	285.1845
390	390	0.39	3.8123	21.21	47	74.3070	343.6839
420	420	0.42	4.1056	21.21	55	86.9550	402.1832
450	450	0.45	4.3988	21.21	65	102.7650	475.3075
480	480	0.48	4.6921	21.21	75	118.5750	548.4317
510	510	0.51	4.9853	21.21	85	134.3850	621.5559
540	540	0.54	5.2786	21.21	93	147.0330	680.0553
570	570	0.57	5.5718	21.21	99	156.5190	723.9298
600	600	0.6	5.8651	21.21	104	164.4240	760.4919
630	630	0.63	6.1584	21.21	114	180.2340	833.6162
660	660	0.66	6.4516	21.21	123	194.4630	899.4280
690	690	0.69	6.7449	21.21	131	207.1110	957.9273
720	720	0.72	7.0381	21.21	136	215.0160	994.4895
750	750	0.75	7.3314	21.21	141	222.9210	1031.0516
780	780	0.78	7.6246	21.21	143	226.0830	1045.6764
810	810	0.81	7.9179	21.21	146	230.8260	1067.6137
840	840	0.84	8.2111	21.21	148	233.9880	1082.2385
870	870	0.87	8.5044	21.21	153	241.8930	1118.8006
900	900	0.9	8.7977	21.21	157	248.2170	1148.0503
930	930	0.93	9.0909	21.21	153	241.8930	1118.8006
960	960	0.96	9.3842	21.21	150	237.1500	1096.8634
990	990	0.99	9.6774	21.21	143	226.0830	1045.6764
1020	1020	1.02	9.9707	21.21	129	203.9490	943.3025
1050	1050	1.05	10.2639	21.21	125	197.6250	914.0528
1080	1080	1.08	10.5572	21.21	118	186.5580	862.8659
1110	1110	1.11	10.8504	21.21	108	170.7480	789.7416
1140	1140	1.14	11.1437	21.21	95	150.1950	694.6801
1170	1170	1.17	11.4370	21.21	92	145.4520	672.7429
1200	1200	1.2	11.7302	21.21	89	140.7090	650.8056
1230	1230	1.23	12.0235	21.21	85	134.3850	621.5559
1260	1260	1.26	12.3167	21.21	82	129.6420	599.6186
1290	1290	1.29	12.6100	21.21	78	123.3180	570.3690
1320	1320	1.32	12.9032	21.21	75	118.5750	548.4317
1350	1350	1.35	13.1965	21.21	74	116.9940	541.1193
1380	1380	1.38	13.4897	21.21	73.5	116.2035	537.4631
1410	1410	1.41	13.7830	21.21	70.5	111.4605	515.5258
1440	1440	1.44	14.0762	21.21	68.5	108.2985	500.9009
1470	1470	1.47	14.3695	21.21	67	105.9270	489.9323
1500	1500	1.5	14.6628	21.21	65	102.7650	475.3075

1530	1530	1.53	14.9560	21.21	63	99.6030	460.6826
1560	1560	1.56	15.2493	21.21	60	94.8600	438.7453
1590	1590	1.59	15.5425	21.21	58	91.6980	424.1205
1620	1620	1.62	15.8358	21.21	56	88.5360	409.4957
1650	1650	1.65	16.1290	21.21	55	86.9550	402.1832
1680	1680	1.68	16.4223	21.21	56	88.5360	409.4957
1710	1710	1.71	16.7155	21.21	57	90.1170	416.8081
1740	1740	1.74	17.0088	21.21	58	91.6980	424.1205
1770	1770	1.77	17.3021	21.21	58.5	92.4885	427.7767
1800	1800	1.8	17.5953	21.21	58.5	92.4885	427.7767
1830	1830	1.83	17.8886	21.21	58.5	92.4885	427.7767
1860	1860	1.86	18.1818	21.21	59	93.2790	431.4329
1890	1890	1.89	18.4751	21.21	59.5	94.0695	435.0891
1920	1920	1.92	18.7683	21.21	60	94.8600	438.7453
1950	1950	1.95	19.0616	21.21	60	94.8600	438.7453
1980	1980	1.98	19.3548	21.21	60.5	95.6505	442.4016
2010	2010	2.01	19.6481	21.21	60	94.8600	438.7453
2040	2040	2.04	19.9413	21.21	61	96.4410	446.0578
2070	2070	2.07	20.2346	21.21	63	99.6030	460.6826
2100	2100	2.1	20.5279	21.21	64.5	101.9745	471.6512
2130	2130	2.13	20.8211	21.21	65	102.7650	475.3075
2160	2160	2.16	21.1144	21.21	68	107.5080	497.2447
2190	2190	2.19	21.4076	21.21	70	110.6700	511.8696
2220	2220	2.22	21.7009	21.21	74	116.9940	541.1193
2250	2250	2.25	21.9941	21.21	77	121.7370	563.0565
2280	2280	2.28	22.2874	21.21	81	128.0610	592.3062
2310	2310	2.31	22.5806	21.21	83	131.2230	606.9311
2340	2340	2.34	22.8739	21.21	87	137.5470	636.1808
2370	2370	2.37	23.1672	21.21	90	142.2900	658.1180
2400	2400	2.4	23.4604	21.21	94	148.6140	687.3677

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter	5.20	cm	Luas	21.23717	cm2
Tinggi	10.16	cm	Volume	215.7696	cm3
Berat	319.8	g	Berat vol.	1.482136	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

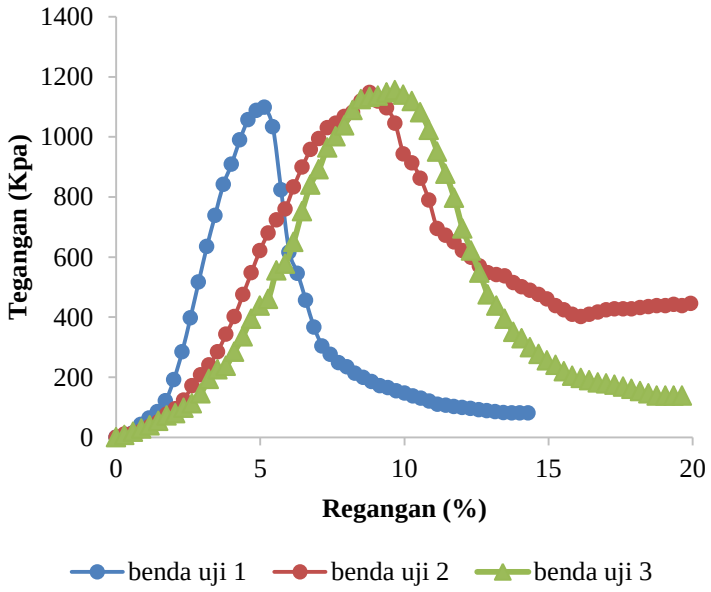
q_u 1155.3628 kPa $\square_f$ 9.677419 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.21	0	0.0000	0.0000
30	30	0.03	0.2933	21.21	1	1.5810	7.3124
60	60	0.06	0.5865	21.21	2.5	3.9525	18.2811
90	90	0.09	0.8798	21.21	4	6.3240	29.2497
120	120	0.12	1.1730	21.21	5.5	8.6955	40.2183
150	150	0.15	1.4663	21.21	7.5	11.8575	54.8432
180	180	0.18	1.7595	21.21	10	15.8100	73.1242
210	210	0.21	2.0528	21.21	11	17.3910	80.4366
240	240	0.24	2.3460	21.21	13.5	21.3435	98.7177
270	270	0.27	2.6393	21.21	15.5	24.5055	113.3425
300	300	0.3	2.9326	21.21	20	31.6200	146.2484
330	330	0.33	3.2258	21.21	26.5	41.8965	193.7792
360	360	0.36	3.5191	21.21	31	49.0110	226.6851
390	390	0.39	3.8123	21.21	32.5	51.3825	237.6537
420	420	0.42	4.1056	21.21	39	61.6590	285.1845
450	450	0.45	4.3988	21.21	46	72.7260	336.3714
480	480	0.48	4.6921	21.21	54	85.3740	394.8708
510	510	0.51	4.9853	21.21	60	94.8600	438.7453
540	540	0.54	5.2786	21.21	63	99.6030	460.6826
570	570	0.57	5.5718	21.21	76	120.1560	555.7441
600	600	0.6	5.8651	21.21	79	124.8990	577.6814
630	630	0.63	6.1584	21.21	89	140.7090	650.8056
660	660	0.66	6.4516	21.21	103	162.8430	753.1795
690	690	0.69	6.7449	21.21	115	181.8150	840.9286
720	720	0.72	7.0381	21.21	122	192.8820	892.1155
750	750	0.75	7.3314	21.21	132	208.6920	965.2398
780	780	0.78	7.6246	21.21	137	216.5970	1001.8019
810	810	0.81	7.9179	21.21	142	224.5020	1038.3640
840	840	0.84	8.2111	21.21	149	235.5690	1089.5509
870	870	0.87	8.5044	21.21	154	243.4740	1126.1131
900	900	0.9	8.7977	21.21	155	245.0550	1133.4255
930	930	0.93	9.0909	21.21	155.5	245.8455	1137.0817

960	960	0.96	9.3842	21.21	157	248.2170	1148.0503
990	990	0.99	9.6774	21.21	158	249.7980	1155.3628
1020	1020	1.02	9.9707	21.21	156	246.6360	1140.7379
1050	1050	1.05	10.2639	21.21	153	241.8930	1118.8006
1080	1080	1.08	10.5572	21.21	148	233.9880	1082.2385
1110	1110	1.11	10.8504	21.21	140	221.3400	1023.7391
1140	1140	1.14	11.1437	21.21	130	205.5300	950.6149
1170	1170	1.17	11.4370	21.21	120	189.7200	877.4907
1200	1200	1.2	11.7302	21.21	109	172.3290	797.0541
1230	1230	1.23	12.0235	21.21	95	150.1950	694.6801
1260	1260	1.26	12.3167	21.21	85	134.3850	621.5559
1290	1290	1.29	12.6100	21.21	75	118.5750	548.4317
1320	1320	1.32	12.9032	21.21	65	102.7650	475.3075
1350	1350	1.35	13.1965	21.21	60	94.8600	438.7453
1380	1380	1.38	13.4897	21.21	54	85.3740	394.8708
1410	1410	1.41	13.7830	21.21	48	75.8880	350.9963
1440	1440	1.44	14.0762	21.21	45	71.1450	329.0590
1470	1470	1.47	14.3695	21.21	41	64.8210	299.8093
1500	1500	1.5	14.6628	21.21	38	60.0780	277.8721
1530	1530	1.53	14.9560	21.21	35	55.3350	255.9348
1560	1560	1.56	15.2493	21.21	33	52.1730	241.3099
1590	1590	1.59	15.5425	21.21	30	47.4300	219.3727
1620	1620	1.62	15.8358	21.21	28	44.2680	204.7478
1650	1650	1.65	16.1290	21.21	27	42.6870	197.4354
1680	1680	1.68	16.4223	21.21	26	41.1060	190.1230
1710	1710	1.71	16.7155	21.21	25	39.5250	182.8106
1740	1740	1.74	17.0088	21.21	24.5	38.7345	179.1544
1770	1770	1.77	17.3021	21.21	24	37.9440	175.4981
1800	1800	1.8	17.5953	21.21	23	36.3630	168.1857
1830	1830	1.83	17.8886	21.21	22	34.7820	160.8733
1860	1860	1.86	18.1818	21.21	21	33.2010	153.5609
1890	1890	1.89	18.4751	21.21	20	31.6200	146.2484
1920	1920	1.92	18.7683	21.21	19	30.0390	138.9360
1950	1950	1.95	19.0616	21.21	19	30.0390	138.9360
1980	1980	1.98	19.3548	21.21	19	30.0390	138.9360
2010	2010	2.01	19.6481	21.21	19	30.0390	138.9360

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.21	5.20	5.20
Tinggi, H_o (cm)	10.49	10.23	10.16
Luas penampang, A (cm^2)	21.34	21.21	21.23
Volume benda uji, V_1 (cm^3)	223.88	216.94	215.73
Berat tanah, W_1 (g)	320.44	320.63	319.8
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.79	9.35	9.33	9.16	9.28	9.12	9.46	9.73	9.26
Berat cawan + tanah, W_2 (g)	29.79	29.35	29.33	29.16	29.28	29.12	29.46	29.73	29.26
Berat cawan + tanah kering, W_3 (g)	25.51	25.08	25.08	24.85	24.99	24.78	25.1	25.35	24.98
Kadar air, W (%)	27.2	27.1	27.0	27.5	27.3	27.7	27.9	28.0	27.2
Kadar air rata-rata, W_f (%)	27.1			27.5			27.7		
Berat tanah kering, W_d (g)	252.08			251.48			250.40		



Gambar 10 Kurva Tegangan – Regangan

b. Kadar semen 5% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :			Benda Uji 1		
Diameter	5.21	cm	Luas	21.34621	cm2
Tinggi	10.49	cm	Volume	223.9218	cm3
Berat	320.44	g	Berat vol.	1.431035	g/cm3
			Kalibrasi proving ring : 1.581		kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1387.334 kPa e_f 4.575786 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.346215	0	0.0000	0
30	30	0.03	0.2860	21.407437	4.5	7.1145	32.6023
60	60	0.06	0.5720	21.469012	8.6	13.5966	62.1280
90	90	0.09	0.8580	21.530941	12	18.9720	86.4409
120	120	0.12	1.1439	21.59323	21	33.2010	150.8352
150	150	0.15	1.4299	21.655879	30	47.4300	214.8554
180	180	0.18	1.7159	21.718893	41	64.8210	292.7838
210	210	0.21	2.0019	21.782275	56	88.5360	398.7362
240	240	0.24	2.2879	21.846028	73	115.4130	519.7811
270	270	0.27	2.5739	21.910156	90	142.2900	638.9559
300	300	0.3	2.8599	21.97466	106	167.5860	750.3455
330	330	0.33	3.1459	22.039546	125	197.6250	882.2440
360	360	0.36	3.4318	22.104816	145	229.2450	1020.3901
390	390	0.39	3.7178	22.170474	166	262.4460	1164.7214
420	420	0.42	4.0038	22.236523	182	287.7420	1273.2019
450	450	0.45	4.2898	22.302967	193	305.1330	1346.1433
480	480	0.48	4.5758	22.369809	199.5	315.4095	1387.3343
510	510	0.51	4.8618	22.437053	199	314.6190	1379.7223
540	540	0.54	5.1478	22.504703	194	306.7140	1341.0247
570	570	0.57	5.4337	22.572761	173	273.5130	1192.2675
600	600	0.6	5.7197	22.641233	155	245.0550	1064.9958
630	630	0.63	6.0057	22.710121	141	222.9210	965.8728
660	660	0.66	6.2917	22.779429	131.5	207.9015	898.0638
690	690	0.69	6.5777	22.849162	120	189.7	817.0324
720	720	0.72	6.8637	22.919323	106	167.5860	719.5094
750	750	0.75	7.1497	22.989917	96	151.7760	649.6363
780	780	0.78	7.4357	23.060946	89	140.7090	600.4177

810	810	0.81	7.7216	23.132416	84	132.8040	564.9409
840	840	0.84	8.0076	23.204331	80	126.4800	536.3767
870	870	0.87	8.2936	23.276693	77	121.7370	514.6625
900	900	0.9	8.5796	23.349509	76	120.1560	506.3994

Data Benda Uji Sebelum Pengujian : Benda Uji 2

Diameter	5.20	cm	Luas	21.20995	cm2
Tinggi	10.23	cm	Volume	216.9778	cm3
Berat	320.63	g	Berat vol.	1.477709	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1440.547 kPa e_f 4.985337 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.21	0	0.0000	0.0000
30	30	0.03	0.2933	21.21	4	6.3240	29.2497
60	60	0.06	0.5865	21.21	8	12.6480	58.4994
90	90	0.09	0.8798	21.21	13	20.5530	95.0615
120	120	0.12	1.1730	21.21	19	30.0390	138.9360
150	150	0.15	1.4663	21.21	28	44.2680	204.7478
180	180	0.18	1.7595	21.21	37	58.4970	270.5596
210	210	0.21	2.0528	21.21	48	75.8880	350.9963
240	240	0.24	2.3460	21.21	62	98.0220	453.3702
270	270	0.27	2.6393	21.21	78	123.3180	570.3690
300	300	0.3	2.9326	21.21	94	148.6140	687.3677
330	330	0.33	3.2258	21.21	110	173.9100	804.3665
360	360	0.36	3.5191	21.21	128	202.3680	935.9901
390	390	0.39	3.8123	21.21	144	227.6640	1052.9888
420	420	0.42	4.1056	21.21	163	257.7030	1191.9249
450	450	0.45	4.3988	21.21	181	286.1610	1323.5485
480	480	0.48	4.6921	21.21	191	301.9710	1396.6727
510	510	0.51	4.9853	21.21	197	311.4570	1440.5472
540	540	0.54	5.2786	21.21	194	306.7140	1418.6100
570	570	0.57	5.5718	21.21	177	279.8370	1294.2988
600	600	0.6	5.8651	21.21	164	259.2840	1199.2373
630	630	0.63	6.1584	21.21	154	243.4740	1126.1131
660	660	0.66	6.4516	21.21	145	229.2450	1060.3013
690	690	0.69	6.7449	21.21	133.5	211.0635	976.2084
720	720	0.72	7.0381	21.21	125.5	198.4155	917.7090
750	750	0.75	7.3314	21.21	119	188.1390	870.1783

780	780	0.78	7.6246	21.21	114	180.2340	833.6162
810	810	0.81	7.9179	21.21	109	172.3290	797.0541
840	840	0.84	8.2111	21.21	102	161.2620	745.8671
870	870	0.87	8.5044	21.21	96	151.7760	701.9926
900	900	0.9	8.7977	21.21	91	143.8710	665.4304
930	930	0.93	9.0909	21.21	86	135.9660	628.8683
960	960	0.96	9.3842	21.21	81	128.0610	592.3062
990	990	0.99	9.6774	21.21	75	118.5750	548.4317
1020	1020	1.02	9.9707	21.21	71.5	113.0415	522.8382
1050	1050	1.05	10.2639	21.21	68	107.5080	497.2447
1080	1080	1.08	10.5572	21.21	64	101.1840	467.9950

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter	5.20	cm	Luas	21.23717	cm2
Tinggi	10.16	cm	Volume	215.7696	cm3
Berat	319.8	g	Berat vol.	1.482136	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

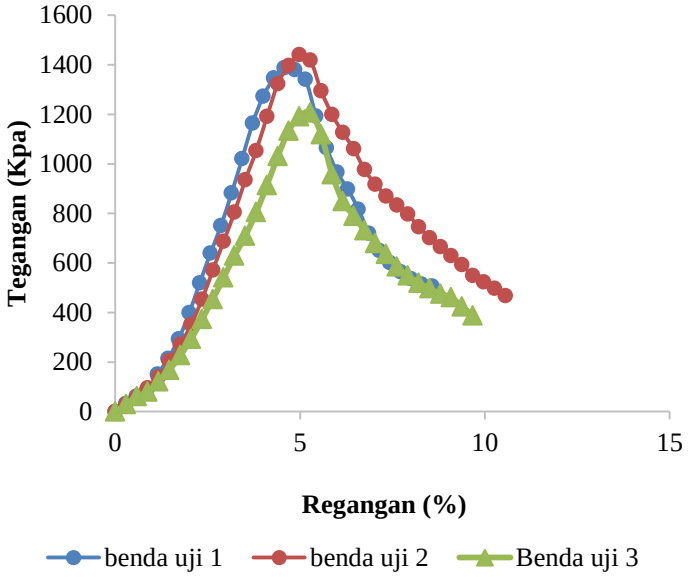
q_u 1206.55 kPa e_f 5.278592 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.21	0	0.0000	0.0000
30	30	0.03	0.2933	21.21	4	6.3240	29.2497
60	60	0.06	0.5865	21.21	8.5	13.4385	62.1556
90	90	0.09	0.8798	21.21	11	17.3910	80.4366
120	120	0.12	1.1730	21.21	16.5	26.0865	120.6550
150	150	0.15	1.4663	21.21	23	36.3630	168.1857
180	180	0.18	1.7595	21.21	31	49.0110	226.6851
210	210	0.21	2.0528	21.21	40	63.2400	292.4969
240	240	0.24	2.3460	21.21	51	80.6310	372.9335
270	270	0.27	2.6393	21.21	62	98.0220	453.3702
300	300	0.3	2.9326	21.21	74	116.9940	541.1193
330	330	0.33	3.2258	21.21	86	135.9660	628.8683
360	360	0.36	3.5191	21.21	97	153.3570	709.3050
390	390	0.39	3.8123	21.21	110	173.9100	804.3665
420	420	0.42	4.1056	21.21	125	197.6250	914.0528
450	450	0.45	4.3988	21.21	141	222.9210	1031.0516
480	480	0.48	4.6921	21.21	155	245.0550	1133.4255
510	510	0.51	4.9853	21.21	163	257.7030	1191.9249
540	540	0.54	5.2786	21.21	165	260.8650	1206.5497
570	570	0.57	5.5718	21.21	153	241.8930	1118.8006

600	600	0.6	5.8651	21.21	131	207.1110	957.9273
630	630	0.63	6.1584	21.21	116	183.3960	848.2410
660	660	0.66	6.4516	21.21	108	170.7480	789.7416
690	690	0.69	6.7449	21.21	100	158.1000	731.2422
720	720	0.72	7.0381	21.21	93	147.0330	680.0553
750	750	0.75	7.3314	21.21	87	137.5470	636.1808
780	780	0.78	7.6246	21.21	80	126.4800	584.9938
810	810	0.81	7.9179	21.21	75	118.5750	548.4317
840	840	0.84	8.2111	21.21	71	112.2510	519.1820
870	870	0.87	8.5044	21.21	68	107.5080	497.2447
900	900	0.9	8.7977	21.21	65	102.7650	475.3075
930	930	0.93	9.0909	21.21	63	99.6030	460.6826
960	960	0.96	9.3842	21.21	58	91.6980	424.1205
990	990	0.99	9.6774	21.21	53	83.7930	387.5584

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.21	5.20	5.20
Tinggi, H_o (cm)	10.49	10.23	10.16
Luas penampang, A (cm^2)	21.34	21.21	21.23
Volume benda uji, V_1 (cm^3)	223.88	216.94	215.73
Berat tanah, W_1 (g)	320.44	320.63	319.8
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.57	9.4	9.32	9.11	9.22	9.21	9.17	9.11	9.35
Berat cawan + tanah, W_2 (g)	29.57	29.4	29.32	29.11	29.22	29.21	29.17	29.11	29.35
Berat cawan + tanah kering, W_3 (g)	25.25	25.02	24.92	24.76	24.9	24.81	24.81	24.79	25
Kadar air, W (%)	27.6	28.0	28.2	27.8	27.6	28.2	27.9	27.6	27.8
Kadar air rata-rata, W_f (%)	27.9			27.9			27.7		
Berat tanah kering, W_d (g)	250.48			250.78			250.35		



Gambar 11 Kurva Tegangan - Regangan

c. Kadar semen 8% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.21	cm
Tinggi	10.56	cm
Berat	316.37	g

Benda Uji 1

Luas	21.31893	cm2
Volume	225.1279	cm3
Berat vol.	1.40529	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1626.2201 kPa e_f 5.965909 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.318926	0	0.0000	0
30	30	0.03	0.2841	21.379664	2	3.1620	14.5088
60	60	0.06	0.5682	21.440749	6	9.4860	43.4022
90	90	0.09	0.8523	21.502184	10.5	16.6005	75.7369
120	120	0.12	1.1364	21.563971	16.5	26.0865	118.6741
150	150	0.15	1.4205	21.626115	23	36.3630	164.9492
180	180	0.18	1.7045	21.688619	30	47.4300	214.5311
210	210	0.21	1.9886	21.751484	39.5	62.4495	281.6496
240	240	0.24	2.2727	21.814715	53	83.7930	377.9095
270	270	0.27	2.5568	21.878315	67	105.9270	476.3500
300	300	0.3	2.8409	21.942287	81	128.0610	574.2117
330	330	0.33	3.1250	22.006634	96	151.7760	678.5631
360	360	0.36	3.4091	22.071359	111	175.4910	782.2944

390	390	0.39	3.6932	22.136466	128	202.3680	899.4598
420	420	0.42	3.9773	22.201959	144	227.6640	1008.9162
450	450	0.45	4.2614	22.26784	161	254.5410	1124.6968
480	480	0.48	4.5455	22.334113	178	281.4180	1239.7748
510	510	0.51	4.8295	22.400782	194	306.7140	1347.2056
540	540	0.54	5.1136	22.46785	210	332.0100	1453.9752
570	570	0.57	5.3977	22.535321	224.5	354.9345	1549.7288
600	600	0.6	5.6818	22.603199	235	371.5350	1617.3536
630	630	0.63	5.9659	22.671487	237	374.6970	1626.2201
660	660	0.66	6.2500	22.740188	218	344.6580	1491.3424
690	690	0.69	6.5341	22.809307	177	279.837	1207.202
720	720	0.72	6.8182	22.878848	153	241.8930	1040.3518
750	750	0.75	7.1023	22.948814	136	215.0160	921.9463
780	780	0.78	7.3864	23.019209	124	196.0440	838.0353
810	810	0.81	7.6705	23.090037	108	170.7480	727.6696
840	840	0.84	7.9545	23.161303	99	156.5190	664.9844
870	870	0.87	8.2386	23.233009	92	145.4520	616.0638
900	900	0.9	8.5227	23.305162	89	140.7090	594.1354

Data Benda Uji Sebelum Pengujian :

Diameter	5.20	cm
Tinggi	10.6	cm
Berat	316.41	g

Benda Uji 2

Luas	21.2644	cm2
Volume	225.4027	cm3
Berat vol.	1.403754	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1546.2637 kPa e_f 6.226415 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.26	0	0.0000	0.0000
30	30	0.03	0.2830	21.26	2	3.1620	14.5874
60	60	0.06	0.5660	21.26	5	7.9050	36.4685
90	90	0.09	0.8491	21.26	8	12.6480	58.3496
120	120	0.12	1.1321	21.26	12	18.9720	87.5244
150	150	0.15	1.4151	21.26	18	28.4580	131.2865
180	180	0.18	1.6981	21.26	28	44.2680	204.2235
210	210	0.21	1.9811	21.26	37	58.4970	269.8668
240	240	0.24	2.2642	21.26	46.5	73.5165	339.1569
270	270	0.27	2.5472	21.26	60	94.8600	437.6218
300	300	0.3	2.8302	21.26	72	113.8320	525.1462

330	330	0.33	3.1132	21.26	86	135.9660	627.2579
360	360	0.36	3.3962	21.26	101.5	160.4715	740.3102
390	390	0.39	3.6792	21.26	117	184.9770	853.3625
420	420	0.42	3.9623	21.26	135	213.4350	984.6491
450	450	0.45	4.2453	21.26	151	238.7310	1101.3482
480	480	0.48	4.5283	21.26	165	260.8650	1203.4600
510	510	0.51	4.8113	21.26	178	281.4180	1298.2780
540	540	0.54	5.0943	21.26	190	300.3900	1385.8024
570	570	0.57	5.3774	21.26	200	316.2000	1458.7393
600	600	0.6	5.6604	21.26	206	325.6860	1502.5015
630	630	0.63	5.9434	21.26	210.5	332.8005	1535.3232
660	660	0.66	6.2264	21.26	212	335.1720	1546.2637
690	690	0.69	6.5094	21.26	209	330.4290	1524.3826
720	720	0.72	6.7925	21.26	190	300.3900	1385.8024
750	750	0.75	7.0755	21.26	158	249.7980	1152.4041
780	780	0.78	7.3585	21.26	144	227.6640	1050.2923
810	810	0.81	7.6415	21.26	133	210.2730	970.0617
840	840	0.84	7.9245	21.26	126	199.2060	919.0058
870	870	0.87	8.2075	21.26	119	188.1390	867.9499
900	900	0.9	8.4906	21.26	109	172.3290	795.0129
930	930	0.93	8.7736	21.26	101	159.6810	736.6634
960	960	0.96	9.0566	21.26	97	153.3570	707.4886
990	990	0.99	9.3396	21.26	92	145.4520	671.0201
1020	1020	1.02	9.6226	21.26	88	139.1280	641.8453
1050	1050	1.05	9.9057	21.26	86	135.9660	627.2579
1080	1080	1.08	10.1887	21.26	83	131.2230	605.3768
1110	1110	1.11	10.4717	21.26	80	126.4800	583.4957

Data Benda Uji Sebelum Pengujian :

Diameter	5.20	cm
Tinggi	10.5	cm
Berat	317.5	g

Benda Uji 3

Luas	21.23717	cm2
Volume	222.9902	cm3
Berat vol.	1.423829	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

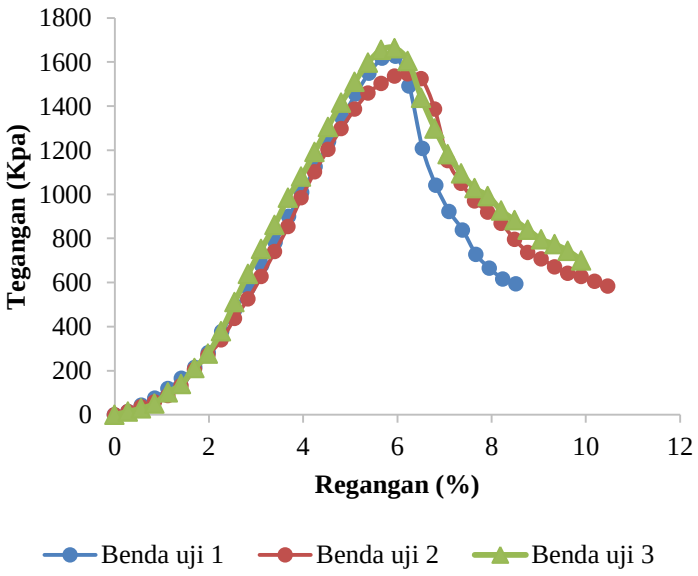
q_u 1662.9628 kPa e_f 5.943396 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.26	0	0.0000	0.0000
30	30	0.03	0.2830	21.26	2	3.1620	14.5874
60	60	0.06	0.5660	21.26	4	6.3240	29.1748

90	90	0.09	0.8491	21.26	7	11.0670	51.0559
120	120	0.12	1.1321	21.26	14	22.1340	102.1118
150	150	0.15	1.4151	21.26	19	30.0390	138.5802
180	180	0.18	1.6981	21.26	29	45.8490	211.5172
210	210	0.21	1.9811	21.26	38	60.0780	277.1605
240	240	0.24	2.2642	21.26	52	82.2120	379.2722
270	270	0.27	2.5472	21.26	70	110.6700	510.5588
300	300	0.3	2.8302	21.26	87.5	138.3375	638.1985
330	330	0.33	3.1132	21.26	103	162.8430	751.2508
360	360	0.36	3.3962	21.26	118	186.5580	860.6562
390	390	0.39	3.6792	21.26	135	213.4350	984.6491
420	420	0.42	3.9623	21.26	148	233.9880	1079.4671
450	450	0.45	4.2453	21.26	163.5	258.4935	1192.5194
480	480	0.48	4.5283	21.26	179	282.9990	1305.5717
510	510	0.51	4.8113	21.26	194	306.7140	1414.9772
540	540	0.54	5.0943	21.26	207	327.2670	1509.7952
570	570	0.57	5.3774	21.26	219	346.2390	1597.3196
600	600	0.6	5.6604	21.26	227	358.8870	1655.6691
630	630	0.63	5.9434	21.26	228	360.4680	1662.9628
660	660	0.66	6.2264	21.26	220	347.8200	1604.6133
690	690	0.69	6.5094	21.26	197	311.4570	1436.8582
720	720	0.72	6.7925	21.26	178	281.4180	1298.2780
750	750	0.75	7.0755	21.26	162	256.1220	1181.5789
780	780	0.78	7.3585	21.26	150	237.1500	1094.0545
810	810	0.81	7.6415	21.26	141	222.9210	1028.4112
840	840	0.84	7.9245	21.26	136	215.0160	991.9428
870	870	0.87	8.2075	21.26	127	200.7870	926.2995
900	900	0.9	8.4906	21.26	121	191.3010	882.5373
930	930	0.93	8.7736	21.26	115	181.8150	838.7751
960	960	0.96	9.0566	21.26	109	172.3290	795.0129
990	990	0.99	9.3396	21.26	106	167.5860	773.1318
1020	1020	1.02	9.6226	21.26	102	161.2620	743.9571
1050	1050	1.05	9.9057	21.26	96	151.7760	700.1949
1080	1080	1.08	10.1887	21.26	85	134.3850	619.9642
1110	1110	1.11	10.4717	21.26	85	134.3850	619.9642

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.21	5.20	5.20
Tinggi, H_o (cm)	10.56	10.6	10.5
Luas penampang, A (cm^2)	21.31	21.26	21.23
Volume benda uji, V_1 (cm^3)	225.09	225.36	222.95
Berat tanah, W_1 (g)	316.37	316.41	317.5
Berat jenis, G_s	2.65	2.65	2.65

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.3	9.24	9.18	9.23	9.93	9.21	9.04	9.14	9.34
Berat cawan + tanah, W_2 (g)	29.3	29.24	29.18	29.23	29.93	29.21	29.04	29.14	29.34
Berat cawan + tanah kering, W_3 (g)	24.92	24.81	24.9	24.97	25.64	25.83	24.65	24.86	24.93
Kadar air, W (%)	28.0	28.5	27.2	27.1	27.3	20.3	28.1	27.2	28.3
Kadar air rata-rata, W_f (%)	27.9			24.9			27.9		
Berat tanah kering, W_d (g)	247.34			253.32			248.28		



Gambar 12 Kurva Tegangan-Regangan

5. Benda uji dengan umur pemeraman 14 hari

a. Kadar semen 3% dan serat 0,4%

Data Benda Uji Sebelum Pengujian : Benda Uji 1

Diameter	5.21	cm	Luas	21.3189	cm2
Tinggi	10.48	cm	Volume	223.422	cm3
Berat	315.77	g	Berat vol.	1.41333	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1258.5824 kPa e_f 5.43893 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.318926	0	0.0000	0.0000
30	30	0.03	0.2863	21.32	2	3.1620	14.5501
60	60	0.06	0.5725	21.32	5	7.9050	36.3752
90	90	0.09	0.8588	21.32	8	12.6480	58.2003
120	120	0.12	1.1450	21.32	12	18.9720	87.3005
150	150	0.15	1.4313	21.32	17	26.8770	123.6757
180	180	0.18	1.7176	21.32	23	36.3630	167.3260
210	210	0.21	2.0038	21.32	32	50.5920	232.8014
240	240	0.24	2.2901	21.32	41	64.8210	298.2768
270	270	0.27	2.5763	21.32	52	82.2120	378.3022
300	300	0.3	2.8626	21.32	64	101.1840	465.6027
330	330	0.33	3.1489	21.32	76	120.1560	552.9032
360	360	0.36	3.4351	21.32	90	142.2900	654.7538
390	390	0.39	3.7214	21.32	105	166.0050	763.8795
420	420	0.42	4.0076	21.32	117	184.9770	851.1800
450	450	0.45	4.2939	21.32	132	208.6920	960.3056
480	480	0.48	4.5802	21.32	145	229.2450	1054.8812
510	510	0.51	4.8664	21.32	155	245.0550	1127.6316
540	540	0.54	5.1527	21.32	167	264.0270	1214.9321
570	570	0.57	5.4389	21.32	173	273.5130	1258.5824
600	600	0.6	5.7252	21.32	160	252.9600	1164.0068
630	630	0.63	6.0115	21.32	110	173.9100	800.2547
660	660	0.66	6.2977	21.32	90	142.2900	654.7538
690	690	0.69	6.5840	21.32	77	121.7370	560.1783
720	720	0.72	6.8702	21.32	69	109.0890	501.9779
750	750	0.75	7.1565	21.32	64	101.1840	465.6027
780	780	0.78	7.4427	21.32	56	88.5360	407.4024
810	810	0.81	7.7290	21.32	51	80.631	371.0272
840	840	0.84	8.0153	21.32	46	72.726	334.6520
870	870	0.87	8.3015	21.32	44	69.564	320.1019

900	900	0.9	8.5878	21.32	41	64.821	298.2768
930	930	0.93	8.8740	21.32	39.5	62.4495	287.3642
960	960	0.96	9.1603	21.32	38	60.078	276.4516
990	990	0.99	9.4466	21.32	36.5	57.7065	265.5391
1020	1020	1.02	9.7328	21.32	36	56.916	261.9015
1050	1050	1.05	10.0191	21.32	37	58.497	269.1766
1080	1080	1.08	10.3053	21.32	37	58.497	269.1766
1110	1110	1.11	10.5916	21.32	37	58.497	269.1766
1140	1140	1.14	10.8779	21.32	37	58.497	269.1766
1170	1170	1.17	11.1641	21.32	38	60.078	276.4516
1200	1200	1.2	11.4504	21.32	38.5	60.8685	280.0891
1230	1230	1.23	11.7366	21.32	39.5	62.4495	287.3642
1260	1260	1.26	12.0229	21.32	40	63.24	291.0017
1290	1290	1.29	12.3092	21.32	41	64.821	298.2768
1320	1320	1.32	12.5954	21.32	41.5	65.6115	301.9143
1350	1350	1.35	12.8817	21.32	42	66.402	305.5518
1380	1380	1.38	13.1679	21.32	42.5	67.1925	309.1893
1410	1410	1.41	13.4542	21.32	43	67.983	312.8268

Data Benda Uji Sebelum Pengujian : Benda Uji 2

Diameter	5.20	cm	Luas	21.2644	cm2
Tinggi	10.54	cm	Volume	224.127	cm3
Berat	314	g	Berat vol.	1.40099	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1137.8167 kPa e_f 4.83871 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.264402	0	0.0000	0.0000
30	30	0.03	0.2846	21.26	3	4.7430	21.8811
60	60	0.06	0.5693	21.26	6	9.4860	43.7622
90	90	0.09	0.8539	21.26	10	15.8100	72.9370
120	120	0.12	1.1385	21.26	14	22.1340	102.1118
150	150	0.15	1.4231	21.26	20	31.6200	145.8739
180	180	0.18	1.7078	21.26	27	42.6870	196.9298
210	210	0.21	1.9924	21.26	35	55.3350	255.2794
240	240	0.24	2.2770	21.26	45	71.1450	328.2164
270	270	0.27	2.5617	21.26	58	91.6980	423.0344
300	300	0.3	2.8463	21.26	73	115.4130	532.4399
330	330	0.33	3.1309	21.26	86	135.9660	627.2579
360	360	0.36	3.4156	21.26	103	162.8430	751.2508

390	390	0.39	3.7002	21.26	117	184.9770	853.3625
420	420	0.42	3.9848	21.26	132	208.6920	962.7680
450	450	0.45	4.2694	21.26	144	227.6640	1050.2923
480	480	0.48	4.5541	21.26	152	240.3120	1108.6419
510	510	0.51	4.8387	21.26	156	246.6360	1137.8167
540	540	0.54	5.1233	21.26	155	245.0550	1130.5230
570	570	0.57	5.4080	21.26	152	240.3120	1108.6419
600	600	0.6	5.6926	21.26	141	222.9210	1028.4112
630	630	0.63	5.9772	21.26	123	194.4630	897.1247
660	660	0.66	6.2619	21.26	110	173.9100	802.3066
690	690	0.69	6.5465	21.26	104	164.4240	758.5445
720	720	0.72	6.8311	21.26	98	154.9380	714.7823
750	750	0.75	7.1157	21.26	94	148.6140	685.6075
780	780	0.78	7.4004	21.26	88	139.1280	641.8453
810	810	0.81	7.6850	21.26	85	134.3850	619.9642
840	840	0.84	7.9696	21.26	81	128.0610	590.7894
870	870	0.87	8.2543	21.26	78	123.318	568.9083
900	900	0.9	8.5389	21.26	75	118.5750	547.0273
930	930	0.93	8.8235	21.26	71	112.2510	517.8525
960	960	0.96	9.1082	21.26	67	105.9270	488.6777
990	990	0.99	9.3928	21.26	63	99.6030	459.5029
1020	1020	1.02	9.6774	21.26	58	91.6980	423.0344
1050	1050	1.05	9.9620	21.26	54	85.3740	393.8596
1080	1080	1.08	10.2467	21.26	51	80.6310	371.9785
1110	1110	1.11	10.5313	21.26	50.5	79.8405	368.3317
1140	1140	1.14	10.8159	21.26	50	79.0500	364.6848
1170	1170	1.17	11.1006	21.26	49	77.4690	357.3911
1200	1200	1.2	11.3852	21.26	48	75.8880	350.0974
1230	1230	1.23	11.6698	21.26	47	74.3070	342.8037
1260	1260	1.26	11.9545	21.26	46	72.7260	335.5100

Data Benda Uji Sebelum Pengujian : Benda Uji 3

Diameter	5.23	cm	Luas	21.4555	cm2
Tinggi	10.68	cm	Volume	229.145	cm3
Berat	319.25	g	Berat vol.	1.39322	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

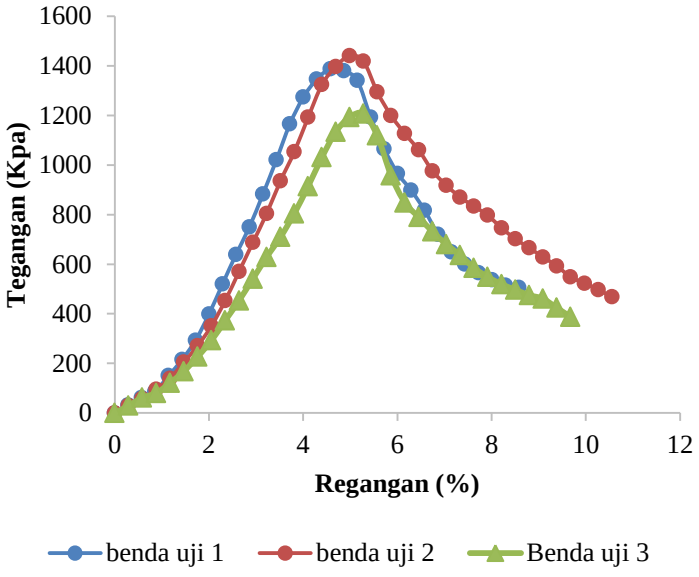
q_u 1438.5152 kPa e_f 5.40797 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.455542	0	0.0000	0.0000
30	30	0.03	0.2846	21.46	4	6.3240	28.9149
60	60	0.06	0.5693	21.46	8	12.6480	57.8298
90	90	0.09	0.8539	21.46	11	17.3910	79.5159
120	120	0.12	1.1385	21.46	18	28.4580	130.1170
150	150	0.15	1.4231	21.46	27	42.6870	195.1754
180	180	0.18	1.7078	21.46	37	58.4970	267.4626
210	210	0.21	1.9924	21.46	46	72.7260	332.5211
240	240	0.24	2.2770	21.46	60	94.8600	433.7232
270	270	0.27	2.5617	21.46	76	120.1560	549.3827
300	300	0.3	2.8463	21.46	91	143.8710	657.8135
330	330	0.33	3.1309	21.46	108	170.7480	780.7017
360	360	0.36	3.4156	21.46	123	194.4630	889.1325
390	390	0.39	3.7002	21.46	132	208.6920	954.1910
420	420	0.42	3.9848	21.46	141	222.9210	1019.2495
450	450	0.45	4.2694	21.46	154	243.4740	1113.2228
480	480	0.48	4.5541	21.46	170	268.7700	1228.8824
510	510	0.51	4.8387	21.46	185	292.4850	1337.3132
540	540	0.54	5.1233	21.46	195	308.2950	1409.6004
570	570	0.57	5.4080	21.46	199	314.6190	1438.5152
600	600	0.6	5.6926	21.46	178	281.4180	1286.7121
630	630	0.63	5.9772	21.46	148	233.9880	1069.8505
660	660	0.66	6.2619	21.46	128	202.3680	925.2761
690	690	0.69	6.5465	21.46	119	188.1390	860.2177
720	720	0.72	6.8311	21.46	110	173.9100	795.1592
750	750	0.75	7.1157	21.46	104.5	165.2145	755.4012
780	780	0.78	7.4004	21.46	99	156.5190	715.6433
810	810	0.81	7.6850	21.46	93	147.0330	672.2709
840	840	0.84	7.9696	21.46	88	139.1280	636.1273
870	870	0.87	8.2543	21.46	84	132.804	607.2125
900	900	0.9	8.5389	21.46	81	128.0610	585.5263
930	930	0.93	8.8235	21.46	80.5	127.2705	581.9119

960	960	0.96	9.1082	21.46	80	126.4800	578.2976
990	990	0.99	9.3928	21.46	79	124.8990	571.0689
1020	1020	1.02	9.6774	21.46	78	123.3180	563.8401
1050	1050	1.05	9.9620	21.46	77	121.7370	556.6114
1080	1080	1.08	10.2467	21.46	76	120.1560	549.3827
1110	1110	1.11	10.5313	21.46	76	120.1560	549.3827

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.21	5.20	5.23
Tinggi, H_o (cm)	10.48	10.54	10.68
Luas penampang, A (cm^2)	21.31	21.26	21.45
Volume benda uji, V_1 (cm^3)	223.38	224.08	229.10
Berat tanah, W_1 (g)	315.77	314	319.25
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.35	9.33	9.48	9.29	12.12	9.4	9.18	9.21	9.11
Berat cawan + tanah, W_2 (g)	29.35	29.33	29.48	29.29	32.12	29.4	29.18	29.21	29.11
Berat cawan + tanah kering, W_3 (g	25.37	25.03	25.05	24.73	27.6	24.87	24.77	24.71	24.65
Kadar air, W (%)	24.8	27.4	28.5	29.5	29.2	29.3	28.3	29.0	28.7
Kadar air rata-rata, W_f (%)	26.9			29.3			28.7		
Berat tanah kering, W_d (g)	248.84			242.77			248.11		



Gambar 13 Kurva Tegangan - Regangan

b. Kadar semen 5% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.20	cm
Tinggi	10.64	cm
Berat	324.81	g

Benda Uji 1

Luas	21.2372	cm2
Volume	225.963	cm3
Berat vol.	1.43744	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1562.8528 kPa e_f 5.92105 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.237166	0	0.0000	0.0000
30	30	0.03	0.2820	21.24	2	3.1620	14.6061
60	60	0.06	0.5639	21.24	6	9.4860	43.8183
90	90	0.09	0.8459	21.24	10.5	16.6005	76.6820
120	120	0.12	1.1278	21.24	16.5	26.0865	120.5003
150	150	0.15	1.4098	21.24	23	36.3630	167.9702
180	180	0.18	1.6917	21.24	30	47.4300	219.0915
210	210	0.21	1.9737	21.24	39.5	62.4495	288.4705
240	240	0.24	2.2556	21.24	53	83.7930	387.0617
270	270	0.27	2.5376	21.24	67	105.9270	489.3044
300	300	0.3	2.8195	21.24	81	128.0610	591.5471
330	330	0.33	3.1015	21.24	96	151.7760	701.0929
360	360	0.36	3.3835	21.24	111	175.4910	810.6386
390	390	0.39	3.6654	21.24	123	194.4630	898.2752
420	420	0.42	3.9474	21.24	137	216.5970	1000.5179
450	450	0.45	4.2293	21.24	150	237.1500	1095.4576
480	480	0.48	4.5113	21.24	165	260.8650	1205.0033
510	510	0.51	4.7932	21.24	179	282.9990	1307.2461
540	540	0.54	5.0752	21.24	189	298.8090	1380.2766
570	570	0.57	5.3571	21.24	201	317.7810	1467.9132
600	600	0.6	5.6391	21.24	210	332.0100	1533.6406
630	630	0.63	5.9211	21.24	214	338.3340	1562.8528
660	660	0.66	6.2030	21.24	205	324.1050	1497.1254
690	690	0.69	6.4850	21.24	177	279.8370	1292.6400
720	720	0.72	6.7669	21.24	153	241.8930	1117.3667
750	750	0.75	7.0489	21.24	137	216.5970	1000.5179
780	780	0.78	7.3308	21.24	124	196.0440	905.5783
810	810	0.81	7.6128	21.24	109	172.329	796.0325
840	840	0.84	7.8947	21.24	100	158.1	730.3051

870	870	0.87	8.1767	21.24	93	147.033	679.1837
900	900	0.9	8.4586	21.24	89	140.709	649.9715
930	930	0.93	8.7406	21.24	85	134.385	620.7593
960	960	0.96	9.0226	21.24	82	129.642	598.8501

Data Benda Uji Sebelum Pengujian :

Diameter	5.24	cm
Tinggi	10.58	cm
Berat	325.88	g

Benda Uji 2

Luas	21.5377	cm2
Volume	227.869	cm3
Berat vol.	1.43012	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1418.6242 kPa e_f 5.67108 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.537721	0	0.0000	0.0000
30	30	0.03	0.2836	21.54	2	3.1620	14.4023
60	60	0.06	0.5671	21.54	4	6.3240	28.8046
90	90	0.09	0.8507	21.54	7	11.0670	50.4080
120	120	0.12	1.1342	21.54	12	18.9720	86.4137
150	150	0.15	1.4178	21.54	19	30.0390	136.8216
180	180	0.18	1.7013	21.54	28	44.2680	201.6319
210	210	0.21	1.9849	21.54	39	61.6590	280.8444
240	240	0.24	2.2684	21.54	51	80.6310	367.2580
270	270	0.27	2.5520	21.54	66	104.3460	475.2751
300	300	0.3	2.8355	21.54	80	126.4800	576.0910
330	330	0.33	3.1191	21.54	94	148.6140	676.9070
360	360	0.36	3.4026	21.54	109	172.3290	784.9240
390	390	0.39	3.6862	21.54	124	196.0440	892.9411
420	420	0.42	3.9698	21.54	139	219.7590	1000.9582
450	450	0.45	4.2533	21.54	153	241.8930	1101.7741
480	480	0.48	4.5369	21.54	165	260.8650	1188.1878
510	510	0.51	4.8204	21.54	177	279.8370	1274.6014
540	540	0.54	5.1040	21.54	185	292.4850	1332.2105
570	570	0.57	5.3875	21.54	193	305.1330	1389.8196
600	600	0.6	5.6711	21.54	197	311.4570	1418.6242
630	630	0.63	5.9546	21.54	194	306.7140	1397.0208
660	660	0.66	6.2382	21.54	184	290.9040	1325.0094
690	690	0.69	6.5217	21.54	174	275.0940	1252.9980
720	720	0.72	6.8053	21.54	167.5	264.8175	1206.1906
750	750	0.75	7.0888	21.54	160	252.9600	1152.1821
780	780	0.78	7.3724	21.54	155.5	245.8455	1119.7770

810	810	0.81	7.6560	21.54	152	240.3120	1094.5730
840	840	0.84	7.9395	21.54	148	233.9880	1065.7684
870	870	0.87	8.2231	21.54	144	227.664	1036.9639
900	900	0.9	8.5066	21.54	140	221.3400	1008.1593
930	930	0.93	8.7902	21.54	137	216.5970	986.5559
960	960	0.96	9.0737	21.54	133.5	211.0635	961.3519
990	990	0.99	9.3573	21.54	130	205.5300	936.1479
1020	1020	1.02	9.6408	21.54	126	199.2060	907.3434
1050	1050	1.05	9.9244	21.54	122	192.8820	878.5388
1080	1080	1.08	10.2079	21.54	118	186.5580	849.7343
1110	1110	1.11	10.4915	21.54	115	181.8150	828.1309
1140	1140	1.14	10.7750	21.54	112.5	177.8625	810.1280
1170	1170	1.17	11.0586	21.54	110	173.9100	792.1252
1200	1200	1.2	11.3422	21.54	106	167.5860	763.3206
1230	1230	1.23	11.6257	21.54	103	162.8430	741.7172
1260	1260	1.26	11.9093	21.54	101	159.6810	727.3149

Data Benda Uji Sebelum Pengujian :

Diameter	5.21	cm
Tinggi	10.58	cm
Berat	330.12	g

Benda Uji 3

Luas	21.3462	cm2
Volume	225.843	cm3
Berat vol.	1.46172	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

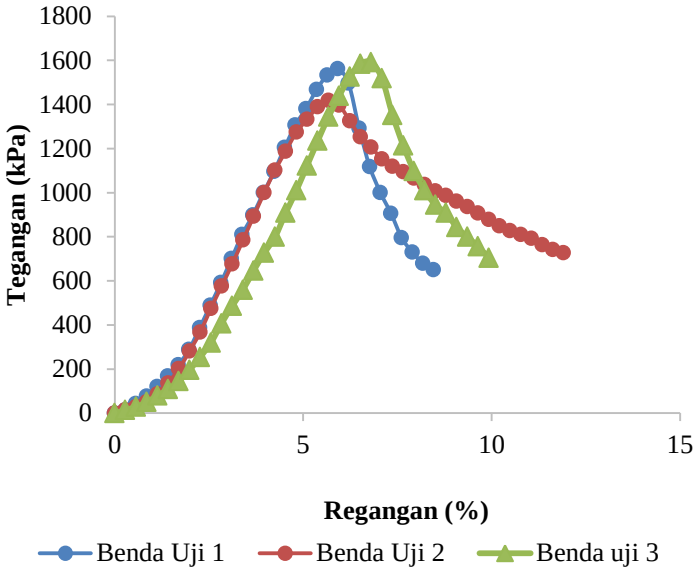
q_u 1591.1976 kPa e_f 6.80529 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.346215	0	0.0000	0.0000
30	30	0.03	0.2836	21.35	2	3.1620	14.5315
60	60	0.06	0.5671	21.35	4	6.3240	29.0630
90	90	0.09	0.8507	21.35	7	11.0670	50.8602
120	120	0.12	1.1342	21.35	11	17.3910	79.9232
150	150	0.15	1.4178	21.35	15	23.7150	108.9861
180	180	0.18	1.7013	21.35	20	31.6200	145.3149
210	210	0.21	1.9849	21.35	27	42.6870	196.1751
240	240	0.24	2.2684	21.35	35	55.3350	254.3010
270	270	0.27	2.5520	21.35	44	69.5640	319.6927
300	300	0.3	2.8355	21.35	56	88.5360	406.8816
330	330	0.33	3.1191	21.35	67	105.9270	486.8048
360	360	0.36	3.4026	21.35	77	121.7370	559.4622
390	390	0.39	3.6862	21.35	89	140.7090	646.6511

420	420	0.42	3.9698	21.35	100	158.1000	726.5743
450	450	0.45	4.2533	21.35	110	173.9100	799.2317
480	480	0.48	4.5369	21.35	125	197.6250	908.2178
510	510	0.51	4.8204	21.35	139	219.7590	1009.9382
540	540	0.54	5.1040	21.35	154.5	244.2645	1122.5572
570	570	0.57	5.3875	21.35	170	268.7700	1235.1762
600	600	0.6	5.6711	21.35	185	292.4850	1344.1624
630	630	0.63	5.9546	21.35	198	313.0380	1438.6170
660	660	0.66	6.2382	21.35	210	332.0100	1525.8059
690	690	0.69	6.5217	21.35	218	344.6580	1583.9319
720	720	0.72	6.8053	21.35	219	346.2390	1591.1976
750	750	0.75	7.0888	21.35	209	330.4290	1518.5402
780	780	0.78	7.3724	21.35	186	294.0660	1351.4281
810	810	0.81	7.6560	21.35	167	264.0270	1213.3790
840	840	0.84	7.9395	21.35	151	238.7310	1097.1271
870	870	0.87	8.2231	21.35	139	219.759	1009.9382
900	900	0.9	8.5066	21.35	130	205.5300	944.5465
930	930	0.93	8.7902	21.35	125	197.6250	908.2178
960	960	0.96	9.0737	21.35	116	183.3960	842.8261
990	990	0.99	9.3573	21.35	110	173.9100	799.2317
1020	1020	1.02	9.6408	21.35	104	164.4240	755.6372
1050	1050	1.05	9.9244	21.35	97	153.3570	704.7770

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.20	5.24	5.21
Tinggi, H_o (cm)	10.64	10.58	10.58
Luas penampang, A (cm^2)	21.23	21.53	21.34
Volume benda uji, V_1 (cm^3)	225.92	227.83	225.80
Berat tanah, W_1 (g)	324.81	325.88	330.12
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.24	9.11	9.11	9.73	9.33	9.23	9.18	9.18	9.22
Berat cawan + tanah, W_2 (g)	29.24	29.15	29.03	29.73	29.4	29.23	29.18	29.18	29.22
Berat cawan + tanah kering, W_3 (g)	25.23	25.12	25.09	25.67	25.38	25.22	25.2	25.18	25.2
Kadar air, W (%)	25.1	25.2	24.7	25.5	25.0	25.1	24.8	25.0	25.2
Kadar air rata-rata, W_f (%)	25.0			25.2			25.0		
Berat tanah kering, W_d (g)	259.91			260.29			264.10		



Gambar 14 Kurva Tegangan – Regangan

c. Kadar semen 8% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.16	cm
Tinggi	10.5	cm
Berat	317.78	g

Benda Uji 1

Luas	20.8847	cm2
Volume	219.289	cm3
Berat vol.	1.44914	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1901.1345 kPa e_f 4.85714 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	20.884688	0	0.0000	0.0000
30	30	0.03	0.2857	20.88	4.5	7.1145	33.4184
60	60	0.06	0.5714	20.88	8.6	13.5966	63.8662
90	90	0.09	0.8571	20.88	14	22.1340	103.9683
120	120	0.12	1.1429	20.88	23	36.3630	170.8051
150	150	0.15	1.4286	20.88	32	50.5920	237.6418
180	180	0.18	1.7143	20.88	45	71.1450	334.1838
210	210	0.21	2.0000	20.88	60	94.8600	445.5784
240	240	0.24	2.2857	20.88	77	121.7370	571.8256
270	270	0.27	2.5714	20.88	99	156.5190	735.2044
300	300	0.3	2.8571	20.88	121	191.3010	898.5831
330	330	0.33	3.1429	20.88	144	227.6640	1069.3882
360	360	0.36	3.4286	20.88	167	264.0270	1240.1932
390	390	0.39	3.7143	20.88	195	308.2950	1448.1298

420	420	0.42	4.0000	20.88	219	346.2390	1626.3612
450	450	0.45	4.2857	20.88	237	374.6970	1760.0347
480	480	0.48	4.5714	20.88	248	392.0880	1841.7240
510	510	0.51	4.8571	20.88	256	404.7360	1901.1345
540	540	0.54	5.1429	20.88	254	401.5740	1886.2819
570	570	0.57	5.4286	20.88	234	369.9540	1737.7558
600	600	0.6	5.7143	20.88	198	313.0380	1470.4087
630	630	0.63	6.0000	20.88	175	276.6750	1299.6037
660	660	0.66	6.2857	20.88	151.5	239.5215	1125.0855
690	690	0.69	6.5714	20.88	139	219.7590	1032.2566
720	720	0.72	6.8571	20.88	123	194.4630	913.4357
750	750	0.75	7.1429	20.88	113	178.6530	839.1727
780	780	0.78	7.4286	20.88	107	169.1670	794.6148
810	810	0.81	7.7143	20.88	102	161.262	757.4833
840	840	0.84	8.0000	20.88	100	158.1	742.6307
870	870	0.87	8.2857	20.88	98	154.938	727.7781
900	900	0.9	8.5714	20.88	96	151.776	712.9254

Data Benda Uji Sebelum Pengujian :

Diameter	5.18	cm
Tinggi	10.5	cm
Berat	314.99	g

Benda Uji 2

Luas	21.047	cm2
Volume	220.994	cm3
Berat vol.	1.42534	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1643.2947 kPa e_f 4.57143 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.047004	0	0.0000	0.0000
30	30	0.03	0.2857	21.05	4	6.3240	29.4761
60	60	0.06	0.5714	21.05	9.5	15.0195	70.0058
90	90	0.09	0.8571	21.05	17	26.8770	125.2736
120	120	0.12	1.1429	21.05	23.5	37.1535	173.1723
150	150	0.15	1.4286	21.05	34	53.7540	250.5472
180	180	0.18	1.7143	21.05	46	72.7260	338.9756
210	210	0.21	2.0000	21.05	64	101.1840	471.6182
240	240	0.24	2.2857	21.05	81	128.0610	596.8918
270	270	0.27	2.5714	21.05	99	156.5190	729.5344
300	300	0.3	2.8571	21.05	118	186.5580	869.5461
330	330	0.33	3.1429	21.05	135	213.4350	994.8197
360	360	0.36	3.4286	21.05	153	241.8930	1127.4623
390	390	0.39	3.7143	21.05	175	276.6750	1289.5810

420	420	0.42	4.0000	21.05	198	313.0380	1459.0688
450	450	0.45	4.2857	21.05	214	338.3340	1576.9734
480	480	0.48	4.5714	21.05	223	352.5630	1643.2947
510	510	0.51	4.8571	21.05	221	349.4010	1628.5566
540	540	0.54	5.1429	21.05	215	339.9150	1584.3424
570	570	0.57	5.4286	21.05	208	328.8480	1532.7592
600	600	0.6	5.7143	21.05	185	292.4850	1363.2714
630	630	0.63	6.0000	21.05	158	249.7980	1164.3075
660	660	0.66	6.2857	21.05	137	216.5970	1009.5577
690	690	0.69	6.5714	21.05	113	178.6530	832.7009
720	720	0.72	6.8571	21.05	95	150.1950	700.0583
750	750	0.75	7.1429	21.05	87	137.5470	641.1060
780	780	0.78	7.4286	21.05	80	126.4800	589.5228
810	810	0.81	7.7143	21.05	73	115.4130	537.9395
840	840	0.84	8.0000	21.05	67	105.9270	493.7253
870	870	0.87	8.2857	21.05	64	101.1840	471.6182
900	900	0.9	8.5714	21.05	62	98.0220	456.8801
930	930	0.93	8.8571	21.05	60	94.8600	442.1421

Data Benda Uji Sebelum Pengujian :

Diameter	5.13	cm
Tinggi	10.59	cm
Berat	317.22	g

Benda Uji 3

Luas	20.6692	cm2
Volume	218.887	cm3
Berat vol.	1.44924	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

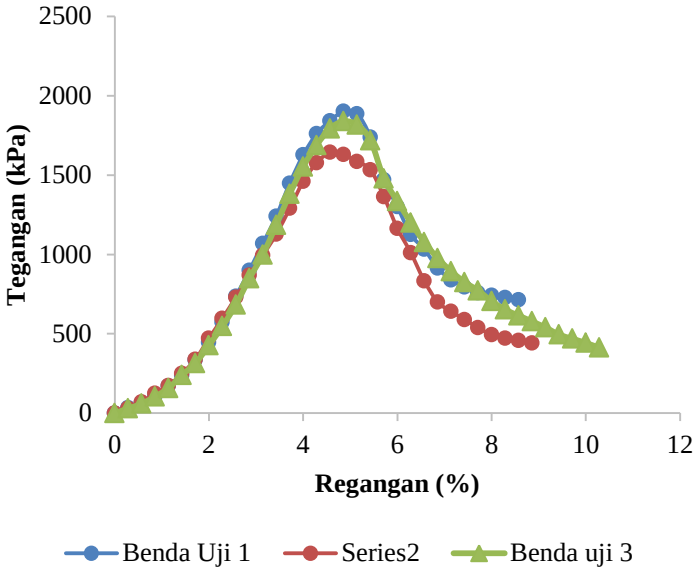
q_u 1838.4099 kPa e_f 4.85714 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	20.669245	0	0.0000	0.0000
30	30	0.03	0.2857	20.67	4	6.3240	30.0149
60	60	0.06	0.5714	20.67	8	12.6480	60.0297
90	90	0.09	0.8571	20.67	14	22.1340	105.0520
120	120	0.12	1.1429	20.67	21	33.2010	157.5780
150	150	0.15	1.4286	20.67	32	50.5920	240.1188
180	180	0.18	1.7143	20.67	42	66.4020	315.1560
210	210	0.21	2.0000	20.67	57	90.1170	427.7117
240	240	0.24	2.2857	20.67	73	115.4130	547.7711
270	270	0.27	2.5714	20.67	91	143.8710	682.8380
300	300	0.3	2.8571	20.67	113	178.6530	847.9197
330	330	0.33	3.1429	20.67	133	210.2730	997.9939

360	360	0.36	3.4286	20.67	158	249.7980	1185.5868
390	390	0.39	3.7143	20.67	184	290.9040	1380.6834
420	420	0.42	4.0000	20.67	207	327.2670	1553.2688
450	450	0.45	4.2857	20.67	225	355.7250	1688.3356
480	480	0.48	4.5714	20.67	239	377.8590	1793.3876
510	510	0.51	4.8571	20.67	245	387.3450	1838.4099
540	540	0.54	5.1429	20.67	242	382.6020	1815.8988
570	570	0.57	5.4286	20.67	229	362.0490	1718.3505
600	600	0.6	5.7143	20.67	197	311.4570	1478.2316
630	630	0.63	6.0000	20.67	178	281.4180	1335.6611
660	660	0.66	6.2857	20.67	160	252.9600	1200.5942
690	690	0.69	6.5714	20.67	143.5	226.8735	1076.7829
720	720	0.72	6.8571	20.67	130	205.5300	975.4828
750	750	0.75	7.1429	20.67	119	188.1390	892.9420
780	780	0.78	7.4286	20.67	110	173.9100	825.4085
810	810	0.81	7.7143	20.67	103	162.8430	772.8825
840	840	0.84	8.0000	20.67	94	148.6140	705.3491
870	870	0.87	8.2857	20.67	87	137.5470	652.8231
900	900	0.9	8.5714	20.67	82	129.6420	615.3045
930	930	0.93	8.8571	20.67	77	121.7370	577.7860
960	960	0.96	9.1429	20.67	72	113.8320	540.2674
990	990	0.99	9.4286	20.67	66	104.3460	495.2451
1020	1020	1.02	9.7143	20.67	62.5	98.8125	468.9821
1050	1050	1.05	10.0000	20.67	59	93.2790	442.7191

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.16	5.18	5.13
Tinggi, H_o (cm)	10.5	10.5	10.59
Luas penampang, A (cm^2)	20.88	21.04	20.67
Volume benda uji, V_1 (cm^3)	219.25	220.95	218.85
Berat tanah, W_1 (g)	317.78	314.99	317.22
Berat jenis, G_s	2.65	2.65	2.65

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.18	9.18	9.23	9.82	9.33	9.3	9.24	9	9.73
Berat cawan + tanah, W_2 (g)	29.18	29.18	29.23	29.82	29.33	29.3	29.24	29	29.73
Berat cawan + tanah kering, W_3 (g)	25.09	25.06	25.15	25.8	25.34	25.36	25.11	24.87	25.65
Kadar air, W (%)	25.7	25.9	25.6	25.2	24.9	24.5	26.0	26.0	25.6
Kadar air rata-rata, W_f (%)	25.8			24.9			25.9		
Berat tanah kering, W_d (g)	252.69			252.25			251.98		



Gambar 15 Kurva Tegangan – Regangan

6. Benda uji dengan umur pemeraman 28 hari

a. Kadar semen 3% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :

Diameter	5.24	cm
Tinggi	10.5	cm
Berat	317.73	g

Benda Uji 1

Luas	21.5651	cm2
Volume	226.434	cm3
Berat vol.	1.40319	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1395.2440 kPa e_f 6 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.565149	0	0.0000	0.0000
30	30	0.03	0.2857	21.57	2	3.1620	14.3840
60	60	0.06	0.5714	21.57	4	6.3240	28.7679
90	90	0.09	0.8571	21.57	6	9.4860	43.1519
120	120	0.12	1.1429	21.57	11	17.3910	79.1118
150	150	0.15	1.4286	21.57	16	25.2960	115.0717
180	180	0.18	1.7143	21.57	23	36.3630	165.4155
210	210	0.21	2.0000	21.57	29	45.8490	208.5674
240	240	0.24	2.2857	21.57	35	55.3350	251.7193
270	270	0.27	2.5714	21.57	41.5	65.6115	298.4671
300	300	0.3	2.8571	21.57	50	79.0500	359.5990
330	330	0.33	3.1429	21.57	60	94.8600	431.5188

360	360	0.36	3.4286	21.57	69	109.0890	496.2466
390	390	0.39	3.7143	21.57	80	126.4800	575.3583
420	420	0.42	4.0000	21.57	94	148.6140	676.0460
450	450	0.45	4.2857	21.57	110	173.9100	791.1177
480	480	0.48	4.5714	21.57	129	203.9490	927.7653
510	510	0.51	4.8571	21.57	136	215.0160	978.1092
540	540	0.54	5.1429	21.57	162	256.1220	1165.1006
570	570	0.57	5.4286	21.57	179	282.9990	1287.3643
600	600	0.6	5.7143	21.57	189	298.8090	1359.2841
630	630	0.63	6.0000	21.57	194	306.7140	1395.2440
660	660	0.66	6.2857	21.57	188	297.2280	1352.0921
690	690	0.69	6.5714	21.57	165	260.8650	1186.6766
720	720	0.72	6.8571	21.57	140	221.3400	1006.8771
750	750	0.75	7.1429	21.57	100	158.1000	719.1979
780	780	0.78	7.4286	21.57	80	126.4800	575.3583
810	810	0.81	7.7143	21.57	62	98.022	445.9027
840	840	0.84	8.0000	21.57	50	79.05	359.5990
870	870	0.87	8.2857	21.57	42	66.402	302.0631
900	900	0.9	8.5714	21.57	36	56.916	258.9113
930	930	0.93	8.8571	21.57	35	55.335	251.7193
960	960	0.96	9.1429	21.57	34	53.754	244.5273

Data Benda Uji Sebelum Pengujian :

Diameter	5.21	cm
Tinggi	10.53	cm
Berat	316.45	g

Benda Uji 2

Luas	21.3189	cm2
Volume	224.488	cm3
Berat vol.	1.40965	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1331.3328 kPa e_f 5.98291 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.318926	0	0.0000	0.0000
30	30	0.03	0.2849	21.32	2.5	3.9525	18.1876
60	60	0.06	0.5698	21.32	5	7.9050	36.3752
90	90	0.09	0.8547	21.32	10	15.8100	72.7504
120	120	0.12	1.1396	21.32	17	26.8770	123.6757
150	150	0.15	1.4245	21.32	25	39.5250	181.8761
180	180	0.18	1.7094	21.32	33	52.1730	240.0764
210	210	0.21	1.9943	21.32	42	66.4020	305.5518
240	240	0.24	2.2792	21.32	54	85.3740	392.8523
270	270	0.27	2.5641	21.32	66	104.3460	480.1528

300	300	0.3	2.8490	21.32	79	124.8990	574.7284
330	330	0.33	3.1339	21.32	90	142.2900	654.7538
360	360	0.36	3.4188	21.32	102	161.2620	742.0544
390	390	0.39	3.7037	21.32	113	178.6530	822.0798
420	420	0.42	3.9886	21.32	126	199.2060	916.6554
450	450	0.45	4.2735	21.32	138	218.1780	1003.9559
480	480	0.48	4.5584	21.32	150	237.1500	1091.2564
510	510	0.51	4.8433	21.32	157	248.2170	1142.1817
540	540	0.54	5.1282	21.32	164	259.2840	1193.1070
570	570	0.57	5.4131	21.32	173	273.5130	1258.5824
600	600	0.6	5.6980	21.32	177	279.8370	1287.6826
630	630	0.63	5.9829	21.32	183	289.3230	1331.3328
660	660	0.66	6.2678	21.32	183	289.3230	1331.3328
690	690	0.69	6.5527	21.32	181	286.1610	1316.7827
720	720	0.72	6.8376	21.32	174	275.0940	1265.8574
750	750	0.75	7.1225	21.32	163	257.7030	1185.8320
780	780	0.78	7.4074	21.32	150	237.1500	1091.2564
810	810	0.81	7.6923	21.32	147	232.4070	1069.4313
840	840	0.84	7.9772	21.32	124	196.0440	902.1053
870	870	0.87	8.2621	21.32	112	177.072	814.8048
900	900	0.9	8.5470	21.32	101	159.6810	734.7793
930	930	0.93	8.8319	21.32	92	145.4520	669.3039
960	960	0.96	9.1168	21.32	84.5	133.5945	614.7411
990	990	0.99	9.4017	21.32	77.5	122.5275	563.8158
1020	1020	1.02	9.6866	21.32	70	110.6700	509.2530
1050	1050	1.05	9.9715	21.32	66.5	105.1365	483.7903
1080	1080	1.08	10.2564	21.32	63	99.6030	458.3277
1110	1110	1.11	10.5413	21.32	60	94.8600	436.5026

Data Benda Uji Sebelum Pengujian :

Diameter	5.21	cm
Tinggi	10.52	cm
Berat	317.7	g

Benda Uji 3

Luas	21.3189	cm2
Volume	224.275	cm3
Berat vol.	1.41656	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

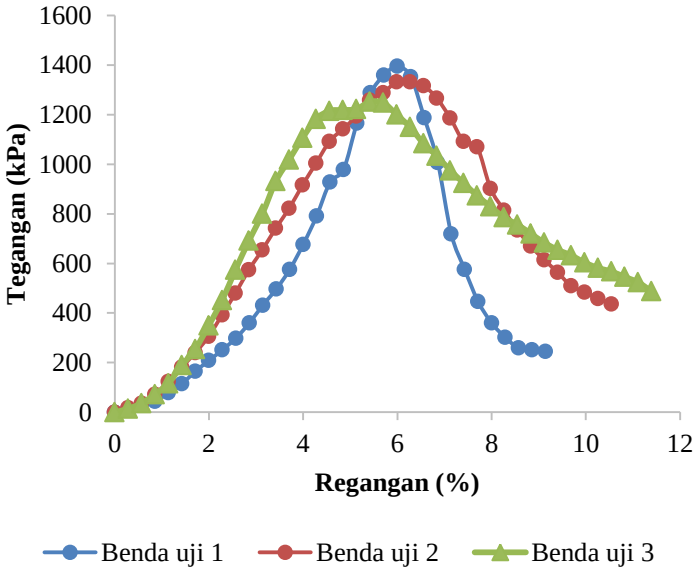
q_u 1251.3074 kPa $\square_f$ 5.41311 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.318926	0	0.0000	0.0000
30	30	0.03	0.2849	21.32	2	3.1620	14.5501

60	60	0.06	0.5698	21.32	5	7.9050	36.3752
90	90	0.09	0.8547	21.32	10	15.8100	72.7504
120	120	0.12	1.1396	21.32	16	25.2960	116.4007
150	150	0.15	1.4245	21.32	26	41.1060	189.1511
180	180	0.18	1.7094	21.32	35	55.3350	254.6265
210	210	0.21	1.9943	21.32	48	75.8880	349.2021
240	240	0.24	2.2792	21.32	62	98.0220	451.0527
270	270	0.27	2.5641	21.32	79	124.8990	574.7284
300	300	0.3	2.8490	21.32	95	150.1950	691.1291
330	330	0.33	3.1339	21.32	110	173.9100	800.2547
360	360	0.36	3.4188	21.32	128	202.3680	931.2055
390	390	0.39	3.7037	21.32	140	221.3400	1018.5060
420	420	0.42	3.9886	21.32	152	240.3120	1105.8065
450	450	0.45	4.2735	21.32	162.5	256.9125	1182.1944
480	480	0.48	4.5584	21.32	167	264.0270	1214.9321
510	510	0.51	4.8433	21.32	167.5	264.8175	1218.5697
540	540	0.54	5.1282	21.32	168	265.6080	1222.2072
570	570	0.57	5.4131	21.32	172	271.9320	1251.3074
600	600	0.6	5.6980	21.32	171.5	271.1415	1247.6698
630	630	0.63	5.9829	21.32	165	260.8650	1200.3821
660	660	0.66	6.2678	21.32	158	249.7980	1149.4568
690	690	0.69	6.5527	21.32	149	235.5690	1083.9814
720	720	0.72	6.8376	21.32	142	224.5020	1033.0561
750	750	0.75	7.1225	21.32	134	211.8540	974.8557
780	780	0.78	7.4074	21.32	127	200.7870	923.9304
810	810	0.81	7.6923	21.32	120	189.7200	873.0051
840	840	0.84	7.9772	21.32	114	180.2340	829.3549
870	870	0.87	8.2621	21.32	108	170.748	785.7046
900	900	0.9	8.5470	21.32	104	164.4240	756.6044
930	930	0.93	8.8319	21.32	99	156.5190	720.2292
960	960	0.96	9.1168	21.32	94	148.6140	683.8540
990	990	0.99	9.4017	21.32	90	142.2900	654.7538
1020	1020	1.02	9.6866	21.32	87	137.5470	632.9287
1050	1050	1.05	9.9715	21.32	83	131.2230	603.8285
1080	1080	1.08	10.2564	21.32	80	126.4800	582.0034
1110	1110	1.11	10.5413	21.32	78	123.3180	567.4533
1140	1140	1.14	10.8262	21.32	75	118.5750	545.6282
1170	1170	1.17	11.1111	21.32	72	113.8320	523.8031
1200	1200	1.2	11.3960	21.32	67	105.9270	487.4279

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.24	5.21	5.21
Tinggi, H_o (cm)	10.5	10.53	10.52
Luas penampang, A (cm^2)	21.56	21.31	21.31
Volume benda uji, V_1 (cm^3)	226.39	224.45	224.23
Berat tanah, W_1 (g)	317.73	316.45	317.7
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.36	9.4	9.58	9.18	9.11	9.12	9.21	9.33	9.23
Berat cawan + tanah, W_2 (g)	29.36	29.4	29.58	29.18	29.11	29.12	29.21	29.33	29.23
Berat cawan + tanah kering, W_3 (g)	25.71	25.78	25.9	25.85	25.8	25.77	25.21	25.25	25.31
Kadar air, W (%)	22.3	22.1	22.5	20.0	19.8	20.1	25.0	25.6	24.4
Kadar air rata-rata, W_f (%)	22.3			20.0			25.0		
Berat tanah kering, W_d (g)	259.74			263.76			254.16		



Gambar 16 Kurva Tegangan- Regangan

b. Kadar semen 5% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :			Benda Uji 1		
Diameter	5.23	cm	Luas	21.5103	cm2
Tinggi	10.6	cm	Volume	228.009	cm3
Berat	323.94	g	Berat vol.	1.42073	g/cm3
			Kalibrasi proving ring : 1.581		kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1701.6342 kPa e_f 5.9434 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.51031	0	0.0000	0.0000
30	30	0.03	0.2830	21.51	4	6.3240	28.8413
60	60	0.06	0.5660	21.51	6	9.4860	43.2619
90	90	0.09	0.8491	21.51	9	14.2290	64.8928
120	120	0.12	1.1321	21.51	14	22.1340	100.9444
150	150	0.15	1.4151	21.51	22	34.7820	158.6269
180	180	0.18	1.6981	21.51	33	52.1730	237.9404
210	210	0.21	1.9811	21.51	47	74.3070	338.8848
240	240	0.24	2.2642	21.51	57.5	90.9075	414.5931
270	270	0.27	2.5472	21.51	71.5	113.0415	515.5375
300	300	0.3	2.8302	21.51	92	145.4520	663.3489
330	330	0.33	3.1132	21.51	107	169.1670	771.5036
360	360	0.36	3.3962	21.51	122	192.8820	879.6584
390	390	0.39	3.6792	21.51	140	221.3400	1009.4440
420	420	0.42	3.9623	21.51	157	248.2170	1132.0194
450	450	0.45	4.2453	21.51	176	278.2560	1269.0153
480	480	0.48	4.5283	21.51	191	301.9710	1377.1700
510	510	0.51	4.8113	21.51	206	325.6860	1485.3248
540	540	0.54	5.0943	21.51	220	347.8200	1586.2692
570	570	0.57	5.3774	21.51	229	362.0490	1651.1620
600	600	0.6	5.6604	21.51	235	371.5350	1694.4239
630	630	0.63	5.9434	21.51	236	373.1160	1701.6342
660	660	0.66	6.2264	21.51	228	360.4680	1643.9517
690	690	0.69	6.5094	21.51	178	281.4180	1283.4360
720	720	0.72	6.7925	21.51	143	226.0830	1031.0750
750	750	0.75	7.0755	21.51	122	192.8820	879.6584
780	780	0.78	7.3585	21.51	108	170.7480	778.7140
810	810	0.81	7.6415	21.51	98	154.938	706.6108
840	840	0.84	7.9245	21.51	83	131.223	598.4561
870	870	0.87	8.2075	21.51	76	120.156	547.9839
900	900	0.9	8.4906	21.51	72	113.832	519.1426

930	930	0.93	8.7736	21.51	58	91.698	418.1982
960	960	0.96	9.0566	21.51	55	86.955	396.5673

Data Benda Uji Sebelum Pengujian :

Diameter	5.21	cm
Tinggi	10.5	cm
Berat	327.16	g

Benda Uji 2

Luas	21.3462	cm2
Volume	224.135	cm3
Berat vol.	1.45965	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1678.3865 kPa $\square_f$ 6.28571 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.346215	0	0.0000	0.0000
30	30	0.03	0.2857	21.35	3	4.7430	21.7972
60	60	0.06	0.5714	21.35	6	9.4860	43.5945
90	90	0.09	0.8571	21.35	10	15.8100	72.6574
120	120	0.12	1.1429	21.35	14	22.1340	101.7204
150	150	0.15	1.4286	21.35	22	34.7820	159.8463
180	180	0.18	1.7143	21.35	35	55.3350	254.3010
210	210	0.21	2.0000	21.35	48	75.8880	348.7556
240	240	0.24	2.2857	21.35	58	91.6980	421.4131
270	270	0.27	2.5714	21.35	71	112.2510	515.8677
300	300	0.3	2.8571	21.35	91	143.8710	661.1826
330	330	0.33	3.1429	21.35	105	166.0050	762.9030
360	360	0.36	3.4286	21.35	120	189.7200	871.8891
390	390	0.39	3.7143	21.35	137	216.5970	995.4067
420	420	0.42	4.0000	21.35	153	241.8930	1111.6586
450	450	0.45	4.2857	21.35	170	268.7700	1235.1762
480	480	0.48	4.5714	21.35	184	290.9040	1336.8966
510	510	0.51	4.8571	21.35	198	313.0380	1438.6170
540	540	0.54	5.1429	21.35	211	333.5910	1533.0717
570	570	0.57	5.4286	21.35	220	347.8200	1598.4634
600	600	0.6	5.7143	21.35	224	354.1440	1627.5263
630	630	0.63	6.0000	21.35	228	360.4680	1656.5893
660	660	0.66	6.2857	21.35	231	365.2110	1678.3865
690	690	0.69	6.5714	21.35	230.5	364.4205	1674.7537
720	720	0.72	6.8571	21.35	227	358.8870	1649.3236
750	750	0.75	7.1429	21.35	214	338.3340	1554.8689
780	780	0.78	7.4286	21.35	154	243.4740	1118.9244
810	810	0.81	7.7143	21.35	129	203.9490	937.2808
840	840	0.84	8.0000	21.35	117	184.9770	850.0919

870	870	0.87	8.2857	21.35	103	162.843	748.3715
900	900	0.9	8.5714	21.35	89	140.7090	646.6511
930	930	0.93	8.8571	21.35	84	132.8040	610.3224
960	960	0.96	9.1429	21.35	72.5	114.6225	526.7663
990	990	0.99	9.4286	21.35	69	109.0890	501.3362
1020	1020	1.02	9.7143	21.35	65	102.7650	472.2733

Data Benda Uji Sebelum Pengujian :

Diameter	5.20	cm
Tinggi	10.55	cm
Berat	325.01	g

Benda Uji 3

Luas	21.2099	cm2
Volume	223.765	cm3
Berat vol.	1.45246	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

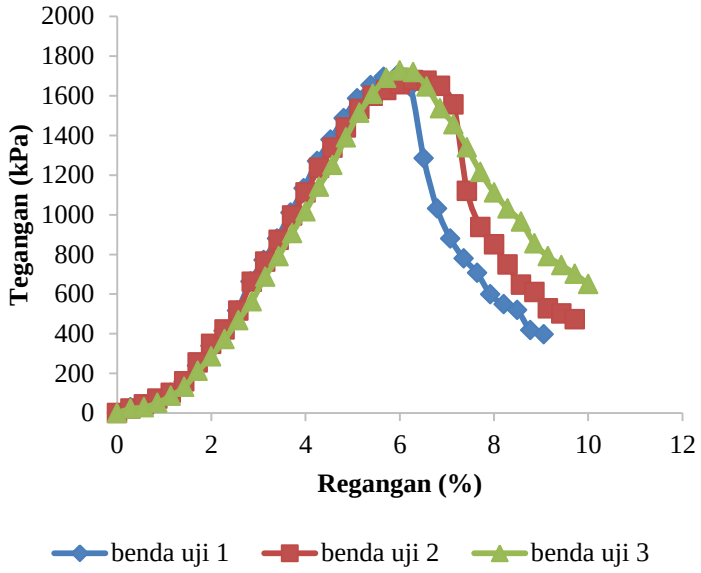
q_u 1725.7317 kPa e_f 6.0000 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.209948	0	0.0000	0.0000
30	30	0.03	0.2857	21.21	3	4.7430	21.9373
60	60	0.06	0.5714	21.21	4	6.3240	29.2497
90	90	0.09	0.8571	21.21	7	11.0670	51.1870
120	120	0.12	1.1429	21.21	12	18.9720	87.7491
150	150	0.15	1.4286	21.21	18	28.4580	131.6236
180	180	0.18	1.7143	21.21	29	45.8490	212.0603
210	210	0.21	2.0000	21.21	39	61.6590	285.1845
240	240	0.24	2.2857	21.21	51	80.6310	372.9335
270	270	0.27	2.5714	21.21	64	101.1840	467.9950
300	300	0.3	2.8571	21.21	77	121.7370	563.0565
330	330	0.33	3.1429	21.21	94	148.6140	687.3677
360	360	0.36	3.4286	21.21	108	170.7480	789.7416
390	390	0.39	3.7143	21.21	124	196.0440	906.7404
420	420	0.42	4.0000	21.21	139	219.7590	1016.4267
450	450	0.45	4.2857	21.21	156	246.6360	1140.7379
480	480	0.48	4.5714	21.21	171	270.3510	1250.4242
510	510	0.51	4.8571	21.21	190	300.3900	1389.3603
540	540	0.54	5.1429	21.21	207	327.2670	1513.6715
570	570	0.57	5.4286	21.21	220	347.8200	1608.7329
600	600	0.6	5.7143	21.21	231	365.2110	1689.1696
630	630	0.63	6.0000	21.21	236	373.1160	1725.7317
660	660	0.66	6.2857	21.21	235	371.5350	1718.4193
690	690	0.69	6.5714	21.21	225	355.7250	1645.2951

720	720	0.72	6.8571	21.21	210	332.0100	1535.6087
750	750	0.75	7.1429	21.21	199	314.6190	1455.1721
780	780	0.78	7.4286	21.21	183	289.3230	1338.1733
810	810	0.81	7.7143	21.21	166	262.4460	1213.8621
840	840	0.84	8.0000	21.21	152	240.3120	1111.4882
870	870	0.87	8.2857	21.21	141	222.921	1031.0516
900	900	0.9	8.5714	21.21	132	208.6920	965.2398
930	930	0.93	8.8571	21.21	117	184.9770	855.5534
960	960	0.96	9.1429	21.21	108	170.7480	789.7416
990	990	0.99	9.4286	21.21	102	161.2620	745.8671
1020	1020	1.02	9.7143	21.21	96	151.7760	701.9926
1050	1050	1.05	10.0000	21.21	89	140.7090	650.8056

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.23	5.21	5.20
Tinggi, H_o (cm)	10.6	10.5	10.55
Luas penampang, A (cm^2)	21.51	21.34	21.21
Volume benda uji, V_1 (cm^3)	227.97	224.09	223.72
Berat tanah, W_1 (g)	323.94	327.16	325.01
Berat jenis, G_s	2.66	2.66	2.66

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.12	9.18	9.33	9.29	9.31	9.26	9.78	9.83	9.22
Berat cawan + tanah, W_2 (g)	29.12	29.18	29.33	29.29	29.31	29.26	29.78	29.83	29.22
Berat cawan + tanah kering, W_3 (g)	25.11	25.55	25.4	25.41	25.56	25.46	25.86	25.83	25.44
Kadar air, W (%)	25.1	22.2	24.5	24.1	23.1	23.5	24.4	25.0	23.3
Kadar air rata-rata, W_f (%)	23.9			23.5			24.2		
Berat tanah kering, W_d (g)	261.45			264.83			261.62		



Gambar 17 Kurva Tegangan – Regangan

c. Kadar semen 8% dan serat 0,4%

Data Benda Uji Sebelum Pengujian :			Benda Uji 1		
Diameter	5.20	cm	Luas	21.2099	cm2
Tinggi	10.53	cm	Volume	223.341	cm3
Berat	310.8	g	Berat vol.	1.3916	g/cm3
			Kalibrasi proving ring : 1.581		kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 2032.8534 kPa e_f 5.69801 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.209948	0	0.0000	0.0000
30	30	0.03	0.2849	21.21	5.5	8.6955	40.2183
60	60	0.06	0.5698	21.21	11	17.3910	80.4366
90	90	0.09	0.8547	21.21	17	26.8770	124.3112
120	120	0.12	1.1396	21.21	25	39.5250	182.8106
150	150	0.15	1.4245	21.21	35	55.3350	255.9348
180	180	0.18	1.7094	21.21	49	77.4690	358.3087
210	210	0.21	1.9943	21.21	66	104.3460	482.6199
240	240	0.24	2.2792	21.21	83	131.2230	606.9311
270	270	0.27	2.5641	21.21	102	161.2620	745.8671
300	300	0.3	2.8490	21.21	123	194.4630	899.4280
330	330	0.33	3.1339	21.21	142	224.5020	1038.3640
360	360	0.36	3.4188	21.21	160	252.9600	1169.9876

390	390	0.39	3.7037	21.21	179	282.9990	1308.9236
420	420	0.42	3.9886	21.21	196	309.8760	1433.2348
450	450	0.45	4.2735	21.21	215	339.9150	1572.1708
480	480	0.48	4.5584	21.21	233	368.3730	1703.7944
510	510	0.51	4.8433	21.21	248	392.0880	1813.4808
540	540	0.54	5.1282	21.21	263	415.8030	1923.1671
570	570	0.57	5.4131	21.21	272	430.0320	1988.9789
600	600	0.6	5.6980	21.21	278	439.5180	2032.8534
630	630	0.63	5.9829	21.21	276	436.3560	2018.2286
660	660	0.66	6.2678	21.21	241	381.0210	1762.2938
690	690	0.69	6.5527	21.21	211	333.5910	1542.9211
720	720	0.72	6.8376	21.21	186	294.0660	1360.1106
750	750	0.75	7.1225	21.21	171	270.3510	1250.4242
780	780	0.78	7.4074	21.21	159	251.3790	1162.6752
810	810	0.81	7.6923	21.21	149.5	236.3595	1093.2072
840	840	0.84	7.9772	21.21	141	222.921	1031.0516
870	870	0.87	8.2621	21.21	135	213.435	987.1770
900	900	0.9	8.5470	21.21	127	200.787	928.6777

Data Benda Uji Sebelum Pengujian :

Diameter	5.19	cm
Tinggi	10.48	cm
Berat	312.71	g

Benda Uji 2

Luas	21.1556	cm2
Volume	221.71	cm3
Berat vol.	1.41044	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

q_u 1964.7671 kPa e_f 4.86641 %

Waktu (detik)	Deformasi		Regangan ε = ΔH/Ho (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	ΔH = a x 10^{-3} (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.155563	0	0.0000	0.0000
30	30	0.03	0.2863	21.16	4	6.3240	29.3249
60	60	0.06	0.5725	21.16	7.5	11.8575	54.9842
90	90	0.09	0.8588	21.16	14	22.1340	102.6371
120	120	0.12	1.1450	21.16	23	36.3630	168.6181
150	150	0.15	1.4313	21.16	35	55.3350	256.5927
180	180	0.18	1.7176	21.16	52	82.2120	381.2235
210	210	0.21	2.0038	21.16	69	109.0890	505.8542
240	240	0.24	2.2901	21.16	89	140.7090	652.4786
270	270	0.27	2.5763	21.16	110	173.9100	806.4343
300	300	0.3	2.8626	21.16	131	207.1110	960.3899
330	330	0.33	3.1489	21.16	155	245.0550	1136.3392

360	360	0.36	3.4351	21.16	180	284.5800	1319.6197
390	390	0.39	3.7214	21.16	204	322.5240	1495.5690
420	420	0.42	4.0076	21.16	229	362.0490	1678.8495
450	450	0.45	4.2939	21.16	252	398.4120	1847.4676
480	480	0.48	4.5802	21.16	263	415.8030	1928.1110
510	510	0.51	4.8664	21.16	268	423.7080	1964.7671
540	540	0.54	5.1527	21.16	266	420.5460	1950.1046
570	570	0.57	5.4389	21.16	258	407.8980	1891.4549
600	600	0.6	5.7252	21.16	243	384.1830	1781.4866
630	630	0.63	6.0115	21.16	227	358.8870	1664.1870
660	660	0.66	6.2977	21.16	207	327.2670	1517.5626
690	690	0.69	6.5840	21.16	186	294.0660	1363.6070
720	720	0.72	6.8702	21.16	166	262.4460	1216.9826
750	750	0.75	7.1565	21.16	147	232.4070	1077.6894
780	780	0.78	7.4427	21.16	133	210.2730	975.0523
810	810	0.81	7.7290	21.16	122	192.8820	894.4089
840	840	0.84	8.0153	21.16	111	175.4910	813.7655
870	870	0.87	8.3015	21.16	100	158.1000	733.1220

Data Benda Uji Sebelum Pengujian :

Diameter	5.19	cm
Tinggi	10.52	cm
Berat	314.28	g

Benda Uji 3

Luas	21.1284	cm2
Volume	222.271	cm3
Berat vol.	1.41395	g/cm3

Kalibrasi proving ring : 1.581 kg/div

Hasil Uji Kuat Tekan Bebas:

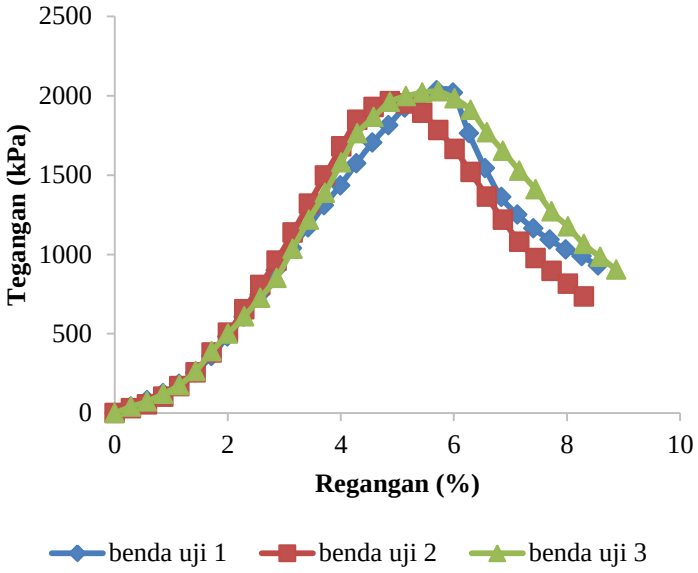
q_u 2026.0185 kPa e_f 5.72519 %

Waktu (detik)	Deformasi		Regangan $\varepsilon = \Delta H/Ho$ (%)	Luas terkoreksi A (cm^2)	Beban Aksial		Tegangan P/A (kPa)
	Arloji ukur (a)	$\Delta H = a \times 10^{-3}$ (cm)			Arloji Ukur	Beban P (kg)	
0	0	0	0.0000	21.128397	0	0.0000	0.0000
30	30	0.03	0.2863	21.13	5.5	8.6955	40.3736
60	60	0.06	0.5725	21.13	10	15.8100	73.4065
90	90	0.09	0.8588	21.13	16.5	26.0865	121.1207
120	120	0.12	1.1450	21.13	24	37.9440	176.1755
150	150	0.15	1.4313	21.13	36	56.9160	264.2633
180	180	0.18	1.7176	21.13	53	83.7930	389.0543
210	210	0.21	2.0038	21.13	68	107.5080	499.1640
240	240	0.24	2.2901	21.13	83	131.2230	609.2737
270	270	0.27	2.5763	21.13	99	156.5190	726.7240
300	300	0.3	2.8626	21.13	116	183.3960	851.5150
330	330	0.33	3.1489	21.13	141	222.9210	1035.0312

360	360	0.36	3.4351	21.13	166	262.4460	1218.5473
390	390	0.39	3.7214	21.13	189	298.8090	1387.3822
420	420	0.42	4.0076	21.13	215	339.9150	1578.2390
450	450	0.45	4.2939	21.13	240	379.4400	1761.7552
480	480	0.48	4.5802	21.13	254	401.5740	1864.5243
510	510	0.51	4.8664	21.13	267	422.1270	1959.9527
540	540	0.54	5.1527	21.13	272	430.0320	1996.6559
570	570	0.57	5.4389	21.13	275	434.7750	2018.6778
600	600	0.6	5.7252	21.13	276	436.3560	2026.0185
630	630	0.63	6.0115	21.13	270	426.8700	1981.9746
660	660	0.66	6.2977	21.13	260	411.0600	1908.5681
690	690	0.69	6.5840	21.13	241	381.0210	1769.0958
720	720	0.72	6.8702	21.13	225	355.7250	1651.6455
750	750	0.75	7.1565	21.13	208	328.8480	1526.8545
780	780	0.78	7.4427	21.13	192	303.5520	1409.4042
810	810	0.81	7.7290	21.13	173	273.5130	1269.9319
840	840	0.84	8.0153	21.13	160	252.9600	1174.5035
870	870	0.87	8.3015	21.13	145	229.2450	1064.3938
900	900	0.9	8.5878	21.13	134	211.8540	983.6467
930	930	0.93	8.8740	21.13	123	194.4630	902.8995

Data Benda Uji Sebelum Pengujian	Benda 1	Benda 2	Benda 3
Diameter / lebar sisi (cm)	5.20	5.19	5.19
Tinggi, H_o (cm)	10.53	10.48	10.52
Luas penampang, A (cm^2)	21.21	21.15	21.12
Volume benda uji, V_1 (cm^3)	223.30	221.67	222.23
Berat tanah, W_1 (g)	310.8	312.71	314.28
Berat jenis, G_s	2.65	2.65	2.65

Data Pengujian Kadar Air	Benda 1			Benda 2			Benda 3		
Berat Cawan, W_1 (g)	9.21	10.42	12.96	9.33	9.82	9.83	9.26	9.31	9.78
Berat cawan + tanah, W_2 (g)	29.21	30.42	32.96	29.33	29.82	29.83	29.26	29.31	29.78
Berat cawan + tanah kering, W_3 (g)	25.7	26.9	29.46	25.75	26.31	26.29	25.75	25.8	26.13
Kadar air, W (%)	21.3	21.4	21.2	21.8	21.3	21.5	21.3	21.3	22.3
Kadar air rata-rata, W_f (%)	21.3			21.5			21.6		
Berat tanah kering, W_d (g)	256.25			257.31			258.39		



Gambar 18 Kurva Tegangan-Regangan