

DAFTAR PUSTAKA

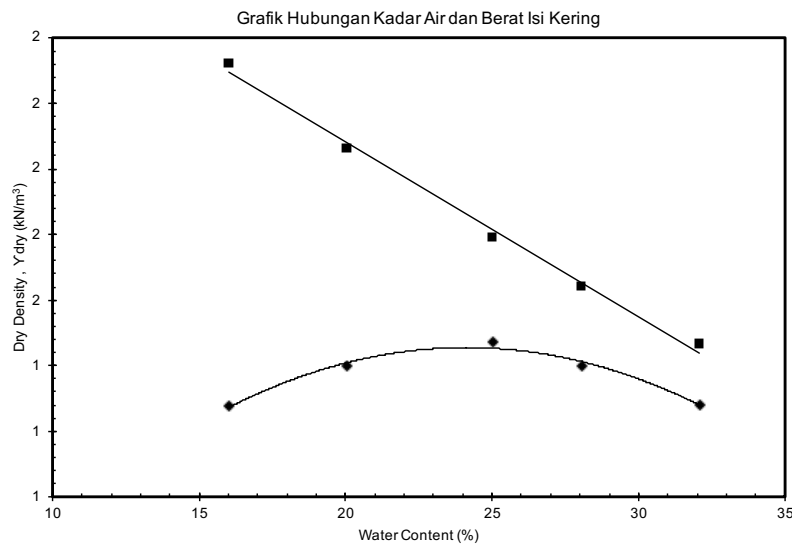
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LAMPIRAN

COMPACTION TEST RESULTS											
PROJECT	: KARAKTERISTIK KUAT TEKAN TANAH TERSTABILISASI ZEOLITE DAN OVERBOULDER										
LOCATION	: GOWA										
SAMPLE	: SOFT SOIL										
CLIENT	:										
TESTING METHOD	: ASTM D 698/ D 1567			TESTED BY		: AFDHAL REFSI NEGARA					
LABORATORY	: HASANUDDIN UNIVERSITY			DATE		: AUGUST 2019					
Berat tanah	gram	2500	2500	2500	2500	2500					
Kadar air mula-mula	%	0.00	0.00	0.00	0.00	0.00					
Penambahan air	ml	400	500	600	700	800					
Kadar air akhir	%	16.00	20.00	24.00	28.00	32.00					
Berat Isi Basah (Wet density)											
No. Mould	-	1	2	3	4	5					
Berat Mould	gram	1943	1943	1943	1943	1943					
Berat tanah basah + Mould	gram	3502	3629	3745	3743	3721					
Berat tanah basah, W_{wet}	gram	1559	1686	1802	1800	1778					
Volume Mould	cm ³	1004	1004	1004	1004	1004					
Berat Volume Basah	gr/cm ³	1.5529	1.6794	1.7949	1.7929	1.7710					
Kadar Air (Water Content)											
No. Container	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B
Berat tanah basah + Container	gram	30.04	21.4	32.51	32	39.77	44.4	26.65	32.66	34.15	29.05
Berat tanah kering + Container	gram	26.63	19.17	28.44	27.95	33.36	37.09	22.51	26.67	27.94	24.03
Berat air	gram	3.41	2.23	4.07	4.05	6.41	7.31	4.14	5.99	6.21	5.02
Berat container	gram	5.32	5.26	8.15	7.79	7.79	7.82	7.77	5.29	8.55	8.4
Berat tanah kering	gram	21.31	13.91	20.29	20.16	25.57	29.27	14.74	21.38	19.39	15.63
Kadar air	%	16.00	16.03	20.06	20.09	25.07	24.97	28.09	28.02	32.03	32.12
Kadar air rata-rata	%	16.02		20.07		25.02		28.05		32.07	
Berat Isi Kering (Dry Density)											
Berat tanah basah, W_{wet}	gram	1559		1686		1802		1800		1778	
Kadar air rata-rata	%	16.02		20.07		25.02		28.05		32.07	
Berat kering	gram	1343.77		1404.13		1441.35		1405.68		1346.23	
$W_{dry} = \frac{W_{wet}}{1 + \left(\frac{W}{100}\right)}$	gram	1343.77		1404.13		1441.35		1405.68		1346.23	
Volume Mould	cm ³	1003.94		1003.94		1003.94		1003.94		1003.94	
Berat isi kering $\gamma_{dry} = \frac{W_{dry}}{V_{mould}}$	kN/m ³	1.34		1.40		1.44		1.40		1.34	
$g_w = G_s / (1 + (w \cdot G_s))$	kN/m ³	1.86		1.73		1.59		1.52		1.43	

Jadi, kadar air optimum dicapai pada saat 28.05 % dan berat isi kering 1.44 kN/m³

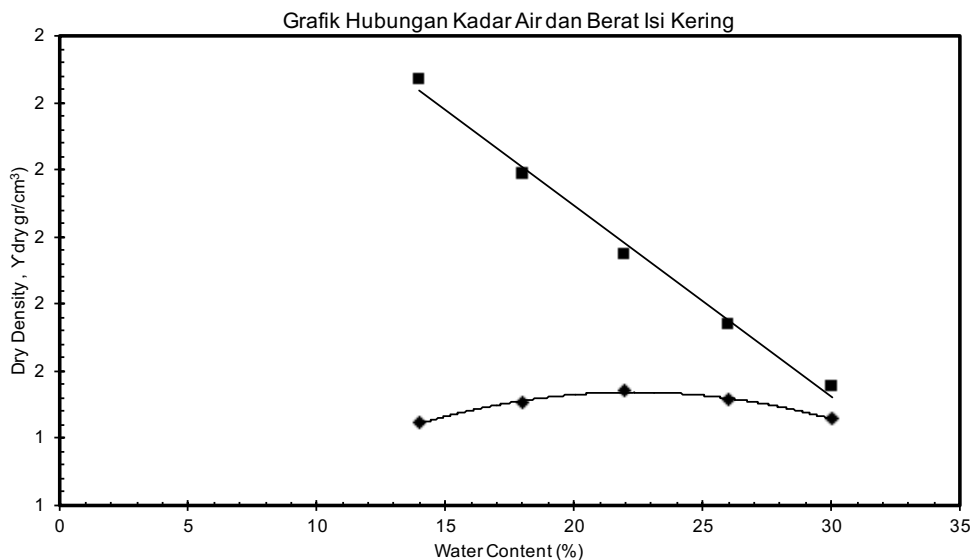


COMPACTION TEST RESULTS											
PROJECT	: KARAKTERISTIK KUAT TEKAN TANAH TERSTABILISASI ZEOLITE DAN OVERBOULDER										
LOCATION	: GOWA										
SAMPLE	: SOFT SOIL + 15% OVERBOULDER + 1% ZEOLITE										
CLIENT	:										
TESTING METHOD	: ASTM D 698/ D 1567			TESTED BY	: AFDHAL REFSI NEGARA						
LABORATORY	: HASANUDDIN UNIVERSITY			DATE	: AUGUST 2019						
Berat tanah	gram	2500	2500	2500	2500	2500					
Kadar air mula-mula	%	0.00	0.00	0.00	0.00	0.00					
Penambahan air	ml	350	450	550	650	750					
Kadar air akhir	%	14.00	18.00	22.00	26.00	30.00					
Berat Isi Basah (Wet density)											
No. Mould	-	1	2	3	4	5					
Berat Mould	gram	1943	1943	1943	1943	1943					
Berat tanah basah + Mould	gram	3571	3665	3745	3789	3808					
Berat tanah basah, W_{wet}	gram	1628	1722	1802	1846	1865					
Volume Mould	cm ³	1004	1004	1004	1004	1004					
Berat Volume Basah	gr/cm ³	1.6216	1.7152	1.7949	1.8388	1.8577					
Kadar Air (Water Content)											
No. Container	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B
Berat tanah basah + Container	gram	29.45	20.15	33.1	31.55	39.47	42.1	26.8	32.07	32.5	28.95
Berat tanah kering + Container	gram	26.45	18.35	28.44	28.8	33.35	36.38	22.9	26.5	27.1	24.09
Berat air	gram	3	1.8	4.66	2.75	6.12	5.72	3.9	5.57	5.4	4.86
Berat container	gram	5.32	5.26	8.15	7.79	7.79	7.82	7.77	5.29	8.55	8.4
Berat tanah kering	gram	21.13	13.09	20.29	21.01	25.56	28.56	15.13	21.21	18.55	15.69
Kadar air	%	14.20	13.75	22.97	13.09	23.94	20.03	25.78	26.26	29.11	30.98
Kadar air rata-rata	%	13.97		18.03		21.99		26.02		30.04	
Berat Isi Kering (Dry Density)											
Berat tanah basah, W_{wet}	gram	1628	1722	1802	1846	1865					
Kadar air rata-rata	%	13.97	18.03	21.99	26.02	30.04					
Berat kering $W_{dry} = \frac{W_{wet}}{1 + \left(\frac{W}{100}\right)}$	gram	1428.39	1458.98	1477.22	1464.86	1434.14					
Volume Mould	cm ³	1003.94	1003.94	1003.94	1003.94	1003.94					
Berat isi kering $\gamma_{dry} = \frac{W_{dry}}{V_{mould}}$	gr/cm ³	1.42	1.45	1.47	1.46	1.43					
$gw = Gs/(1+(w.Gs))$	gr/cm ³	1.93	1.79	1.68	1.57	1.48					

Jadi, kadar air optimum dicapai pada saat

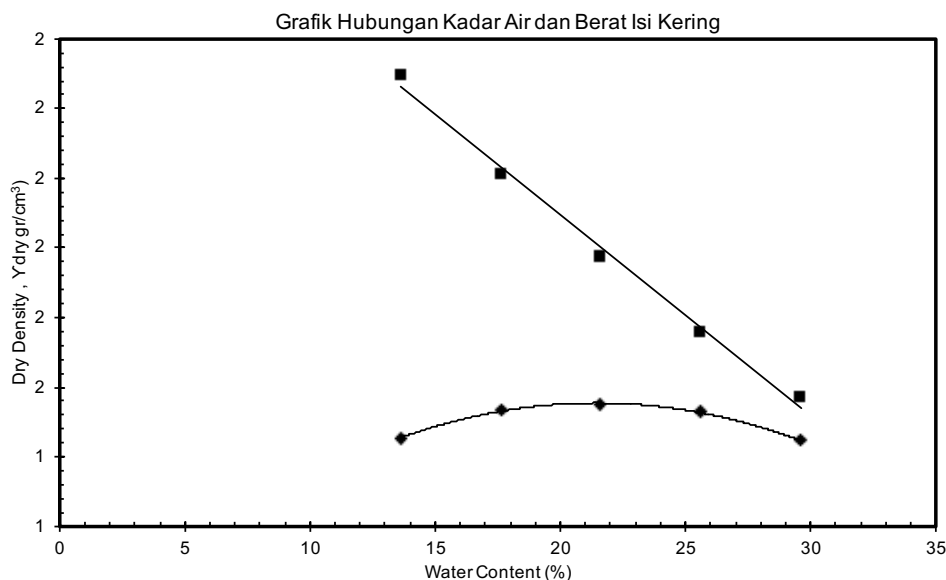
26.02 % dan berat isi kering

1.46 kN/m³



COMPACTION TEST RESULTS												
PROJECT	: KARAKTERISTIK KUAT TEKAN TANAH TERSTABILISASI ZEOLITE DAN OVERBOULDER											
LOCATION	: GOWA											
SAMPLE	: SOFT SOIL + 15% OVERBOULDER + 2% ZEOLITE											
CLIENT	: -											
TESTING METHOD	: ASTM D 698/ D 1567					TESTED BY			: AFDHAL REFSI NEGARA			
LABORATORY	: HASANUDDIN UNIVERSITY					DATE			: AUGUST 2019			
Berat tanah	gram	2500	2500	2500	2500	2500						
Kadar air mula-mula	%	0.00	0.00	0.00	0.00	0.00						
Penambahan air	ml	340	440	540	640	740						
Kadar air akhir	%	13.60	17.60	21.60	25.60	29.60						
Berat Isi Basah (Wet density)												
No. Mould	-	1	2	3	4	5						
Berat Mould	gram	1943	1943	1943	1943	1943						
Berat tanah basah + Mould	gram	3571	3675	3745	3789	3795						
Berat tanah basah, W_{wet}	gram	1628	1732	1802	1846	1852						
Volume Mould	cm ³	1004	1004	1004	1004	1004						
Berat Volume Basah	gr/cm ³	1.6216	1.7252	1.7949	1.8388	1.8447						
Kadar Air (Water Content)												
No. Container	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	
Berat tanah basah + Container	gram	29.3	20.15	32	32.52	39.27	42.1	26.67	32.07	32.37	28.93	
Berat tanah kering + Container	gram	26.45	18.35	28.44	28.8	33.35	36.38	22.9	26.5	27.1	24.09	
Berat air	gram	2.85	1.8	3.56	3.72	5.92	5.72	3.77	5.57	5.27	4.84	
Berat container	gram	5.32	5.26	8.15	7.79	7.79	7.82	7.77	5.29	8.55	8.4	
Berat tanah kering	gram	21.13	13.09	20.29	21.01	25.56	28.56	15.13	21.21	18.55	15.69	
Kadar air	%	13.49	13.75	17.55	17.71	23.16	20.03	24.92	26.26	28.41	30.85	
Kadar air rata-rata	%	13.62		17.63		21.59		25.59		29.63		
Berat Isi Kering (Dry Density)												
Berat tanah basah, W_{wet}	gram	1628	1732	1802	1846	1852						
Kadar air rata-rata	%	13.62	17.63	21.59	25.59	29.63						
Berat kering $W_{dry} = \frac{W_{wet}}{1 + \left(\frac{W}{100}\right)}$	gram	1432.85	1472.47	1481.97	1469.87	1428.70						
Volume Mould	cm ³	1003.94	1003.94	1003.94	1003.94	1003.94						
Berat isi kering $\gamma_{dry} = \frac{W_{dry}}{V_{mould}}$	gr/cm ³	1.43	1.47	1.48	1.46	1.42						
gw = Gs/(1+(w.Gs))	gr/cm ³	1.95	1.81	1.69	1.58	1.48						

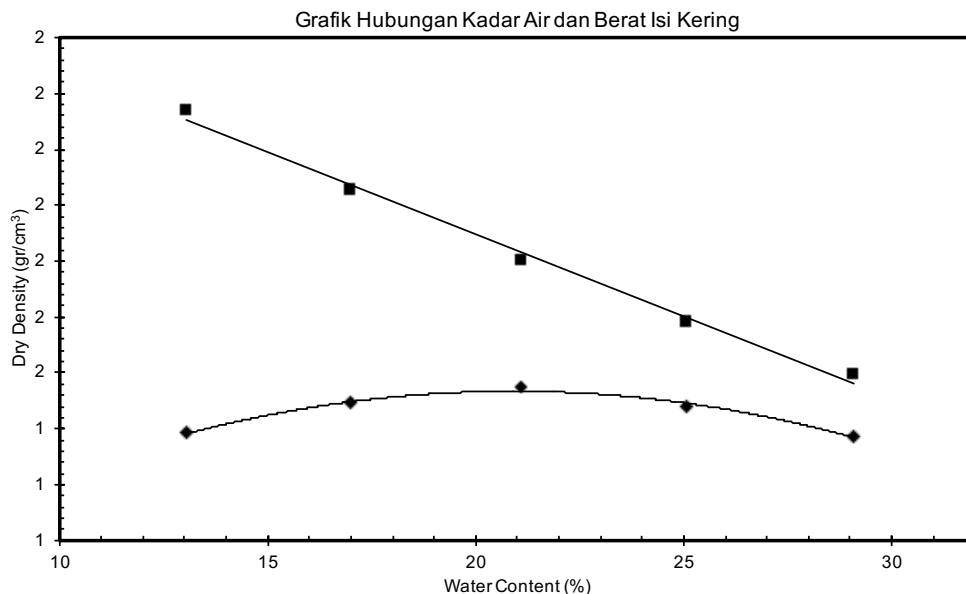
Jadi, kadar air optimum dicapai pada saat 25.59 % dan berat isi kering 1.46 kN/m³



COMPACTION TEST RESULTS											
PROJECT	: KARAKTERISTIK KUAT TEKAN TANAH TERSTABILISASI ZEOLITE DAN OVERBOULDER										
LOCATION	: GOWA										
SAMPLE	: SOFT SOIL + 15% OVERBOULDER + 3% ZEOLITE										
CLIENT	:										
TESTING METHOD	: ASTM D 698/ D 1567			TESTED BY	: AFDHAL REFSI NEGARA						
LABORATORY	: HASANUDDIN UNIVERSITY			DATE	: AUGUST 2019						
Berat tanah	gram	2500	2500	2500	2500	2500					
Kadar air mula-mula	%	0.00	0.00	0.00	0.00	0.00					
Penambahan air	ml	325	425	525	625	725					
Kadar air akhir	%	13.00	17.00	21.00	25.00	29.00					
Berat Isi Basah (Wet density)											
No. Mould	-	1	2	3	4	5					
Berat Mould	gram	1943	1943	1943	1943	1943					
Berat tanah basah + Mould	gram	3522	3641	3735	3750	3740					
Berat tanah basah, W_{wet}	gram	1579	1698	1792	1807	1797					
Volume Mould	cm ³	1004	1004	1004	1004	1004					
Berat Volume Basah	gr/cm ³	1.5728	1.6913	1.7850	1.7999	1.7900					
Kadar Air (Water Content)											
No. Container	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B
Berat tanah basah + Container	gram	41.12	34.12	41.23	43.21	43.3	29.1	49.98	47.62	47.02	41.52
Berat tanah kering + Container	gram	37.47	31.23	36.39	38.02	37.42	25.54	42.9	40.98	39.74	35.55
Berat air	gram	3.65	2.89	4.84	5.19	5.88	3.56	7.08	6.64	7.28	5.97
Berat container	gram	9.81	8.81	7.81	7.6	9.44	8.7	14.59	14.57	14.66	15.07
Berat tanah kering	gram	27.66	22.42	28.58	30.42	27.98	16.84	28.31	26.41	25.08	20.48
Kadar air	%	13.20	12.89	16.93	17.06	21.02	21.14	25.01	25.14	29.03	29.15
Kadar air rata-rata	%	13.04		17.00		21.08		25.08		29.09	
Berat Isi Kering (Dry Density)											
Berat tanah basah, W_{wet}	gram	1579	1698	1792	1807	1797					
Kadar air rata-rata	%	13.04	17.00	21.08	25.08	29.09					
Berat kering $W_{dry} = \frac{W_{wet}}{1 + \left(\frac{W}{100}\right)}$	gram	1396.81	1451.31	1480.04	1444.73	1392.07					
Volume Mould	cm ³	1003.94	1003.94	1003.94	1003.94	1003.94					
Berat isi kering $\gamma_{dry} = \frac{W_{dry}}{V_{mould}}$	kN/m ³	1.39	1.45	1.47	1.44	1.39					
$g_w = G_s / (1 + (w \cdot G_s))$	gr/cm ³	1.97	1.83	1.70	1.59	1.50					

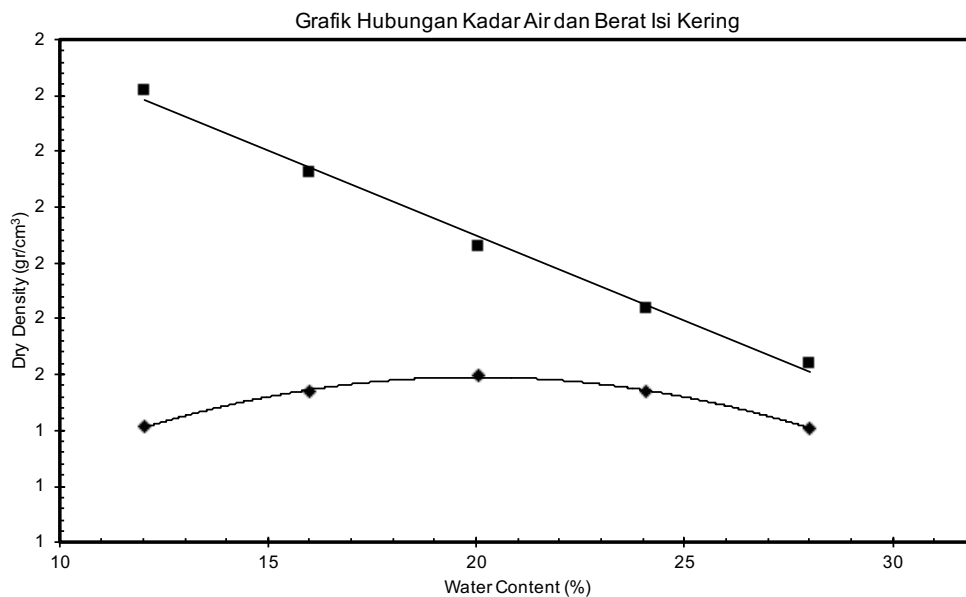
Jadi, kadar air optimum dicapai pada saat

21.08 % dan berat isi kering 1.47 kN/m³



COMPACTION TEST RESULTS											
PROJECT	: KARAKTERISTIK KUAT TEKAN TANAH TERSTABILISASI ZEOLITE DAN OVERBOULDER										
LOCATION	: BGOWA										
SAMPLE	: SOFT SOIL + 15% OVERBOULDER + 4% ZEOLITE										
CLIENT	: -										
TESTING METHOD	: ASTM D 698/ D 1567			TESTED BY	: AFDHAL REFSI NEGARA						
LABORATORY	: HASANUDDIN UNIVERSITY			DATE	: AUGUST 2019						
Berat tanah	gram	2500	2500	2500	2500	2500					
Kadar air mula-mula	%	0.00	0.00	0.00	0.00	0.00					
Penambahan air	ml	300	400	500	600	700					
Kadar air akhir	%	12.00	16.00	20.00	24.00	28.00					
Berat Isi Basah (Wet density)											
No. Mould	-	1	2	3	4	5					
Berat Mould	gram	1943	1943	1943	1943	1943					
Berat tanah basah + Mould	gram	3525	3654	3749	3776	3747					
Berat tanah basah, W_{wet}	gram	1582	1711	1806	1833	1804					
Volume Mould	cm ³	1004	1004	1004	1004	1004					
Berat Volume Basah	gr/cm ³	1.5758	1.7043	1.7989	1.8258	1.7969					
Kadar Air (Water Content)											
No. Container	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B
Berat tanah basah + Container	gram	40.81	34.12	40.98	43.21	43.02	29.1	49.72	47.62	46.75	41.52
Berat tanah kering + Container	gram	37.47	31.41	36.39	38.32	37.42	25.68	42.9	41.21	39.74	35.72
Berat air	gram	3.34	2.71	4.59	4.89	5.6	3.42	6.82	6.41	7.01	5.8
Berat container	gram	9.81	8.81	7.81	7.6	9.44	8.7	14.59	14.57	14.66	15.07
Berat tanah kering	gram	27.66	22.6	28.58	30.72	27.98	16.98	28.31	26.64	25.08	20.65
Kadar air	%	12.08	11.99	16.06	15.92	20.01	20.14	24.09	24.06	27.95	28.09
Kadar air rata-rata	%	12.03		15.99		20.08		24.08		28.02	
Berat Isi Kering (Dry Density)											
Berat tanah basah, W_{wet}	gram	1582	1711	1806	1833	1804					
Kadar air rata-rata	%	12.03	15.99	20.08	24.08	28.02					
Berat kering $W_{dry} = \frac{W_{wet}}{1 + \left(\frac{W}{100}\right)}$	gram	1412.08	1475.14	1504.02	1477.32	1409.17					
Volume Mould	cm ³	1003.94	1003.94	1003.94	1003.94	1003.94					
Berat isi kering $\gamma_{dry} = \frac{W_{dry}}{V_{mould}}$	kN/m ³	1.41	1.47	1.50	1.47	1.40					
$g_w = G_s / (1 + (w \cdot G_s))$	gr/cm ³	2.01	1.86	1.73	1.62	1.52					

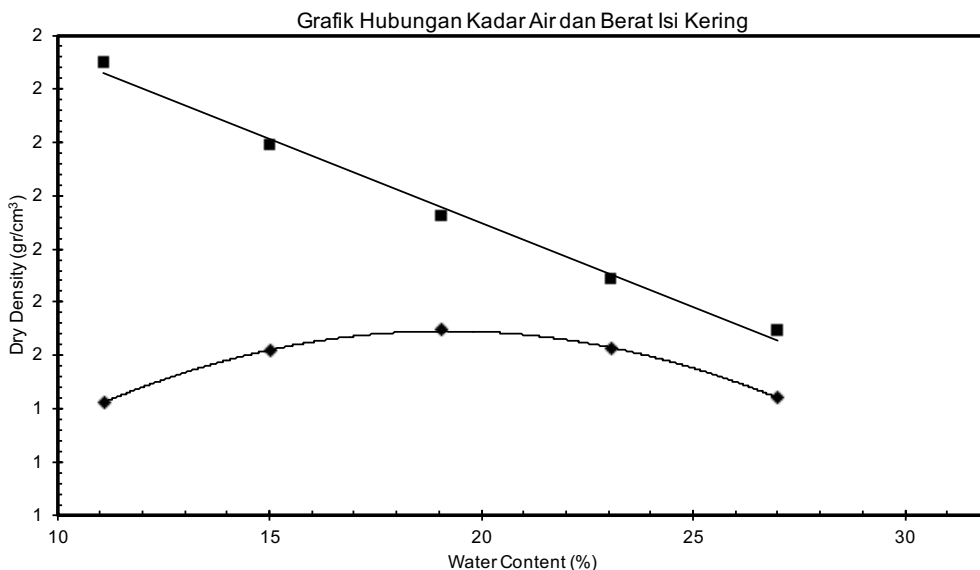
Jadi, kadar air optimum dicapai pada saat 20.08 % dan berat isi kering 1.50 kN/m³



COMPACTION TEST RESULTS

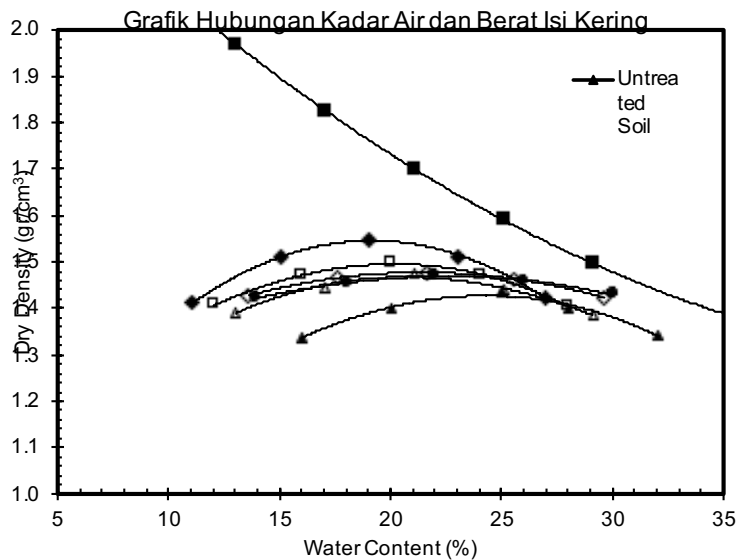
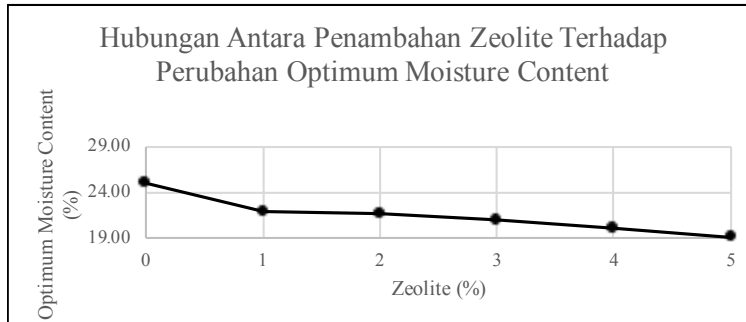
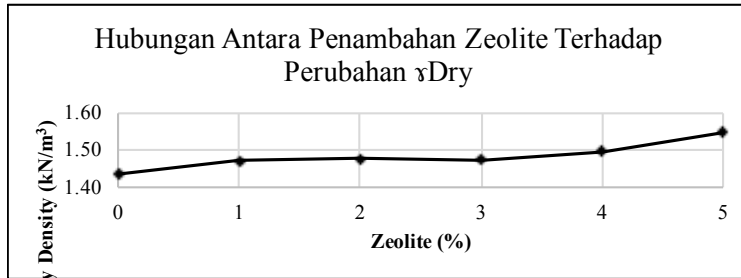
PROJECT		: KARAKTERISTIK KUAT TEKAN TANAH TERSTABILISASI ZEOLITE DAN OVERBOULDER									
LOCATION		: GOWA									
SAMPLE		: SOFT SOIL + 15% OVERBOULDER + 5% ZEOLITE									
CLIENT		: -									
TESTING METHOD		: ASTM D 698/ D 1567		TESTED BY		: AFDHAL REFSI NEGARA					
LABORATORY		: HASANUDDIN UNIVERSITY		DATE		: AUGUST 2019					
Berat tanah	gram	2500	2500	2500	2500	2500					
Kadar air mula-mula	%	0.00	0.00	0.00	0.00	0.00					
Penambahan air	ml	275	375	475	575	675					
Kadar air akhir	%	11.00	15.00	19.00	23.00	27.00					
Berat Isi Basah (Wet density)											
No. Mould	-	1	2	3	4	5					
Berat Mould	gram	1943	1943	1943	1943	1943					
Berat tanah basah + Mould	gram	3517	3687	3793	3812	3755					
Berat tanah basah, W_{wet}	gram	1574	1744	1850	1869	1812					
Volume Mould	cm ³	1004	1004	1004	1004	1004					
Berat Volume Basah	gr/cm ³	1.5678	1.7372	1.8427	1.8617	1.8049					
Kadar Air (Water Content)											
No. Container	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B
Berat tanah basah + Container	gram	40.51	34.12	40.67	43.21	42.76	29.1	49.43	47.62	46.53	41.52
Berat tanah kering + Container	gram	37.47	31.58	36.39	38.54	37.42	25.84	42.9	41.42	39.74	35.91
Berat air	gram	3.04	2.54	4.28	4.67	5.34	3.26	6.53	6.2	6.79	5.61
Berat container	gram	9.81	8.81	7.81	7.6	9.44	8.7	14.59	14.57	14.66	15.07
Berat tanah kering	gram	27.66	22.77	28.58	30.94	27.98	17.14	28.31	26.85	25.08	20.84
Kadar air	%	10.99	11.16	14.98	15.09	19.09	19.02	23.07	23.09	27.07	26.92
Kadar air rata-rata	%	11.07		15.03		19.05		23.08		27.00	
Berat Isi Kering (Dry Density)											
Berat tanah basah, W_{wet}	gram	1574		1744		1850		1869		1812	
Kadar air rata-rata	%	11.07		15.03		19.05		23.08		27.00	
Berat kering $W_{dry} = \frac{W_{wet}}{1 + \left(\frac{W}{100}\right)}$	gram	1417.09		1516.07		1553.94		1518.54		1426.81	
Volume Mould	cm ³	1003.94		1003.94		1003.94		1003.94		1003.94	
Berat isi kering $\gamma_{dry} = \frac{W_{dry}}{V_{mould}}$	kN/m ³	1.41		1.51		1.55		1.51		1.42	
$gw = Gs/(1+(w.Gs))$	gr/cm ³	2.05		1.89		1.76		1.64		1.54	

Jadi, kadar air optimum dicapai pada saat 19.05 % dan berat isi kering 1.55 kN/m³



REKAPITULASI

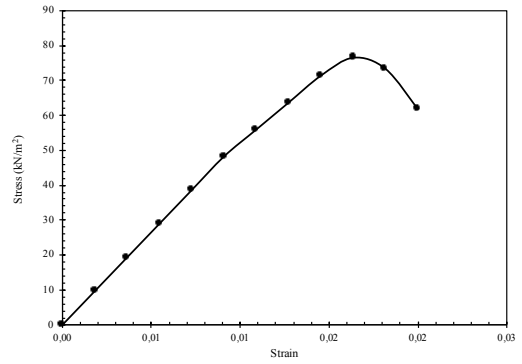
Soil (%)	OB (%)	Zeolite (%)	γ_{Dry} (kN/m ³)	OMC (%)
100	0	0	1.44	25.02
84	15	1	1.47	21.99
83	15	2	1.48	21.59
82	15	3	1.47	21.08
81	15	4	1.50	20.08
80	15	5	1.55	19.05



UNCONFINED COMPRESSION TEST

Dimension			Details		
Diameter	=	5,5 cm	Sample Num	=	Soft Soil
Height	=	11 cm	Date	=	
Area	=	23,74625 cm ²	Tested By	=	Afdhal Refsi Negara
Volume	=	261,2088 cm ³	Client	=	
Wet Weight	=	275 gr	Project	=	
Dry Weight	=	226,259 gr	Summary		
Wet Density	=	1,052798 gr/cm ³	Unconfined Compressive Strength	=	76,549 kN/m ²
Dry Density	=	0,8662 gr/cm ³			
Water Content	=	21,54212 %			

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0
0,2	0,5	0,0018	2,337	23,7467	9,652
0,4	1	0,0036	4,675	23,7471	19,303
0,6	1,5	0,0055	7,012	23,7475	28,954
0,8	2	0,0073	9,349	23,7480	38,605
1	2,5	0,0091	11,687	23,7484	48,255
1,2	2,9	0,0109	13,556	23,7488	55,975
1,4	3,3	0,0127	15,426	23,7493	63,694
1,6	3,7	0,0145	17,296	23,7497	71,413
1,8	4	0,0164	18,698	23,7501	76,549
2	3,8	0,0182	17,763	23,7506	73,341
2,2	3,2	0,0200	14,959	23,7510	61,760

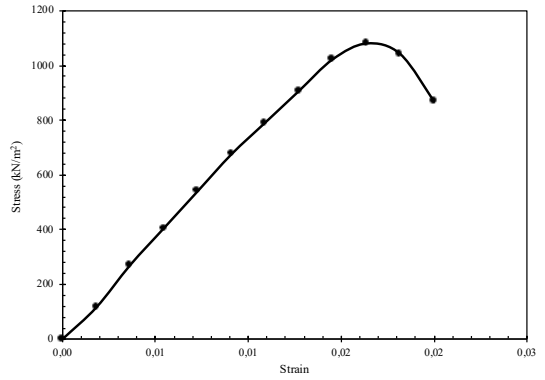


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 1% Zeolite 0 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 275 gr	Project	=
Dry Weight	= 226,259 gr	Summary	
Wet Density	= 1,052798 gr/cm ³	Unconfined Compressive Strength = 1080,832 kN/m²	
Dry Density	= 0,8662 gr/cm ³		
Water Content	= 21,54212 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0
0,2	6	0,0018	28,048	23,7467	115,820
0,4	14	0,0036	65,444	23,7471	270,242
0,6	21	0,0055	98,167	23,7475	405,356
0,8	28	0,0073	130,889	23,7480	540,465
1	35	0,0091	163,611	23,7484	675,569
1,2	41	0,0109	191,659	23,7488	791,367
1,4	47	0,0127	219,706	23,7493	907,160
1,6	53	0,0145	247,754	23,7497	1022,949
1,8	56	0,0164	261,778	23,7501	1080,832
2	54	0,0182	252,428	23,7506	1042,212
2,2	45	0,0200	210,357	23,7510	868,494

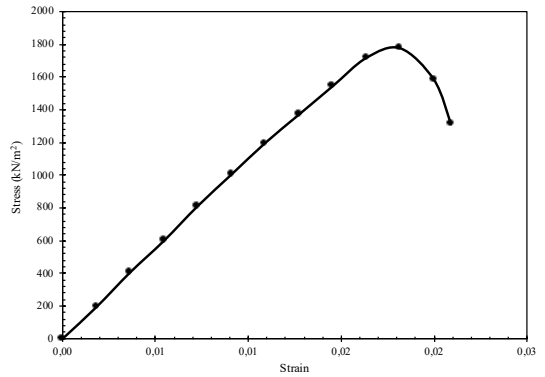


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 1% Zeolite 7 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 230 gr	Project	=
Dry Weight	= 189,1674 gr	Summary	
Wet Density	= 0,880522 gr/cm ³	Unconfined Compressive Strength = 1775,621 kN/m²	
Dry Density	= 0,7242 gr/cm ³	Elasticity Modulus = 0 kN/m²	
Water Content	= 21,58545 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	10	0,0018	46,746	23,7467	193,034
0,4	21	0,0036	98,167	23,7471	405,364
0,6	31	0,0055	144,913	23,7475	598,383
0,8	42	0,0073	196,333	23,7480	810,698
1	52	0,0091	243,079	23,7484	1003,703
1,2	62	0,0109	289,825	23,7488	1196,701
1,4	71	0,0127	331,897	23,7493	1370,391
1,6	80	0,0145	373,968	23,7497	1544,074
1,8	89	0,0164	416,039	23,7501	1717,751
2	92	0,0182	430,063	23,7506	1775,621
2,2	82	0,0200	383,317	23,7510	1582,590
2,3	68	0,0209	317,873	23,7512	1312,379

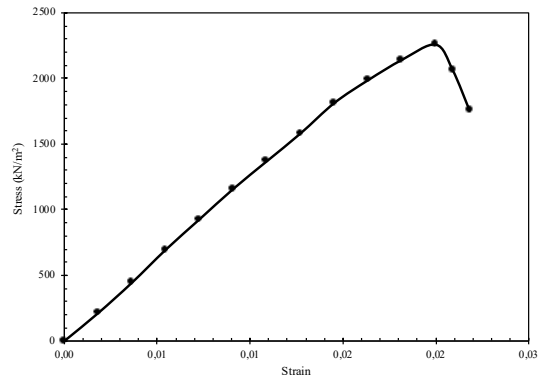


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 1% Zeolite 14 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 2258,085 kN/m ²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	11	0,0018	51,421	23,7467	212,337
0,4	23	0,0036	107,516	23,7471	443,970
0,6	36	0,0055	168,286	23,7475	694,896
0,8	48	0,0073	224,381	23,7480	926,512
1	60	0,0091	280,476	23,7484	1158,119
1,2	71	0,0109	331,897	23,7488	1370,416
1,4	82	0,0127	383,317	23,7493	1582,705
1,6	94	0,0145	439,412	23,7497	1814,287
1,8	103	0,0164	481,484	23,7501	1987,959
2	111	0,0182	518,881	23,7506	2142,325
2,2	117	0,0200	546,928	23,7510	2258,085
2,3	107	0,0209	500,182	23,7512	2065,068
2,4	91	0,0218	425,389	23,7514	1756,256

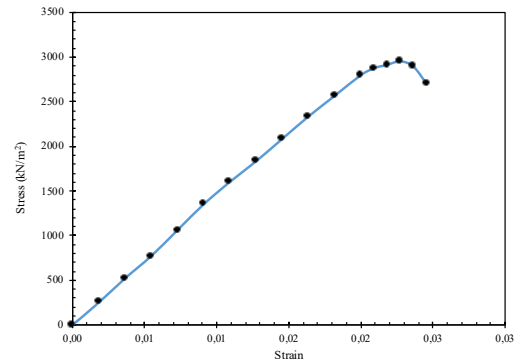


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

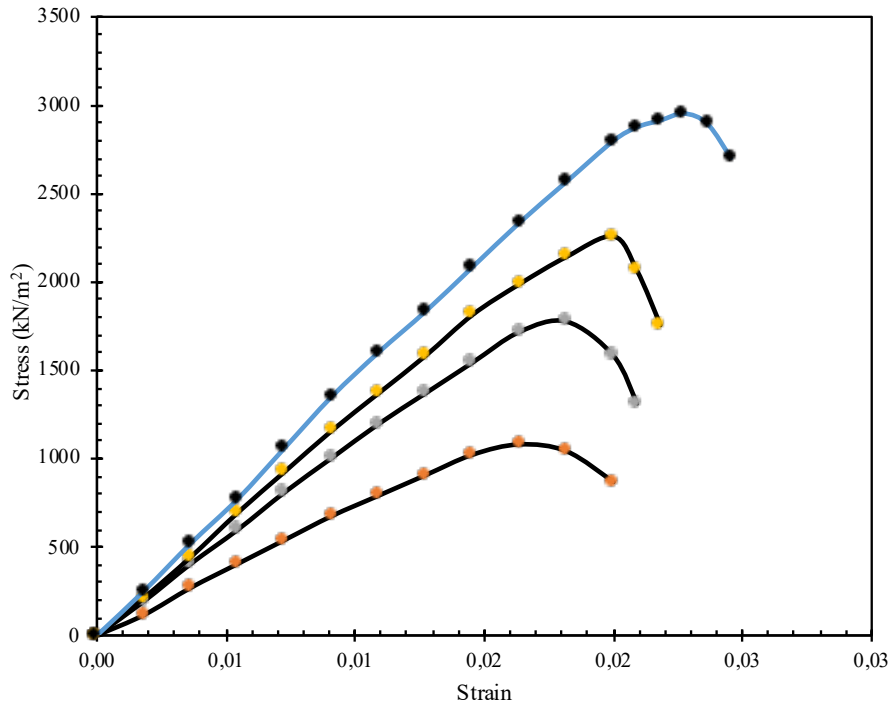
Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 1% Zeolite 28 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 2952,800 kN/m ²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	13	0,0018	60,770	23,7467	250,944
0,4	27	0,0036	126,214	23,7471	521,182
0,6	40	0,0055	186,984	23,7475	772,107
0,8	55	0,0073	257,103	23,7480	1061,628
1	70	0,0091	327,222	23,7484	1351,138
1,2	83	0,0109	387,992	23,7488	1602,035
1,4	95	0,0127	444,087	23,7493	1833,621
1,6	108	0,0145	504,857	23,7497	2084,500
1,8	121	0,0164	565,627	23,7501	2335,370
2	133	0,0182	621,722	23,7506	2566,930
2,2	145	0,0200	677,817	23,7510	2798,482
2,3	149	0,0209	696,515	23,7512	2875,655
2,4	151	0,0218	705,865	23,7514	2914,228
2,5	153	0,0227	715,214	23,7516	2952,800
2,6	150	0,0236	701,190	23,7519	2894,876
2,7	140	0,0245	654,444	23,7521	2701,859



Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

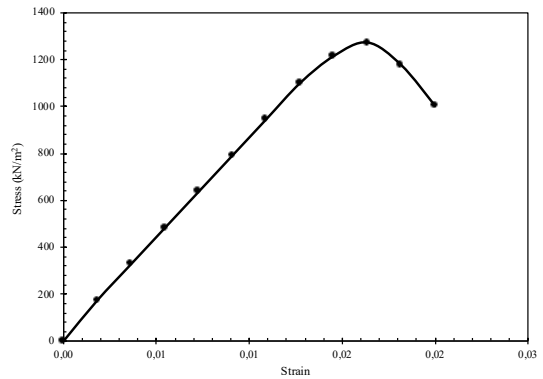
Recapitulation	Unconfined Compressive Strength (kN/m ²)	Elasticity Modulus (kN/m ²)	γ_{Dry}
15% OB + 1% Zeolite 0 Day	1080,83217	0	0,8662
15% OB + 1% Zeolite 7 Day	1775,620561	0	0,7242
15% OB + 1% Zeolite 14 Day	2258,085084	0	0,5822
15% OB + 1% Zeolite 28 Day	2952,799946	0	0,5822



UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 2% Zeolite 0 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 275 gr	Project	=
Dry Weight	= 226,259 gr	Summary	
Wet Density	= 1,052798 gr/cm ³	Unconfined Compressive Strength = 1273,838 kN/m²	
Dry Density	= 0,8662 gr/cm ³		
Water Content	= 21,54212 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0
0,2	9	0,0018	42,071	23,7467	173,730
0,4	17	0,0036	79,468	23,7471	328,152
0,6	25	0,0055	116,865	23,7475	482,567
0,8	33	0,0073	154,262	23,7480	636,977
1	41	0,0091	191,659	23,7484	791,381
1,2	49	0,0109	229,055	23,7488	945,780
1,4	57	0,0127	266,452	23,7493	1100,173
1,6	63	0,0145	294,500	23,7497	1215,958
1,8	66	0,0164	308,524	23,7501	1273,838
2	61	0,0182	285,151	23,7506	1177,314
2,2	52	0,0200	243,079	23,7510	1003,593

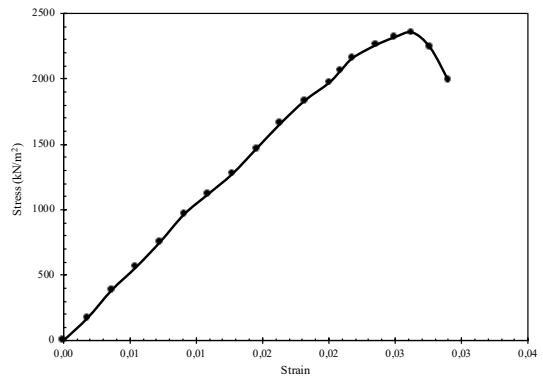


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 2% Zeolite 14 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength = 2354,437 kN/m²	
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus = 0 kN/m²	
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	9	0,0018	42,071	23,7467	173,730
0,4	20	0,0036	93,492	23,7471	386,061
0,6	29	0,0055	135,563	23,7475	559,778
0,8	39	0,0073	182,309	23,7480	752,791
1	50	0,0091	233,730	23,7484	965,099
1,2	58	0,0109	271,127	23,7488	1119,494
1,4	66	0,0127	308,524	23,7493	1273,884
1,6	76	0,0145	355,270	23,7497	1466,870
1,8	86	0,0164	402,016	23,7501	1659,849
2	95	0,0182	444,087	23,7506	1833,521
2,2	102	0,0200	476,809	23,7510	1968,587
2,3	107	0,0209	500,182	23,7512	2065,068
2,4	112	0,0218	523,555	23,7514	2161,546
2,59	117	0,0235	546,928	23,7518	2258,005
2,74	120	0,0249	560,952	23,7522	2315,871
2,89	122	0,0263	570,301	23,7525	2354,437
3,04	116	0,0276	542,254	23,7528	2238,614
3,19	103	0,0290	481,484	23,7531	1987,708

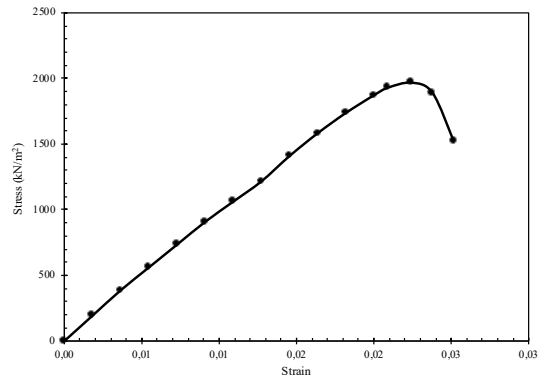


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 2% Zeolite 7 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 230 gr	Project	=
Dry Weight	= 189,1674 gr	Summary	
Wet Density	= 0,880522 gr/cm ³	Unconfined Compressive Strength	= 1968,539 kN/m ²
Dry Density	= 0,7242 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,58545 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	10	0,0018	46,746	23,7467	193,034
0,4	20	0,0036	93,492	23,7471	386,061
0,6	29	0,0055	135,563	23,7475	559,778
0,8	38	0,0073	177,635	23,7480	733,489
1	47	0,0091	219,706	23,7484	907,193
1,2	55	0,0109	257,103	23,7488	1061,590
1,4	63	0,0127	294,500	23,7493	1215,980
1,6	73	0,0145	341,246	23,7497	1408,968
1,8	82	0,0164	383,317	23,7501	1582,647
2	90	0,0182	420,714	23,7506	1737,020
2,2	97	0,0200	453,436	23,7510	1872,088
2,3	100	0,0209	467,460	23,7512	1929,970
2,466666667	102	0,0224	476,809	23,7516	1968,539
2,616666667	98	0,0238	458,111	23,7519	1891,316
2,766666667	79	0,0252	369,293	23,7522	1524,611

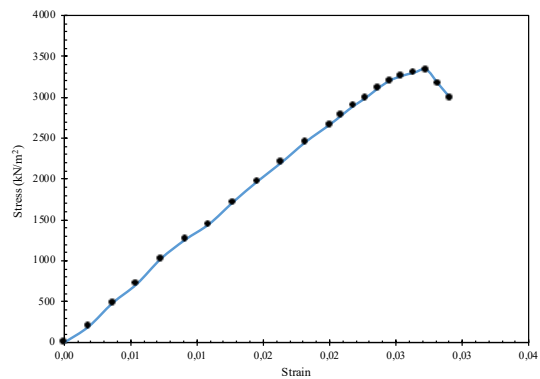


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

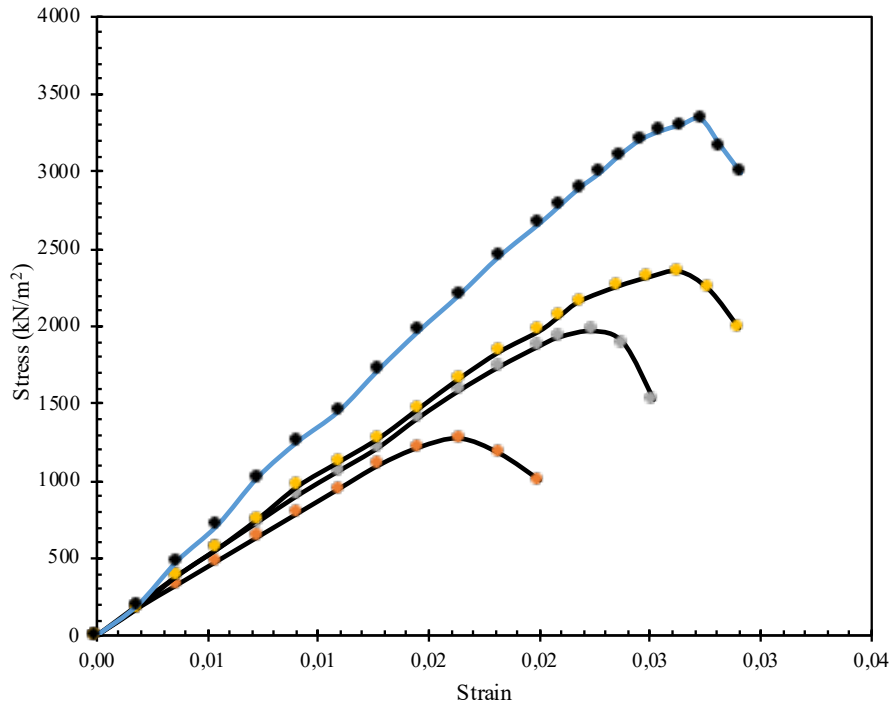
Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 2% Zeolite 28 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 3338,635 kN/m ²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	10	0,0018	46,746	23,7467	193,034
0,4	25	0,0036	116,865	23,7471	482,576
0,6	37	0,0055	172,960	23,7475	714,199
0,8	53	0,0073	247,754	23,7480	1023,023
1	65	0,0091	303,849	23,7484	1254,629
1,2	75	0,0109	350,595	23,7488	1447,622
1,4	89	0,0127	416,039	23,7493	1717,814
1,6	102	0,0145	476,809	23,7497	1968,694
1,8	114	0,0164	532,904	23,7501	2200,265
2	127	0,0182	593,674	23,7506	2451,128
2,2	138	0,0200	645,095	23,7510	2663,382
2,3	144	0,0209	673,142	23,7512	2779,156
2,4	150	0,0218	701,190	23,7514	2894,928
2,5	155	0,0227	724,563	23,7516	2991,399
2,6	161	0,0236	752,611	23,7519	3107,166
2,7	166	0,0245	775,984	23,7521	3203,633
2,8	169	0,0255	790,007	23,7523	3261,501
2,9	171	0,0264	799,357	23,7525	3300,068
3	173	0,0273	808,706	23,7527	3338,635
3,1	164	0,0282	766,634	23,7529	3164,920
3,2	155	0,0291	724,563	23,7532	2991,208



Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

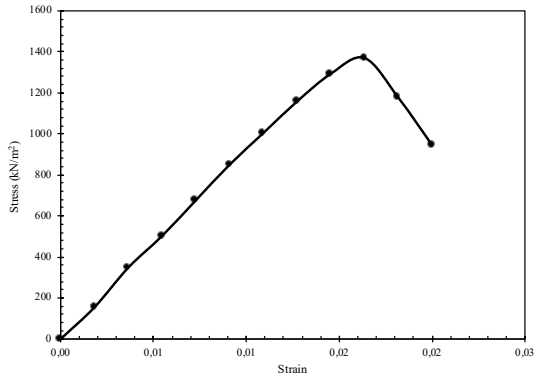
Recapitulation	Unconfined Compressive Strength (kN/m ²)	Elasticity Modulus (kN/m ²)	γ_{Dry}
15% OB + 2% Zeolite 0 Day	1273,837915	0	0,8662
15% OB + 2% Zeolite 7 Day	1968,539264	0	0,7242
15% OB + 2% Zeolite 14 Day	2354,436721	0	0,5822
15% OB + 2% Zeolite 28 Day	3338,635069	0	0,5822



UNCONFINED COMPRESSION TEST

Dimension			Details		
Diameter	=	5,5 cm	Sample Num	=	15% OB + 3% Zeolite 0 Day
Height	=	11 cm	Date	=	
Area	=	23,74625 cm ²	Tested By	=	Afdhal Refsi Negara
Volume	=	261,2088 cm ³	Client	=	
Wet Weight	=	275 gr	Project	=	
Dry Weight	=	226,259 gr	Summary		
Wet Density	=	1,052798 gr/cm ³	Unconfined Compressive Strength = 1370,341 kN/m²		
Dry Density	=	0,8662 gr/cm ³			
Water Content	=	21,54212 %			

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0
0,2	8	0,0018	37,397	23,7467	154,427
0,4	18	0,0036	84,143	23,7471	347,455
0,6	26	0,0055	121,540	23,7475	501,870
0,8	35	0,0073	163,611	23,7480	675,582
1	44	0,0091	205,682	23,7484	849,287
1,2	52	0,0109	243,079	23,7488	1003,685
1,4	60	0,0127	280,476	23,7493	1158,077
1,6	67	0,0145	313,198	23,7497	1293,162
1,8	71	0,0164	331,897	23,7501	1370,341
2	61	0,0182	285,151	23,7506	1177,314
2,2	49	0,0200	229,055	23,7510	945,694

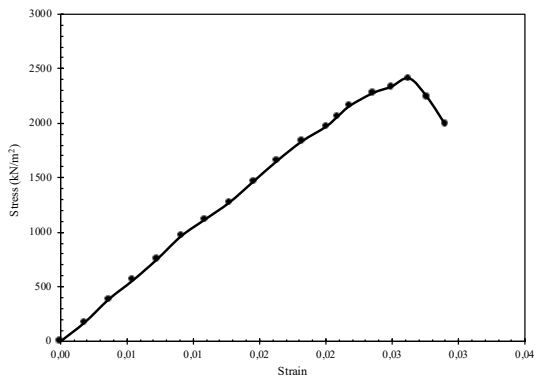


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension			Details		
Diameter	=	5,5 cm	Sample Num	=	15% OB + 3% Zeolite 14 Day
Height	=	11 cm	Date	=	
Area	=	23,74625 cm ²	Tested By	=	Afdhal Refsi Negara
Volume	=	261,2088 cm ³	Client	=	
Wet Weight	=	185 gr	Project	=	
Dry Weight	=	152,0757 gr	Summary		
Wet Density	=	0,708246 gr/cm ³	Unconfined Compressive Strength = 2412,333 kN/m²		
Dry Density	=	0,5822 gr/cm ³	Elasticity Modulus = 0 kN/m²		
Water Content	=	21,64991 %			

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	9	0,0018	42,071	23,7467	173,730
0,4	20	0,0036	93,492	23,7471	386,061
0,6	29	0,0055	135,563	23,7475	559,778
0,8	39	0,0073	182,309	23,7480	752,791
1	50	0,0091	233,730	23,7484	965,099
1,2	58	0,0109	271,127	23,7488	1119,494
1,4	66	0,0127	308,524	23,7493	1273,884
1,6	76	0,0145	355,270	23,7497	1466,870
1,8	86	0,0164	402,016	23,7501	1659,849
2	95	0,0182	444,087	23,7506	1833,521
2,2	102	0,0200	476,809	23,7510	1968,587
2,3	107	0,0209	500,182	23,7512	2065,068
2,4	112	0,0218	523,555	23,7514	2161,546
2,59	118	0,0235	551,603	23,7518	2277,304
2,74	121	0,0249	565,627	23,7522	2355,170
2,89	125	0,0263	584,325	23,7525	2412,333
3,04	116	0,0276	542,254	23,7528	2238,614
3,19	103	0,0290	481,484	23,7531	1987,708

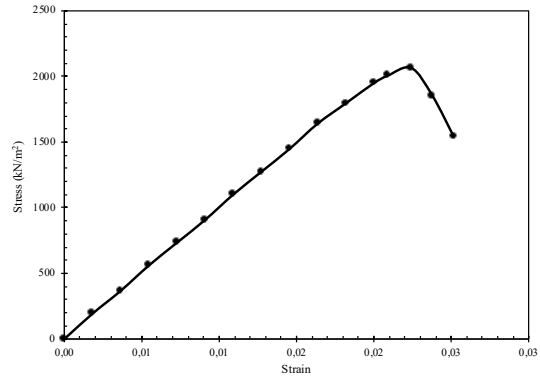


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5.5 cm	Sample Num	= 15% OB + 3% Zeolite 7 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 230 gr	Project	=
Dry Weight	= 189,1674 gr	Summary	
Wet Density	= 0,880522 gr/cm ³	Unconfined Compressive Strength	= 2065,036 kN/m ²
Dry Density	= 0,7242 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,58545 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0.0000	0.000	23,7463	0.000
0.2	10	0.0018	46.746	23,7467	193.034
0.4	19	0.0036	88.817	23,7471	366.758
0.6	29	0.0055	135.563	23,7475	559.778
0.8	38	0.0073	177.635	23,7480	733.489
1	47	0.0091	219.706	23,7484	907.193
1.2	57	0.0109	266.452	23,7488	1100.193
1.4	66	0.0127	308.524	23,7493	1273.884
1.6	75	0.0145	350.595	23,7497	1447.569
1.8	85	0.0164	397.341	23,7501	1640.549
2	93	0.0182	434.738	23,7506	1794.921
2.2	101	0.0200	472.135	23,7510	1949.287
2.3	104	0.0209	486.158	23,7512	2007.168
2,466666667	107	0.0224	500.182	23,7516	2065.036
2,616666667	96	0.0238	448.762	23,7519	1852.718
2,766666667	80	0.0252	373.968	23,7522	1543.910

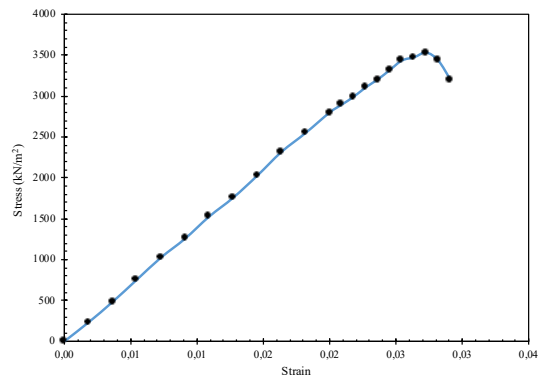


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

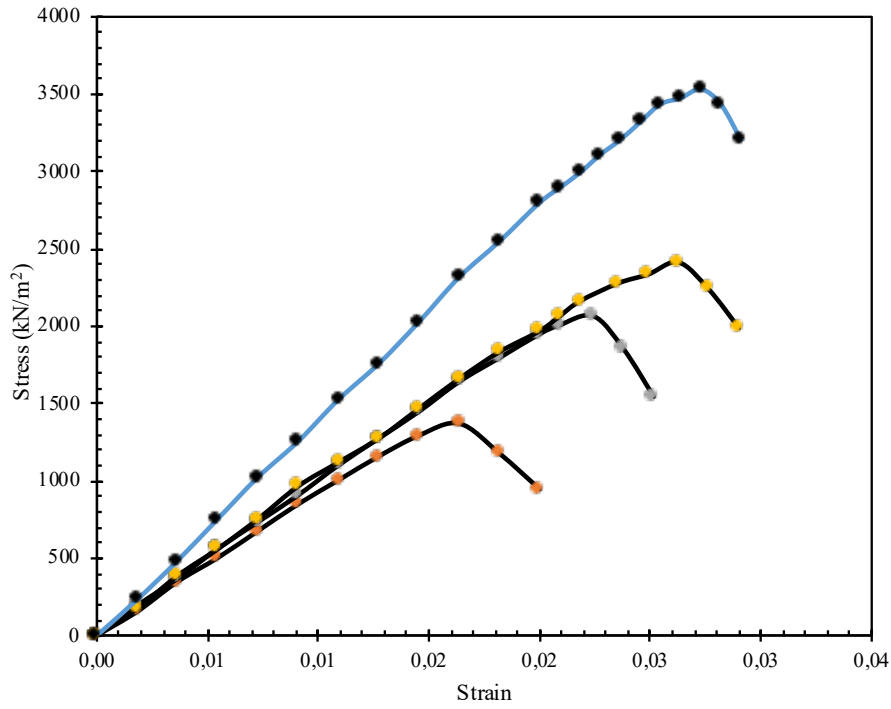
Dimension		Details	
Diameter	= 5.5 cm	Sample Num	= 15% OB + 3% Zeolite 28 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 3531,620 kN/m ²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0.0000	0.000	23,7463	0.000
0.2	12	0.0018	56.095	23,7467	231.641
0.4	25	0.0036	116.865	23,7471	482.576
0.6	39	0.0055	182.309	23,7475	752.805
0.8	53	0.0073	247.754	23,7480	1023.023
1	65	0.0091	303.849	23,7484	1254.629
1.2	79	0.0109	369.293	23,7488	1524.829
1.4	91	0.0127	425.389	23,7493	1756.416
1.6	105	0.0145	490.833	23,7497	2026.597
1.8	120	0.0164	560.952	23,7501	2316.069
2	132	0.0182	617.047	23,7506	2547.630
2.2	145	0.0200	677.817	23,7510	2798.482
2.3	150	0.0209	701.190	23,7512	2894.955
2.4	155	0.0218	724.563	23,7514	2991.426
2.5	161	0.0227	752.611	23,7516	3107.195
2.6	166	0.0236	775.984	23,7519	3203.662
2.7	172	0.0245	804.031	23,7521	3319.427
2.8	178	0.0255	832.079	23,7523	3435.190
2.9	180	0.0264	841.428	23,7525	3473.756
3	183	0.0273	855.452	23,7527	3531.620
3,1	178	0.0282	832.079	23,7529	3435.096
3,2	166	0.0291	775.984	23,7532	3203.488



Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

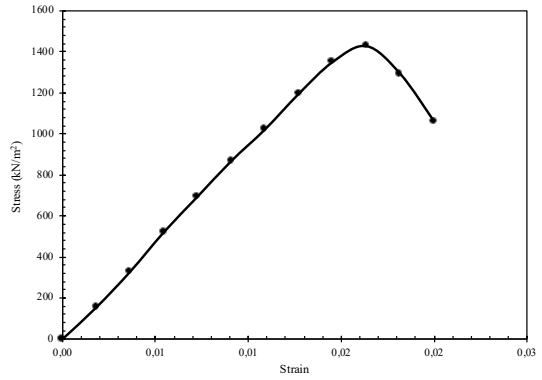
Recapitulation	Unconfined Compressive Strength (kN/m ²)	Elasticity Modulus (kN/m ²)	γ_{Dry}
15% OB + 3% Zeolite 0 Day	1370,340787	0	0,8662
15% OB + 3% Zeolite 7 Day	2065,036287	0	0,7242
15% OB + 3% Zeolite 14 Day	2412,332706	0	0,5822
15% OB + 3% Zeolite 28 Day	3531,619755	0	0,5822



UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 4% Zeolite 0 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 275 gr	Project	=
Dry Weight	= 226,259 gr	Summary	
Wet Density	= 1,052798 gr/cm ³	Unconfined Compressive Strength	= 1428,243 kN/m²
Dry Density	= 0,8662 gr/cm ³		
Water Content	= 21,54212 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0
0,2	8	0,0018	37,397	23,7467	154,427
0,4	17	0,0036	79,468	23,7471	328,152
0,6	27	0,0055	126,214	23,7475	521,172
0,8	36	0,0073	168,286	23,7480	694,884
1	45	0,0091	210,357	23,7484	868,589
1,2	53	0,0109	247,754	23,7488	1022,986
1,4	62	0,0127	289,825	23,7493	1196,679
1,6	70	0,0145	327,222	23,7497	1351,065
1,8	74	0,0164	345,920	23,7501	1428,243
2	67	0,0182	313,198	23,7506	1293,115
2,2	55	0,0200	257,103	23,7510	1061,493

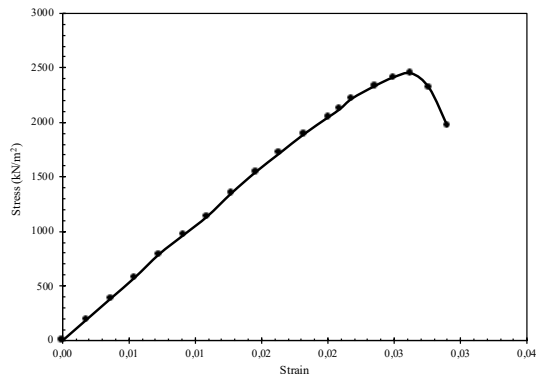


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 4% Zeolite 14 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 2450,930 kN/m²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	10	0,0018	46,746	23,7467	193,034
0,4	20	0,0036	93,492	23,7471	386,061
0,6	30	0,0055	140,238	23,7475	579,080
0,8	41	0,0073	191,659	23,7480	791,396
1	50	0,0091	233,730	23,7484	965,099
1,2	59	0,0109	275,801	23,7488	1138,796
1,4	70	0,0127	327,222	23,7493	1351,089
1,6	80	0,0145	373,968	23,7497	1544,074
1,8	89	0,0164	416,039	23,7501	1717,751
2	98	0,0182	458,111	23,7506	1891,422
2,2	106	0,0200	495,508	23,7510	2045,786
2,3	110	0,0209	514,206	23,7512	2122,967
2,4	115	0,0218	537,579	23,7514	2219,445
2,59	121	0,0235	565,627	23,7518	2335,202
2,74	125	0,0249	584,325	23,7522	2412,366
2,89	127	0,0263	593,674	23,7525	2450,930
3,04	120	0,0276	560,952	23,7528	2315,808
3,19	102	0,0290	476,809	23,7531	1968,410

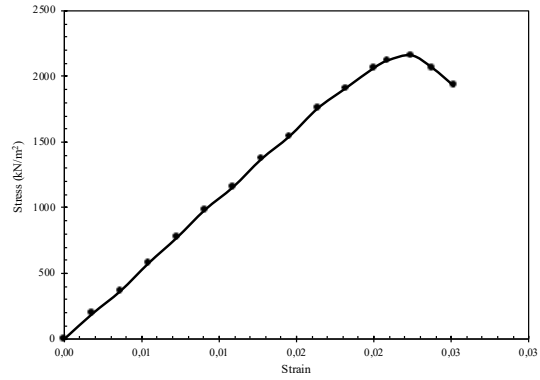


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 4% Zeolite 7 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 230 gr	Project	=
Dry Weight	= 189,1674 gr	Summary	
Wet Density	= 0,880522 gr/cm ³	Unconfined Compressive Strength	= 2161,533 kN/m ²
Dry Density	= 0,7242 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,58545 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	10	0,0018	46,746	23,7467	193,034
0,4	19	0,0036	88,817	23,7471	366,758
0,6	30	0,0055	140,238	23,7475	579,080
0,8	40	0,0073	186,984	23,7480	772,093
1	51	0,0091	238,405	23,7484	984,401
1,2	60	0,0109	280,476	23,7488	1158,098
1,4	71	0,0127	331,897	23,7493	1370,391
1,6	80	0,0145	373,968	23,7497	1544,074
1,8	91	0,0164	425,389	23,7501	1756,352
2	99	0,0182	462,785	23,7506	1910,722
2,2	107	0,0200	500,182	23,7510	2065,086
2,3	110	0,0209	514,206	23,7512	2122,967
2,466666667	112	0,0224	523,555	23,7516	2161,533
2,616666667	107	0,0238	500,182	23,7519	2065,008
2,766666667	100	0,0252	467,460	23,7522	1929,888

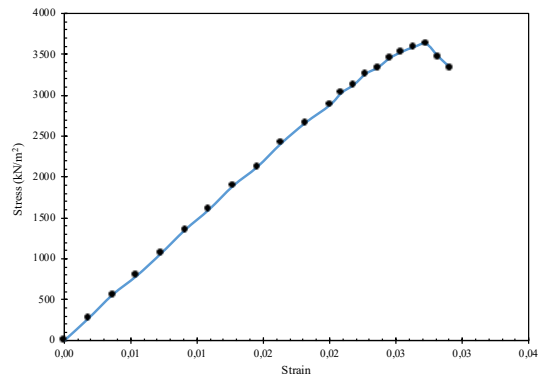


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

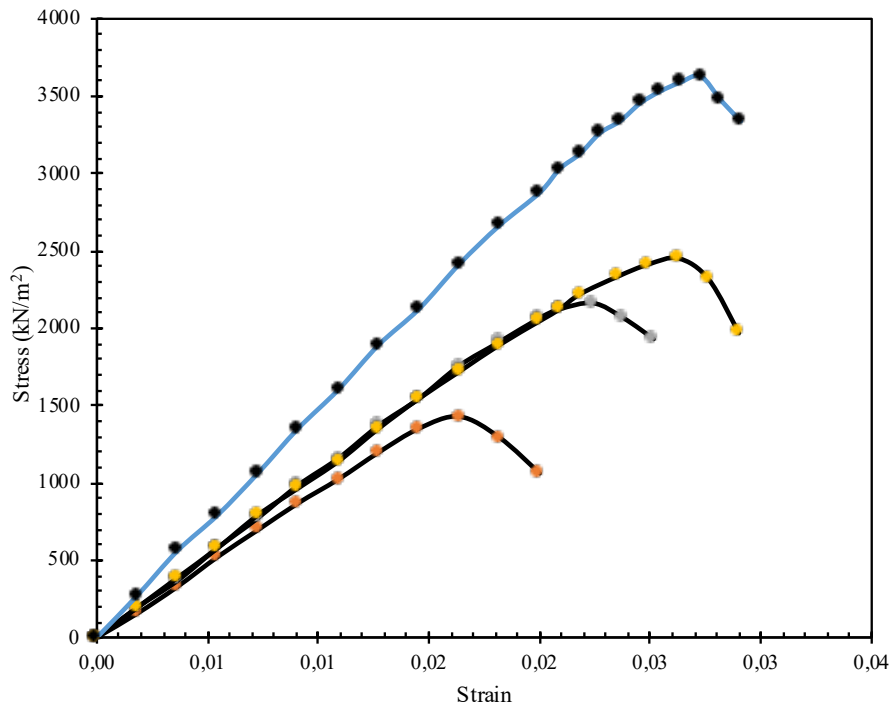
Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 4% Zeolite 28 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 3628,112 kN/m ²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	14	0,0018	65,444	23,7467	270,247
0,4	29	0,0036	135,563	23,7471	559,788
0,6	41	0,0055	191,659	23,7475	791,410
0,8	55	0,0073	257,103	23,7480	1061,628
1	70	0,0091	327,222	23,7484	1351,138
1,2	83	0,0109	387,992	23,7488	1602,035
1,4	98	0,0127	458,111	23,7493	1891,525
1,6	110	0,0145	514,206	23,7497	2123,102
1,8	125	0,0164	584,325	23,7501	2412,572
2	138	0,0182	645,095	23,7506	2663,431
2,2	149	0,0200	696,515	23,7510	2875,681
2,3	157	0,0209	733,912	23,7512	3030,052
2,4	162	0,0218	757,285	23,7514	3126,522
2,5	169	0,0227	790,007	23,7516	3261,589
2,6	173	0,0236	808,706	23,7519	3338,757
2,7	179	0,0245	836,753	23,7521	3454,520
2,8	183	0,0255	855,452	23,7523	3531,684
2,9	186	0,0264	869,476	23,7525	3589,548
3	188	0,0273	878,825	23,7527	3628,112
3,1	180	0,0282	841,428	23,7529	3473,693
3,2	173	0,0291	808,706	23,7532	3338,574



Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

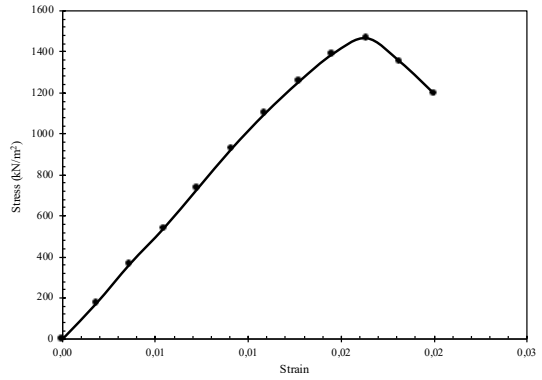
Recapitulation	Unconfined Compressive Strength (kN/m ²)	Elasticity Modulus (kN/m ²)	γ_{Dry}
15% OB + 4% Zeolite 0 Day	1428,242511	0	0,8662
15% OB + 4% Zeolite 7 Day	2161,533309	0	0,7242
15% OB + 4% Zeolite 14 Day	2450,930029	0	0,5822
15% OB + 4% Zeolite 28 Day	3628,112098	0	0,5822



UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 5% Zeolite 0 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 275 gr	Project	=
Dry Weight	= 226,259 gr	Summary	
Wet Density	= 1,052798 gr/cm ³	Unconfined Compressive Strength	= 1466,844 kN/m²
Dry Density	= 0,8662 gr/cm ³		
Water Content	= 21,54212 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0
0,2	9	0,0018	42,071	23,7467	173,730
0,4	19	0,0036	88,817	23,7471	366,758
0,6	28	0,0055	130,889	23,7475	540,475
0,8	38	0,0073	177,635	23,7480	733,489
1	48	0,0091	224,381	23,7484	926,495
1,2	57	0,0109	266,452	23,7488	1100,193
1,4	65	0,0127	303,849	23,7493	1254,583
1,6	72	0,0145	336,571	23,7497	1389,667
1,8	76	0,0164	355,270	23,7501	1466,844
2	70	0,0182	327,222	23,7506	1351,016
2,2	62	0,0200	289,825	23,7510	1196,592

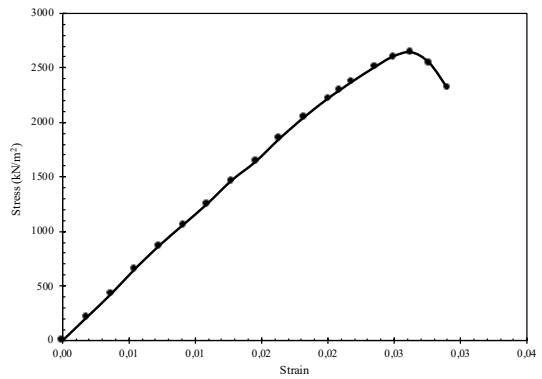


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 5% Zeolite 14 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 2643,917 kN/m²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	11	0,0018	51,421	23,7467	212,337
0,4	22	0,0036	102,841	23,7471	424,667
0,6	34	0,0055	158,936	23,7475	656,291
0,8	45	0,0073	210,357	23,7480	868,605
1	55	0,0091	257,103	23,7484	1061,609
1,2	65	0,0109	303,849	23,7488	1254,606
1,4	76	0,0127	355,270	23,7493	1466,897
1,6	85	0,0145	397,341	23,7497	1640,579
1,8	96	0,0164	448,762	23,7501	1852,855
2	106	0,0182	495,508	23,7506	2045,824
2,2	115	0,0200	537,579	23,7510	2219,485
2,3	119	0,0209	556,277	23,7512	2296,664
2,4	123	0,0218	574,976	23,7514	2373,841
2,59	130	0,0235	607,698	23,7518	2508,894
2,74	135	0,0249	631,071	23,7522	2605,355
2,89	137	0,0263	640,420	23,7525	2643,917
3,04	132	0,0276	617,047	23,7528	2547,389
3,19	120	0,0290	560,952	23,7531	2315,776

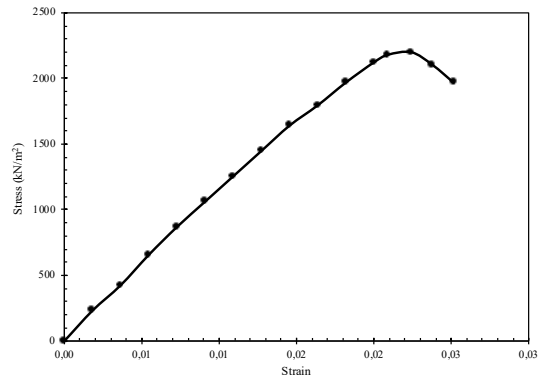


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 5% Zeolite 7 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 230 gr	Project	=
Dry Weight	= 189,1674 gr	Summary	
Wet Density	= 0,880522 gr/cm ³	Unconfined Compressive Strength	= 2200,132 kN/m ²
Dry Density	= 0,7242 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,58545 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	12	0,0018	56,095	23,7467	231,641
0,4	22	0,0036	102,841	23,7471	424,667
0,6	34	0,0055	158,936	23,7475	656,291
0,8	45	0,0073	210,357	23,7480	868,605
1	55	0,0091	257,103	23,7484	1061,609
1,2	65	0,0109	303,849	23,7488	1254,606
1,4	75	0,0127	350,595	23,7493	1447,596
1,6	85	0,0145	397,341	23,7497	1640,579
1,8	93	0,0164	434,738	23,7501	1794,953
2	102	0,0182	476,809	23,7506	1968,623
2,2	110	0,0200	514,206	23,7510	2122,986
2,3	113	0,0209	528,230	23,7512	2180,866
2,466666667	114	0,0224	532,904	23,7516	2200,132
2,616666667	109	0,0238	509,531	23,7519	2103,606
2,766666667	102	0,0252	476,809	23,7522	1968,486

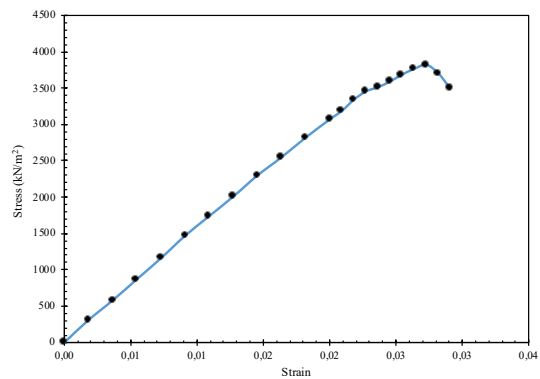


Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

UNCONFINED COMPRESSION TEST

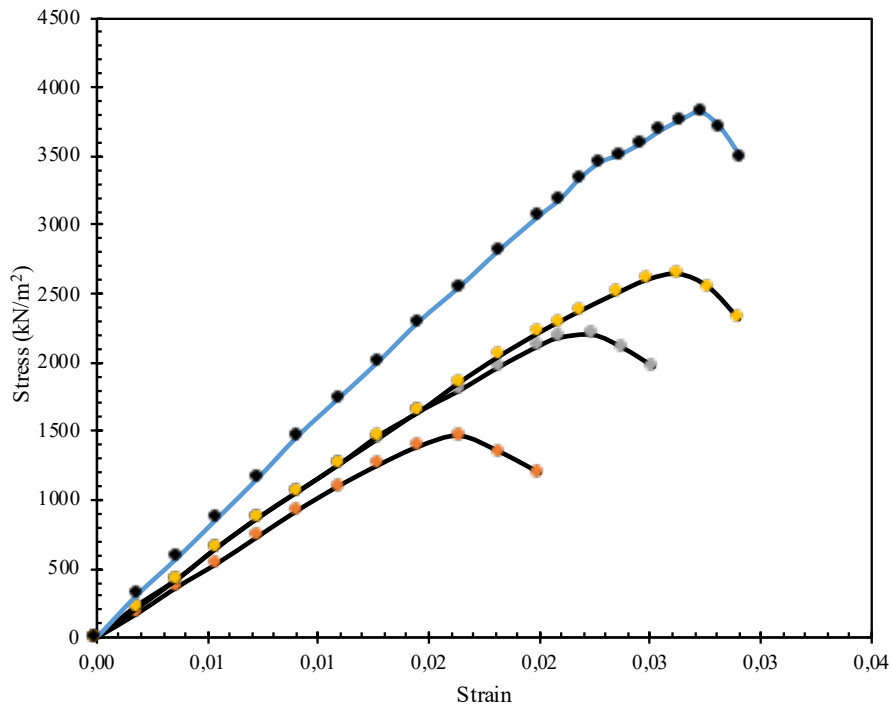
Dimension		Details	
Diameter	= 5,5 cm	Sample Num	= 15% OB + 5% Zeolite 28 Day
Height	= 11 cm	Date	=
Area	= 23,74625 cm ²	Tested By	= Afdhal Refsi Negara
Volume	= 261,2088 cm ³	Client	=
Wet Weight	= 185 gr	Project	=
Dry Weight	= 152,0757 gr	Summary	
Wet Density	= 0,708246 gr/cm ³	Unconfined Compressive Strength	= 3821,097 kN/m ²
Dry Density	= 0,5822 gr/cm ³	Elasticity Modulus	= 0 kN/m ²
Water Content	= 21,64991 %		

Axial Deformation (mm)	Load Dial Reading (DIV)	Axial Strain (ΔH/H)	Load (kg)	Corrected Area (cm ²)	Stress (kN/m ²)
0	0	0,0000	0,000	23,7463	0,000
0,2	16	0,0018	74,794	23,7467	308,854
0,4	30	0,0036	140,238	23,7471	579,091
0,6	45	0,0055	210,357	23,7475	868,621
0,8	60	0,0073	280,476	23,7480	1158,140
1	76	0,0091	355,270	23,7484	1466,950
1,2	90	0,0109	420,714	23,7488	1737,146
1,4	104	0,0127	486,158	23,7493	2007,333
1,6	119	0,0145	556,277	23,7497	2296,810
1,8	132	0,0164	617,047	23,7501	2547,676
2	146	0,0182	682,492	23,7506	2817,833
2,2	159	0,0200	743,261	23,7510	3068,680
2,3	165	0,0209	771,309	23,7512	3184,450
2,4	173	0,0218	808,706	23,7514	3338,817
2,5	179	0,0227	836,753	23,7516	3454,583
2,6	182	0,0236	850,777	23,7519	3512,449
2,7	186	0,0245	869,476	23,7521	3589,613
2,8	191	0,0255	892,849	23,7523	3686,075
2,9	195	0,0264	911,547	23,7525	3763,236
3	198	0,0273	925,571	23,7527	3821,097
3,1	192	0,0282	897,523	23,7529	3705,272
3,2	181	0,0291	846,103	23,7532	3492,959



Consistency	UCS (kN/m ²)
Very Soft	<25
Soft	25-50
Medium	50-100
Stiff	100-200
Very Stiff	200-400
Hard	>400

Recapitulation	Unconfined Compressive Strength (kN/m ²)	Elasticity Modulus (kN/m ²)	γ_{Dry}
15% OB + 5% Zeolite 0 Day	1466,84366	0	0,8662
15% OB + 5% Zeolite 7 Day	2200,132118	0	0,7242
15% OB + 5% Zeolite 14 Day	2643,916645	0	0,5822
15% OB + 5% Zeolite 28 Day	3821,096785	0	0,5822



Zeolite	Overboulder	UCS			
		0	7	14	28
1	15	1080,83217	1775,62056	2258,08508	2952,79995
2	15	1273,837915	1968,53926	2354,43672	3338,63507
3	15	1370,340787	2065,03629	2412,33271	3531,61976
4	15	1428,242511	2161,53331	2450,93003	3628,1121
5	15	1466,84366	2200,13212	2643,91665	3821,09678

