Unconfined Compression Test

Test date:	2025-09-04
Group no.:	5

Sample no.:	1
Initial diameter:	1.50 mm
Initial length:	2.99 mm
Initial area:	1.76 mm^2

Displacement dial factor:	0.001

Can no.:	102
Wt of can:	21.20 g
Wt of can + wet sample:	180.64 g
Wt of can + dry sample:	146.60 g
Moisture content:	27.15%

Calibration of proving ring (in kg)	
For D ≤ 630	P = 0.4146D
For D > 630	P = 0.9633D - 352.55

Load Dial	Load (lb)	Disp. Dial	Disp. (in)	Unit Strain	Corrected Area (in^2)	Stress (psi)
1.0	0.91	10	0.01	0.003	1.76	0.518
1.0	0.91	20	0.02	0.007	1.77	0.516
2.0	1.83	30	0.03	0.010	1.78	1.030
2.5	2.29	40	0.04	0.013	1.78	1.283
3.0	2.74	50	0.05	0.017	1.79	1.534
3.5	3.20	70	0.07	0.023	1.80	1.777
4.5	4.11	90	0.09	0.030	1.81	2.269
5.0	4.57	110	0.11	0.037	1.82	2.504
7.0	6.40	130	0.13	0.043	1.84	3.482
8.3	7.59	150	0.15	0.050	1.85	4.099
10.0	9.14	170	0.17	0.057	1.86	4.904
11.0	10.05	190	0.19	0.064	1.88	5.356
13.5	12.34	220	0.22	0.074	1.90	6.503
15.0	13.71	250	0.25	0.084	1.92	7.148
17.0	15.54	280	0.28	0.094	1.94	8.012
19.0	17.37	310	0.31	0.104	1.96	8.856
21.0	19.19	340	0.34	0.114	1.98	9.678
22.0	20.11	370	0.37	0.124	2.01	10.025
23.5	21.48	400	0.40	0.134	2.03	10.586
25.5	23.31	450	0.45	0.150	2.07	11.265
27.5	25.14	500	0.50	0.167	2.11	11.910
29.5	26.96	550	0.55	0.184	2.15	12.519
30.5	27.88	600	0.60	0.201	2.20	12.679
31.0	28.34	650	0.65	0.217	2.25	12.617

Unconfined Compression Test

Test date:	2025-09-04
Group no.:	5

Sample no.:	2
Initial diameter:	1.50 mm
Initial length:	2.99 mm
Initial area:	1.76 mm^2

Displacement dial factor:	0.001

Can no.:	5
Wt of can:	22.90 g
Wt of can + wet sample:	176.45 g
Wt of can + dry sample:	129.70 g
Moisture content:	43.77%

Calibration of proving ring (in kg)	
For D ≤ 630	P = 0.4146D
For D > 630	P = 0.9633D - 352.55

Load Dial	Load (lb)	Disp. Dial	Disp. (in)	Unit Strain	Corrected Area (in^2)	Stress (psi)
2.5	2.29	10	0.01	0.003	1.76	1.296
4.0	3.66	20	0.02	0.007	1.77	2.066
6.0	5.48	30	0.03	0.010	1.78	3.089
8.0	7.31	40	0.04	0.013	1.78	4.104
9.5	8.68	50	0.05	0.017	1.79	4.857
11.0	10.05	70	0.07	0.023	1.80	5.586
12.5	11.43	90	0.09	0.030	1.81	6.304
15.0	13.71	110	0.11	0.037	1.82	7.513
19.0	17.37	130	0.13	0.043	1.84	9.450
22.0	20.11	150	0.15	0.050	1.85	10.866
25.0	22.85	170	0.17	0.057	1.86	12.261
29.0	26.51	190	0.19	0.064	1.88	14.121
32.0	29.25	220	0.22	0.074	1.90	15.415
36.0	32.91	250	0.25	0.084	1.92	17.155
36.5	33.36	280	0.28	0.094	1.94	17.203
35.0	31.99	310	0.31	0.104	1.96	16.313
29.0	26.51	340	0.34	0.114	1.98	13.366
26.0	23.76	370	0.37	0.124	2.01	11.847
24.0	21.94	400	0.40	0.134	2.03	10.811
22.0	20.11	450	0.45	0.150	2.07	9.719

Unconfined Compression Test

Test date:	2025-09-04
Group no.:	5

Sample no.:	3
Initial diameter:	1.50 mm
Initial length:	2.99 mm
Initial area:	1.76 mm^2

Displacement dial factor:	0.001

Can no.:	5-B
Wt of can:	21.80 g
Wt of can + wet sample:	180.43 g
Wt of can + dry sample:	141.70 g
Moisture content:	32.30%

Calibration of proving ring (in kg)	
For D ≤ 630	P = 0.4146D
For D > 630	P = 0.9633D - 352.55

Load Dial	Load (lb)	Disp. Dial	Disp. (in)	Unit Strain	Corrected Area (in^2)	Stress (psi)
0.2	0.18	10	0.01	0.003	1.76	0.104
0.5	0.46	20	0.02	0.007	1.77	0.258
1.1	1.01	30	0.03	0.010	1.78	0.566
1.8	1.65	40	0.04	0.013	1.78	0.923
2.0	1.83	50	0.05	0.017	1.79	1.023
3.0	2.74	70	0.07	0.023	1.80	1.523
4.0	3.66	90	0.09	0.030	1.81	2.017
4.5	4.11	110	0.11	0.037	1.82	2.254
5.6	5.12	130	0.13	0.043	1.84	2.785
7.0	6.40	150	0.15	0.050	1.85	3.457
8.0	7.31	170	0.17	0.057	1.86	3.923
9.0	8.23	190	0.19	0.064	1.88	4.383
11.0	10.05	220	0.22	0.074	1.90	5.299
12.0	10.97	250	0.25	0.084	1.92	5.718
13.5	12.34	280	0.28	0.094	1.94	6.363
15.0	13.71	310	0.31	0.104	1.96	6.991
16.0	14.62	340	0.34	0.114	1.98	7.374
17.5	16.00	370	0.37	0.124	2.01	7.974
18.3	16.73	400	0.40	0.134	2.03	8.243
19.5	17.82	450	0.45	0.150	2.07	8.614
21.0	19.19	500	0.50	0.167	2.11	9.095
21.3	19.47	550	0.55	0.184	2.15	9.039
22.0	20.11	600	0.60	0.201	2.20	9.145
22.0	20.11	650	0.65	0.217	2.25	8.954
22.0	20.11	700	0.70	0.234	2.29	8.763
22.0	20.11	750	0.75	0.251	2.35	8.572