

APPENDIX B

ROUNDNESS AND SPHERICITY MEASUREMENT

Table B.1 Roundness of each fragment for PWSS, PPCS, and PPSS specimens.

N	Sample	PWSS		PPCS		PPSS	
		Dry	Wet	Dry	Wet	Dry	Wet
0	1-10	-	-	-	-	-	-
20	1	0.43	0.44	0.35	0.31	0.42	0.60
	2	0.43	0.44	0.32	0.30	0.40	0.58
	3	0.43	0.45	0.26	0.31	0.37	0.57
	4	0.44	0.45	0.36	0.32	0.44	0.56
	5	0.45	0.46	0.40	0.34	0.49	0.55
	6	0.45	0.47	0.24	0.37	0.45	0.54
	7	0.48	0.48	0.25	0.33	0.43	0.54
	8	0.48	0.49	0.28	0.31	0.43	0.52
	9	0.48	0.49	0.29	0.33	0.41	0.51
	10	0.49	0.49	0.33	0.35	0.47	0.49
	Mean±SD	0.46±0.02	0.47±0.02	0.31±0.05	0.33±0.02	0.43±0.03	0.55±0.03
40	1	0.43	0.45	0.37	0.33	0.52	0.69
	2	0.47	0.46	0.34	0.32	0.50	0.66
	3	0.49	0.46	0.28	0.33	0.47	0.65
	4	0.50	0.47	0.38	0.34	0.54	0.64
	5	0.50	0.48	0.42	0.36	0.59	0.63
	6	0.50	0.49	0.26	0.39	0.55	0.63
	7	0.51	0.50	0.27	0.35	0.53	0.62
	8	0.51	0.50	0.30	0.33	0.53	0.61
	9	0.52	0.50	0.31	0.35	0.51	0.60
	10	0.55	0.51	0.35	0.37	0.57	0.57
	Mean±SD	0.50±0.03	0.48±0.02	0.33±0.05	0.35±0.02	0.53±0.03	0.63±0.03

Table B.1 Roundness of each fragment for PWSS, PPCS, and PPSS specimens.
(continued)

N	Sample	PWSS		PPCS		PPSS	
		Dry	Wet	Dry	Wet	Dry	Wet
60	1	0.46	0.49	0.39	0.37	0.57	0.81
	2	0.50	0.46	0.36	0.36	0.55	0.78
	3	0.51	0.47	0.30	0.37	0.52	0.77
	4	0.52	0.47	0.40	0.38	0.59	0.76
	5	0.52	0.48	0.44	0.4	0.64	0.75
	6	0.53	0.50	0.28	0.43	0.60	0.75
	7	0.54	0.50	0.29	0.39	0.58	0.74
	8	0.54	0.51	0.32	0.37	0.58	0.73
	9	0.55	0.51	0.33	0.39	0.56	0.72
	10	0.57	0.51	0.37	0.41	0.62	0.69
	Mean±SD	0.52±0.03	0.49±0.02	0.35±0.05	0.39±0.02	0.58±0.03	0.75±0.03
80	1	0.50	0.50	0.42	0.41	0.64	0.97
	2	0.54	0.47	0.39	0.40	0.62	0.94
	3	0.56	0.48	0.33	0.41	0.59	0.93
	4	0.57	0.48	0.43	0.42	0.66	0.92
	5	0.57	0.49	0.47	0.44	0.71	0.91
	6	0.57	0.51	0.31	0.44	0.67	0.91
	7	0.58	0.51	0.32	0.43	0.65	0.90
	8	0.58	0.52	0.35	0.41	0.65	0.89
	9	0.59	0.52	0.36	0.43	0.63	0.88
	10	0.62	0.52	0.35	0.45	0.69	0.85
	Mean±SD	0.57±0.03	0.50±0.02	0.38±0.05	0.42±0.02	0.65±0.03	0.91±0.03

Table B.2 Sphericity of each fragment for PWSS, PPCS, and PPSS specimens.

N	Sample	PWSS		PPCS		PPSS	
		Dry	Wet	Dry	Wet	Dry	Wet
0	1-10	0.58					
20	1	0.61	0.58	0.59	0.61	0.60	0.60
	2	0.61	0.58	0.58	0.60	0.57	0.61
	3	0.62	0.58	0.57	0.59	0.57	0.59
	4	0.59	0.58	0.57	0.61	0.61	0.53
	5	0.58	0.58	0.58	0.62	0.63	0.50
	6	0.60	0.58	0.56	0.60	0.62	0.45
	7	0.60	0.58	0.58	0.58	0.58	0.63
	8	0.59	0.58	0.57	0.60	0.58	0.38
	9	0.58	0.58	0.57	0.61	0.59	0.62
	10	0.60	0.58	0.58	0.60	0.60	0.60
	Mean±SD	0.60±0.01	0.60±0.01	0.58±0.01	0.60±0.01	0.60±0.02	0.55±0.08
40	1	0.62	0.60	0.60	0.62	0.62	0.67
	2	0.62	0.60	0.59	0.61	0.59	0.49
	3	0.63	0.62	0.58	0.60	0.59	0.46
	4	0.60	0.60	0.58	0.62	0.63	0.39
	5	0.60	0.59	0.59	0.63	0.65	0.50
	6	0.61	0.60	0.57	0.61	0.64	0.35
	7	0.62	0.60	0.59	0.59	0.60	0.62
	8	0.60	0.59	0.58	0.61	0.60	0.33
	9	0.62	0.59	0.58	0.62	0.61	0.62
	10	0.63	0.60	0.59	0.61	0.62	0.63
	Mean±SD	0.62±0.01	0.63±0.01	0.59±0.01	0.61±0.01	0.62±0.02	0.51±0.12

Table B.2 Sphericity of each fragment for PWSS, PPCS, and PPSS specimens (continued).

N	Sample	PWSS		PPCS		PPSS	
		Dry	Wet	Dry	Wet	Dry	Wet
60	1	0.63	0.64	0.61	0.63	0.65	0.59
	2	0.63	0.66	0.60	0.62	0.62	0.59
	3	0.64	0.65	0.59	0.61	0.62	0.60
	4	0.61	0.64	0.59	0.63	0.66	0.59
	5	0.61	0.64	0.60	0.64	0.68	0.38
	6	0.62	0.65	0.58	0.62	0.67	0.11
	7	0.63	0.63	0.60	0.60	0.63	0.22
	8	0.61	0.62	0.59	0.62	0.63	0.46
	9	0.63	0.63	0.59	0.63	0.64	0.44
	10	0.64	0.64	0.60	0.62	0.65	0.52
	Mean±SD	0.63±0.01	0.64±0.01	0.60±0.01	0.62±0.01	0.65±0.02	0.46±0.17
80	1	0.63	0.67	0.62	0.64	0.67	0.55
	2	0.63	0.68	0.61	0.63	0.64	0.54
	3	0.64	0.66	0.60	0.62	0.64	0.53
	4	0.62	0.65	0.60	0.64	0.68	0.54
	5	0.64	0.65	0.61	0.65	0.70	0.43
	6	0.63	0.66	0.59	0.63	0.69	0.09
	7	0.64	0.64	0.61	0.61	0.65	0.10
	8	0.62	0.64	0.60	0.63	0.65	0.39
	9	0.63	0.64	0.60	0.64	0.66	0.40
	10	0.64	0.65	0.61	0.63	0.67	0.35
	Mean±SD	0.64±0.01	0.65±0.01	0.61±0.01	0.63±0.01	0.67±0.02	0.39±0.17