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APPENDIX

Some specification of the English ball clay used as standard in this study

Chemical Analysis

	Hyplas 64	Hyplas 67	Hyplas 71	Hywite Superb	Hywite Magnum	Hywite Optima	Hycast Zenith	Hycast Classic	Hycast Vc	Hycast Visa	Hycast Mega	Hycast Rapide	Hycast Hka	Hypure Nova
SiO₂	63	65	69	49	49	50	55	56	53	55	55	55	47	49
Al₂O₃	24	23	20	33	31	32	29	28	30	29	29	29	36	33
Fe₂O₃	1	1	0.9	1.1	1.2	1.3	1.2	1.3	1.2	1.2	1.2	1.1	1.2	1.1
TiO₂	1.6	1.7	1.7	0.9	0.9	0.9	1	1.2	1	1.1	1.1	1.1	0.8	0.9
CaO	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2
MgO	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
K₂O	2.1	2	1.9	1.8	2	1.3	1.9	2.2	2	1.9	1.8	1.6	1	1.8
Na₂O	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3
LOI	6.8	6.2	5.4	14	14.5	14	11	10.7	12.2	11.5	11.7	12	13.5	13.1

Particle Size Distribution Mass %

>125 um	0.4	0.5	1	1.5	1.5	2	0.2	0.8	1.5	1.5	1.7	2	0.1	0
>53 um	3	4	6	2.5	2	3	-	1.5	2.5	2.3	2.6	3	0.5	1
<5 um	85	80	70	94	96	93	86	88	93	88	87	87	93	94
<2 um	75	65	57	84	87	80	72	76	81	73	72	70	77	82
<1 um	65	55	50	75	79	70	62	66	69	63	62	60	63	72
<0.5 um	55	46	40	63	66	61	51	55	56	50	48	45	48	59

Modulus of rupture (MNm⁻²)

	8.5	7.5	6.5	5.5	7.5	4	6	7.5	5.5	5.5	4.5	3.5	4	7.3
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% Absorption

1,180°C	4	4.5	6	6.5	5.5	10.5	5	4.5	5.5	6	7	8	15.5	6.7
1,240°C	2	2	3	4	3.5	4.5	2	2	3	3	3.5	4	11	3

Fired Properties

% Brightness

1,180°C	54	53	54	72	70	77	63	58	62	63	65	68	82	74
1,240°C	46	45	45	68	65	67	56	50	56	54	56	58	82	68

% Contraction

1,180°C	9	8.1	6.5	14	14	13	11.5	11.5	13	11.5	11.5	11.5	11	11.6
1,240°C	10	9.3	8.1	15	15	15.5	13	13	14	13.7	13.4	13.5	12.5	14.1

Hypure Sigma	Hypure Vector	Hymod Excelsior	Hymod Pkh	Hymod Prima	Hymod Blue	Hymod Kc	Hymod Macro	Hymod Bravo	Hymod Rn	Hymod Sm	Hymod Gr	Hymod Bl2	Hymod At	Hymod Al
49	49	49	50	54	53	54	57	60	57	74	58	51	54	54
33	32	35	33	30	31	30	29	26	28	17	28	32	29	30
1.1	1.3	1.6	1.5	1.4	1.4	1.4	1.4	1.3	1.5	0.9	1.5	2.2	2.3	1.4
0.9	1	1.3	1.4	1.2	1	1.2	1.2	1.3	1.1	1.5	1.3	0.9	1.2	1
0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2
0.4	0.5	0.3	0.3	0.4	0.5	0.5	0.4	0.4	0.5	0.3	0.4	0.5	0.4	0.4
2.1	2.2	1.2	1.6	3.1	3.2	3.3	2.6	2.4	3.3	1.7	3	3.3	3.1	2.8
0.2	0.3	0.2	0.2	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.5	0.5	0.5	0.4
13.5	12.5	12	11	8.8	9.2	8.7	8.6	7.8	8.2	4.7	7.9	9.5	8.5	9.5

0	0	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.2	0.2	0.7
1	1	0.6	0.5	0.3	0.3	0.4	1.2	2.5	0.5	5.5	0.7	0.4	0.6	1
95	97	96	97	96	97	95	90	83	94	64	92	98	95	94
86	87	92	92	88	89	85	82	74	82	48	80	93	85	84
78	77	87	85	79	79	75	74	65	71	40	70	85	78	76
66	65	80	78	67	65	64	65	56	58	35	57	75	65	66

10.7	10.9	7.5	7.5	8	8	7.5	8	7.5	7.5	4.5	7	8.5	7	5.5
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4.9	5.8	4.5	4.5	2.5	2.5	2	3.5	4	2	9	2.5	2.5	2	2.5
3.4	3.2	3	3	1.5	1.5	1.5	2	2	1	5	1	1.5	1	1.5

70	66	68	64	54	57	52	57	56	47	57	47	41	35	52
63	63	63	57	49	53	48	52	48	42	49	41	40	33	47

12.5	11.8	14.5	14	12.5	12.2	12	11	9.8	11.7	4.2	11.5	12.7	12.1	14
14.6	13.4	15.3	15	13	12.6	12.5	11.6	10.8	12	6.3	12	13.1	12.5	14.5

BIOGRAPHY

Mr.Suthisak Thowanich was born on April 22, 1973 in Bangkok. He has finished the Undergraduate study (Geology program) and received the B.Sc. degree from Department of Geology, Faculty of Science, Chulalongkorn University, since 1995. After that he studied the Graduate program in geology at Graduate School, Chulalongkorn University.

