

APPENDIX 3

MISCELLANEOUS

Table A.3.1 Chemical composition of cement, PFA, and RGD

Material	Reference	SiO ₂ (%)	Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	CaO (%)	MgO (%)	K ₂ O (%)	Na ₂ O (%)	SO ₃ (%)	Na ₂ O _{eq} (%)	Other oxides (%)	Loss on ignition (%)
Cement used in this study	Manufacturer (Procem: Lafarge, UK)	21.8	4.20	2.50	65.10	-	0.72	0.13	-	0.60	3.15	-
	(Ramazan 2006)	21.2	5.70	4.90	62.20	1.10	0.70	0.15	-	0.61	2.55	-
	(Hassan 2000)	21.0	4.73	2.93	63.63	2.67	0.65	0.30	3.00	0.72	1.06	0.97
	(Burak 2007)	20.1	5.92	2.54	63.91	0.94	0.85	0.26	2.56	0.82	2.97	-
	(Cengiz 2007)	19.7	5.20	3.13	62.91	2.54	0.90	0.25	2.72	0.84	2.04	0.96
PFA used in this study	Manufacturer (Lafarge & ScotAsh, UK)	45	30	11	5.9	2.25	3.4	1.3	1.5	-	-	11
Other PFA	(Harun 2009)	48.53	24.61	7.59	9.48	2.28	-	-	-	-	0.93	-
	(Vanchai 2007)	43.00	21.8	10.70	14.0	2.80	2.6	1.8	1.4	3.51	1.90	1.6
	(Sear 2005)	45-52	24-32	7-15	1.1-5.4	1.2-4.4	2.3-4.5	0.8-1.8	0.35-1.7	-	-	5-20
	(Hassan 2000)	49.90	26.5	8.10	1.7	1.3	3.6	1.5	0.9	3.84	6.50	3.8
RGD used in this study	Producer (Cloburn Quarry, Edinburgh, UK)	61.40	16.30	3.66	3.69	1.70	3.75	3.62	0.05	6.09	5.83	5.01
Other RGD	(Vieira 2004)	67.14	14.92	4.4	1.91	0.73	5.18	2.93	-	6.33	2.80	0.50
	(Owsiak 2004)	73.85	12.78	2.53	2.45	0.21	1.85	2.77	0.14	3.97	3.42	0.40
	(Wilson 2006)	44.21	22.38	9.86	8.71	3.51	4.13	2.71	-	5.40	0.15	0.43

Silica (SiO₂), Alumina (Al₂O₃), Ferric Oxide (Fe₂O₃), Calcium oxide (CaO), Magnesium oxide (MgO), Potassium oxide (K₂O), Sodium oxide (Na₂O), Sulphate (SO₃⁻), Na₂O_{eq} (Na₂O + 0.658K₂O)