Mix design of FAC-cement composites (proportions by weight, where OPC+SF=1)

Mix ID	FAC	OPC	SF	FA	Water & SP	SP (% OPC)	PP fibre (kg/m^3)	CEN standard sand	Density (air dry) (kg/m^3)	Density (oven-dried) (kg/m^3)	Compressive strength (std. prisms) (MPa)
A/0.35/0.25	0.35	0.92	0.08	-	0.25	2.5	-	-	1430	1320	53
A/0.35/0.30	0.35	0.92	0.08	-	0.3	2.5	-	-	1390	1250	55.8
A/0.45/0.27	0.45	0.92	0.08	-	0.27	2.5	-	-	1380	1250	58.5
A/0.45/0.30	0.45	0.92	0.08	-	0.3	2.5	-	-	1390	1250	58.7
A/0.45/0.30/1.8PP	0.45	0.92	0.08	-	0.3	2.5	1.8	-	1320	1200	55.3
A/0.45/0.30/3.6PP	0.45	0.92	0.08	-	0.3	2.5	3.6	-	1300	1180	49.4
A/0.45/0.30/20%FA	0.45	0.74	0.08	0.184	0.3	2.5	-	-	1320	1210	52.6
A/0.45/0.30/40%FA	0.45	0.55	0.08	0.368	0.3	2.5	-	-	1270	1180	45.7
A/0.50/0.40	0.50	0.92	0.08	-	0.4	2	-	-	1320	1150	44.2
A/0.60/0.40	0.60	0.92	0.08	-	0.4	2	-	-	1140	1000	30.2
B/0.30/0.25	0.30	0.92	0.08	-	0.25	2.5	-	-	1502	1432	71.7
B/0.42/0.30	0.42	0.92	0.08	-	0.3	2.5	-	-	1335	1283	52.5
B/0.45/0.30	0.45	0.92	0.08	-	0.3	2.5	-	-	1306	1222	55.2
B/0.45/0.30/1.8PP	0.45	0.92	0.08	-	0.3	2.5	1.8	-	1305	1213	53.8
B/Standard mortar	-	1	-	-	0.5	-	-	3	2212	2146	70.5

Abbreviations used in the table:

FAC - fly ash cenosphere
OPC - ordinary Portland cement 42.5R
SF - silica fume
FA - fly ash
SP - superplasticizer
PP fibre - polypropylene fibre
CEN standard sand - sand complying to EN 196-1
std. prisms - prisms complying to EN 196-1 (160 mm x 40 mm x 40 mm)

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