SUMMARY OF TEST RESULTS
COMPARING KALMATRON KF-A AND SILICA FUME
CONDUCTED AT UNIVERSITY OF TECHNOLOGY SYDNEY

The following is a summary of comparison testing between Kalmatron KF-A and Silica Fume, conducted over a 91day period by Dr. Steve Bakoss at the University of Technology, Sydney, Australia.

COMPARATIVE PARAMETER	KALMATRON KF-A	SILICA FUME	NOTES
Dosage per 1 m^3	5 kg/m^3	40 kg/m^3	
Additional admixtures needed	None	"Pozzolith 370" "Rheobuild 1000"	Concrete mix with Silica Fume needs additional admixtures
Slump 10 minutes	33mm	70mm	
Workability	9 seconds	12 seconds	"Vebe" test
Cementitious volume	95%	70%	By core temperatures
Density at 28 days	2,470 kg/m^3	2,420 kg/m^3	
Compressive strength 1st day 28th day 56th day 91st day	 19.7 Mpa = 2900 psi 57.9 Mpa = 8400 psi 58.4 Mpa = 8500 psi 62.1 Mpa = 9000psi	 13.3 Mpa = 1900 psi 56.9 Mpa = 8200 psi 68.4 Mpa= 9900 psi 63.6 Mpa = 9200 psi	After 56 days, Silica Fume lost 9% of strength – degradation continues.
Flexural strength 14 days 91 days	 6 Mpa 7.2 Mpa	 4.7 Mpa 7.2 Mpa	
Shrinkage 28 days 56 days 119 days	 257 microstrain 310 microstrain 320 microstrain	 466 microstrain 653 microstrain 745 microstrain	
Chloride permeability	Equal to high aluminum concrete	In accordance with properties of concrete	By electric conduct
15% Sulphuric Acid attack at 42nd day	25%	43%	By weight loss
15% Hydrochloric Acid attack at 42nd day	7%	9.5%	By weight loss
15% Orthophosphoric Acid attack at 42nd day	2.5%	4.5%	By weight loss
15% Nitric Acid attack at 42nd day	8.8%	10.3%	By weight loss
15% Sugar Solution attack at 42nd day	0.1%	0.35%	By weight loss
Liquid impermeability	W10 to W16	N/A	

CONCLUSION

Kalmatron KF-A is a good replacement for Silica Fume. The entire test booklet results of 40 pages is available upon request.