

ECONOMIC EFFECTIVENESS OF KALMATRON KF-A

The economic effectiveness of concrete admixtures is determined by the combination of the following criteria:

- Number and quantity of admixtures in concrete mixes to obtain desired results
- Comparison of various characteristics in the concrete mix and the final structure through objective testing
- Requirements for the curing of the concrete

For purposes of illustration, we have compared two concrete admixtures:

Kalmatron KF-A
Silica Fume

Silica Fume was selected as the comparison admixture for three reasons: We have the comparative test results; we have data about both products; and, both products are advanced and already have a developed market. To be objective, we should remember that each product was developed for a particular purpose with a targeted application.

Technical Performance of Kalmatron KF-A and Silica Fume

Based on a concrete mix with a targeted compressive strength of 25 Mpa

TARGETED CHARACTERISTICS	KALMATRON KF-A	SILICA FUME
Improvement of characteristic of concrete up to		
Compressive strength at 28 days	100%	100%
Flexural strength at 28 days	25%	15%
Liquid impermeability at 28 days	100%	75%
Density at 28 days	18%	6%
Corrosion Resistance	100%	N/A*
Decreasing of slump with reduction of water by 15%	50%	N/A
Decreasing of shrinkage with reduction of water by 15%	35%	N/A
Workability with reduction of water by 15%	100%	N/A
Early strengthening up to targeted compressive strength	7 days	20 days
Freeze-thaw resistance	28 days	28 days

*Silica Fume admixtures are known as Supplementary Cementitious Materials, which create denser concrete structures independently from the compacting aggregate and viscosity of the cement dough. Cement with these admixtures has been decayed by water hydration. No other chemical reactions have occurred with the cement grains.