



SUPAPLAST

Superplasticiser & Integral Cement Waterproof for Concrete

DESCRIPTION

“SUPAPLAST” is new generation of concrete admixture based on a blend of specially selected organic polymers, combining the properties of superplasticiser with high degree of slump retention characteristics, high range water reducer and integral cement waterproofer for concrete, complying ASTM C-494 Type F&G, IS :9103 - 1999 & IS:2645 - 1975.

USES

“SUPAPLAST” can be used to either produce an extremely workable “FLOWING CONCRETE” without loss of strength or to enable large water reduction to be made for the same workability which result in a dense, watertight concrete with higher ultimate strength.

ADVANTAGES

Substantial improvements in workability and flow properties without increased water produces self leveling concrete which can be poured into place around congested reinforcement and requires little (or no) vibration to achieve optimum compaction. The bond strength of concrete to reinforcement steel is considerably increased.

The internal friction and thixotropy of the mix is reduced to a minimum without the risk of segregation, thus making concrete pumping more efficient.

Very significant water reduction minimises shrinkage or cracking, thereby producing close textured impervious concrete with improved durability and surface finish. Suitable for use in most type of concrete above and below ground subjected to water pressure and aggressive atmospheric conditions. Reduction in concrete permeability, protects against water migration and corrosion of embedded steel.

For a given concrete mix, keeping the cement consumption and workability constant by large reduction in the amount of mixing water, substantial increase in strength can be achieved. Alternatively, for the same concrete mix, by keeping workability and strength constant, a definite cement economy ranging from 10 to 20% can be obtained. Obvious advantages for precast concrete production are achieved.

PROPERTIES

Form	Liquid
Colour	Brown
Specific Gravity	1.17 ± 0.02
Air Entrainment	May increase very marginally.
Setting & Hardening	There may be mild retarding effect on setting time.
pH Value	7 to 8
Chloride content	Nil
Compatibility	Can be used with all types of Portland and slag cements including sulphate resistant cement.
Consistency	“SUPAPLAST” is formulated from carefully selected raw materials and is manufactured under control conditions to produce a consistent product.

TABLE - 1 - Typical workability Test using “SUPAPLAST” with different dosage

Sl.No.	Test	Dosage in Lt/50 kg of cement	W/C Ratio	Cement content in kg/m ³	Slump in mm
I	Control Mix	-	0.55	350	50
II	SUPAPLAST	0.2	0.55	350	80
III	SUPAPLAST	0.4	0.55	350	150
IV	SUPAPLAST	0.6	0.55	350	200

TABLE-2 - Compressive Strengths of Water-Reduced Concrete using “SUPAPLAST” in workability range 50 to 80 mm slump

Sl. No.	Test	Dosage in Lt/50 kg of cement	W/C Ratio	Cement content in kg/m ³	Compressive strength in kg/cm ²	
					7 Day	28 Day
I	Control	-	0.55	350	175	270
II	SUPAPLAST	0.2	0.50	350	255	343
III	SUPAPLAST	0.6	0.46	350	325	410

TABLE-3 - Cement saving of plasticised concrete using ‘SUPAPLAST’ with different dosage levels at constant W/C ratio (0.55) and workability (80-90 mm slump)

Item	Dosage in Lt/ 50 kg of cement	Percentage of cement saving	Cement content in kg/m ³	Compressive Strength in kg/cm ²				
				3 days	7 days	28 days	1 yr.	3 yrs.
I	Control Mix	-	400	125	175	285	310	325
II	0.2	8.5%	366	130	185	293	321	340
III	0.6	14%	344	130	195	310	325	340
IV	1.0	20%	320	125	203	315	326	345

HANDLING : “SUPAPLAST” is formulated from chemicals which present no fire or health hazards.

STORAGE : If stored in unopened containers at normal ambient temperatures, a shelf-life of approximately 12 months could be expected.

MEHTOD OF USE

“SUPAPLAST” is supplied ready for use. For maximum dispersion through out the mix, measured quantity of “SUPAPLAST” should be added directly into the mixer at the time of the mixing water. On no account should it be added to the dry cement.

RATE OF ADDITION

The optimum dosage should be determined by site trials with the particular concrete mix. As a guide, the rate of addition is generally in the range of 200 to 1500 ml per 50 kg of cement depending on the function to be performed.

<i>Function</i>	<i>Dosage</i>
1) As superplasticiser-for flowing concrete	200 to 500 ml per 50 kg of cement.
2) As integral cement waterproofer for dens watertight concrete (with water reduction)	300 ml per 50 kg of cement.
3) As high range water reducing admixture for high strength concrete (with large water reduction)	400 to 1500 ml per 50 kg.of cement

PACKING

“SUPAPLAST” is available in 25 and 100/200 litre drums.

TECHNICAL SERVICE :

SWC group maintains a technical division with highly qualified technical personnel to investigate and advise on subjects related to Concrete and the Construction Industry. The Division can advise on the correct use and selection of right products at the right place.

SWC undertakes Consultancy Service for diagnosis and rehabilitation of distressed structures. SWC undertakes Contracts on turnkey basis for total Waterproofing System with guarantee

NOTE : This Technical data sheet is to be used as guidance only. Although the basic formulation of the product remains unchanged, production refinements arising from continuing research and evaluation programmes may occasionally result in marginal change in properties. The recommendation and properties of the product based on continuous monitoring of the product are not intended to infringe on other patents.

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