PLASTCONE AP509

High performance water reducing admixture

Uses:

PLASTCONE AP509 is a high performance plasticizer which allows large water reductions resulting in significant increase in early and ultimate strengths. Increased workability can be achieved without loss in strength. PLASTCONE AP509 can be used as a retarding water-reducing admixture at higher dosages.

Advantages:

- **Increased strength:** Water reduction of up to 10% leads to high ultimate strength without increase in cement content.
- **Improved durability:** Improves durability by increasing density and lowering permeability. Reduces shrinkage cracking because of lower water cement ratio
- **Speeds up construction:** Greatly improves workability which enables easier and quicker placing and optimum compaction.
- **Larger Pours:** Extended setting times at higher dosages enable large volume of concrete to be placed thus avoiding cold joints
- **Compatibility:** PLASTCONE AP509 can be used with all types of Portland cements.
- **Chloride free:** Safe in prestressed concrete and with sulphate resisting cements and in marine conditions.

Standards compliance:

PLASTCONE AP509 complies with the requirements of IS 9103 1999.

Description:

PLASTCONE AP509 is a formulated blend of polymeric materials based on hydrolyzed carbohydrate derivatives. It is designed to give maximum cement particle dispersion without producing unwanted side effects. This results in good, dense concrete having exceptionally high strength.

PLASTCONE AP509 acts as a normal water reducing admixture at low to medium dosage rates. At higher dosages, it acts as a retarding plasticizer. The amount of retardation will also depend on chemical composition of the cement and concrete temperature.

Properties

- **Specific gravity:** 1.21 - 1.220 @30^{0}C
- **Chloride content:** NIL
- **Air entrainment:** Less than 1% additional air is entrained
- **Compatibility:** Can be used with all types of Portland and slag cements except high alumina cements. PLASTCONE AP509 is compatible with other PLASTCONE admixtures provided they are added separately.
- **Workability:** The addition of PLASTCONE AP509 without reduction in the water content increases the slump and significantly improves

concrete flow characteristics without decrease in concrete strength.

- **Setting time:** Initial and final setting times will relate to cement type and ambient temperature. But typically the initial setting is extended between 1 to 4 hours depending upon dosage and temperature at constant workability.
- **Compressive strength:** Table 1 shows typical results where increased workability is obtained at original water cement ratio and increase in strength where workability is maintained and water cement ratio reduced.
- **Durability:** Where the water reducing properties of PLASTCONE AP509 are utilized, there is increase in density, durability and the resistance of concrete to attack by aggressive agents.

  The reduced water cement ratio makes concrete less permeable.

Application instructions

Dosage:

The optimum dosage determined by site trials with a specific concrete mix which enables the effects of workability, strength gain and setting time to be measured. The rate of addition of PLASTCONE AP509 is typical between 160ml to 500ml per 100kg cement. At dosages beyond 400ml per 100 kg of cement, it may act as a retarding plasticizer.

Dispensing:

The correct quantity of PLASTCONE AP509 should be measured by means of a suitable dispenser. The measured quantity of PLASTCONE AP509 should be added directly to the mixer preferably by dispensing to the mixing water. If the mixing water is added in more than one stage, PLASTCONE AP509 should be added at the last stage.

Overdosing:

Any overdosing of PLASTCONE AP509 can result in increased retardation of the initial set of the concrete. The ultimate strength of the concrete will not be affected and could be increased if advantage is taken of the increased workability by reducing water.

Curing:

Normal curing methods such as water ponding/spray or wet hessian must be used. Where water curing is a problem, efficient curing is achieved by use of PLASTCONE REDICURE SWB, spray Applied curing compound.

Estimating

Packing: PLASTCONE AP509 is supplied in 250, 50 and 25 kg containers.

Storage:

PLASTCONE AP509 has a shelf life of minimum 12 months when stored under normal temperatures. It should be protected from extremes of temperatures and preferably stored in shade.

Precautions:

Health and safety:

PLASTCONE AP509 is non- toxic, non-flammable and splashes on skin should be removed by copious amounts of water. If contact with eyes occurs, wash well with water immediately and seek medical advice.

Table 1:

Typical test results M30 mix:

Zone 2 sand: 34%

Coarse Aggregate (20 - 5mm):66%

Cement: 410 kg/m^3 OPC

Test	Dosage of PLASTCONE AP509 kg/50kgcement	W/C	Slump (mm)	Compressive strength N/mm2			Density kg/m3
				3D	7D	28D	
Control	Nil	**0.48**	**40**	**22.7**	**27.5**	**38.7**	**2395**
Workability Increased	0.15	**0.48**	**100**	**24.5**	**31.6**	**43.3**	**2390**
Strength Increased	0.15	**0.44**	**40**	**27.5**	**36.7**	**48.9**	**2400**

Note:
The values quoted are representative of results obtained and are provided as illustrations of performance in different situations. Because of the variability of concreting materials, the results should only be taken as typical of the performance to be expected.

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NOTE: Redwop products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale,

ISO 9001:2008

Responsible Care

REDWOP CHEMICALS PVT. LTD.

Office:

1st Floor, Suryachandra Complex,

Opp Punjab Honda Showroom,

Kalawad Road,

Rajkot-(Guj.)INDIA.

Pin.360005

Factory:

Village Shapara, Nr.Jay Internation School,Opp Arya Bhagwati Society,

Kalawad Road,

Metoda,G.I.D.C

Rajkot.(Guj.)INDIA.

Customer Care: +91 97246 55551

Phone no.: +91 281 2576664

E: info@redwopchemical.com

W: www.redwopchemical.com