



DUPLAST SP

ADMIXTURE BASED ON SULPHONATED NAPTHELENE FORMALDEHYDE

High-range, Water Reducing Super plasticizer for High Performance Concrete Mixes

Dubond's Duplast SP (Super Plasticizer) is composed of synthetic polymers specially designed to allow considerable reduction of mixing water while maintaining control on extend of set retardation. It is a preferred admixture for triple blend binder system based High Performance Concrete (HPC) mixes or mixes containing micro silica or metakaolin.

Uses

- Concrete containing Silica fume/ Metakaolin
- Congested/complex reinforced sections
- Long-distance transporting
- Low water/binder ratio mixes
- Mixes requiring >20% water reductions
- Pre-cast concrete production
- Pumped concrete
- Ready mixed concrete

Advantages

- Better compaction and finishing by acting as viscosity modifier
- Breaks the salinity of water by converting them into salt crystals
- Chloride free
- Extended setting with longer work ability
- Good dispersion even in mixes with high fines
- High work ability for longer periods
- Higher cohesion
- Higher ultimate strengths
- Increased ease in finishing concrete
- Increases extra bonding strength
- Lower pumping pressure
- Lowers cement content for increase in specified strength, work ability & durability
- Reduce risk of honey combing
- Reduce risk of shrinkage cracks due to heat of hydration
- Reduced permeability
- Reduced thermal peaks
- Reduced water content for a given work ability
- Reduces the risk of rusting of reinforcement by breaking the chain of rust electrons
- Resistance to segregation and bleeding even at high work ability



■ Typical Properties

Standards

ASTM C - 494 Type "G"

EN 934 – 2 : T11.1 / 11.2

IS 9103

■ Effects of over dosage

The high-range, retarding, super plasticising admixture for concrete shall be Duplast SP , a sulphonated naphthalene polymer based formulation having slump retaining capabilities. The product shall comply with IS : 9103 and shall be of type "G" when tested to ASTM C - 494. The product shall have density of 1.19 at 25 °C.

■ Direction for use

Duplast SP is a ready-to-use liquid which is dispensed into the concrete together with the mixing water. The plasticising effect and water reduction are higher if the admixture is added to the damp concrete after 50% to 70% of the mixing water has been added.

The addition of Duplast SP to dry aggregate or cement is not recommended.

■ Dosage

Optimum dosage of Duplast SP should be determined with trial mixes. As a guide, a dosage range of 250 ml to 850 ml per 50 kg of bag of portland cement is normally recommended. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be required. In such cases, contact your local Dubond representative. For addition information on Duplast SP admixture or on its use in developing concrete mixes with special performance characteristics, contact your local Dubond representative.

■ Effects of over dosage

A severe over-dosage of Duplast SP can result in the following:

- Long extension of initial and final set.
- Increase in air entrainment.
- Bleed/segregation of mix, quick loss of work ability
- Increased plastic shrinkage

A slight overdosing may not adversely affect the ultimate strength of the concrete and can achieve higher strengths than normal concrete, provided it is properly compacted and cured. Due allowance should be made for the effect of fluid concrete pressure on form work, and stripping times should be monitored. In the event of over dosage, consult your local Dubond representative immediately.

■ Technical Information :

Aspect	Dark brown free flowing liquid
Relative Density	1.19 ± 0.02 at 25°C

■ Compatibility

Duplast SP is compatible with most admixtures used in the production of quality concrete including normal, other mid-range and high-range water-reducing admixtures, air entertainers, accelerators, retarders, extended set-control admixtures, corrosion inhibitors, and shrinkage reducers. It is also compatible with slag and pozzolans such as fly ash, metakaolin and silica fume.

Duplast SP admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of Duplast SP admixture. In all concrete application, Duplast SP admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

■ Workability

Duplast SP ensures that rheoplastic concrete remains workable in excess of 3 hours at +25°C. Workability loss is dependent on temperature, and on the type of cement, the nature of aggregates, the method of transport and initial work ability.

It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

(The use of Dubond's Hydrobuild CC Wax , wax based curing compound to prevent quick moisture loss from the surface of the flat works such as pavements in the dry, windy and hot climates is highly recommended.)

Duplast SP is supplied in 200 or 250 Kg drums (in bulk on request.)

■ Storage and Shelf life

Duplast SP must be stored where temperatures do not drop below +5°C. If product has frozen, thaw at +5°C or above and completely reconstitute using mild mechanical agitation. Do not use pressurized air for agitation. Store under cover, out of direct sunlight and protect from extremes of temperature.

■ Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local Dubond representative.

■ Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried).

- Treat splashes to eyes and skin immediately.
 - If accidentally ingested, seek immediate medical attention.
 - Keep away from children and animals.
 - Reseal containers after use.
 - Do not reuse containers for storage of consumable item.
- For further information refer to the material safety data sheet. MSDS available on demand or on Dubond Products (India) Pvt Ltd web site.



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