

VARAPLAST DUO

SUPERPLASTICISING AND WORKABILITY RETAINING DUAL ADMIXTURE SYSTEM

DESCRIPTION

VARAPLAST DUO is a chloride free, Superplasticising admixture system based on selected synthetic polymers. **VARAPLAST DUO 1** is supplied as a brown solution which is instantly dispersible in water and is the superplasticizer and high range water reducing component. **VARAPLAST DUO 2** is colourless to straw yellow coloured liquid instantly dispersible in water and is the retarder component and helps in maintaining / workability retaining of concrete.

VARAPLAST DUO can provide very high level of water reduction and hence major increase in strength can be obtained coupled with good retention of workability to aid placement.

USES

- ◆ **VARAPLAST DUO** can provide self-leveling concrete practically eliminating the need for vibration during placing.
- ◆ **VARAPLAST DUO** provides excellent workability even at low water/cement ratio.
- ◆ **VARAPLAST DUO** is recommended for use in ALL types of concrete including high performance concrete and where flexibility in adjusting retention for control is required at batching plant level using different admixture dispensing equipment.

ADVANTAGES

- ◆ **Increased Workability:** Reduces placing time, labour and equipment.
- ◆ **High Strength Concrete :** Water reduction gives higher strengths without cement increase or workability loss.

- ◆ **Workability Retention :** Good workability retention without set retardations.
- ◆ **Reduced Risk of Retardation :** Normal set without retardation even if accidentally overdosed for VARAPLAST DUO 1.
- ◆ **Reduced Permeability :** Reduction of water reduces porosity giving improved water impermeability.
- ◆ **Surface Finish :** Better dispersion of cement particles and increased cohesion minimises segregation and bleeding and gives improved surface finish.
- ◆ **Improved Pumpability :** Line friction is reduced by increasing workability and cohesion.
- ◆ **Chloride Free :** Safe in reinforced concrete.

STANDARDS

VARAPLAST DUO complies with **BS 5075 – 1982** and **ASTM C494 Type G. IS 9103 -1999**

TYPICAL PROPERTIES

- Calcium Chloride Content: Nil in both component
- ◆ **Specific Gravity:** **VARAPLAST SP DUO 1** – 1.20 and **VARAPLAST SP DUO 2** – 1.09 at 25° C.
- ◆ **Air Entrainment:** Less than 1% additional air is entrained.

- ◆ **Setting Time** : Retardation is expected at normal dosage on addition of VARAPLAST DUO 2. All results of setting time is dependent on type and quantity of cement involved in mix design and also on dosage of VARAPLAST DUO 1 and VARAPLAST DUO 2 used. This can be optimized by lab trials and subsequent plant trials.
- ◆ **Cement Compatibility** : Compatible with sulphate resisting and other Portland cements, high alumina cements and cement replacement materials such as PFA, GGBFS and Microsilica.
- ◆ **Durability** : Water reduction gives increase in density and water impermeability which improves durability.

INSTRUCTIONS FOR USE

Dosage : The optimum dosage for VARAPLAST SP DUO 1 and VARAPLAST DUO 2 should be determined by site trials with actual site conditions.

As a guide the dosage is normally:

For VARAPLAST DUO 1 : 0.40 - 1.20 kg/100 kg cementitious material, for flowing concrete.
0.80 - 1.60 kg/100 kg cementitious material, for high strength concrete.

For VARAPLAST DUO 2 : 0.20 - 0.60 kg/100 kg cementitious material, for flowing concrete.
0.30 - 0.80 kg/100 kg cementitious material, for high strength concrete.

Overdosing: An overdose of double the intended amount of VARAPLAST DUO 2 will result in very high workability retention as compared to that normally obtained. Provided that adequate curing is maintained, the ultimate compressive strength will not be impaired.

TECHNICAL SUPPORT

'AKARSH' provides technical support service on mix design, admixture selection, evaluation of trials, dispensing equipment etc. Please contact the Technical Department in these cases.

Curing: As with all structural concrete, normal curing methods apply.

PACKAGING

VARAPLAST DUO-1 is supplied in 250 kgs drums or bulk

VARAPLAST DUO-2 is supplied in 210 kgs drums

Cleaning : Spillages of VARAPLAST DUO can be removed with water.

Storage : VARAPLAST DUO should be protected from extremes of temperature. Should the material become frozen, it must be completely thawed and thoroughly mixed before use. VARAPLAST DUO has a minimum shelf life of 12 months provided temperature is kept within the range 5° C to 30° C.

HEALTH & SAFETY

VARAPLAST DUO is non-toxic. Any splashes to the skin should be washed immediately with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.

Fire : VARAPLAST DUO is non flammable.