

## MASTERPLAST HPA

PCE BASED SUPERPLASTICISER FOR HIGH PERFORMANCE CONCRETE

### DESCRIPTION

**MASTERPLAST HPA** is a polycarboxylic ether based superplasticiser with very high water reduction capacity. It is mainly developed for meeting the criteria of self compacting concrete with high early as well as long term strength at lower water cement ratio. The mechanism is based on steric hindrance effect. Due to the presence of side chains linked to the polymer backbone it generates steric hindrance effect which greatly stabilizes cement particle's capacity to separate and disperse. The specific configuration of PCE polymer allows its delayed absorption on to the cement particles & disperses them efficiently.

### FEATURES / ADVANTAGES

- Particularly adapted for the production of self-compacting concrete. In combination with Masterplast VMA even in presence of dense reinforcement.
- It facilitates high early and long term strength gains with super slump retention property at very low water cement ratio also.
- High level of fluidity that can be poured and placed by gravity avoiding the need of vibration.
- Increased early and ultimate compressive strengths.
- Increased flexural strength.
- It can be used in a concrete containing pozzolans such as PFA, GGBFS, Micro silica etc.
- Lower permeability
- Increased durability
- Better resistance to aggressive atmospheric conditions.
- Reduced shrinkage and creep
- It does not contain chlorides hence does not corrode the reinforcements.
- Elimination of vibration and reduced the labour cost in placing by implementing self compacting concrete.

### USAGE

- Self-compacting concrete
- Ready mix concrete
- Pumped concrete
- Long distance transporting
- High durability concrete
- Very high strength concrete
- For precast concrete industry

### SPECIFICATION COMPLIES

- ASTM C494 Type F and Type G
- IS 9103
- EN 934 Part 2

## MASTERPLAST HPA

PCE BASED SUPERPLASTICISER FOR HIGH PERFORMANCE CONCRETE

### TYPICAL PROPERTIES

- Color & appearance : Light yellow to brown medium viscous liquid
- pH value : Min 6
- Relative density @ 25°C : 1.100 ± 0.02 gm/cc
- Chloride content : 0.2% Max. as per IS 6925

### DOSAGE

Normal dosage range of Masterplast HPA is 0.3 to 1.4 % by weight over cementitious materials including PFA, GGBFS and Micro silica/metakaolin etc. In self compacting grade of concrete, if necessary, use our product Masterplast VMA also at the dosage range of 0.150 to 0.600% over cementitious material to reduce the bleeding & segregation. Masterplast VMA will maintain the correct balance between fluidity & resistance to segregation. The optimum dosage to meet the specific requirement should always be determined by conducting trial mixes using the materials and conditions that will be experienced in use. Because of variations in job conditions, concrete materials and climatic conditions dosage rates may vary, in such cases contact our CCPL (Construction chemicals) representative.

### EFFECT OF OVERDOSE

An overdosing of Masterplast HPA can result in the following:

- Delay of initial & final set of concrete.
- Increase in plastic shrinkage
- Severe bleed & segregation of mix
- Due to slight overdosing of Masterplast HPA, the ultimate compressive strength of concrete cannot get affected, provided it is properly compacted & cured. Due allowance should be made for the effect of fluid concrete pressure on formwork, & stripping time should be monitored. In such cases contact our CCPL (Construction chemicals) representative

### DIRECTION FOR USE

- Stir well the material before use.
- Masterplast HPA is ready to use liquid which is dispensed into the concrete together with the mixing water.
- The dispersion effect is higher if it is added to the damp concrete after 60 to 70% of mixing water has been added. Thorough mixing is essential.
- Not recommended to add in dry aggregates and cement.
- Mix the concrete thoroughly after the addition of Masterplast HPA.

## MASTERPLAST HPA

PCE BASED SUPERPLASTICISER FOR HIGH PERFORMANCE CONCRETE

### WORKABILITY

- Masterplast HPA will retain the workability of concrete approx. up to 3 hrs @25°C. It retains the workability of concrete in proportion to the amount of product dosage used for trials. The workability loss is dependent on factors such as temperature, type of cement, type of aggregate, the initial workability of mix and methods of transportation of concrete etc.
- It is recommended that concrete should be properly cured by adopting the suitable method of curing.
- The use of our curing compounds products Mastercure RB2M & Mastercure WB2M will prevent the early water loss from the surface of the flat works such as pavements in dry, windy and hot climates.

### COMPATIBILITY

Compatible with all types of Portland cements, slag & pozzolans such as fly ash, micro silica/metakaolin etc. The product must not be used in conjunction with any other admixtures unless prior approval is received from CCPL Technical service Department.

### CORROSIVITY

Masterplast HPA has very low chloride ion content, so it will neither initiate nor promote the corrosion of reinforcing steel embedded in concrete.

### PACKAGING

Masterplast HPA is supplied in 5ltr, 20ltr, 200 liters & 250 kg drums or in bulk as per requirements.

### STORAGE & SHELF LIFE

- Store the material in a cool & dry place (preferably at @30°C temp). Store under cover, out of direct sunlight and protect it from extremes of temperatures.
- Shelf life is one year from the date of manufacturing when stored in undamaged, unopened, original sealed packaging

### HEALTH & SAFETY

- If it comes in contact with skin, mouth, eyes etc. wash it with plenty of water & if needed take medical advice. If accidentally gets ingested seek immediate medical attention. It is non toxic.
- Do not reuse the containers for storage of consumable items for further information refers to the material safety data sheet. MSDS available on demand.

## MASTERPLAST HPA

PCE BASED SUPERPLASTICISER FOR HIGH PERFORMANCE CONCRETE

### DISCLAIMER

The above information and details herein are based on the tests conducted and experience on application and usage. The user is advised to carry out the test and take trials for satisfaction on the suitability of the products meeting his requirement considering the prevailing conditions prior to application/ using it on larger area. As the conditions under which the products are used or transported are beyond our control, we would not hold ourselves responsible on its consequential non performance.