GLENIUM® ACE 393

High-range water reducing (superplasticising) admixture for precast concrete manufacture

DESCRIPTION

GLENIUM ACE 393 is an advanced polycarboxylic ether (PCE) based superplasticiser developed to achieve high early strength, being ideally suited for the precast industry where highest durability and performance are demanded. With specifically tailored constituents of the active materials, **GLENIUM ACE 393** shows excellent dispersion of cement and still provides extended slump retention even at low water binder ratio.

The superior development of early strength with **GLENIUM ACE 393**, allows for zero or minimum accelerated heat curing processes in precast concrete manufacture. **GLENIUM ACE 393** is compatible with all Portland cements meeting international standards and is formulated to comply with ASTM C494 for Type F admixtures. **GLENIUM ACE 393** is not to be used with sulphonated polymer based admixtures.

CHEMISTRY & MECHANISM

GLENIUM 393 is differentiated from conventional superplasticisers in that it is based on a unique polycarboxylate ether polymer with long lateral chains. This greatly improves cement dispersion. Conventional superplasticisers, such as those based on sulphonated melamine and naphthalene formaldehyde condensates, at the time of mixing, become absorbed onto the surface of the cement particles. This absorption takes place at a very early stage in the hydration process. The sulphonic groups of the polymer chains increase the negative charge on the surface of the cement particle and dispersion of the cement occurs by electrostatic repulsion. At the start of the mixing process the same electrostatic dispersion occurs as described previously, but the presence of the lateral chains, linked to the polymer backbone, generate a steric hindrance, which stabilises the cement particles capacity to separate and disperse. This mechanism provides flowable concrete with greatly reduced water demand.

FEATURES AND BENEFITS

GLENIUM ACE 393 offers the following benefits for the precast concrete industry:

- **Produces rheoplastic and self consolidating concrete using low w/c ratio**
- **Optimizes curing cycles by shortening curing time or decreasing curing temperature**
- **Eliminates heat curing processes**
- **Eliminates energy required for placing, consolidation and curing**
- **Improves surface appearance and concrete quality**
- **Produces durable precast concrete elements**
- **As compared to the traditional superplasticisers, improves engineering properties such as early and ultimate compressive and flexural strengths**

APPLICATION

GLENIUM ACE 393 is a liquid admixture that can be added to the initial batch water at the beginning of the mixing process. The best results are obtained when the admixture is added after all the other components are already in the mixer and after the addition of at least 80% of the total water.

DOSAGE

The normal recommended dosage rate is 0.8 to 1.5 litres per 100 kg of binder. Other dosages may be used in special cases according to specific job site conditions. In this case please consult our BASF Technical Sales representative.

PACKAGING

GLENIUM ACE 393 is available in bulk, 1000 litre pallecons and 20 litre cubes.

SHELF LIFE

GLENIUM ACE 393 can be stored for 12 months if stored at a temperature above 0ºC and in tightly sealed original containers. If frozen, thaw it and completely reconstitute by mild agitation. Do not use compressed air.

PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the BASF **Material Safety Data Sheet (MSDS**) from our office or our website.

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