

MasterGlenium[®] ACE 8599

High-range superplasticiser for precast manufacturing

DESCRIPTION

MasterGlenium ACE 8599 is an advanced polycarboxylic ether (PCE) based superplasticiser developed, ideally suited for the precast industry under difficult conditions. The specifically tailored formulation of **MasterGlenium ACE 8599** shows excellent dispersion of cement at low water binder ratio. As a result, **MasterGlenium ACE 8599** provides good early strength development and remains workable for a considerable period of time. The product also significantly improves the final strength.

The superior development of early strength with **MasterGlenium ACE 8599** allows for zero or minimum accelerated heat curing processes in precast manufacturing. **MasterGlenium ACE 8599** is compatible with all Portland cements meeting international standards and is formulated to comply with ASTM C494 for Type F admixtures. **MasterGlenium ACE 8599** is not to be used with sulphonated polymer-based admixtures.

CHEMISTRY AND MECHANISM

MasterGlenium ACE 8599 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 high workability concrete with greatly reduced water demand.

FEATURES AND BENEFITS

- **MasterGlenium ACE 8599** offers the following benefits for the precast concrete industry:

- Produce rheoplastic concrete at very low w/c ratio
- Optimize curing cycle by shortening curing time or decreasing curing temperature
- Improve surface appearance and concrete quality
- Improve durability of precast concrete elements
- As compared to the traditional superplasticisers, improve engineering properties such as early and ultimate compressive and flexural strengths

APPLICATION

MasterGlenium ACE 8599 is a liquid admixture to be added to the concrete during 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 normally 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 Master Builders Solutions representative.

PACKAGING

MasterGlenium ACE 8599 is available in bulk and 1000L IBCs.

SHELF LIFE

MasterGlenium ACE 8599 must be stored in a place where the temperature is not below 0°C. In case the product freezes, increase the temperature of the product to 30°C and remix.

PRECAUTIONS

Health: **MasterGlenium ACE 8599** does not contain any hazardous substances requiring labelling.

It is safe for use with standard precautions followed in the construction industry, such as use of hand gloves, safety goggles, etc.

For detailed Health, Safety and Environmental Recommendations, please consult and follow all instructions on the product Material Safety Data Sheet.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this MBCC Group publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by MBCC Group either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not MBCC Group, are responsible for carrying out procedures appropriate to a specific application.

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