

MasterGlenium 27CH

New generation high range water reducing admixture primarily developed for the ready-mix concrete industry and self-compacting concrete

MATERIAL DESCRIPTION

MasterGlenium 27CH is a new high range water-reducing admixture, based on chains of modified polycarboxylate ether. Primarily developed for the ready-mix concrete industry where slump retention, high strength and durability are required. It has a primary role in producing 'self-compacting concrete'.

The excellent dispersion effect makes **MasterGlenium 27CH** the ideal admixture for the ready-mix concrete industry. The ability to work with a very low water/cement ratio and still obtain extended slump retention, allows for the manufacture of high-quality concrete.

MasterGlenium 27CH is free of chloride, meets ASTM C494 requirements for Type A and Type F and it is also compatible with all cements meeting the ENV 934-2 and ASTM standards. BS 5075 Pt 3.

CHEMISTRY

What differentiates **MasterGlenium 27CH** from the traditional high range water reducing action with good workability is a new unique mechanism of action that greatly improves the effectiveness of cement dispersion. Traditional high range water reducing like melamine and naphthalene sulphonates are based on polymers which are absorbed by the cement particles. They wrap around the cement particles at the very early stage of the concrete mixing process. The sulphonic groups of the polymer chains increase the negative charge of the cement particle surface and disperse these particles by electrical repulsion. This electrostatic mechanism causes the cement paste to disperse and has the positive consequence of requiring less mixing water to obtain a given concrete workability.

MasterGlenium 27CH has a different chemical structure than that of traditional high range water reducing products. It consists of a carboxylic ether polymer with long side chains. At the beginning of the mixing process, it imitates the same electrostatic dispersion mechanism as the traditional high range water reducing action, but the side chains linked to the polymer backbone generate a steric hindrance which stabilises the particles ability to separate and disperse.

With this process, flowable concrete with greatly reduced water content is obtained. The alkalinity created by the paste allows the polymers of **MasterGlenium 27CH** to 'open up and progressively release' many additional polymer chains that will prevent the early flocculation or stiffening of the mix. This mechanism allows considerably longer workability, reduction of mixing water content and higher early strengths, compared to traditional or retarding, high water reducing admixtures.

FEATURES AND BENEFITS

- Self-compacting concrete.
- Concrete with the lowest water/cement ratio.
- Reduced risk of segregation or bleeding.
- Low vibration time required even in case of highly reinforced concrete.

Compared to traditional superplasticisers, the addition of **MasterGlenium 27CH** reduces risks of retempering concrete on the job site with additional water and improves the engineering properties of concrete i.e. early and ultimate strengths modulus of elasticity, bond strength to steel, depths of carbonation, impermeability, resistance to chemical aggressive agents, shrinkage and creep.

TYPICAL PROPERTIES*

Properties listed are for guidance and are not a guarantee of performance.

Appearance	Brownish liquid
Specific gravity @25°C	1.020 -1.090
pH value	5.0 – 7.0
Chloride Content	"Chloride Free" to EN 934-2

APPLICATION PROCEDURE

The normally recommended dosage rate is approximately 1 litre per 100kg of binder. Other dosages (0.8% - 2.0% per 100kg of binder) may be recommended in special cases according to the specific site conditions.

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MIXING

MasterGlenium 27CH is a ready-to-use admixture to be added to the concrete mix as a separate component. Optimal mixing water reduction is obtained if **MasterGlenium 27CH** is poured into the concrete mix right after the addition of the first 50-70% of the mixing water, i.e. when all the solids are wetted.

Avoid adding the admixture to the dry aggregates.

PACKAGING

MasterGlenium 27CH is available in 210 litre drums, 1000 litre IBC's or in bulk.

STORAGE

Store **MasterGlenium 27CH** in tightly closed containers at moderate temperatures not below 5°C. If frozen, thaw at approximately 30°C and agitate until completely reconstituted.

COMPATIBILITY

MasterGlenium 27CH is not compatible with MasterRheobuild superplasticizers. **MasterGlenium 27CH** is suitable for mixes containing:

- Microsilica (Silica Fume)
- Fly Ash (PFA)
- GGBS (ground granulated blast furnace slag)

NOTE

Technical support, where provided, does not constitute supervisory responsibility. For additional information contact your local MB Construction Chemicals Solutions South Africa (Pty) Ltd representative. MB Construction Chemicals Solutions South Africa (Pty) Ltd shall not be liable for technical advice provided.

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All products originating from MB Construction Chemicals Solutions South Africa (Pty) Ltd are manufactured under a management system independently certified to conform to the requirements of the quality standards ISO 9001, environmental and occupational health and safety standards.

* Properties listed are based on laboratory controlled tests.

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