

MasterGlenium[®] 51

A high performance concrete superplasticizer based on modified polycarboxylic ether

DESCRIPTION OF PRODUCT

MasterGlenium 51 has been primarily developed for applications in the ready mixed and precast concrete industries where the highest durability and performance required.

MasterGlenium 51 is free from chlorides and complies with ASTM C494 Type A and F.

MasterGlenium 51 is compatible with all Portland cements that meet recognised international standards. Chemistry and mechanism of action of

MasterGlenium 51

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 occurs by electrostatic repulsion.

MasterGlenium 51 is differentiated from conventional superplasticisers in that it is based on a unique carboxylic ether polymer with long lateral chains. This greatly improves cement dispersion. 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.

TYPICAL APPLICATIONS

The excellent dispersion properties of

MasterGlenium 51 make it the ideal admixture for precast and readymixed concrete where low water cement ratios are required. This property allows the production of very high early and high ultimate strength concrete with minimal voids and therefore optimum density.

Due to the strength development characteristics the elimination or reduction of steam curing in precast works may be considered as an economical option.

MasterGlenium 51 can be used to produce very high early strength floor screeds. For screed mix designs consult Master Builders Solutions Technical Services.

- High workability without segregation or bleeding
- Less vibration required
- Can be placed and compacted in congested reinforcement
- Reduced labour requirement
- Improved surface finish

PACKAGING

MasterGlenium 51 is available in 208 litre drums and in bulk tanks upon request

TYPICAL PROPERTIES

Form	viscous liquid
Colour	brown
Relative Density	1.1 @ 20 °C
pH	6.6
Viscosity	128 +/- 30 cps @ 20°C
Transport	Not classified as dangerous
Labelling	No hazard label required

Effect on hardened concrete properties

- Increase early and ultimate compressive strength
- increase flexural strength
- higher E modulus
- improved adhesive to reinforcing and stressing steel
- better resistance to carbonation
- Lower permeability
- better resistance to aggressive atmospheric conditions
- reduced shrinkage and creep
- Increase durability

MasterGlenium® 51

COMPATABILITY OF MASTERGLENUIUM 51

MasterGlenium 51 must not be used in conjunction with any other admixture unless prior approval is received from Master Builders Solutions Egypt Technical Services.

MasterGlenium 51 is suitable for mixes containing:

- microsilica
- pulverised fuel ash
- ground granulated blast furnace slag cement

DOSAGE

The normal dosage for **MasterGlenium 51** is between 0.5 to 0.8 litres per 100kg of cement (cementitious material). Dosages outside this range are permissible subject to trial mixes.

DIRECTION FOR USE

MasterGlenium 51 is a ready to use admixture that is added to the concrete at the time of batching.

The maximum effect is achieved when the **MasterGlenium 51** is added after the addition of

SHELF LIFE

Up to 24 months if stored according to manufacturer's instructions in unopened containers.

SAFETY PRECAUTIONS

MasterGlenium 51 contains no hazardous substances requiring labelling. For further information, refer to the material safety data sheet.

NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional

50 to 70% of the of the water. **MasterGlenium 51** must not be added to the dry materials.

Through mixing is essential and a minimum mixing cycle, after the addition of the **MasterGlenium 51**, of 60 seconds for forced action mixers is recommended.

STORAGE

MasterGlenium 51 should be stored in original containers and at above 5 Centigrade. If frozen gradually thaw and agitate until completely reconstituted.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consults Master Builders Solutions 's Technical Services Department.

QUALITY STATEMENT

All products manufactured by Master Builders Solutions Egypt, or imported from Master Builders Solutions affiliate companies world-wide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 standards.

* Properties listed are based on laboratory controlled tests.

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