

MasterGlenium® 54

A high performance concrete superplasticiser based on modified polycarboxylic ether

DESCRIPTION

MasterGlenium 54 has been developed for applications primarily in precast but also readymix concrete industries where the highest durability and performance is required.

MECHANISM OF ACTION

MasterGlenium 54 is differentiated from conventional superplasticisers, such as those based on sulphonated melamine or naphthalene formaldehyde condensate as 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 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 and enhanced early strength.

TYPICAL APPLICATIONS

The excellent dispersion properties of **MasterGlenium 54** make it the ideal admixture for precast or ready-mix 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.

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

MasterGlenium 54 may be used in combination with **MasterMatrix** for producing Smart Dynamic Concrete (SDC). The technology produces advanced self-compacting concrete, without the aid of vibration. For economic, ecological and ergonomic ready-mix / precast concrete production.

MasterGlenium 54 can be used to produce very high early strength floor screeds. For screed mix designs consult Master Builders Solutions Technical Services.

PACKAGING

MasterGlenium 54 is available in 208 L drums and in bulk tanks upon request.

STANDARDS

ASTM C-494 Type F & G
BS EN 934-2

TYPICAL PROPERTIES*

Appearance	Whitish to straw coloured liquid
Relative density	1.07
pH value	4.0 - 7.0

APPLICATION GUIDELINES

MasterGlenium 54 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 54** is added after the addition of 70% of the water. **MasterGlenium 54** must not be added to the dry materials.

Thorough mixing is essential and a minimum mixing cycle, after the addition of the **MasterGlenium 54**, of 60 seconds for forced action mixers is recommended.

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The normal dosage for **MasterGlenium 54** is between 0.50 and 1.75 L/100kg of cement (cementitious material). Dosages outside this range are permissible subject to trial mixes.

MIXING

MasterGlenium 54 is suitable for mixes containing all types of Portland cement and cementitious materials as follows:

- Microsilica
- Fly ash (PFA)
- Ground granulated blast furnace slag GGBS

Note: **MasterGlenium 54** is not compatible with **MasterRheobuild** superplasticizers.

EFFECT ON HARDENED CONCRETE

- Increased early and ultimate compressive strengths
- Increased flexural strength
- Better resistance to carbonation
- Lower permeability
- Better resistance to aggressive atmospheric conditions
- Reduced shrinkage and creep
- Increased durability

STORAGE AND SHELF LIFE

MasterGlenium 54 should be stored above 5°C In closed containers or storage tanks to protect from evaporation and extreme temperatures. The shelf life is 12 months when stored as above.

The occurrence of a surface layer with **MasterGlenium 54** is normal and will have no effect on the performance of the product.

HEALTH AND SAFETY

MasterGlenium 54 contains no hazardous substances requiring labelling. For further information refer to the Material Safety Data Sheet.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

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NOTE

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