

MasterGlenium 399

High range water reducing admixture for concrete - EN 934-2: T3.1 & T3.2

Material Description

MasterGlenium 399 is a unique blend of powdered superplasticizers based on modified polycarboxylic ether.

The Chemistry

What differentiates MasterGlenium 399 from other generations of polycarboxylic ether is a unique mechanism of action that greatly improves the effectiveness of cement dispersion.

At the beginning of the mixing process, it initiates the same electrostatic dispersion mechanism as the traditional superplasticizers, but the side chains linked to the polymer backbone generate a steric hindrance, which greatly stabilises the cement particles' ability to separate and disperse.

Steric hindrance provides a physical barrier (alongside the electrostatic barrier) between the cement grains, thus provides a flowable concrete with greatly reduced water content.

Fields of Application

- Powdered superplasticiser for use in dry silo systems.
- Designed for use with shotcrete mixes
- Higher consistence obtained compared to a control mix with the same water/cement ratio.
- Higher strength concretes obtained by reducing water/cement ratios.

Characteristics and Benefits

MasterGlenium 399 offers the following benefits:

- Flowable concrete with the lowest water/cement ratio without segregation or bleeding.

MasterGlenium 399 increases:

- Initial and final compressive strength.
- Initial and final flexural and tensile strength.
- Strength and durability

MasterGlenium 399 decreases:

- Risk of shrinkage and creep.

Dosage

Depending on specific mix design and requirements, the normal recommended dosage rate of MasterGlenium 399 is 0.2% - 0.8% by weight of cement.

The dosage rates given above are for typical usages, they are not meant as absolute limits, as other dosages may be utilised in special cases according to specific job conditions. If required consult our Technical Services Department for advice. Trial mixes should be carried out to ensure optimum dosage and effect. Where the concrete is to be machine finished by utilising power float or power trowelling methods, we recommend that you contact the Technical Services Department for dosage rate guidance.

Mixing

MasterGlenium 399 is a ready to use powdered admixture that can be added to the concrete mix as a separate component.

Optimal concrete plasticizing effect (and thus maximum mixing water reduction) is obtained if MasterGlenium 399 is added into the concrete after the first 50-70% of the water has been mixed.

Avoid adding the admixture to the dry aggregate or sand. In all cases it is important to add MasterGlenium 399 first and the other admixtures subsequently.

Compatibility

MasterGlenium 399 can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department.

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MasterGlenium 399 is compatible for use in concrete mixes also containing:

- Air entraining agents (such as MasterAir range) to optimise frost/thaw resistance.
- Silica fume for higher density.
- Expanding agents (such as for controlled shrinkage).
- Synthetic and steel fibres.

When complimentary admixtures are required it is important that trials are performed, prior to any supply, to determine the respective dosages of any complimentary admixture, and the

suitability, in the fresh and hardened state, of the resultant concrete. In these circumstances we recommend that you consult our Technical Services Department for further advice.

Packaging

MasterGlenium 399 is supplied in 500-kilo sacks.

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Product Data	
Appearance:	Beige / off white powder
Alkali content (%):	≤ 10.00 by mass
Chloride content (%):	≤ 0.10 by mass
Corrosion behaviour:	Contains only components according to BS EN 934-1:2008, Annex A.1
Air Content:	Fulfilled
Water reduction:	≥ 112% of Reference mix
Increase in consistence:	Increase of ≥ 120mm from initial slump or ≥ 160mm from initial flow
Retention of consistence:	At 30 mins ≥ Reference mix at initial
Compressive strength:	Fulfilled
Durability:	NPD
Dangerous substances:	NPD
Logistics	
Shelf life:	12 months if stored according to manufacturer's instructions in unopened container.
Storage conditions:	Store in original sealed containers and at temperatures between 5°C and 30°C. Store under cover, out of direct sunlight and protect from extremes of temperature. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.
Handling and transportation:	Refer to MasterGlenium 399 Safety Data Sheet
Disposal:	Refer to MasterGlenium 399 Safety Data Sheet

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DISCLAIMER

MasterGlenium 399, Master Builders Solutions UK Ltd, Version 2

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Health and Safety: *For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted. **Spillage:** Chemical products can cause damage; clean spillage immediately.

DISCLAIMER: "Master Builders Solutions UK Ltd" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use. Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application. Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.

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Declaration of Performance can be found at:
www.master-builders-solutions.com/en-gb

Master Builders Solutions UK Ltd

Swinton Hall Road, Swinton, Manchester, M27 4EU

Tel: +44 (0) 161 727 6300

www.master-builders-solutions.com/en-gb

