

MasterGlenium[®] ACE 450

High Range Water Reducing Admixture for Concrete
 EN 934-2 Table 3.1&3.2&7

Material Description

MasterGlenium[®] ACE 450 is optimized for use where the time between concrete mixing & placing is rapid, such as when using bucket skips or direct discharge from mixer to unit. In this instance, the workability life of the concrete is optimized to give a balance between the retention of the workability but still enabling the strength development process to start as soon as possible. If utilized in conjunction with our patented MasterX-Seed[®] concept this enables rapid mold turn round and can reduce or even eliminate the need for enhanced temperature curing regimes. The particular molecular configuration of MasterGlenium[®] ACE 450 accelerates the cement hydration by allowing an increased surface area of the cement particle to react with water. Robustness and controlled retention is a distinctive feature of the precast concrete produced with MasterGlenium[®] ACE 450.

Areas of Application

MasterGlenium[®] ACE 450 is suitable for making precast concrete elements with highly workable, non-segregating concrete utilizing low water cement ratios and, consequently, high early and final strengths. This can be achieved without the aid of

vibration, for economic, ecological and ergonomic precast production. MasterGlenium[®] ACE 450 has been developed to have a particular synergy for use with the MasterX-Seed[®] Crystal Speed Hardening concept.

Characteristics and Benefits

MasterGlenium[®] ACE 450 offers the following benefits for the precast concrete industry:

- Production of highly flowable, robust self-compacting concrete having a low water cement ratio along with an optimal Rheology and optimized workability retention times.
- Enhanced robustness and consistency in concrete quality with low stickiness.
- Environmentally friendly, CO2 reduced mix-design optimization.
- Potential elimination or reduction of heat curing. Reduction in curing time or curing temperature. Increased productivity particularly in combination with MasterX-Seed[®] - Crystal Speed Hardening.
- Improved surface appearance.
- Durable precast concrete elements as per EN 206-1.
- Elimination of the energy required for placing, compaction and curing (ZERO ENERGY)
- Optimization of the curing cycles.

Technical Properties

Structure of the Material	Polycarboxylic Ether Based
Appearance	Opaque Liquid
Specific gravity (20°C)	1.060-1.1095 kg/ltr
pH Value	Approx. 4 - 7
Alkali Content (%)	≤ 3.00
Chloride Content (%)	≤ 0.10
Corrosion Behaviour	Contains only components according to BS EN 934-1:2008, Annex A.1
Dangerous Substances	Comply with annex AZ.

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Zero Energy System

The Zero Energy System is based on a combination of the latest MasterGlenium[®] ACE superplasticizers and advanced self-compacting concrete technology. The Zero Energy System has been developed to help the precast concrete producer rationalize his production process and save on energy costs, whilst combining this with improved quality of the product and overall site working conditions.

Dosage

The normally recommended dosage rate of MasterGlenium[®] ACE 450 is approximately:

By Weight – 0.20 to 2.50 kg per 100 kg of cement (binder) content.

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

Mixing

MasterGlenium[®] ACE 450 is a liquid admixture that is added to the concrete during the mixing process. Optimal water reduction is obtained if the MasterGlenium[®] ACE 450 product is dispensed into the concrete mix after the addition of 70-90% of mixing water. Avoid adding the admixture to dry materials. After adding MasterGlenium[®] ACE 450 allow enough mixing time to secure a homogenous concrete. If necessary, continue mixing and add additional MasterGlenium[®] ACE 450 to obtain the required workability. Workability levels will start to

decrease rapidly after 15 to 30 minutes from mixing (temperature & cement type depending).

Compatibility

MasterGlenium[®] ACE 450 can be used with all types of **EN 197** Cements. For use with other special cements, contact our **MBT Tech** Technical Services Department. MasterGlenium[®] ACE 450 should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing MasterGlenium[®] ACE 450 they must be dispensed separately.

MasterGlenium[®] ACE 450 is compatible and recommended for use with:

- MasterX-Seed[®] - Crystal Speed Hardening Concept for accelerated early strengths
- MasterMatrix[®] to modify the viscosity of SCC.
- MasterFinish[®], demoulding agents for easy formwork removal and improved finish.
- MasterKure[®], curing compounds for highly efficient water retention and friendly use.

MasterGlenium[®] ACE 450 is **not compatible** with all admixtures of MasterRheobuild[®] series.

When such complimentary admixtures are required it is important that laboratory 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 **MBT Tech** Technical Services Department for further advice.

Packaging

MasterGlenium[®] ACE 450 is supplied in bulk, 1000-kg IBC's and 220-kg barrels and 30 kg cans.

Shelf Life

12 months if stored according to manufacturer's instructions in unopened container.

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Storage

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.

Health and Safety

For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

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 vapor 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.

Spillage

Chemical products can cause damage; clean spillage immediately.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of

use. This technical form is valid only till a new version is implemented and nullifies the old ones.

Contact

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