MasterGlenium® 27 TR

High Range Water Reducing Admixture for Concrete
EN 934-2 T3.1& T3.2

Material Description

MasterGlenium® 27 TR is a high range water reducing admixture, based on modified poly-carboxylic ether polymers. 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® 27 TR** the ideal admixture for the ready-mix concrete industry. The ability to work with a very low water/cement ratio and still obtain extended workability retention, allows for the manufacture of high quality concrete.

Characteristics and Benefits

- Self-compacting concrete.
- Rheoplastic concrete with the lowest water/cement ratio.
- No segregation or bleeding.
- Compared to traditional superplasticizers, the addition of MasterGlenium® 27 TR 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.
- Low vibration time required even in case of highly reinforced concrete.

The Chemistry

What differentiates MasterGlenium® 27 TR from the traditional high range water reducing action with good workability is a unique mechanism of action that greatly improves the effectiveness of cement dispersion.
Traditional high range water reducing like melamine and naphthalene sulfonates 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 sulfonic 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® 27 TR 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 stabilizes the particles ability to separate and disperse. With this process, flowable concrete with greatly reduced water content is

Technical Properties	
Structure of the Material	Modified Polycarboxylic Ether Based
Appearance	Brown Liquid
Specific gravity (20°C)	1,023 – 1,063 kg/lt
pH Value	5,0 – 7,0
Alkali Content (%)	≤ 3.00 (by mass)
Chloride Content (%)	≤ 0.10 (by mass)
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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obtained. The alkalinity created by the paste allows the polymers of MasterGlenium® 27 TR 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.

Dosage

The normally recommended dosage rate of MasterGlenium® 27 TR is approximately:

By Weight – 1.0 to 2.0 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 Teknik Yapı Kimyasalları San. ve Tic. A.Ş. Division 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 utilizing power float or power troweling methods, we recommend that you contact the according to specific job conditions. If required consult MBT Teknik Yapı Kimyasalları San. ve Tic. A.Ş. Technical Services Department for dosage rate guidance.

Mixing

MasterGlenium® 27 TR 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® 27 TR is dispensed 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 out. Avoid adding the admixture to the dry aggregates.

Compatibility

MasterGlenium® 27 TR can be used with all types of **EN 197** Cements. For use with other special cements, contact our MBT Teknik Yapı Kimyasalları San. ve Tic. A.Ş. Technical Services Department. MasterGlenium® 27 TR should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing MasterGlenium® 27 TR they must be dispensed separately.

MasterGlenium® 27 TR is not compatible with all admixtures of the MasterRheobuild® series.

In order to optimize special requirements the use of the following complementary additives is suggested:

• Air entraining agents MasterAir® to improve frost/thaw resistance

• Silica fume for high performance concrete (HPC) and improving durability in chemical aggressive environments
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 Teknik Yapı Kimyasalları San. ve Tic. A.Ş. Technical Services Department for further advice.

Packaging

MasterGlenium® 27 TR is supplied in Bulk, 1000-kg IBC's and 220-kg barrels.

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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