

MasterSet® R 100

Set Retarding Admixture for Concrete
EN 934 - 2: T10

Material Description

Placing and finishing requirements are facilitated because **MasterSet® R 100** retards setting time.

- Increased compressive and flexural strength.
- Durability to damage from freezing and thawing.
- Reduced water content required for given workability.
- Retarded setting characteristics.

Areas of Application

MasterSet® R 100 admixture is recommended for use in all types of concrete where moderate to extended retardation of set and improved performance are desired.

This admixture improves pumped concrete, shot-concrete (wet mix), and conventionally placed concrete. It improves plain, reinforced, precast, prestressed, lightweight or normal weight concrete.

MasterSet® R 100 admixture can be used with air-entraining cements and with air-entraining admixtures approved under; **EN 934 part 2** specifications. On its own, **MasterSet® R 100** admixture does not entrain air.

Characteristics and Benefits

The set retarding characteristics of MasterSet® R 100 admixture aid in the production of concrete with the following special qualities:

- Improved workability.
- Reduced segregation.
- Superior finishing characteristics for flatwork and cast surfaces.
- Controlled retardation - depending on the addition rate.
- Provides flexibility in scheduling of placing and finishing operations.
- Offsets the effects of too early hardening during extended delays between mixing and placing.
- Helps eliminate cold joints.
- Allows for dead-load deflection to take place (before concrete sets) in extended pours for bridge decks, cantilevers, non-shored structural elements, etc.
- Lowers peak temperature and/or rate of temperature rise in mass concrete - reduces thermal cracking.
- Effective as a single admixture or as a component in a **MasterPozzolith®**, **MasterGlenium®** and **MasterRheobuild®** admixture system.

Technical Properties

Structure of the Material	Lignin Sulfonate
Appearance	Brown liquid
Specific Gravity (20°C'de)	1.100 -1.18 kg/lit
pH Value	6.0 – 9.0
Alkali Content (%)	≤ 5.00 (by mass)
Chloride Content (%)	≤ 0.10 (by mass)
Corrosion Behavior	Contains only components according to BS EN 934-1:2008, Annex A.1
Dangerous Substances	Comply with annex AZ.

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Dosage

For most concrete mixes using average concrete ingredients, **MasterSet® R 100** admixture is recommended for use at the rate of:

By Mass - 0.40 to 0.60 kg per 100 kg of cement (binder).

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 Sanayi ve Ticaret A.Ş. 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 trowelling methods, we recommend that you contact the according to specific job conditions. If required consult MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş. Technical Services Department for dosage rate guidance.

Compressive Strength

Concrete produced with **MasterSet® R 100** admixture will have rapid strength development after initial set occurs. If retardation is within the normal ASTM C-494 Types B and D specification, **MasterSet® R 100** admixture will develop higher early (24 hours) and higher ultimate strengths than plain concrete when used within the recommended dosage range and under normal, comparable curing conditions.

When **MasterSet® R 100** admixture is used in heat-cured concrete; the length of the preheating period should be increased until initial set of the concrete is achieved. The actual heat-curing period is then reduced accordingly to maintain existing production cycles without sacrificing early or ultimate strengths.

Effects of Overdosing

If MasterSet® R 100 is used at too high a dosage rate then the concrete set may be retarded for a

significant period of time. In this situation, and provided that the concrete is protected from frost and water loss, the 28 day strength of the affected concrete is likely to be at least equivalent to the same concrete with a normal dosage of MasterSet® R 100.

Rate of Hardening

The temperature of the concrete mix and the ambient temperature (forms, earth, reinforcement, air, etc.) affect the hardening rate of concrete. At higher temperatures, concrete hardens more rapidly which may cause problems with placing and finishing.

A function of MasterSet® R 100 admixture is to retard the set of concrete. Within the normal dosage range, it will generally extend the compaction and setting time of concrete containing normal Portland cement approximately 2½ to 10 hours compared to a plain concrete mix, depending on job materials and temperatures. Trial mixes should be made with job materials approximating job conditions to determine the dosage required. MasterSet® R 100 admixture may be used at less than the recommended dosage for the purpose of retardation only.

Compatibility

MasterSet® R 100 can be used with all types of **EN 197** Cements. For use with other special cements, contact our MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş. Technical Services Department.

MasterSet® R 100 should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing MasterSet® R 100, they must be dispensed separately.

When non-compensated admixtures are required, it is important to conduct laboratory testing prior to any application in order to determine the suitability of the relevant dosages for both the fresh and hardened states of the concrete. In such cases, it is recommended to consult the Technical Services Department for further guidance.

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Packaging

MasterSet[®] R 100 is available in bulk and 1000 kg IBCs.

Shelf Life

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

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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