

MasterSure 1970

Consistence retaining admixture for concrete – BS EN 934-2 T2

Material Description

MasterSure 1970 is an innovative admixture based on a unique consistence retention polymer. It provides the ultimate level in the Master Builders Solutions Total Performance Control™ concept. MasterSure 1970 is specially engineered for readymix concrete. It has been optimised to work in conjunction with the high-performance superplasticiser, MasterGlenium SKY 1966, as part of a two-component system giving high performance concrete with controllable, and selectable consistence retention periods. Although optimised for use with MasterGlenium SKY 1966, it can also be used with other products from our MasterGlenium, MasterGlenium SKY & MasterEase ranges.

When using MasterSure 1970 in combination with the appropriate products from our portfolio, it is now possible to obtain a high-quality concrete mix with extended consistence retention of up to 8 hours, without sacrificing early strength development. In special circumstances the period of retention can be increased to 12 hours. The unique polymer formulation enables true consistence retention to be achieved across a broad spectrum of consistence classes (F4 to SF3). This is achieved without significant set retardation, or significantly reduced 24-hour strength performance (for up to 8-hour consistence retention). Under normal circumstances, the unique formulation of MasterSure 1970 enables such extreme consistence retention performance with minimal tendency for consistence refluidification during the often-critical time window of 5 to 30 minutes after batching of the concrete.

Total Performance Control

The Total Performance Control™ concept ensures that ready-mix producers, contractors and engineers get a concrete that is of the same high quality as originally specified; starting from production at the batching plant, to the delivery and application into place, and finally by its hardening process. Utilizing our well established advanced polymer technology, it provides a concrete mix with exceptional placing characteristics and optimised cement hydration for early strength development and high-quality concrete.

MasterSure 1970 has been formulated so that, at dosage rates of 0.4% or less, it has minimal plasticising effect on the concrete, so mix designs do not need the dosage rate of the appropriate HRWRA (High Range Water Reducing Admixture) adjusting to compensate. At dosages higher than 0.4%, the plasticising effect will need assessing, and adjustments made to the dosage of the HRWRA being used.

The use of this two-component system allows modifications to the consistence retention of the concrete mix to be made, without affecting the water reduction aspect obtained from MasterGlenium SKY 1966, or other appropriate HRWRA. This would cover scenarios where a different retention period is required, the ambient temperature conditions increase/decrease dramatically, or changes in the binder chemistry occur. The opposite is also true, in that the level of MasterGlenium SKY 1966, or other appropriate HRWRA, can be adjusted to give higher or lower consistence levels, without impacting on the consistence retention period. Large changes in either dosage rate, however, will need to be verified prior to supply.

Fields of Application

MasterSure 1970, in combination with the appropriate HRWRA, is especially beneficial for the production of high quality ready-mix concrete particularly when high water reductions are required in combination with a requirement for an extended period of workability, e.g. long distance deliveries, deliveries with extended discharge times, extended placing scenarios such as deep piling operations where the reinforcing cage is introduced at the end of concreting operations, or in congested Urban environments.

The formulation of MasterSure 1970 has been particularly optimised for the more challenging retention issues that can be posed by the use of modern high replacement levels of supplementary cementitious materials such as PFA and GGBS in CIIIA, CIIIB and CIIIB-V cements.

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Characteristics and Benefits

MasterSure 1970 is optimised for use in conjunction with MasterGlenium SKY 1966, but can also be used in combination with other products from our MasterGlenium, MasterGlenium SKY & MasterEase ranges, MasterSure 1970 offers the following benefits:

The ready-mix producer:

- Production of a concrete with low water cement ratio that meets EN 206-1 without loss of workability over extended periods of up to 8 hours (12 in special circumstances).
- Single product for many application needs.
- Extended retention performance with cements containing either GGBS or PFA
- Confidence that the workability will be the same at the job site as it was when first produced.

The contractor / applicator:

- Easier placing and faster strength development.
- Guarantee to place the same concrete as specified and ordered from ready-mix plant.
- More versatile concrete mix.
- Long pumping distances both horizontally and vertically
- Opportunity for placement of reinforcement cages in large deep piles after prolonged placement periods.

The engineer:

- Insurance that concrete meets original specification
- Confidence in the concrete's ability to be placed in areas of congested reinforcement.
- High quality concrete with better durability.

Dosage

In combination with products from our MasterGlenium, MasterGlenium SKY & MasterEase ranges, MasterSure 1970 is particularly suited for mixes where higher strengths/low water cement ratios are required, without significant workability reduction, for up to a 12-hour period. The normally recommended dosage rate of MasterSure 1970 is typically:

- *By Volume* - 0.1 to 0.6 litres per 100 kg of cement (binder) content.

- *By Weight* - 0.11 to 0.66 kg per 100 kg of cement (binder) content.

At higher dosage rates the concrete may show increased tendency to refluidise and set retardation may occur. 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 guidance.

Mixing

MasterSure 1970 should be added to the concrete after the dispensing of appropriate HRWRA.

Compatibility

MasterSure 1970 can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department.

MasterSure 1970 has been designed to work in conjunction with products from our MasterGlenium, MasterGlenium SKY or MasterEase ranges, it is not designed to be used on its own, or with any other plasticising or superplasticizing admixture. It should not be pre-mixed with other admixtures. 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.

If it is intended to use MasterSure 1970 with any admixture other than from the MasterGlenium, MasterGlenium SKY or MasterEase ranges, the concrete performance must be fully verified prior to any supply, to determine the respective dosages of any complimentary admixture, and the suitability, in the fresh and hardened state.

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Packaging

MasterSure 1970 is supplied in Bulk, 1000-litre IBC's and 15-litre containers.

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Product Data	
Appearance:	Beige / milky white
Specific gravity @ 20°C:	1.09 ± 0.02 g/cm ³
Solids content:	25.5 ± 1.5%
pH-value:	5.5 ± 1
Alkali content (%):	≤ 2.50 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:	≤ Reference mix + 2.0%
Water reduction:	≥ 5% of Reference mix
Compressive strength - 7 day:	≥ 110% of Reference mix
Compressive strength - 28 day:	≥ 110% of Reference mix
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 MasterSure 1970 Safety Data Sheet
Disposal:	Refer to MasterSure 1970 Safety Data Sheet

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DISCLAIMER

MasterSure 1970, Master Builders Solutions UK Ltd, Version 9

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

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