

# Master X-Seed 100

Hardening accelerating admixture for concrete - EN 934-2: T7

## Material Description

Master X-Seed 100 is an engineered suspension of crystal seeds containing nanoparticles, designed to boost the hydration process of early age cement (6-12 hrs). Based on unique and innovative seeding technology, the growth of the essential Calcium Silicate Hydrate crystals is strongly accelerated.

Master X-Seed 100 promotes concrete hardening at low, ambient and even heat curing temperatures. Unlike traditional acceleration methods and thanks to the unique mode of action - the virtually barrier-free crystal growth of the seeds in between the cement grains - early strength development is accelerated while the final microstructure benefits from equivalent or improved properties.

## Crystal Speed Hardening

Master X-Seed 100 is the essential component of our Crystal Speed Hardening concept.

Crystal Speed Hardening expresses the Value Proposition offered by the unique crystal seeding technology of Master X-Seed:

- Efficient Processes
- Energy Reduction
- Material Optimization
- High Quality Specifications

The concept addresses key industry requirements and has the power to exceed all current solutions. In particular, the concept is designed to make a significant contribution to meeting sustainable construction targets.

## Fields of Application

Master X-Seed 100 is optimized for all kinds of concretes, especially for structural precast elements where high early strength development is a key success factor for the producer. Master X-Seed 100 is a relevant alternative to heat curing

methods and the strong promotion of hydration in particular supports the use of binders with lower clinker content.

## Characteristics and Benefits

Master X-Seed 100 offers the following benefits:

- Early strength acceleration at low, ambient and heat curing temperatures
- Flexible adjustment of production capacities
- Increased production cycles (double, triple rotation)
- Better use of formwork by earlier demoulding
- Reduction/elimination of heat curing
- Reduced investment and running cost of curing
- Allows use of minimum required cement quantities
- Allows binder optimization by using lower grade, less clinker-containing cements or by increasing use of supplementary cementitious materials (Limestone, Fly Ash, Slag)
- Lower risk of delayed ettringite formation
- Reduced water absorption
- Improved concrete durability aspects
- Improved plant and product ECO-efficiency by reducing CO<sub>2</sub> emissions

## Dosage

The normally recommended dosage rate of Master X-Seed 100 is approximately:

- *By Volume* - 0.44 to 5.29 litres per 100 kg of cement (binder).
- *By Weight* - 0.50 to 6.00 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 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.

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## Mixing

Master X-Seed 100 is a ready-to-use liquid admixture to be added to the concrete during the mixing process. Enough mixing time to secure homogeneous dispersion should be provided.

## Compatibility

Master X-Seed 100 can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department.

Master X-Seed 100 should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing Master X-Seed 100 they must be dispensed separately.

Master X-Seed 100 is compatible with all our core technologies such as ZERO ENERGY SYSTEM and SMART DYNAMIC CONCRETE, in particular with:

- MasterGlenium type superplasticizers for high fluidification power
- MasterMatrix viscosity modifying agents for robust self-compacting concrete
- MasterAir air entraining agents for improved freeze-thaw resistance
- MasterFinish form release agents for easy formwork removal & aesthetic surface finish.

## Packaging

Master X-Seed 100 is supplied in Bulk, 1000-litre IBC's and 15-litre containers.

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| Product Data                   |                                                                                                                                                                                                                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appearance:                    | White liquid                                                                                                                                                                                                                                                                                   |
| Specific gravity @ 20°C:       | 1.135 ± 0.03 g/cm <sup>3</sup>                                                                                                                                                                                                                                                                 |
| pH-value:                      | 11.0 ± 1                                                                                                                                                                                                                                                                                       |
| Alkali content (%):            | ≤ 4.00 by mass                                                                                                                                                                                                                                                                                 |
| Chloride content (%):          | ≤ 0.10 by mass                                                                                                                                                                                                                                                                                 |
| Corrosion behaviour:           | Contains only components according to BS EN 934-1:2008, Annex A.1 & declared list A.2.                                                                                                                                                                                                         |
| Air Content:                   | Fulfilled                                                                                                                                                                                                                                                                                      |
| Setting time – initial @ 5°C:  | ≤ 60% of Reference mix                                                                                                                                                                                                                                                                         |
| Setting time – initial @ 20°C: | ≥ 30 minutes                                                                                                                                                                                                                                                                                   |
| Compressive strength:          | Fulfilled                                                                                                                                                                                                                                                                                      |
| Durability:                    | NPD                                                                                                                                                                                                                                                                                            |
| Dangerous substances:          | NPD                                                                                                                                                                                                                                                                                            |
| Logistics                      |                                                                                                                                                                                                                                                                                                |
| Shelf life:                    | 6 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 Master X-Seed 100 Safety Data Sheet                                                                                                                                                                                                                                                   |
| Disposal:                      | Refer to Master X-Seed 100 Safety Data Sheet                                                                                                                                                                                                                                                   |

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## DISCLAIMER

Master X-Seed 100, Master Builders Solutions UK Ltd, Version 8

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](http://www.master-builders-solutions.com/en-gb)

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