

# Master X-Seed<sup>®</sup> 100

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

## 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 Master Builders Solutions 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.

## TYPICAL APPLICATIONS

**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.

## ADVANTAGES

**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

## PACKAGING

**Master X-Seed 100** is supplied in bulk, and 1,000 litres IBC's.

## TYPICAL PROPERTIES\*

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	"chloride-free" to EN 934-2
Corrosion behaviour	Contains only components according to BS EN 934-1:2008, Annex A.1 & declared list A.2

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## APPLICATION GUIDELINES

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

- By Volume - 0.44 to 5.29 litres per 100 kg of cement (binder) content.
- By Weight - 0.50 to 6.00 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 utilised in special cases according to specific job conditions. If required consult Master Builders Solutions Technical Services Department for advice. Trial mixes should be carried out to ensure optimum dosage and effect.

## 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 Portland Cements.

**Master X-Seed 100** is suitable for mixes containing:

- Microsilica (silica Fume)
- Fly Ash (PFA)
- GGBS (ground granulated blast furnace slag)

**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 Master Builders Solutions 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 and aesthetic surface finish

## STORAGE AND SHELF LIFE

Store in original sealed containers or bulk storage tanks to protect from extremes of temperature.

The shelf life is 9 months if stored according to manufacturer's instructions in unopened container.

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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## QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

\* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the MBCC Group in many countries.

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### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

### NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.

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