

Master X-Seed[®] 44

Strength-Enhancing Admixture

Description

Master X-Seed 44 is a patented, strength-enhancing admixture that improves very-early age (< 16 hours) strength development in concrete, without negative effects on 28-day strength development. Master X-Seed 44 admixture is based on a unique technology that facilitates improved cement hydration, thus enhancing very-early age strength development. Master X-Seed 44 admixture meets ASTM C 494/C 494M requirements for Type S, Specific Performance, admixtures.

Applications

- Green Sense[®] Concrete
- Prestressed concrete
- Precast concrete
- Ready-mixed concrete
- Self-consolidating concrete (SCC)

Features

- Improves cement hydration
- Increases very-early age strength development (< 16 hours) with no adverse effect on 28-day strength development with a wide spectrum of cement chemistries and binder system combinations
- Enhances workability of high-performance concrete mixtures depending on cement chemistry and product dosage

Benefits

- Ability to achieve Type III cement performance with Type I/II cement
- Reduces in-place concrete costs when utilized in optimized concrete mixtures
- Ability to reduce/eliminate heat curing to achieve early strength development
- Permits higher replacement levels of supplementary cementitious materials (SCMs)
- Permits reduced cementitious material contents while maintaining early and later age strength development
- Permits earlier stripping and reuse of forms
- Helps reduce CO₂ emissions associated with concrete

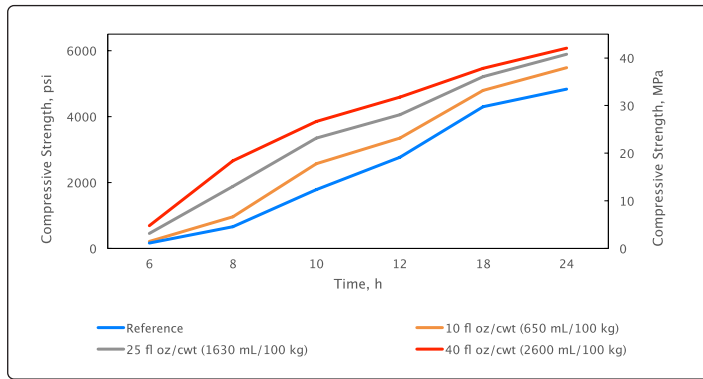
Particle Seeding Technology

Master X-Seed 44 admixture is based on a Master Builders Solutions proprietary technology that ensures a stable suspension of synthetically-produced crystalline CSH nanoparticles. These particles act as active seeds in a concrete mixture to facilitate the growth of hydration products between cement particles. The unique technology of Master X-Seed 44 admixture provides an unsurpassed enhancement of the hydration process in a concrete matrix which increases very-early age strength development (< 16 hours) compared to a reference untreated concrete mixture.

Performance Characteristics

Master X-Seed 44 admixture provides significant strength enhancement in 6- to 24-hour time window. The strength enhancement is dependent on time, temperature, cement (type and content) and water-cementitious materials ratio.

The following graph shows the strength development of concrete mixtures with Type I/II cement, with and without Master X-Seed 44 admixture. These mixtures had 750 lb/yd³ (450 kg/m³) of cement and a water-cement ratio (w/c) of 0.38.



Guidelines for Use

Dosage: Master X-Seed 44 admixture has a recommended dosage range of 10 to 40 fl oz/cwt (650 to 2600 mL/100 kg) of cementitious materials. Because of variations in concrete materials, jobsite conditions and/or applications, dosages outside of the recommended range may be required. In such cases, contact your local sales representative.

Mixing: Master X-Seed 44 admixture can be added with the initial batch water or as a delayed addition.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: Master X-Seed 44 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressing steel or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of Master X-Seed 44 admixture.

Compatibility: Master X-Seed 44 admixture is compatible with most admixtures used in the production of quality concrete, including normal, mid-range and high-range water-reducing admixtures, air-entrainers, accelerators, retarders, extended set control admixtures, corrosion inhibitors, and shrinkage reducers.

Master X-Seed 44 admixture has only been tested with other admixtures manufactured by Master Builders Solutions. Thus, use of Master X-Seed 44 admixture with non-Master Builders Solutions admixtures may produce unpredictable results. Master Builders Solutions denies any warranty expressed or implied with respect to any application using a non-Master Builders Solutions admixture in combination with Master X-Seed 44 admixture.

Storage and Handling

Storage Temperature: Master X-Seed 44 admixture must be stored at temperatures above 32 °F (0 °C). If Master X-Seed 44 admixture freezes, thaw and reconstitute by mechanical agitation. Do not use pressurized air for agitation.

Shelf Life: Master X-Seed 44 admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. If the product is not utilized within one month, agitation may be required.

Packaging

Master X-Seed 44 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Safety Data Sheets: Master X-Seed 44 admixture

Additional Information

For additional information on Master X-Seed 44 admixture, or its use in developing a concrete mixture with special performance characteristics, contact your local sales representative.

Master Builders Solutions creates technologies for the construction industry inspiring people to build better. We are active in ~40 countries and operate 35 production sites with over 1,600 employees. We develop, produce, and market high-quality chemical admixtures, as well as adjacent core technologies, to master the challenges of today and support a decarbonized future. Our people are pivotal and pair leading technologies and a strong brand heritage to surpass our customers' expectations and drive continuous value creation.

Limited Warranty Notice

Master Builders Solutions Admixtures US, LLC ("Master Builders Solutions") warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. MASTER BUILDERS SOLUTIONS MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of Master Builders Solutions. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. MASTER BUILDERS SOLUTIONS WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

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