

03 30 00	Cast-in-Place Concrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete
31 00 00	Earthwork

MasterLife[®] 300L

Liquid Crystalline Capillary Waterproofing Admixture

Description

MasterLife 300L is a liquid crystalline capillary waterproofing admixture for concrete. It is designed for use in above- and below-grade applications. MasterLife 300L admixture meets ASTM C494/C494M requirements for Type S, Specific Performance, admixtures and meets the requirements of ICC-ES AC531, Acceptance Criteria for Crystalline-Based Permeability-Reducing Chemical Admixtures Used in Concrete.

Applications

Recommended for use in:

- Foundations
- Sewage and water treatment plants
- Water tanks and reservoirs
- Swimming pools
- Underground vaults
- Tunnels and subway systems
- Secondary containment structures
- Below-grade parking structures
- Precast components
- Water features
- Geotechnical grouting and ground improvement
- Tinted concrete elements

Features

- Unique liquid crystalline formulation
- Automated dispenser / integral addition

Benefits

- Reduces concrete permeability
- Reduces penetration of water and other liquids
- Resists positive and negative side hydrostatic pressure
- Protects against sewage and industrial waste
- Seals hairline cracks
- Allows concrete to breathe
- Accurate dosing and addition verification with batch ticket printout
- Enhanced safety during batching
- No packaging waste or disposal cost

Performance Characteristics

The MasterLife 300L admixture is a permeability-reducing admixture (PRAH) as described in the American Concrete Institute's ACI 212 document Report on Chemical Admixtures for Concrete. This product has been evaluated using industry recognized tests for waterproofing characteristics such as water penetration and water permeability under pressure and capillary absorption. Data from third-party, independent testing is available upon request.

Hardened Properties: The MasterLife 300L crystalline capillary waterproofing admixture reacts in concrete to form non-soluble crystalline hydration products in the capillary pores of the concrete. These crystalline hydration products effectively reduce the permeability of concrete thus reducing capillary absorption and the penetration of water and other liquids.

Guidelines for Use

Concrete Quality: Crystalline capillary waterproofing admixtures such as the MasterLife 300 series of admixtures are categorized as Permeability-Reducing Admixtures (PRAs) in ACI 212.3R-16, Report on Chemical Admixtures for Concrete. These admixtures "are intended to be used in, and complement, well-proportioned concrete mixtures, not to compensate for poorly proportioned concrete mixtures. Although recommendations differ from each manufacturer, a w/cm of 0.45 or less is typical for concrete designed to resist water movement." In accordance with the recommendations provided in ACI 318, ACI 350 and ACI 212.3R, Master Builders Solutions recommends the use of the MasterLife 300 series of admixtures in good quality concrete with a maximum water-cementitious materials ratio of 0.45 and a minimum compressive strength of 4000 psi (28 MPa). The MasterLife 300 series of admixtures meet the requirements for PRAs for concrete exposed to hydrostatic conditions (PRAH), as defined in ACI 212.3R-16. Master Builders Solutions recommends adherence to the following guidelines provided in ACI 212.3R-16 when the MasterLife 300 series of admixtures are used: "If the PRAH forms part of a primary waterproofing system, consider crack control measures (control joints), the admixture's crack sealing abilities, treatment of construction joints, and compatible repair systems. Also consider using concrete with the lowest drying shrinkage possible."

Dosage: MasterLife 300L admixture is recommended for use at a dosage of 1.25 gal/yd³ (6.2 L/m³).

Dispensing and Mixing: Mixture Proportions: The mix water content should be reduced by 1.25 gal/yd³ [6.2 L/m³] to account for the quantity of MasterLife 300L admixture used. MasterLife 300L admixture may be added to the concrete mixture during the initial batch sequence at the production plant or at the jobsite. If the delayed addition method is used, mixing at high speed for 3–5 minutes after the addition of MasterLife 300L admixture will result in mixture uniformity.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterLife 300L admixture will neither initiate nor promote corrosion of reinforcing steel, prestressing steel or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of MasterLife 300L admixture.

Compatibility - Admixtures: MasterLife 300L admixture is compatible with most admixtures used in the production of quality concrete, including normal, mid-range and high-range water-reducers, retarders, accelerators and corrosion inhibitors. MasterLife 300L admixture is recommended for use with high-range water-reducing admixtures, such as the MasterGlenium® series, for maximum workability while maintaining a low water-cementitious materials ratio. For air-entrained concrete applications, MasterLife 300L admixture can also be used with MasterAir® series of air-entraining admixtures. The dosage of air-entraining admixture should be established through truck trials.

Compatibility - Cementitious Materials: MasterLife 300L admixture can be used with portland cements approved under ASTM, AASHTO or CRD specifications and supplementary cementitious materials used in concretes. Trial mixtures with MasterLife 300L admixture are required before project start to ensure compatibility and desired results, especially due to potential variations in material response. Different sources of cementitious materials and variations between material batches may affect setting time, slump, or other performance attributes including compressive strength. Consult your local sales representative for recommended concrete mixture adjustments if necessary.

Tinted Concrete: MasterLife 300L admixture can be used in combination with a coloring admixture, such as MasterColor Medium Red liquid admixture, to produce tinted concrete.

Packaging

MasterLife 300L admixture is available in 265 gal (1003 L) totes and by bulk delivery.

Storage and Handling

Storage Temperature: MasterLife 300L admixture should be stored at ambient temperatures above 40 °F (5 °C), and precautions should be taken to protect the admixture from freezing. If MasterLife 300L admixture freezes, thaw and reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

Shelf Life

MasterLife 300L admixture has a minimum shelf life of 12 months when stored under recommended conditions. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use if the shelf life of MasterLife 300L admixture has been exceeded.

Related Documents

Safety Data Sheet: MasterLife 300L admixture

Additional Information

For additional information on MasterLife 300L 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

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