

# MasterLife<sup>®</sup> WP 3122

Unique waterproofing admixture combining crystalline and hydrophobic pore-blocking ingredients

## DESCRIPTION

**MasterLife WP 3122** is a waterproofing liquid admixture having both integral crystalline capillary and hydrophobic pore-blocking functions. It is designed for use in above- and below-grade applications.

**MasterLife WP 3122** consists of various active, proprietary chemicals. These active chemicals react with the by-products of cement hydration to cause a reaction, which generates an insoluble crystalline deposit throughout the pores and capillary tracts of the concrete. Thus, the concrete with **MasterLife WP 3122** reduces water permeability. This product also has a self-healing property under presence of moisture and can heal cracks up to 0.5 mm.

## TYPICAL APPLICATIONS

**MasterLife WP 3122** should be used in all structural concrete that is constantly or intermittently in contact with water such as sea walls, tunnels, basements, structural and precast concrete. **MasterLife WP 3122** can also be used as a waterproofing admixture for cement mortars and plasters. Typically used for the following structures:

- Building basement and foundations
- Sewage and water treatment plants
- Dams, canals, tunnels, harbours
- Tunnel and subway systems
- Water reservoirs
- Concrete pipes
- Parking structures
- Precast, cast-in-place and shotcrete applications
- Swimming pools
- Retaining walls & sea defense walls

## ADVANTAGES

- Unique formulation allows the product to be categorized as both PRAN and PRAH within ACI 212.3R-10 "Report on Chemical Admixtures for concrete" (Permeability-reducing admixtures)

- Liquid product facilitates accurate measurement and recording of addition through existing concrete batch plant dispensing system
- Reduces concrete permeability and "self-heals"
- Allows concrete to breathe
- Non toxic
- Becomes an integral part of the concrete
- Reduces penetration of water and other liquids
- Can seal hairline cracks up to 0.5 mm
- Resists positive and negative hydrostatic pressure
- Protects against sewage and industrial wastes
- Added to the concrete at time of batching and therefore, is not subject to climatic restraints

## PACKAGING

**MasterLife WP 3122** is available in bulk, 30 L, 200 L drums or 1000 L IBC.

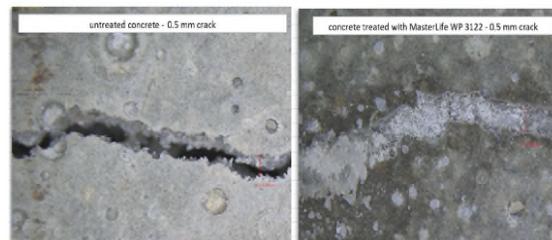
## PERFORMANCE CHARACTERICS

### Setting time:

**MasterLife WP 3122** admixture has little to no effect on concrete setting time within the recommended dosage range. However, it is recommended to test this in case any additives or blended cementitious combinations are used in concrete.

### Permeability:

**MasterLife WP 3122** waterproofing admixture is a liquid-based material that reacts in concrete to form insoluble products in the capillary pores/capillary tracts of the concrete effectively reducing the water absorption of concrete. In the presence of moisture **MasterLife WP 3122** can seal cracks by forming insoluble crystalline deposits hence improving the service life of the structure.



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Typical Data for MasterLife WP 3122 admixture @ 1-2% by mass of cement.

OPC	w/c ratio	20mm	10mm	5mm	Sand	Dune sand	MasterGlenium	MasterLife WP 3122
400	0.40	650	375	380	140	350	0.6%	1-2%

Specification	Test Results
Water Absorption (BS 1881 part 122)	< 1% when tested at 7 days
Water Penetration depth (DIN1048 Part 5)	10mm
Concrete water proofing admixture shall of the crystalline growth type	SEM Report shows Crystalline growth and lower void in concrete relative to untreated concrete mixture
Water Penetration	Reduction up to 30 to 35% relative to untreated concrete mixture
Workability	<b>MasterLife WP 3122</b> has little or no effect on workability
Setting time of concrete	Relative to untreated concrete mixture
Aspect	Clear to yellow liquid
Bulk density	1.055 +/- 0.005 kg/L
Chloride content	"chloride free" to EN 934

## APPLICATION GUIDELINES

As a guide, a dosage rate of 1 - 2.5%. For addition to ready mix concrete, a typical dosage of 6-7 kg per cubic meter of concrete is best recommended.

For addition information on **MasterLife WP 3122** or on its use in developing concrete mixes with special performance characteristics, please contact your local Master Builders Solutions representative.

### Points to remember when producing waterproof concrete:

- Ensure water / cement ratio is less than 0.45
- Addition of good superplasticiser from the **MasterRheobuild**, **MasterPolyheed** or **MasterGlenium** range is advised to achieve minimum free water/cement ratio.
- Place concrete quickly and compact it well preferably using self-compacting concrete containing **MasterMatrix** viscosity-modifying admixture.
- Ensure complete curing with a **MasterKure** curing compound.

**MasterLife WP 3122** admixture is batched at the concrete production plant in a manner similar to that for liquid based admixtures or similar liquids. It may be batched in either a central or truck mixer. Follow the procedures outlined in ASTM C94 /C94M, Standard Specification for Ready-Mixed Concrete, for general batching and mixing instructions for concrete if adding to a truck mixer. Provide at least 5 minutes of mixing after the addition of **MasterLife WP 3122** admixture to ensure thorough and uniform distribution of the admixture in the concrete mixture.

## MIXING

**MasterLife WP 3122** admixture can be used with portland cements approved under ASTM and EN specifications. It is compatible with most concrete admixtures, including all Master Builders Solutions admixtures. **MasterLife WP 3122** admixture is recommended for use with high-range water reducing admixtures, such as the **MasterGlenium** series, for maximum workability while maintaining a low water-to-cementitious materials ratio.

Note: **MasterLife WP 3122** is also compatible with supplementary cementitious materials such as fly-ash (PFA), GGBS and silica fume.

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## CORROSIVITY - NON-CHLORIDE, NON CORROSIVE

**MasterLife WP 3122** will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of **MasterLife WP 3122**. In all concrete application, **MasterLife WP 3122** will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

## WORKABILITY

**MasterLife WP 3122** has little or no effect on workability of concrete. Prior site trials are advised to assess the effect, and any increase or decrease in the workability can be adjusted by adjusting the admixture dosage or amount of water in use.

It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

## STORAGE AND SHELF-LIFE

**MasterLife WP 3122** must be stored where temperatures do not drop below +5°C.

Shelf life is 6 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local Master Builders Solutions representative.

## HEALTH AND SAFETY

For health, safety and environmental Recommendations, please consult and follow all instructions on the Material Safety Data Sheet.

## 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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