

# MasterLife® WP 1500

## High Performance Dual Mechanism Liquid Crystalline Waterproofing Admixture

### DESCRIPTION

**MasterLife WP 1500**, a high-performance dual mechanism liquid crystalline waterproofing admixture. It is an integral waterproofing admixture for concrete and designed for use in below and above grade applications.

**MasterLife WP 1500** consists of various active, proprietary chemicals. One of these chemicals reacts with the hydration products of cement to generate additional calcium silicate hydrates (CSH) to impart higher impermeability and additional strength to the concrete. These active chemicals also react with the moisture in fresh concrete to form insoluble crystalline deposits throughout the pores and capillary tracts of the concrete. These crystalline products effectively reduce the permeability, capillary absorption and the penetration of water and other liquids. Thus, the concrete treated with **MasterLife WP 1500** reduces concrete permeability through the formation of additional CSH and crystalline deposits in capillary channels. If the treated concrete should crack, the active chemicals react with water and moisture to form insoluble crystalline deposits to seal cracks. It can heal and seal cracks up to 0.4 mm to create waterproof structures.

### TYPICAL APPLICATIONS

**MasterLife WP 1500** can be used in all structural concrete which are constantly or intermittently in contact with water such as sea walls, tunnels, basements, structural and pre-cast concrete. The following are the typical applications and structures to be waterproofed:

- Sewage and water treatment plants
- Liquid retaining structures
- Water reservoirs and tanks for potable water
- Swimming pools
- Foundations, basements, lift pits, podiums, balconies and roofs
- Parking structures
- Precast, pre-stressed and post-tensioned concrete
- Culverts
- Tunnel and subway systems
- Shotcrete
- Concrete subjected to wet, harsh and aggressive environments

**MasterLife WP 1500** can also be used as crystalline waterproofing admixture for cement mortars and plasters.

### ADVANTAGES

- Liquid Crystalline material
- Integral addition
- Reduces concrete permeability
- Allows concrete to breathe
- Non toxic
- Becomes an integral part of the concrete
- Reduces penetration of water and other liquids
- Can seal cracks up to 0.4 mm.
- Resists positive and negative side hydrostatic pressure
- Protects against sewage and industrial wastes
- Less expensive than traditional waterproofing methods
- Added to the concrete at time of batching and therefore is not subject to climatic constraints.

### PERFORMANCE CHARACTERISTICS

#### Setting Time:

**MasterLife WP 1500** 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.

#### Workability:

**MasterLife WP 1500** 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.

### APPLICATION GUIDELINES

As a guide, a dosage of 1% of cementitious content is recommended. Dosage up to 2% can be used in special requirements.

For additional information on **MasterLife WP 1500** or on its use in developing concrete mixes with special performance characteristics, contact your local Master Builders Solutions representative.

# MasterLife<sup>®</sup> WP 1500

## Points to remember when producing waterproof concrete:

- Ensure water/cement ratio is less than 0.5
- Addition of good superplasticizer from the MasterRheobuild or MasterGlenium range is advised to achieve minimum water/cement ratio.
- Place concrete quickly and compact it well.
- Ensure complete curing with a MasterKure curing compound.

### MIXING

**MasterLife WP 1500** 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 1500** admixture to ensure thorough and uniform distribution of the admixture in the concrete mixture.

**MasterLife WP 1500** admixture can be used with portland cements approved under ASTM and EN specifications. It is compatible with most concrete admixtures, including all MasterBuilders Solutions admixtures. **MasterLife WP 1500** 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.

**MasterLife WP 1500** is also compatible with slag and pozzolans such as fly ash, GGBS and silica fume.

### PACKAGING

**MasterLife WP 1500** is available in 25 kg pail, 205 litre drum and bulk.

### CORROSIVITY – NON-CHLORIDE, NON-CORROSIVE

**MasterLife WP 1500** 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 1500**. In all concrete application, **MasterLife WP 1500** will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

### STORAGE AND SHELF LIFE

**MasterLife WP 1500** must be stored where temperatures do not drop below +5°C.

The shelf life is 12 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.

### PRECAUTIONS

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet.

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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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