

# MasterLife<sup>®</sup> WP 3760

## Crystalline waterproofing admixture for concrete & mortars

### DESCRIPTION

**MasterLife WP 3760** crystalline waterproofing powder admixture is an integral crystalline capillary waterproofing admixture for concrete. It is designed for use in above- and below-grade applications.

**MasterLife WP 3760** consists of Portland cement, very fine treated silica sand and various active, proprietary chemicals. These active chemicals react with the moisture in fresh concrete 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 3760** reduces water permeability. This product also has a self-healing property under presence of moisture and can heal cracks below 0.4 mm.

### APPLICATIONS

**MasterLife WP 3760** should be used in all structural concrete that is constantly or intermittently in contact with water such as sea walls, tunnels, basements, structural and pre-cast concrete. **MasterLife WP 3760** can also be used as crystalline waterproofing admixture for cement mortars and plasters. To waterproof structures such as:

- Building Basement and foundations
- Sewage and water treatment plants
- Dams, canals, Tunnels, Harbours
- Tunnel and subway systems
- Water reservoirs
- Concrete pipes
- Parking structures
- Pre-Cast, Cast-in-Place and Shotcrete applications
- Swimming pools
- Retaining walls & sea defense walls

### FEATURES

- Crystalline cementitious material
- Integral addition
- Reduces concrete permeability
- Allows concrete to breathe

Non toxic

Becomes an integral part of the concrete

### BENEFITS

- Reduces penetration of water and other liquids
- Can seal hairline cracks up to 0.4 mm.
- Resists positive and negative side hydrostatic pressure
- Protects against sewage and industrial wastes
- Less expensive than traditional methods
- Added to the concrete at time of batching and therefore is not subject to climatic restraints

### PACKAGING

**MasterLife WP 3760** is available in 5kg & 25kg pack.

### PERFORMANCE CHARACTERISTICS

#### Setting Time:

**MasterLife WP 3760** 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 3760** capillary waterproofing admixture is a portland cement-based crystalline cementitious material that reacts in concrete to form insoluble crystalline hydration products in the capillary pores/capillary tracts of the concrete. These crystalline hydration products are deposited and fill the pores and hairline cracks, effectively reduce the permeability of concrete, its capillary absorption and penetration of water and other liquids into the concrete.

# MasterLife® WP 3760

Typical Data for MasterLife WP 3760 admixture @ 1% by mass of cement.

OPC	Fly Ash	w/b	water	20mm	10mm	sand	MasterGlenium	MasterLife WP 3760
370	120	0.34	166.5	530	530	708	0.6%	1%

Specification	Test Results
Water Permeability coefficient - $5 \times 10^{-13}$ m/s (DIN1048 Part 5)	$1.3 \times 10^{-13}$
Water Penetration depth – Below 15mm (DIN1048 Part 5)	6.67mm
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 3760</b> has little or no effect on workability
Setting time of concrete	relative to untreated concrete mixture

## PERFORMANCE TEST DATA

Aspect	Free Flowing grey powder
Bulk density	$1.350 \pm 0.02$ gm/cm <sup>3</sup>
Chloride content	“chloride free” to EN 934

## DOSAGE

As a guide, a dosage of 1000 grams per 100kg of cementitious content is recommended. Dosage up to 2000 grams per 100kg of cementitious content can be used in special requirements. For addition to ready mix concrete, a typical dosage of 5kg per cubic meter of concrete is best recommended.

For addition information on **MasterLife WP 3760** or on its use in developing concrete mixes with special performance characteristics, contact your local Master Builders Solutions representative.

## Points to remember when producing waterproof concrete:

Ensure water / cement ratio is less than 0.5 Addition of good superplasticiser 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.

## DISPENSING & MIXING

**MasterLife WP 3760** admixture is batched at the concrete production plant in a manner similar to that for cement or other cementitious materials. 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 3760** admixture to ensure thorough and uniform distribution of the admixture in the concrete mixture.

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### COMPATIBILITY

**MasterLife WP 3760** 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 3760** 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 3760** is also compatible with slag and pozzolans such as fly ash, GGBS and silica fume.

### CORROSIVITY – NON CHLORIDE , NON CORROSIVE

**MasterLife WP 3760** 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 3760**. In all concrete application, **MasterLife WP 3760** will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

### WORKABILITY

**MasterLife WP 3760** 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 / SHELF LIFE

**MasterLife WP 3760** 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.

### NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local Master Builders Solutions representative.

Master Builders Solutions reserves the right to have the true cause of any difficulty determined by accepted test methods.

### QUALITY AND CARE

All products manufactured by Master Builders Solutions Egypt, or imported from Master Builders Solutions affiliate companies world-wide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 standards.

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