

MasterLife[®] WP 707

Low dosage, liquid, integral waterproofer

DESCRIPTION

A liquid admixture for concrete to give high water resistance, based upon a blend of surface active agents and refined lignosulphonate. Waterproof concrete is the result of good concrete practice coupled with the lowest w/c ratio compatible with achieving full compaction.

PRIMARY USES

MasterLife WP 707 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 in exposed superstructures.

ADVANTAGES

- Concrete containing **MasterLife WP 707** is resistant to water penetration either under conditions of hydrostatic pressure or capillary absorption
- Durability is increased due to a significant reduction in w/c ratio
- Sulphate attack is reduced due to the sulphate bearing ground water being resisted
- The cohesive properties of the concrete are improved thus reducing segregation and bleeding
- Concrete of similar workability to a control mix produced with **MasterLife WP 707**, is easier to place
- Pumpability of concrete is greatly improved
- The surface finish of the concrete is improved

PACKAGING

MasterLife WP 707 is available in bulk or 210 L drums.

ACTION

MasterLife WP 707 assists in the production of water resistant concrete by its two fold action:

- It significantly reduces water demand to enable production of good workability concrete with a minimum water/cement ratio.
- It disrupts the cellular network within the concrete mass (capillaries), that are normally inter-connected thereby reducing the

concrete permeability. Test results using Initial Surface Absorption Tests (ISAT) in accordance with BS 1881: Part 5: 1970, on concrete with **MasterLife WP 707** show a decrease in surface absorption of between 60-80% over a similar concrete without **MasterLife WP 707**.

COMPOSITION

A blend of specially selected surface active agents and refined lignosulphonates.

STANDARDS

EN 934-2 Table 2

ASTM C494: Types A & D.

TYPICAL PROPERTIES*

Colour	Brown liquid
Specific gravity	1.185 At 25°C
Air entrainment	2 ± 1% according to grading of sand and water content
Chloride content	Nil to BS 5075
Nitrate content	Nil
Freezing point	0°C. Can be reconstituted if stirred after thawing

APPLICATION GUIDELINES

MasterLife WP 707 should be added with the mixing water preferably via a dispenser. It should never be added to the dry cement. No extensions to mixing times are required.

Points to remember when producing waterproof concrete:

- Ensure specified water / cement ratio is not exceeded; work within the range of 0.4 to 0.6 using a superplasticiser from the MBCC range. Advice on the most appropriate product can be obtained from the Master Builders Solutions Technical Department.
- Keep water content as low as possible compatible with achieving full compaction.
- Place concrete quickly and ensure it is thoroughly compacted.

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- Protect new concrete against rapid drying out and ensure adequate and complete curing with Master Builders Solutions **MasterKure** curing compounds.

DOSAGE

320ml per 100kg of cement. Field trials should be conducted to determine the effect of **MasterLife WP 707** on the workability of the concrete.

EFFECTS OF OVER DOSAGE

- Slight set retardation. (No effect on striking times).
- Slight increase in air content.
- Increase in workability.

DISPENSING

MasterLife WP 707 should be dispensed through a proprietary dispenser such as those available from Master Builders Solutions. Details upon request.

TYPICAL TEST RESULTS

TABLE 1 – WATER ABSORBENCY

Mix Proportions:	Series I	Series II
Cement	340kg	400kg
Sand	650kg	585kg
20mm-5mm aggregate	1280	1285
Workability	50mm	100mm

	Series I		Series II	
Admixture	None	MasterLife WP 707 at 320ml / 100kg cement	None	MasterLife WP 707 at 320ml / 100kg cement
Cement	SRC	SRC	OPC	OPC
Air %	1	3	1	3
W/C	0.5	0.44	0.435	0.37
Density kg/m³	2.43	2.43	2.45	2.43
Water absorbency after 2 hours	4.6	2.0	4.1	1.8

TABLE 2 - INITIAL SURFACE ABSORPTION TEST

Reference:	Initial surface absorption (ml/m²/sec)			
Control	10 min	30 min	1 hour	2 hour
1	2.04	1.15	0.87	0.73
2	2.58	1.77	1.44	1.28
3	2.33	1.61	1.35	1.23
Average	2.31	1.51	1.22	1.08
MasterLife WP 707				
1	0.98	0.48	0.34	0.24
2	1.09	0.56	0.41	0.28
3	0.60	0.35	0.27	0.20
Average	0.89	0.46	0.34	0.24

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ANALYSIS OF RESULTS

The typical results above show that **MasterLife WP 707** is effective as a permeability reducing admixture both under conditions of pressure and capillary absorption. It can be used with complete safety with OPC and SRC cements. That it significantly lowers water cement ratio whilst maintaining workability without affecting compressive strength.

All products should be used in accordance with the manufacturer's instructions. No responsibility can be taken by the manufacturer where conditions of use are beyond our control.

STORAGE

Store under cover, out of direct sunlight and protect from extremes of temperature.

HEALTH AND SAFETY

MasterLife WP 707 contains no hazardous substances requiring labelling. For further information, refer to 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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