

MasterSeal[®] 501

Surface applied, capillary waterproofing coating for concrete and mortar

DESCRIPTION OF PRODUCT

The **MasterSeal 501** is a waterproofing coating that ensures the total and permanent solution to water leakage, ingress or seepage in concrete structures or any cementitious substrate. The formation and development of insoluble crystals into water-bearing capillaries effectively blocks the further passage of water and ensures permanent water tightness for the life of the structure.

MasterSeal 501

Supplied as a powder and mixed to a slurry consistency with water. **MasterSeal 501** is applied directly to concrete, blockwork or cement renders in areas where general waterproofing is required. In powder form, the product may be used as a dry shake on horizontal construction joints.

TYPICAL APPLICATIONS

| WATER RETAINING | WATER EXCLUDING |
|--|---|
| <ul style="list-style-type: none">• Water tanks/ towers• Reservoirs• Swimming pools• Water treatment works• Dams• Canals• Harbours | <ul style="list-style-type: none">• Basements• Tunnels• Inspection pits• Foundations• Retaining walls• Lift shafts• Construction joints• Sea defence walls• Bridge decks• Jetties• Pontoons |

STANDARD

BS 1881 Part 124: 1988

PHYSICAL PROPERTIES

- Compressive Strength after 28 days (ASTM C579) > 20N/mm²
- Bonding Strength to concrete after 28 days (EN 1542) > 1.0 N/mm²
- Chloride Ion Content ≤ 0.03%
- Water Pressure: Can resist up to 5 bar of water pressure
- Resistance to fire (BS 476-7): Class 1

ADVANTAGES

Provides total and permanent waterproofing properties, by becoming an integral part of the structure to which it is applied. Active ingredients will not delaminate, peel off or wear away
Protects concrete and reinforcement against corrosive water-borne substances
Crystalline action is reactivated by contact with water providing dormant additional protection
Effective against both positive and negative water pressure
Non-toxic or tainting

PACKAGING

MasterSeal 501 is supplied in 25 kg paper bag

COVERAGE

Two coat slurry application:
MasterSeal 501: 0.8-1kg/m²/coat

Dry shake application:
UNMIXED MasterSeal 501: 1kg/m

COMPOSITION

MasterSeal 501 consists of a blend of moisture activated chemicals, high-grade silica aggregates and selected cements.

ACTION

Moisture and free lime present in the substrate react with the active chemicals in MasterSeal 501 to create a continuous barrier of insoluble crystals. The crystal formation will penetrate deep into the capillary structure of the concrete, blocking capillaries from the passage of water, whilst permitting the transmission of air and water vapour, enabling the structure to breathe.

Rate and penetration of crystalline development varies with the density and surface absorption of the concrete; but the crystals will penetrate to the depth to which water is present. Surface penetration sufficient to provide full waterproofing properties can be achieved after 5-7 days.

MasterSeal 501 is effective against both negative and positive water or osmotic pressure and can be applied to the internal or external surface. Wherever possible, however,



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MasterSeal 501 should be applied to the surface with which the water is in direct contact. This will result in an accelerated rate of penetration and crystallisation into the concrete structure. After the crystallisation process has successfully waterproofed the structure, the **MasterSeal 501** active chemicals remain dormant in the concrete. Any later contact with water will reactivate the sealing process.

DIRECTIONS FOR USE NEW CONSTRUCTION:

The vast majority of leaking water-retaining (or excluding) structures constructed of sound dense concrete, leak only at construction or day work joints. Costly remedial work can be avoided by the use of **MasterSeal 501** as a dry shake onto the horizontal surfaces of joints or as a slurry application on vertical surfaces.

In conditions of high water table, **MasterSeal 501** may be applied as a slurry or dry shake over blinding concrete immediately prior to casting the slab. This will prevent ingress of ground water preventing deterioration and dampness or flooding. Foundations should be treated on the external face wherever possible, as should the face of construction joints. **MasterSeal 501** can be applied immediately after the formwork has been removed, as the water curing process required for **MasterSeal 501** will also ensure full hydration of the concrete.

If the treatment is to be exposed and an aesthetically pleasing finish is required, the **MasterSeal 501** should receive a sand/cement render on which to apply the desired finish.

EXISTING STRUCTURES:

Structures subject to water leakage or ingress must be carefully inspected to determine the cause. Any water present should be cleared away so that a thorough survey can be conducted. Static cracks over 1mm must be chased out, dampened down and repaired with with a suitable cementitious repair mortar such as **MasterEmaco S 488** on a **MasterSeal 501** slurry coat. Dynamic cracks

must be formed into a watertight elastomeric movement joint.

SURFACE PREPARATION

As with all coating systems, surface preparation is of prime importance, the quality of substrate preparation directly affects the performance of the coatings. Surfaces to be treated must be free from dust, oil, grease, paint residual curing compound, mould oil or any previous surface treatment that will impair adhesion of the **MasterSeal 501** treatment, or inhibit penetration of the chemicals or water into the surface. These include polymer modified renders and those substrates treated with silicon or silane water repellents. Remove any laitance and provide an open-pored, slightly rough surface sufficient to act as a mechanical key, essential for adequate adhesion of the **MasterSeal 501** treatment.

Areas of weak or honeycombed concrete must be repaired. Hollow, de-bonded renders must be removed and made good. Surfaces to be treated, if not already wet, should be saturated for a period of 24 hours before first application. **MasterSeal 501** system technology requires the presence of water for the active chemicals to migrate into the concrete. Crystalline development will usually extend to the depth of water penetration.

MIXING:

Always add water to **MasterSeal 501** – not in reverse order.

Mix 1 part of water to 2.25-2.5 parts **MasterSeal 501** powder by volume.

APPLICATION:

MasterSeal 501 is applied by brush or spray onto the dampened substrate. Apply the material in 2 coats at right angles; apply the second coat whilst the first is firm, but “green” – usually 3-4 hours after first coat (dependent on temperature).

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PLUGGING LEAKS:

Leaks and holes drilled to relieve water pressure may be sealed permanently using plugging compound Rheomix 450. To plug leaks under pressure, chase out the area of the leak until water flow is free and insert a length of plastic hose. Seal around the plastic hose with plugging compound as above. Clean the cavity and apply a coat of **MasterSeal 501** and when tacky, fill the cavity with a cementitious mortar containing the plugging compound. When surrounding waterproofing is complete, withdraw the hose and plug the hole with plugging compound as above, using a gloved thumb to hold it in place until set (approximately 1 minute). Fill the remainder of the hole with MasterEmaco 488. When the mortar has set, complete the waterproofing, lapping slurry coats of **MasterSeal 501** onto the concrete surrounding the hole. Holes under low pressure can be similarly sealed, but pipe insertion and removal is omitted.

CURING:

The **MasterSeal 501** must be prevented from drying out too rapidly and should be kept damp for 5-7 days. Mist spraying with water and covering with polythene is effective when drying out would otherwise take place. Curing compounds are unsuitable for use with **MasterSeal 501** system technology. Protect from weathering, sun, frost and wind for a similar minimum period.

Tanks and other water retaining structures may be filled 24 hours after final **MasterSeal 501** application as crystal growth is accelerated by water pressure.

N.B.: If a final coating is required over the **MasterSeal 501**, consult your BASF representative.

If the coating is left uncovered, discolouration can occur but this has no effect on the performance of the waterproofing system. If discolouration occurs, grinding can be made to remove the coating. This will not affect the waterproofing properties of the **MasterSeal 501**.

EQUIPMENT CARE

Clean tools and equipment immediately after use with water. Use of plastic or rubber containers is recommended.

SPECIFICATION CLAUSE

MasterSeal 501 CRYSTALLINE WATERPROOFING SYSTEM

All areas indicated shall be waterproofed by the **MasterSeal 501** system as manufactured by

COMPOSITION:

Pre-mixed powders consisting of selected Portland cement blended with activating chemicals and high-grade quartz

COLOUR:

Powder – Grey

The material shall be applied at the rates and in the manner recommended:

- | | |
|---------------------------------------|---|
| • As a powder on construction joints: | • 1kg/m ² |
| • MasterSeal 501 : | • 0.8 -1 kg/m ² /coat; minimum two coats |



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STORAGE

Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice, consult BASF's Technical Services Department

SHELF LIFE

Up to 12 months if stored according to manufacturer's instructions in unopened containers.

SAFETY 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.

NOTE

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

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

QUALITY STATEMENT

All products manufactured by BASF Egypt, or imported from BASF affiliate companies worldwide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007 standards.

* Properties listed are based on laboratory controlled tests.

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