

MASTERSEAL™ 501/502

Deep penetrative, reactive, capillary waterproofing system for concrete and mortar

Description

The MASTERSEAL 501 and MASTERSEAL 502 are components of BASF's crystalline capillary waterproofing system. These products contain specialist additives that play a role of catalyst in the formation of water-insoluble crystalline micro-structures deep within the capillaries and interstices of cementitious matrix of concrete and mortars.

As the crystalline capillary waterproofing system enables effective pore sealing it does not rely on film formation on the surface and is not effected by the negative hydrostatic pressure. The system is equally effective against both positive and negative water pressure or osmotic pressure.

MASTERSEAL 501, is the most concentrate form within BASF crystalline waterproofing system and contains maximum amount of specialist catalysts. MASTERSEAL 501 can be used by applying as coating, dry shake or as additive in the concrete or mortar mix.

MASTERSEAL 502, is crystalline reprofiling render, which can be used in conjunction with MASTERSEAL 501 for patch repairs, formation of *vata*, as render on the old concrete surfaces.

Uses

- Water tanks, Reservoirs
- Building Basements & foundations
- Swimming pools and water parks
- Sewage and Water treatment plants
- Dams, canals, Tunnels, Harbours
- Retaining walls & sea defence walls
- Concrete pipes

Advantages

- Imparts integral watertightness to structures
- Protects from waterborne corrosive agents.
- Permanently active - crystalline action is reactivated by contact with water.
- Equally effective against both positive and negative water pressure or osmotic pressure.
- Non-toxic and non-tainting

Typical properties: MASTERSEAL 501

Aspect	: Free flowing powder
Water/ Powder Ratio, by weight	: 0.3
Mixed density	: 2.0 kg/litre
Recoatable	: 2 – 4 hours at 25°C
Open to foot traffic	: 24 hours at 25°C

MASTERSEAL 502

Aspect	: Free flowing powder
Water/ Powder Ratio, by weight	: 0.13
Mixed density	: 2.3 kg/litre
Setting time	: 4 Hours at 25°C
Open to foot traffic	: 24 Hours at 25°C

Specification Clause

The crystalline waterproofing system shall consist of MASTERSEAL 501, crystalline waterproofing slurry containing highly active, deep penetrative, reactive catalysts & MASTERSEAL 502, crystalline watertight reprofiling mortar. Use MASTERSEAL 502 for all reprofiling work and formation of *vata* at all the junctions. Treat all the surfaces using two coats of MASTERSEAL 501 @ 1Kg/m² per coat. For old concrete, brickwork and granulated blocks, replace the second slurry coat with a MASTERSEAL 502 render of 5 – 10mm thickness.

Directions for use

Surface preparation

It is essential to open up capillary pores for effective penetration of catalysts to foster growth of crystalline micro-structures deeper in the tracts.

Surfaces to be treated must be free from dust, oil, grease, paint, residual curing compound, mould oil or any other previous surface treatment that will impair adhesion of the MASTERSEAL system or inhibit penetration of the active 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 waterproofing system.

Areas of weak or honeycombed concrete must be repaired. Hollow debonded renders must be removed and made good.

Surfaces to be treated that are not damp, must be pre-wetted and still damp at the time of application.

Mixing

Always add water to MASTERSEAL 501/502 – not in reverse order.

MASTERSEAL 501: Mix 1 part of water to 2.0 - 2.25 parts powder by volume. OR mix approximately 7.5 litres (7 – 8 litres) of water into 25 Kg powder.

Mix until smooth consistency is obtained.

MASTERSEAL 502: Mix sufficient water to achieve mortar consistency. Do not add additional water after initial mixing.

Always ensure to mix only sufficient MASTERSEAL 501/502 that can be used in 20 minutes.

Application

Apply MASTERSEAL 501, by brush on to the prepared surface in two coats each of 1kg/m², the second coat applied at right angles to the first, 3-4hours later.

In high water table situations, especially in basement concrete, MASTERSEAL 501 is also recommended to be applied as a dry shake on to the PCC just before casting the RCC slab.

For old concrete, brickwork and granulated blocks, replace the second slurry coat with a MASTERSEAL 502 render of 5 – 10mm thickness.

Plugging leaks

If the surface is leaking, drill holes and fix plastic hoses in them to relieve water pressure. Treat the remaining area with MASTERSEAL 501/502. When surrounding waterproofing is complete, withdraw the hose and plug the hole with MASTERSEAL 505 – the plugging compound using a gloved thumb to hold it in place until set (approximately 1 minute). Fill the remainder of the hole with MASTERSEAL 502. When the mortar has set, complete the waterproofing, lapping slurry coats of MASTERSEAL 501 onto the concrete surrounding the hole.

Treatment to construction joints

Treat all the construction joints and insertions using appropriate active watertight system from MASTERFLEX range. Please consult BASF representative for advice. In case if active waterproofing system is not deployed, ensure to treat the joints using MASTERSEAL 501 as dry shake on horizontal joints and with a slurry coat on vertical joints.

Curing

Prevented MASTERSEAL 501/502 from rapid drying and keep it damp for 5-7 days by mist spraying of water and covering with polythene sheet. Do not use curing compounds. Screen the area from weathering, sun, frost and wind during the period. Fill tanks and other water retaining structures 24 hours after final coat as crystal growth is accelerated by water pressure.

Coverage

MASTERSEAL 501 as slurry coat: 1 Kg/m² per coat. Minimum two coats are recommended.

MASTERSEAL 501 as dry-shake: 1 - 2 Kg/m²

MASTERSEAL 502 as render coat: 10Kg/m² at 4-5mm thickness

Packaging

MASTERSEAL 501 and MASTERSEAL 502 are supplied in 25 kg bags.

Storage and Shelf life

Store under cover, out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment.

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 please consult BASF's Technical Services Department.

Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). 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. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

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

Disclaimer

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