



The Chemical Company

MASTERSEAL® 590 (WATERPLUG)

Fast setting mortar to plug active water leaks in concrete and masonry

DESCRIPTION

MASTERSEAL 590 is a single component hydraulic cement-based, fast-setting, repair mortar that instantly stops running water or active moisture seepage through holes or cracks in concrete or masonry. Easy to use, it requires no special equipment. It is powder that typically set in 3 to 5 minutes when mixed with clean potable water. Actual setting time depends on the temperatures of the powder, mixing water, ambient air and surface (see Temperature). **MASTERSEAL 590** expands as it sets to lock into place even under constant water pressure. **MASTERSEAL 590** repairs have exceptional strength and durability and will seal out water for life of the structure. **MASTERSEAL 590**, containing no metallic aggregate or corrosive agents, will not shrink or oxidise, and is suitable for water immersion service when cured.

Certified by National Sanitation Foundation (NSF) to conform to the requirements of NSF Standard 61 for Drinking Water System Components.

FIELDS OF APPLICATION

- Stop active water or seepage under pressure through joint, static cracks and holes in concrete or masonry, where a normal mortar would be washed away and resin would not bond.
- As a seal for construction joints or floor joints prior to basement tanking with MASTERSEAL 581 (THOROSEAL).
- For scaling cracks and construction joints in reservoirs and other water retaining structures.
- For instant sewer connections.
- For rapid anchoring of bolts, conduits, pipes, railings, sanitary equipment, etc.
- Joint filling, pointing between concrete segments in concrete and brick tunnels, sewage systems, pipes and mines.

FEATURES AND BENEFITS

| | |
|-----------------------|---|
| Durable | Chloride-free, will not promote corrosion of reinforcement. <u>Expands as it sets to ensure a permanent watertight seal.</u> Mechanical characteristic similar to concrete. |
| Cost effective | <u>Ultra-rapid setting for instant leak plugging.</u> Block water, no injection equipment required. |

Easy to apply Only to be mixed with water.

Environmentally Friendly Cement based, contain no toxic elements.

TYPICAL PERFORMANCE DATA

| | | |
|-----------------------------------|------------|----------|
| Tensile Strength (BS 6319 Part 7) | 28 days | 3 Mpa |
| Compressive Strength (ASTM C 109) | 30 minutes | 10.5 Mpa |
| | 24 hours | 21 Mpa |
| | 7 days | 36 Mpa |
| Flexible Strength (ASTM C 348) | 28 days | 38 Mpa |
| | 30 minutes | 2 Mpa |
| | 24 hours | 6 Mpa |
| | 7 days | 6 Mpa |
| | 28 days | 7 Mpa |

PROPERTIES

| | |
|--------------------|----------------------------------|
| Colour | : Grey |
| Supply Form | : Powder |
| Wet Density | : 2.14kg per 1000cm ³ |
| Final Setting Time | : 2 – 3 minutes |

APPLICATION

Surface Preparation

Place **MASTERSEAL 590** with minimum working, kneading, or rubbing. Force **MASTERSEAL 590** repair mortar into cracks or holes and hold it in place (without twisting), until set is fully achieved. Just prior to final hard set. **MASTERSEAL 590** may be "shaved" with a trowel until flush with the surrounding surface. Always shave from the centre out, dry condition at the time of placement, keep damp for 15 minutes minimum, using a fine spray misting of water, before and after placement.

Sealing Junction

To seal static cracks at the junction of the floors and walls, cut out the crack at least ¾" (19mm) wide and deep, and slightly undercutting, if possible. Flush away all loose debris, dust, and dirt with clean water. Force **MASTERSEAL 590** in the prepared crack with a round tool and smooth out to form a cove at wall-to-floor junctions. Keep damp for at least 15 minutes.

Stopping Running Water

For plugging active leaks in concrete and masonry, cut out crack or hole to a minimum depth and width of 19 mm ¾". Always square cut or undercut when possible; do not "V" cut. Start at top and force **MASTERSEAL 590** into crack. In areas of great pressure, do not

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place **MASTERSEAL 590** into opening immediately. Hold **MASTERSEAL 590** in hand or on trowel until a slight warming occurs. Then press **MASTERSEAL 590** firmly into opening. Do not remove trowel or hand pressure too soon. Do not twist **MASTERSEAL 590** during placement or disturb during set time (5 minutes). After placement to stop the active water flow, carefully cut and "trowel shave" the patch level with the surrounding surface.

Sealing Leaks in Joints and Cracks

To stop leaking mortar joints or static cracks in below grade masonry and concrete walls, cut out defective mortar joints or cracks to minimum width and depth of 19 mm (¾"). Under cut when possible. Force **MASTERSEAL 590** into opening and keep damp for at least 15 minutes.

Repairing Construction Faults

For patching holes, and voids etc., in concrete walls remove all ties wires, wood or steel separators by cutting back from surface to a minimum depth of 19mm (¾"). When there is no active water present, the BASF CONSTRUCTION CHEMICALS range of repair mortars may be used more appropriately.

Anchoring Hardware

To anchor steel bolt or posts in vertical concrete or masonry, drill a hole deep enough so there is at least 12mm (½") on all sides of bolt or post. Fill hole with **MASTERSEAL 590** and tamp so that entire hole is full. Immediately centre bolt or post over hole and force into the putty-like **MASTERSEAL 590**. Tamp **MASTERSEAL 590** firmly around bolt or post keep continuously moist for 15 minutes. Apply no pressure or stress to bolt or post for a minimum of 5 hours after placement.

Note : For repair with huge amount, it is advisable to do in multiple layers to avoid thermal cracks.



V Cut
(Wrong)



Square Cut



Undercut
(Best Cut)

Mixing

MASTERSEAL 590 powder should be mixed with clean water by hand only. Mix quickly and well to a stiff consistency using approximately 0.26 litres water for 1 kg of powder.

Do not overmix. Do not mix more than can be placed within one application, 1-2 minutes (@20°C). Do not re-temper.

ESTIMATING DATA

1 kg of powder will fill 585 cm³ or a joint 20mm X 20mm X 1.45m approx. 1700g powder/litre.

PACKAGING

5 kg can and 25 kg pail.

SHELF LIFE

WATERPLUG can be kept for 12 months from date of manufacture, if stored under shelter and kept clear of the ground. Protect the materials from all sources of moisture and frost. Once opened, the material should be used as soon as possible.

PRECAUTIONS

- Do not apply to frozen or frost-covered surfaces.
- Do not apply to dynamic (moving) cracks.
- Do not use to fill expansion joints or control joints
- Do not remix (re-temper) hardened material.
- Do not use as surface applied coating.
- Do not expose cured patches to soft water with a total calcium hardness below 140 ppm, or with a pH below 7 or above 12, or water soluble sulphates (SO₄), greater than 0.20 % without an additional protective topcoat.
- Do not use if hard lumps have developed in the powder.

MASTERSEAL 590 is based on cement and thus can be irritating to the skin and eyes. Gloves and eye protection should be worn. The use of dust masks is recommended. Accidental splashes of the material to the skin or eyes should be immediately washed off with clean water. In the event of prolonged irritation, seek medical advice.

For detailed Health, Safety and Environmental Recommendations, please consult and follow all instructions in the product Material Safety Data Sheet.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this **BASF Construction Chemicals** 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

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