

MasterSeal[®] 590

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; requires no special equipment. It is a powder that will typically set in 3 - 5 minutes when mixed with clean, potable water. Actual setting time depends on the temperatures of the powder, mixing water, ambient air and substrate. **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 the 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.

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

RECOMMENDED USES

MasterSeal 590 is designed to be used:

- To 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**.
- 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.
- For joint filling and pointing between concrete segments in concrete and brick tunnels, sewage systems, pipes and mines.

FEATURES AND BENEFITS

- **Chloride-free** - Will not promote corrosion of reinforcement.
- **Expands as it sets** - Ensures a permanent watertight seal.
- **Mechanical characteristic similar to concrete** – expands and contracts with thermal movements
- **Cost effective** – only use what is necessary for job.
- **Ultra-rapid setting** - Instant leak plugging.
- **Easy to apply** – Mix with water

PROPERTIES

Tensile strength (BS 6319 Part 7)	28 days	3 Mpa
Compressive strength (ASTM C109)	30 minutes	10.5 Mpa
	24 hours	21 Mpa
	7 days	36 Mpa
Flexible strength (ASTM C348)	28 days	38 Mpa
	30 minutes	2 Mpa
	24 hours	6 Mpa
Supply form	7 days	6 Mpa
	28 days	7 Mpa
	Colour	Powder
Colour	Grey	
Wet density	2.14kg/1000cm ³	
Final setting time	2 – 3 minutes	

APPLICATION

Surface preparation

Ensure that the area around the hole to be plugged is free of scale, contaminants or loose materials

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

Placing

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, it may be "shaved" with a trowel until flush to the surrounding surface. Always shave from the centre out. If the is in a 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 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.

MasterSeal[®] 590

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. 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 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 (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 19mm. Undercut when possible. Force **MasterSeal 590** into opening; keep damp for at least 15 minutes.

Anchoring Hardware

To anchor steel bolt or posts in vertical concrete or masonry, drill a hole deep enough so there is at least 12mm 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 large amount, it is advisable to do in multiple layers to avoid thermal cracks.

ESTIMATING DATA

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

PACKAGING

MasterSeal 590 is available in 25 kg pails and 5 kg cans.

SHELF LIFE

MasterSeal 590 can be kept for 12 months from date of manufacture, if stored unopened under shelter and kept clear of the ground. Protect the materials from all sources of moisture and frost.

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 expose cured patches to soft water with 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.

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

ID# MasterSeal 590 ASEAN v1.1-0113

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication is 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 commonwealth or State legislation. The owner, his representative or the contractor 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 verbally 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.

Master Builders Solutions Hong Kong Limited
Unit 2, 20/F, EW International Tower, 120-124 Texaco Road, Tsuen Wan, New Territories, Hong Kong.

Tel: (852) 2408 4400
Fax: (852) 2408 4401