

# MasterEmaco<sup>®</sup> S 902 (formerly known as Emaco S90UW)

Cementitious rapid setting repair mortar for underwater applications

## DESCRIPTION

**MasterEmaco S 902** is a ready to use, fast setting, cement based marine mortar. It was specifically developed for underwater repair and restoration work.

## RECOMMENDED USES

- Repairing eroded concrete or timber piles, sea walls, wharves
- Repairing leaks or joints in marine structures, concrete reservoirs, swimming pools, pipelines, well etc.

## FEATURES AND BENEFITS

- **Rapid setting** - quick, efficient repairs to areas exposed to wave and tide action
- **Excellent adhesion** - high bond strength to clean concrete and timber surfaces
- **Easy to use** – applied by hand
- **Dense anti wash out mortar** - resistant to wave action during placing
- **Suitable for constant immersion** - resistant to sulphurous ground waters
- **Waterproof** - provides a watertight seal when used to
- repair leaks or seal joints

## PROPERTIES

Compressive strength of 50mm cubes of **MasterEmaco S 902** placed at 21°C are:

Age	Compressive Strength
1 day	10 MPa
3 days	18 MPa
28 days	27 MPa

## APPLICATION

### Preparation

All unsound material, dust, dirt, etc. must be removed from surfaces to be restored. Pre-dampen dry surfaces to eliminate suction.

### Mixing

Mix **MasterEmaco S 902** with fresh water only. Water requirements vary depending on temperature and humidity, but in most cases three volumes of **MasterEmaco S 902** require approximately one volume of water. Place **MasterEmaco S 902** into container and add half the water, mix quickly with a short handled trowel, add extra water as required. (Mix only small

batches at one time, **MasterEmaco S 902** must be placed within 5 minutes of mixing).

Promptly add the remainder of the water and mix thoroughly until no white streaks are present. The mix is ready for use.

For hand application **MasterEmaco S 902** should be made into a putty-like consistency and shaped quickly into balls of about cricket ball size.

Do not retemper material which has begun to stiffen - discard material which has lost its plasticity.

### Application

When applying **MasterEmaco S 902** to eroded piles, all or part of **MasterEmaco S 902** "ball" should be centred in the cavity firmly, and quickly smoothed out from the centre to the sides with both hands, using "forward and sideways" pressure, moulding to appropriate shape and thickness.

When applying underwater, place freshly-mixed "balls" of **MasterEmaco S 902** into a wire basket and lower steadily to diver. Where there is wave action or turbulence in the water, it is advisable to press the **MasterEmaco S 902** firmly in place for a moment or so before smoothing it out to shape. Spray application can be used for the repair of piles above the water-line and in the wave wash water-line.

### Timber pile restoration

1. Remove marine growth and unsound timber by square cutting into sound wood above and below to the depth of furthest deterioration and then remove the unsound section by hand or with air hammers.

2. In cases of deep deterioration, make up a reinforcing cage by using eight No. 12mm diameter rods 20% shorter than the height of the cutout. Drive these rods into counter-bored holes in the top and bottom of the cut surfaces at four equidistant points and splice adjacent rods. Wrap 8-gauge galvanised wire spirally around the cage at 100mm centrelines.

3. Below water, apply **MasterEmaco S 902** by hand after mixing with water to a putty-like consistency. This operation must be carried out quickly as **MasterEmaco S 902** takes its initial set within 5 minutes. Above water, apply either by hand or pneumatic gun.



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4. In cases of shallow deterioration only, 20-gauge galvanised chicken wire should be lashed and stapled to the pile and a 2mm thick coat of **MasterEmaco S 902** is built up in stages.

## Concrete pile restoration, honeycombed concrete repair.

1. Remove deteriorated concrete, rust and scale from reinforcing steel by chipping and/or sand-blasting.
2. Care should be taken to square up or, preferably, under-cut or "dovetail" the edges of those sections where deteriorated concrete has been removed.
3. If reinforcing steel is extensively exposed, where possible wrap 8-gauge galvanised wire spirally around exposed longitudinals at 100mm centrelines.
4. Apply **MasterEmaco S 902** under water by hand, and above water either by hand or by pneumatic gun, until adequate covering thickness is built up or restored.

When repairing cracks or holes in leaking tanks open up the crack or hole to at least 15mm wide and 15mm deep and divert water if necessary with a plastic tube. Mix and ball up mortar, ramming in and holding until initial set. Tie off water diversion.

## ESTIMATING DATA

20kg of **MasterEmaco S 902** mixed in accordance with recommended application directions will yield 11.2L (0.0112m<sup>3</sup>) of mortar.

## PACKAGING

**MasterEmaco S 902** is packaged in 20kg moisture resistant bags.

## SHELF LIFE

**MasterEmaco S 902** has a shelf life of 12 months. Store out of direct sunlight, clear of the ground on pallets protected from rainfall.

## PRECAUTIONS

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 BASF Material Safety Data Sheet (MSDS) from our office or our website.

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## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this BASF 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 BASF either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not BASF, are responsible for carrying out procedures appropriate to a specific application.

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