

# MasterEmaco<sup>®</sup> S 322

**Non shrink, natural aggregate, fibre reinforced for marine environment structure and concrete repair**

## MATERIAL DESCRIPTION

**MasterEmaco S 322** is a non-shrink, natural aggregate grout with excellent high early and ultimate strengths. It is specially formulated for marine environment, while providing extended working time even at high ambient temperatures when mixed and placed at any recommended consistency.

**MasterEmaco S 322** compensates shrinkage in both plastic and hardened states and meets specification of ASTM C-1107. **MasterEmaco S 322** also has an excellent impermeability against salt water and high durability due to the existence of silica fume.

## RECOMMENDED USES

All non-shrink grouting application in marine environment structure with clearances of 10 mm or more including :

- Maintenance of civil structures.
- Extensive repair to beams, slab and other structural elements.
- reinstatement of honeycombed or defective structural concrete.
- High slump and good pumpability for formed applications.

## FEATURES AND BENEFITS

- **High Early strength** – ensure rapid commissioning of new structures and minimum downtime on repair work.
- **Flowable long life repair mortar** – easy to fill intricate spaces normally inaccessible by conventional repair technique.
- **Extended working time** – up to 1.50 hours even at high ambient temperatures. Facilitates grouting of large or difficult placements in a single pour, often without the use of a pump.
- **Non Staining** – Contains no metallic aggregates and is similar in appearance to plain concrete. Suitable for fine architectural finishes.
- **Easy to use** – Requires no special mixing equipment. It can be mixed in a standard concrete mixer or in a pail using grout stirrer.
- **Dual expansion systems for controlled expansion** – Dense and non shrink, even in the hardened state.

## PROPERTIES

Supply form	Powder	
Colour	Cement grey	
Density (wet) Flowable	2.25	
Plastic	2.28	
Flow trough (cm) Flowable	30 – 50	
	Flowable	
Compressive strength	1 day	30MPa
	3 days	50 MPa
	7 days	60 MPa
	28days	70 MPa
Flexural strength	28days	10.5 MPa
Tensile strength	28days	5.5 MPa
Estimate setting time	Initial	5 hr
	Final	6 hr

## APPLICATION

### Surface Preparation

The substrates should be properly prepared and should be free from contamination, laitance and loose material. Thoroughly saturate the substrate with water at least 2 – 3 hours prior to pouring the grout. All free water ponding should be blown out of the void just before pouring the grout.

As for all cementitious materials curing is essential to prevent rapid drying out of the grout and shrinkage caused by the water loss. Curing should be effected by accepted methods such as curing compound, polythene sheet, wet hessian or water ponding.

### Mixing

**MasterEmaco S 322** is supplied in a ready to use form requiring the addition of water only. DO NOT add cement, sand, pea gravel or other materials. DO NOT use hardened or lumpy grout caused by torn or water-damaged bags.

Mix with drinkable water only. DO NOT MIX BY HAND. For small quantities use a grout stirrer and slow speed electric drill, adding all mixing water to empty pail, then

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add dry grout in a steady stream while mixing. Continue mixing for approximately 2 minutes.

For larger quantities a paddle type mortar mixer is preferred. Add 80% or mixing water first, then dry grout to form a stiff consistency. Continue mixing at this consistency for about 1 minute. Add remainder of water steadily until desired consistency is achieved. Total mix time should be 4 to 5 minutes.

Do not use excess water. Discard any grout that has been left so long it has stiffened. Do not re- temper.

### Placing

**MasterEmaco S 322** has been formulated for placing by pouring or pumping to required thickness. Its extended working life properties allow sufficient time for placement to be completed without problems.

However, proper planning and organization on the job site is essential.

Recommended thickness is between 10 mm and 150 mm. Sufficient labour and machine mixing capacity must be available to ensure continuous placement.

### ESTIMATING DATA

A 25kg bag of **MasterEmaco S 322**, when mixed in accordance with Master Builders Solutions Construction Chemicals recommended procedures, will provide the following yields:

Types	Water	Yield
Normal	4.2 Litres	13 Litres
With Pea Gravel	3.4 Litres	12.6 Litres

### PACKAGING

**MasterEmaco S 322** is supplied in 25 kg bag.

### SHELF LIFE

**MasterEmaco S 322** 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 Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

#### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions 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 Master Builders Solutions either orally 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.

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