

EMACO[®] R1

Cementitious trowel applied lightweight polymer modified repair mortar

DESCRIPTION

Emaco R1 is a non-structural, single component, polymer modified, repair and re-profiling mortar. **Emaco R1** is a ready-to-use material that contains special cements, well graded sands, carefully selected polymers to improve physical and application properties. When mixed with water, it forms a mortar with a wide range of applications. **Emaco R1** can easily be hand or trowel applied in thicknesses from 5 up to 100 mm.

FIELD OF APPLICATION

Emaco R1 is used for the non-structural repair of concrete elements like balconies edges, building facades, parapet walls, precast panels, beam edges and stair nosings. **Emaco R1** is ideal for general, non-structural patch repairs where high build properties allowing up to 100 mm thickness in one layer are required. **Emaco R1** can be applied as a smoothing or levelling coat at only 5 mm thick on large vertical and overhead areas to achieve a more aesthetic finish e.g. prior to painting. **Emaco R1** can be applied inside and outside, on horizontal, vertical and overhead surfaces, in dry and wet environments.

FEATURES AND BENEFITS

- Formulated with shrinkage compensation systems to minimise crack tendency by controlling the Nanostructures in the matrix
- Smooth, creamy, non-slump mortar - easy to create profiles and corners without formwork
- High build capacity - can be applied 80 - 100 mm in horizontal or vertical applications in one layer, or even 70 – 80 mm overhead
- Multi-use- reprofiling and patch repair mortar in one
- Good strength development exceeding requirement of Class R1 of EN1504 part 3
- Low modulus of elasticity
- Low chromate (Cr[VI] < 2 ppm)
- Chloride-free.

PROPERTIES

PROPERTY	VALUES
Appearance	Grey powder
Grain size	Max 1.0mm
Layer thickness	Min. 5mm Max. 100mm (vertical & horizontal), 80mm (overhead)

Density	Approx. 1.5 g/cm ³
Temperature for application (support and material)	Between +5°C and +35°C

APPLICATION

Surface preparation - Concrete must be fully cured, clean and sound to ensure good adhesion. All loose traces of concrete or mortar, dust, grease oil, etc. must be removed. Damaged or contaminated concrete should be removed to obtain a keyed surface. Non-impact/ vibrating cleaning methods, e.g. grit or high water pressure blasting are recommended. Aggregate should be clearly visible on the surface of the concrete structure after surface preparation. Cut the edges of the repair vertically to a minimum depth of 5 mm. If reinforcing steel is visible, clean to a minimum grade of SA 2 according to ISO 8501-1 / ISO 12944-4. For extra protection, or when the steel is left exposed before repair work is completed, apply **Emaco Nanocrete AP** active protection cement based primer (*see technical data sheet*).

Priming - The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying **Emaco R1**. The surface must be mat-damp, but without standing water. For improved build thicknesses or when working on large areas, apply bond or contact layer of the **Emaco R1** mortar. Alternatively a bonding coat of **Emaco Nanocrete AP** can be applied. Always apply **Emaco R1** mortar wet-in-wet onto the bond or contact layer.

Mixing - It is strongly recommended that only full bags are mixed. Damaged or opened sacks should not be used. Mix **Emaco R1** with a suitable paddle attached to a powerful, slow speed electric drill for 3 minutes until a lumpfree, plastic consistency is achieved. Only use clean uncontaminated water. Mixing water needed: 4.5 to 5 litres per 25kg bag depending upon consistency required. (Use stiffer consistency for overhead and vertical patching application and softer more creamy consistency for use as a levelling coat at 5mm thick). Allow the mortar to rest for 2 - 3 minutes and then remix briefly, adjusting the consistency as required. NB: Never exceed the maximum water demand.

Mortar application - The minimum temperatures must be maintained during application and for at least 12 hours thereafter for optimum curing of the product. The surface must be mat-damp, but without standing water. **Emaco R1** can be hand or trowel applied. Apply mixed product directly to the prepared damp substrate, or wet on wet onto the primed surface. A thin scrape coat or contact layer before building up to the required

BASF Construction Chemicals offices in ASEAN

Singapore Tel :+65-6861-6766 Fax :+65-6861-3186
Malaysia Tel :+60-3-5628-3888 Fax :+60-3-5628-3776
Indonesia Tel :+62-21-526-2481 Fax :+62-21-526-2541

Thailand Tel :+66-2664-9222 Fax :+66-2664-9267

Vietnam Tel :+84-650-3743-100 Fax :+84-650-3743-200

Philippines Tel : +63-2-811-8000 Fax : +63-2-838-1025

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thickness, wet on wet, will improve the wet adhesion and cohesion of the mortar.

Apply to the desired layer thickness of 5 to max. 100 mm. Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen, typically after approximately 45 - 60 minutes at 20°C. In these environmental conditions, **Emaco R1** can be over-coated, after 7 days, with Masterseal as required.

NB: At lower temperatures and/or higher humidity these times will be extended

NOTE

- Do not add cement, sand or other substances that could affect the properties of the material.
- Never add water or fresh mortar to a mortar mix which has already begun to set.

CURING

Emaco R1 has been formulated to withstand too rapid water loss under normal conditions. In high temperatures with low humidity and windy conditions, repairs should be cured by application of a suitable BASF Construction Chemicals curing compound or cover with plastic sheeting in order to avoid plastic shrinkage cracking.

ESTIMATING DATA

One 25kg bag will yield approximately 20 litres of mortar.

Approx. 1.6 kg of mixed product per m² and mm layer thickness (approx. 1.3 kg of dry powder per m² and mm layer thickness). This consumption is theoretical and depends on the roughness of the support, for which reason it should be adjusted in each particular job by means of "in situ" tests.

TECHNICAL DATA

Compressive strength	AS 1478.2	
- after 7 days	Appendix A	≥ 20 MPa
- after 28 days	(Restrained)	≥ 25 MPa
Electrical resistivity	ASTM C305	14100 ohms @ 28 days
Elastic Modulus	AS 1012 pt 17	10 GPa

Hardening times are measured at 21°C ± 2°C and 60% ± 10% relative humidity. Higher temperatures will reduce these times and lower temperatures will extend them. Technical data shown are statistical results and do not correspond to guaranteed minima. Tolerances are those described in appropriate performance standards

CLEANING

While still wet clean with water. Once dry/cured the materials can only be removed mechanically.

PACKAGING

Emaco R1 is available in 25kg bags.

SHELF LIFE

Emaco R1 can be kept for 12 months if store in original unopened bags in cool and dry warehouse conditions.

PRECAUTIONS

Usual preventive measures for the handling of chemical products should be observed when manipulating this product, for example do not eat, smoke or drink while working and wash your hands when taking a break or when the job is completed. Specific safety information in the handling and transport of this product can be found in the Material Safety Data Sheet.

Avoid contact with eyes and prolonged contact with skin. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Call a physician. In case of contact with skin, wash skin thoroughly.

The disposal of the product and its container should be carried out according to the legislation in force. Responsibility for this lies with the final owner of the product.

For detailed Health, Safety and Environmental recommendations, please consult or follow all instructions on the product Material Safety Data Sheet.

AN/EmacoR1/v4/241110

STATEMENT OF RESPONSIBILITY

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NOTE

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