Monolite

Class R2 Lightweight Repair Mortar

Product Overview

Low density, high build, fibre reinforced, polymer modified shrinkage compensated mortar for non-structural repair of concrete, brick or stone.

Description

MONOLITE is a single component, polymer modified, fibre reinforced, low density cementitious repair mortar. The thixotropic nature of the product enables easy high build hand and trowel application for the repair of voids and the rendering and re-profiling of vertical, horizontal and overhead surfaces.

Uses

Class R2 mortar, suitable for repair methods 3.1, 7.1, 7.2 as defined by EN 1504-3.

Advantages

- Incorporates the latest cement chemistry, microsilica, fibre and styrene acrylic copolymer technology.
- Simply mixed with clean water, part bags can be mixed.
- Generally requires no substrate or inter-layer priming.
- Easy to achieve a high quality trowel finish.
- Single layer build up to 100mm (vertical or overhead).
- Excellent low sag properties.
- Low density minimises additional dead load.
- High bond strength exceeds tensile strength of concrete, ensuring monolithic performance.
- Improved tensile and impact resistance.
- Easily overcoated with specialist membranes to provide further protection and aesthetic quality.

Compliance

- UKCA & CE marked in accordance with EN 1504-3.
- Highways Standard Series 5700 (Concrete Repairs) and CS 462 (Repair & Management of Deteriorated Concrete Structures).

Application Instructions

Preparation

Mechanically remove all damaged concrete, brick or stone back to a sound core. Except in new construction, expose the full circumference of the steel reinforcement 25mm behind the bars and 50mm beyond visible corrosion.

On cutting back, feather edges must be avoided. Step the perimeter of the repair to a depth of 10mm preferably using a power chisel or by saw or disc cutting.

The areas to be repaired must be free from all unsound material including laitance dust, oil, grease, corrosion by-products and organic growth.

Smooth surfaces should be roughened and reinforcement cleaned to bright steel using wet grit blasting techniques or equivalent approved methods.

➢ The compressive strength of the parent concrete should be minimum 20 MPa.

The prepared substrate should be thoroughly soaked with clean water until uniformly saturated without any standing water.

Treatment of Steel Reinforcement

Treat exposed steel reinforcement with 2 x 1mm coats of **STEEL REINFORCEMENT PROTECTOR 841** applied by brush.

Priming of Concrete

MONOLITE does not generally require a primer. Highly porous substrates may be primed with a **POLYMER ADMIXTURE 850** slurry coat. The slurry coat should also be used when treating larger areas of waterproof concrete.

Mixing

MONOLITE should be mechanically mixed using a forced action pan mixer or in a clean drum using a slow speed drill and paddle. A normal concrete mixer is **NOT** suitable.

For normal applications, use between 2.7-3.1 litres of clean water per 18kg bag. For part bags, this equates to 6-7 volumes of powder to 1 volume of water. Typically, for high build applications use 2.9 litres of clean water per bag and mix for 2-3 minutes. Mix to entrain as little air as possible. Use without delay.

➢ Note - These instructions must be adhered to as Flexcrete will not be responsible for failure due to incorrect mixing.

Placing

MONOLITE can be applied by float or trowel in single layers up to 100mm. Shuttering may be required to allow for compaction if working to reveals. Care must be taken to ensure that an initial thickness of mortar, typically 5-10mm, is well placed and adhered before building up to larger depths.

For multi-layer applications, it is important to ensure that previous layers are well keyed and stable but not fully set (typically 2-6 hours) prior to the application of subsequent layers. No inter-layer priming is required. Final profiling is achieved with a steel float.

Curing

Normal concreting procedures must be adhered to. Protect from strong sunlight and drying winds with **CURE-SEAL WB**, polythene sheeting, damp hessian or similar.

Limitations

Do not use **MONOLITE** when the temperature is below 5°C and falling.

Cleaning and Storage

- All tools should be cleaned with water immediately after use.
- Materials can be stored for 12 months in dry, frost free conditions with unopened bags at 20°C.

Packaging

- **MONOLITE** is supplied in 18kg bags.

Yield and Coverage

- 16.7 litres per 18kg.
- 18kg covers 1.67m² at 10mm thickness.

Health and Safety

- Safety Data Sheets are available on request.

Application Top Tips

1. For multi-layer application, use the fingers of a gloved hand to stipple the surface of the first layer.

2. **DO NOT WET OUT OR PRIME** between layers.

3. If the mortar thickens, remix but **DO NOT ADD EXTRA WATER.**

4. **DO NOT OVER TROWEL.** If the mortar begins to slump, allow to stabilise and refinish.

5. When finishing, trowel from centre out towards the perimeter working into the edges of the repair.

6. For structural repairs, use **MONOMIX** and for areas subject to vehicular traffic use **MONOMIX HD.**

7. Cold Weather Working (See separate Guide)

- ≥ 3ºC on a rising thermometer.
- ≥ 5ºC on a falling thermometer.

8. Hot Weather Working (See separate Guide)

- Store material in cool conditions to maximise working life.
- Shade applied material from strong sunlight.
- Spray-apply a second mist coat of **CURE-SEAL WB.**
- If possible, avoid extreme temperatures by working at night.

The information herein is correct to the best of our knowledge, but it does not necessarily refer to the particular requirements of the customer. If the customer has any particular requirements it should make them known in writing to Flexcrete Technologies Limited, and obtain further advice accordingly.

Technical Data

Property	Standard	EN 1504 R2 Requirement	Typical Result
Compressive Strength Development @20°C	EN 12190	≥ 15 MPa @28 Days	1 day 12 MPa 7 days 25 MPa 28 days 30 MPa
Adhesive Bond	EN 1542	≥ 0.8 MPa	1.6 MPa
Chloride Ion Content	EN 1015-17	≤ 0.05%	≤ 0.05%
Elastic Modulus	EN 13412	No Requirement	12.7 GPa
Capillary Absorption	EN 13057	≤ 0.5 kg/(m^2.h$^{0.5}$)	0.082 kg/(m^2.h$^{0.5}$)
Freeze/Thaw Cycling	EN 13687-1	≥ 0.8 MPa	1.6 MPa
Water Permeability Coefficient Equivalent concrete thickness	DIN 1048-1	-	5.68 x10^{-15} m/sec 5.2mm = 1000mm of typical concrete
Flexural Strength	EN196-1	-	5.5 MPa
Shrinkage	EN 12617-4	-	0.07% after 7 days
Mixed Density		-	1250kg/m^3 at 0.14 water:powder ratio
Mixed Colour		-	Concrete grey
Min Application Thickness Max Application Thickness		-	5mm 100mm per layer
Min Application Temperature Max Application Temperature		-	5°C 40°C
Working Life (approx.)		-	60 minutes at 20°C 30 minutes at 40°C
Reaction to Fire	EN 13501-1	-	A2 – s1, d0

The properties given above are obtained from laboratory tests: results obtained from on-site testing may vary according to site conditions.

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