



Monopour

Class R4 Pourable Repair Mortar

Product Overview

Waterproof, polymer modified, cementitious grout and micro-concrete formulations.

Description

MONOPOUR is a high performance, polymer modified, non-shrink cementitious formulation available in two grades.

MONOPOUR PG is a flowing grout with a maximum aggregate size of 2.5mm for application thicknesses up to 100mm.

MONOPOUR PC6 is a pourable micro-concrete with a maximum aggregate size of 6mm for larger depths up to 200mm.

MONOPOUR is supplied as a single component which is mixed with clean water on site to the required consistency.

The mortars benefit from a gaseous expansion mechanism which is non-metallic and relies on nitrogen gas formation to eliminate the risk of staining and degradation resulting from corrosion.

Uses

Structural repair of large areas of concrete and heavy duty applications beneath base plates, plinths and stanchion bases where a pourable or flowable material is required.

Advantages

- Incorporates the latest cement chemistry, microsilica and styrene acrylic copolymer technology.
- Pre-packaged material requiring mixing with clean water to give the required consistency for pouring, pumping or trowelling.
- Dual expansion mechanism compensates for shrinkage in the plastic and hardened state.
- Ultra-fine Portland cement cures rapidly to give high early and long term strength development, enabling quick reinstatement.
- Dense matrix provides excellent protection from the ingress of acid gases, moisture and chlorides.
- All admixtures are chloride-free. Alkali content is less than 3kg/m³ and non-reactive aggregates are used.
- 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 or failed repairs 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 5mm for **MONOPOUR PG** and 15mm for **MONOPOUR PC6**, 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. Power tools such as a needle gun, angle grinder or wire brush may be used on concrete which is not chloride contaminated.

- The compressive strength of the parent concrete should be minimum 20 MPa. The faces of formwork should be treated with a proprietary form release agent.

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

MONOPOUR does not generally require a primer. Highly porous substrates may be primed with a **POLYMER ADMIXTURE 850** slurry coat.

Mixing

MONOPOUR 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.

Measure out the required water content for the selected consistency given in the table and pour $\frac{3}{4}$ into the mixing vessel. With the mixer running, slowly add a full bag of powder and mix for a minimum of 1 minute before adding the remaining water.



Continue mixing for a further 2-3 minutes, making sure that a smooth, even consistency is achieved. Mix to entrain as little air as possible. Pass the mixed material through a suitable coarse metal screen to remove any lumps or contaminants prior to placing.

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

Consistency on Mixing	Monopour PG (litres/25kg sack)	Monopour PC6 (litres/25kg sack)
Trowellable	2.5	2.2
Flowable	3.2	2.8
Fluid	3.5	3.1

Placing

The area to be filled should be shuttered and a header box used to maintain a head of 150-200mm throughout the pour. Continuous grout flow is essential. Ensure sufficient material is available before starting and carefully sequence subsequent mixes.

Pour from one side only to avoid the entrapment of air. Larger volumes may be pumped. Use within the working life and throw away any remaining material.

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 **MONOPOUR** when the temperature is below 5°C and falling. Do not use **MONOPOUR** on waterproof concrete.

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

- **MONOPOUR** is supplied in 25kg bags.

Yield (at flowable consistency) and Coverage

- **MONOPOUR PG**: 12.5 litres per 25kg.
- **MONOPOUR PC6**: 12.2 litres per 25kg.
- 25kg covers 1.2-1.25m² at 10mm thickness.

Health and Safety

- Safety Data Sheets are available on request.

Application Top Tips

1. Care should be taken when cutting out repairs to ensure that the shape is such that air cannot be trapped during the pouring operation.
2. **DO NOT WET OUT OR PRIME** between layers.
3. If mortar thickens, remix but **DO NOT ADD EXTRA WATER**.
4. Can be mixed to produce a trowellable consistency.
5. When finishing, trowel from centre out towards the perimeter working into the edges of the repair.
6. Cold Weather Working (See separate Guide)
 - ≥3°C on a rising thermometer.
 - ≥5°C on a falling thermometer.
7. 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	EN1504 R4 Requirement	Typical Result	
Compressive Strength Development @20°C	EN 12190	≥ 45MPa at 28 days	Monopour PG 1 day 15-20 MPa 7 days 47-52 MPa 28 days 60-65 MPa	Monopour PC6 1 day 20-25 MPa 7 days 50-55 MPa 28 days 65-70 MPa
Flexural Strength	EN 196-1		28 days 9.5 MPa	9.5 MPa
Adhesive Bond	EN 1542	≥ 2.0 MPa	3.3 MPa	3.4 MPa
Chloride Ion Content	EN1504-7	≤ 0.05%	Passes	
Carbonation Resistance	EN13295	≤ ref concrete	Passes	
Elastic Modulus	EN 13412	≥ 20 GPa	33.3 GPa	35.2 GPa
Capillary Absorption	EN 1062-3	≤ 0.5 kg/(m ² .h ^{0.5})	0.15 kg/(m ² .h ^{0.5})	Due beginning of December
Freeze/Thaw Cycling	EN 13687-1	≥ 2 MPa	2.3 MPa	3.4 MPa
Bond Strength	BS 6319-4 Slant Shear Method		60 MPa at 28 days	
Electrical Resistivity	4-Point Wenner Probe		11700-14000 Ω/cm Suitable for use with CP Systems	
Volume Expansion	ASTM C 827		1-4% measured in the plastic state	
Air content	EN 12350-7	EN 13687-1	2.0-3.5%	
Bleed	EN 480-4		0%	
Water Permeability Coefficient	DIN 1048-1		6.13 x 10 ⁻¹⁴ m/sec 10.5mm = 1000mm of typical concrete	
Oxygen diffusion coefficient	Vinci Technologies		9.21 x10 ⁻⁵ cm ² /sec	8.2 x10 ⁻⁵ cm ² /sec
Carbon dioxide diffusion coefficient.	Vinci Technologies		2.91 x10 ⁻⁵ cm ² /sec 50mm = 6350mm of typical concrete	2.59 x10 ⁻⁵ cm ² /sec 50mm = 7160mm of typical concrete
Linear flow	EN 13395-2 1000mm Trough		5 mins 1000mm 30 mins ≥ 800mm	
Mixed Density			2225-2275kg/m ³	
Mixed Colour			Concrete grey	
Min Thickness Max Thickness			5mm 100mm	50mm 200mm
Min Application Temperature Max Application Temperature			5°C 40°C	
Working Life (approx.)			30 minutes at 40°C	

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

