

Monopour

Pourable Repair Mortar

Product Overview

Polymer modified, flowable non-shrink cementitious grout and micro-concrete that can be produced in a range of consistencies tailored for small and large areas of concrete repair.

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 proven 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.
- The gaseous expansion mechanism is non-metallic and relies upon nitrogen gas formation which eliminates the risk of staining and degradation resulting from corrosion.
- All admixtures used are chloride-free. The alkali content is controlled to less than 3kg/m³ and non-reactive aggregates are used.
- Easily overcoated with specialist membranes to provide further protection and aesthetic quality.

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 micro-concrete with a maximum aggregate size of 6mm for larger depths up to 200mm. **MONOPOUR** is supplied as a one-component system which is mixed with clean water on site to give the required consistency.

Compliance

- Compliant with Highways Agency Standard BD27/86 for the repair of Highway Structures.

Specification Clause

The repair mortar shall be a free-flowing, polymer modified, shrinkage compensated, waterproof cementitious repair mortar. It shall be fully compliant with Highways Agency Standard BD 27/86 for the repair of Highway Structures and shall comply with the following performance specification:

- Bond strength after 28 days of >50MPa/mm² in accordance with BS 6319 Part 4.
- Compressive strength at 20°C of at least 15MPa at 1 day and 60MPa at 28 days.

Technical Data / Mechanical Characteristics

Property	Standard	Result	
Compressive Strength	BS 4551	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	EN196-1	28 days 7-9MPa	
Adhesive Bond	EN1542	>2.53MPa	
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	
Expansion	ASTM C 827	1-4% measured in the plastic state	
Mixed Density		2225 - 2275kg/m ³	
Air content	EN12350-7	2.0-3.5%	
Bleed	EN480-4	0%	
Capillary Absorption	EN1062-3	0.15 kg/m ² h ^{0.5}	
Linear flow	EN13395-2 1000mm Trough	5 mins 1000mm 30 mins \geq 800mm	
Mixed colour		Concrete grey	
Min Application Thickness Max Application Thickness		Monopour PG 5mm 50mm	Monopour PC6 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 at flowable consistency: results obtained from on-site testing may vary according to site conditions.

Application Instructions

Preparation

Mechanically remove all damaged concrete or failed repairs back to a sound core. Wherever possible, the full circumference of the steel reinforcement should be exposed to at least 25mm behind the bars and 50mm beyond the point at which corrosion is visible.

On cutting back, feather edges must be avoided. The perimeter of the repair area should be stepped to a depth of 5mm (PG) 15mm (PC6) by means of saw, disc cutting or preferably using a power chisel.

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

Smooth surfaces should be roughened, all loose material and surface laitance removed and reinforcement cleaned to bright steel using wet grit blasting techniques or equivalent approved methods.

The strength of the concrete sub-base should be a minimum of 20MPa.

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

water. The faces of formwork should be treated with a proprietary form release agent.

Treatment of Steel Reinforcement

All exposed steel reinforcement should be treated with 2 x 1mm coats of **STEEL REINFORCEMENT PROTECTOR 841** applied by brush (See separate Data Sheet for full details).

NB: When carrying out repairs in new construction, it is not necessary to fully expose any reinforcing bars.

Mixing

MONOPOUR should be mechanically mixed using a forced action pan mixer or in a clean drum using a slow speed (240 rpm) drill and paddle. A normal concrete mixer is **NOT** suitable.

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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 so as 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. Place within the working life of the product and throw away any material remaining after this period. It is essential that these mixing instructions are strictly adhered to, otherwise significantly lower levels of performance or possible failure will result.

Please Note: It is vital to the success of the application that these instructions are strictly adhered to. Flexcrete cannot be held responsible for any product failures 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 prior to starting and subsequent mixes are carefully sequenced. Pouring should be done from one side only, to avoid the entrapment of air or standing water. Large volumes of **MONOPOUR** may be pumped.

Curing

Normal concreting procedures should be strictly adhered to. It is important that any exposed surface of the **MONOPOUR** is protected from strong sunlight and drying winds with **FLEXCRETE CURING MEMBRANE WB**, polythene sheeting, damp hessian or similar.

Cleaning and Storage

All tools should be cleaned with water immediately after use.

MONOPOUR can be stored for 12 months in dry, frost free conditions with unopened bags at 20°C.

Packaging

MONOPOUR is supplied in a 25kg bags.

Yield and Coverage

Yield (at flowable consistency):

MONOPOUR PG: 12.5 litres per 25kg bag

MONOPOUR PC6: 12.2 litres per 25kg bag

Coverage:

A 25kg bag covers 1.2-1.25m² at 10mm thickness.

Limitations

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

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 coat of **CURING MEMBRANE 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.



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