

# MONOMIX

## Class R3 General Purpose Structural Repair Mortar

### USES

**MONOMIX** is a low density, high strength, shrinkage compensated, waterproof mortar for the structural repair, rendering and profiling of vertical, horizontal and overhead surfaces.

### ADVANTAGES

- Incorporates the latest proven cement chemistry, microsilica, fibre and styrene acrylic copolymer technology.
- Pre-packaged material requiring mixing with clean water on-site to give an easily trowellable mortar with maximum application thickness of 80mm in vertical, horizontal and overhead situations.
- High bond strength exceeds tensile strength of concrete, thus ensuring monolithic performance of the repair.
- Dense matrix offers low permeability to water, even at 10 bar pressure, and very high diffusion resistance to acid gases and chloride ions.
- Improved tensile and impact strength. Excellent low sag properties.
- Non-toxic when cured and is listed as authorised under Regulation 31 for use in the supply of drinking water.
- Economic mortar generally requiring no substrate or inter-layer priming. Part bags can be mixed.
- Easily overcoated with specialist membranes to provide further protection and aesthetic quality.

### COMPLIANCE

CE marked in accordance with BS EN 1504 Part 3. Fully complies with the Highways Agency Standard BD 27/86 for the repair of Highway Structures. Approved by the BBA, Certificate No. 05/4276. Listed under DWI Regulation 31 for drinking water applications. Compliant with LU Standard 1-085 'Fire Safety Performance of Materials'.

### PRODUCT DESCRIPTION

**MONOMIX** is a single component cementitious mortar which incorporates the most advanced cement chemistry, microsilica, fibre and styrene acrylic copolymer technology. This results in a rapid hardening, low density, high strength mortar with enhanced polymer properties. The thixotropic nature of the product enables easy high build trowel application for the structural repair of voids and the rendering and re-profiling of both vertical, horizontal and overhead surfaces. The product is supplied as a single component system ready for on-site mixing and use, requiring only the addition of clean water.



**Flexcrete Technologies Ltd**  
 Tomlinson Road, Leyland PR25 2DY England  
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 0086-CPD-530942

EN1504-3: Concrete repair product for structural repair PCC mortar (based on hydraulic cement polymer modified)

Compressive Strength:	Class R3 $\geq$ 25 MPa
Adhesive Bond:	Class R4 $\geq$ 2.0 MPa
Chloride Ion Content:	$\leq$ 0.05%
Carbonation Resistance:	Passes
Elastic Modulus:	18.2 GPa
Thermal Capability Part 1:	Class R4 $\geq$ 2.0 MPa
Capillary Absorption:	0.077 kg.m <sup>-2</sup> .h <sup>-0.5</sup>
Dangerous Substances:	Complies with 5.4
Reaction to Fire:	Euroclass A2-s1, d0

### TECHNICAL DATA

Mixed Colour:	Concrete Grey
Mixed Density:	1725 kg/m <sup>3</sup> at 0.14 water : powder ratio
Min Application Thickness:	5mm
Max Application Thickness:	80mm per layer
Min Application Temperature:	5°C
Max Application Temperature:	40°C
Working Life (Approx):	60 minutes at 20°C 30 minutes at 40°C

### MECHANICAL CHARACTERISTICS (TYPICAL)

Compressive Strength:	BS 4551 Tested at 20°C
1 day	23.5 MPa
7 days	35.0 MPa
28 days	42.0 MPa
Water Permeability Coefficient:	Taywood Test by Penetration: 9.65 x 10 <sup>-15</sup> m/sec ie. 5.7mm of <b>MONOMIX</b> = 1000mm of typical concrete
Oxygen Diffusion Coefficient:	Taywood Test: D <sub>O2</sub> = 2.72 x 10 <sup>-4</sup> cm <sup>2</sup> /sec (Normal concrete: D <sub>O2</sub> = 2.12 x 10 <sup>-3</sup> cm <sup>2</sup> /sec)
Electrical Resistivity:	4-Point Wenner Probe: 10,000 Ω/cm Suitable for use in conjunction with CP Systems

## APPLICATION DATA

Application Guide available on request.

## PREPARATION

Mechanically remove all damaged concrete 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 10mm by means of saw, disc cutting or preferably using a power chisel. The areas to be repaired must be free from all unsound material, i.e. 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 20 MPa. The prepared substrate should be thoroughly soaked with clean water until uniformly saturated without any standing water.

## PRIMING

**MONOMIX** is highly polymer modified and as a result concrete surfaces do not generally require a primer. Highly porous substrates should be primed with **BONDING BRIDGE 842**. Two coats of **STEEL REINFORCEMENT PROTECTOR 841** should be applied to the prepared steel by brush. For further information, please refer to relevant data sheets.

## MIXING

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

For normal applications, use between 3.3-3.7 litres of clean water per 25kg bag depending upon the desired consistency. For part bags, this equates to 5.0-6.0 volumes of powder to one volume of water. Typically, for high build applications, use 3.5 litres of clean water per bag which gives a water : powder ratio of 14%. Normal mixing time depends on the type of mixer used, 2-3 minutes is average. Mix so as to entrain as little air as possible. Use without delay.

## PLACING

**MONOMIX** can be applied by float or trowel as a render, resulting in application thicknesses of 80mm, even in soffit situations. If necessary, support with shuttering to allow for compaction if working to reveals, etc. The application thickness achievable is dependent upon the substrate and 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 repairs which require multi-layer applications, it is important to ensure that previous layers are well keyed and stable but not fully set prior to the application of subsequent layers. No inter-layer priming is required. Final profiling of a high quality is easily achieved with a steel float.

## CURING AND OVERCOATING

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

## CLEANING

All tools should be cleaned with water immediately after use.

## SHELF LIFE

12 months in dry, frost free conditions with unopened bags at 20°C.

## PACKAGING AND COVERAGE

Pack Size:	25kg
Yield:	16.5 litres per 25kg pack
Coverage:	A 25kg pack covers 1.65m <sup>2</sup> at 10mm thickness

## SAFETY DATA

Safety Data Sheet available on request.

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.



Flexcrete Technologies Limited  
Tomlinson Road  
Leyland  
Lancashire  
PR25 2DY  
United Kingdom  
Tel: +44 (0) 845 260 7005  
Fax: +44 (0) 845 260 7006  
Email: [info@flexcrete.com](mailto:info@flexcrete.com)  
Web: [www.flexcrete.com](http://www.flexcrete.com)



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