Monolevel 844SP

Class R4 Waterproof Screed and Pore Filler

Product Overview

Waterproof, engineering grade fairing coat & render for levelling concrete surfaces and filling blow holes, honeycombing and other surface defects.

Description

MONOLEVEL 844SP is a single component, polymer modified, fibre reinforced, cementitious repair mortar with high adhesive properties for use as a filler with a fair-faced finish or as a waterproof screed. It provides excellent protection from acid gases, chlorides and freeze/thaw cycles, as well as enhanced chemical resistance.

Uses

Suitable for repair methods 3.1, 3.3, 7.1, 7.2 as defined by BS 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.
- Can be applied using bag-rubbing techniques to a feather edge.
- May be used typically to 6mm as a waterproof render.
- Suitable for wet spray application over larger areas.
- Bond strength exceeds tensile strength of concrete to ensure monolithic performance of the repair.
- Dense matrix provides high diffusion resistance to moisture, acid gases and chloride ions.
- Economic mortar, no substrate or inter-layer priming.

Compliance

- UKCA & CE marked in accordance with EN 1504-3.
- Listed under Regulation 31 – England: Regulation 33 – Scotland: Regulation 30 – NI: for use with potable water. WRAS Approved for use with potable water.
- 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.

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 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.

➢ Note - When carrying out repairs in new construction, it is not necessary to fully expose any reinforcing bars.

Priming of Concrete

MONOLEVEL 844SP 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

MONOLEVEL 844SP should be mechanically mixed with 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 2.8-3.2 litres of clean water per 25kg bag. For part bags, this equates to 6.5 volumes of powder to 1 volume of water. Typically, for screeding applications use 3 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

MONOLEVEL 844SP can be applied by palette knife to fill minor voids and discrete surface defects up to a typical depth of 12mm. Over larger areas, work well into the prepared substrate using a wooden float, sponge or 'bag-rubbing' techniques.

When used as an alkaline thin screed for the protection of concrete and for structural waterproofing, **MONOLEVEL 844SP** should be applied to the prepared substrate using a steel float to provide a smooth polymer rich surface finish. Work an initial thin layer into the surface to fill blow holes and minor defects prior to building up to a typical thickness of 3-6mm either by hand or spray techniques.

For repairs which require multi-layer applications, it is important to ensure that previous layers have been finished with a wood or plastic float and are stable, but not fully set (typically 2-6 hours) prior to the application of subsequent layers. No inter-layer priming is required. Once the last layer has stabilised, remove trowel marks using a wooden float or damp sponge. This will produce a surface similar in texture to emery paper, which is ideal for the application of a surface coating.

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 **MONOLEVEL 844SP** when the temperature is below 5°C and falling. Do not use on waterproof concrete without referring to the Flexcrete Technical Department. Not suitable for use on trafficked areas.

Cleaning and Storage

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

Packaging

- **MONOLEVEL 844SP** is supplied in 25kg bags.

Yield and Coverage

- 15 litres per 25kg.
- 25kg covers 5m² at 3mm thickness.

Health and Safety

- Safety Data Sheets are available on request.

Application Top Tips

1. During early mixing, the material appears dry. **DO NOT** add extra water at this stage as full mixing produces a smooth consistency.

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** when applied as a fairing coat otherwise blisters could form in the material, which must be removed.

5. Remove trowel marks using a wooden float or damp sponge once the surface has stabilised.

6. Can be overcoated with Flexcrete membranes to give a coloured, aesthetic finish.

7. Cold Weather Working (See separate Guide)

- ≥3°C on a rising thermometer.
- ≥5°C 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.

Technical Data

Property	Standard	EN 1504 R4 Requirement	Typical Result
Compressive Strength Development @20°C	EN 12190	≥ 45 MPa @28 Days	1 day 20 MPa 7 days 45 MPa 28 days 55 MPa
Adhesive Bond	EN 1542	≥ 2 MPa	2.2 MPa
Chloride Ion Content	EN 1015-17	≤ 0.05%	≤ 0.05%
Carbonation Resistance	EN 13295	≤ ref concrete	Passes
Elastic Modulus	EN 13412	≥ 20 GPa	17.3 GPa Class R3 ≥15MPa
Capillary Absorption	EN 13057	≤ 0.5 kg/(m^2.h$^{0.5}$)	0.047 kg/(m^2.h$^{0.5}$)
Freeze/Thaw Cycling	EN 13687-1	≥ 2 MPa	2.6 MPa
Water Permeability Coefficient Equivalent Concrete Thickness	DIN 1048-1	-	6.94 x 10^{-16} m/sec 1.25mm of Monolevel 844SP = 1000mm of concrete
Oxygen Diffusion Coefficient	Vinci Technology		4.90 x 10^{-5}cm²/s
Carbon Dioxide Diffusion Coefficient Equivalent Concrete thickness	Calculated from Oxygen diffusion		1.55 x 10^{-5}cm²/s 6mm of Monolevel 844SP= 144mm of concrete.
Flexural Strength	EN196-1	-	10.5 MPa
Tensile Strength	BS 6319: 7	-	5.0 MPa
Shrinkage	EN 12617-4	-	0.065% after 7 days
Mixed Density		-	1860kg/m³ at 0.14 water:powder ratio
Mixed Colour		-	Concrete grey
Min Application Thickness Max Application Thickness		-	Feather edge 6mm per layer (overall) 12mm (discrete defects)
Min Application Temperature Max Application Temperature		-	5°C 40°C
Working Life (approx.)		-	30 minutes at 20°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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