

webercem advanced repair concrete CP

Low resistivity flowing recasting repair concrete

- Can be used with electro-chemical cathodic protection systems
- Ideally situated in structural elements where reinforcement is congested
- Fast strength development, reducing repair time possession

About this product

A pre-blended cementitious, high strength flowing repair concrete. Contains non-reactive aggregates and a low soluble-alkali cement content suitable for use where cathodic protection will subsequently be used.

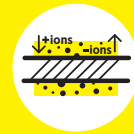
Conformity testing to BS EN 1504-3 has confirmed that **webercem advanced repair concrete CP** meets the requirements for a Class R4 repair product.

Features and benefits

- Excellent electrical resistivity for cathodic protection systems
- Rapid strength development thus reducing repair possession times
- Dimensionally stable, forms an integral bond to existing concrete and restores structural integrity with proven durability
- Economical repair
- Variable application thickness providing flexibility of use
- Does not contain microsilica
- Total water-soluble sulphate content of concrete, SO_3 - does not exceed 4%.
- Complies with NH specification for use on highway structures
- Free-flowing recasting concrete allowing use in areas of congested reinforcement
- Class R4 repair product meeting the requirements of BS EN 1504-3



IDEAL FOR
HIGHWAYS WORK



SUITABLE WITHIN
CATHODIC PROTECTION
SYSTEMS



SHRINKAGE
COMPENSATED



ADD WATER



FLOWABLE
YIELD



MEETS BS EN 1504-3
AS AN R4 MORTAR



webercem 
ADVANCED

Uses

- Repair of concrete to bridge structures to NH specification
- In conjunction with electro-chemical cathodic protection systems
- Replacement of defective concrete to beams and crossheads
- Repair of car parks and buildings
- Coastal structural repairs to jetties and piers
- Repairing concrete columns, beams, walls and soffits

Constraints

- Do not apply if frost is forecast within 24 hours of use
- Do not apply in temperatures below 5°C or above 30°C

Preparation

The concrete substrate shall be adequately prepared by suitable methods to remove all defective concrete or suspect concrete by high pressure water cutting or by mechanical means, i.e. breakers, scabbling, grit blasting, etc.

The perimeter of the prepared area shall be well defined by a saw cut, avoid feather edging of **webercem advanced repair concrete CP**.

All concrete shall be removed to give a minimum clear dimension of 20mm to all exposed rebar reinforcement. The extent of the concrete removal shall be agreed with the contract supervisor or engineer. Temporary structural supports shall be erected as necessary and shall be left in place until the repair concrete has gained sufficient strength.

Steel reinforcement should be prepared in accordance with BS EN 1504-10. Degrease with suitable solvent where appropriate immediately prior to pouring.

No priming of the reinforcement is required, **webercem advanced repair concrete CP** forms a good cementitious bond to clean exposed reinforcement. Do not use primers with this product.

Old concrete surfaces contaminated with oil or grease will require cleaning, care must be taken to ensure all contamination and any coating is removed prior to application of concrete.

Grout-tight formwork is essential. Use a light, uniform application of release agent and good quality sealed ply formwork. The formwork shall be adequately supported and fixed to resist fluid concrete pressures.

The parent concrete shall be thoroughly saturated with potable water prior to the application of the repair concrete. This may be achieved by filling the formwork with water, usually for 2 hours, then draining off the water, followed by removal of all surplus water.

Mixing

Use only freshly opened bags of **webercem advanced repair concrete CP** and a clean forced-action mixer of suitable volume, i.e. Daines Mixal mixer, Cretangle pan mixer or a Putzmeister P13 mixer and pump.

Charge the mixer with 2.9 – 3.7 litres of water, per 25kg bag, followed by a gradual addition of repair concrete. For optimum flow use 3.7 litres of water. Mix for 3 minutes. Mix only full bags, do not mix part bags.

NB: do not exceed maximum water addition of 3.7 litres water per 25kg bag.

Application

The mixed concrete shall be used within 30 minutes of mixing and kept agitated prior to use.

The mixed concrete can be placed either by gravity pouring or by pumping through hoses at least 50mm diameter. Care shall be exercised to avoid air entrapment during placing. No vibration is needed to compact the repair concrete, but the formwork should be tapped with a mallet to release minor air bubbles on the surface of the formwork.

Setting time

Setting time at 20°C is approximately 360-440 minutes.

Winter working

webercem advanced repair concrete CP can be used down to 5°C provided cold weather working precautions are carried out. At low temperatures the strength development gain of repair concrete is greatly reduced.

For further information please contact Weber Technical Services

Curing

Immediately after finishing, the exposed surfaces of the concrete shall be cured with wet hessian, polythene or frost blankets for at least 48 hours to prevent rapid loss of water.

The concrete shall then be cured for a minimum of 14 days using a curing compound conforming BS 7542.

Packaging

webercem advanced repair concrete CP is supplied in 25 kg bags.

Coverage

Yield per 25 kg bag is approx. 13 litres

Coverage per m³ volume is 77 bags of **webercem advanced repair concrete CP**.

Storage and shelf-life

When stored unopened in a dry place at temperatures above 5°C, shelf life is 12 months from date of manufacture.

Health and safety

For further information, please request the Material Safety Data Sheet for this product.

Technical data

EN1504		All tests carried out at max. water addition of 5 litres at 20°C unless otherwise stated		
Performance characteristic	Method	Requirement	Result	Pass/Fail
Compressive strength	EN 12190	≥45 MPa	62.2 MPa	Pass
Chloride ion content	EN 1015-17	≤0.05 %	<0.01%	Pass
Adhesive bond	EN 1542	≥2.0 MPa	3.1 MPa	Pass
Carbonation resistance	EN 13295	dk ≤ control concrete (1.3)	dk ≤ control concrete	Pass
Elastic modulus	EN 13412	≥20 GPa	23.4 GPa	Pass
Thermal compatibility Part 1 Freeze-thaw	EN 13687-1	Bond strength after 50 cycles ≥2.0 MPa	3.0 MPa	Pass
Capillary absorption	EN 13057	≤0.5 kgm ⁻² h ^{-0.5}	0.22 kgm ⁻² h ^{-0.5}	Pass
Reaction to fire	EN 13501-1	Declared class	Class A1	
Coefficient of thermal expansion	EN 1770	Declared value	13.0*10 ⁻⁶	

Additional test data		All tests carried out at max. water addition of 5 litres at 20°C unless otherwise stated		
Performance characteristic	Method	Requirement	Result	Pass/Fail
Flow in a trough at 5°C : immediately after mixing	Specification Clause 1770 AR Class 29F	Flow 750mm in 30 seconds	5.3 seconds	Pass
Flow in a trough at 5°C : 30 minutes after mixing			6.7 seconds	Pass
Flow in a trough at 20°C : immediately after mixing			5.0 seconds	Pass
Flow in a trough at 20°C : 30 minutes after mixing			6.5 seconds	Pass
10 Day compressive strength at 5°C	EN 12190	≥29.0 MPa	48 MPa	Pass
3 Day compressive strength at 20°C	EN 12190	≥29.0 MPa	37.5 MPa	Pass
7 Day compressive strength at 20°C	EN 12190	≤60.0 MPa	51 MPa	Pass
Air content	BS 1881 1: pt 106	≤7.0%	2.17%	Pass
Cement content	BS 4551	≥400 Kg/m ³	580 Kg/m ³	Pass
Electrical resistivity @ 28 days	4-pin Wenner test (Specification Clause 1770 AR Class 29F)	≥500 ≤15000 Ohm.cm	11082 Ohm.cm	Pass

Technical data

Additional test data		All tests carried out at max. water addition of 5 litres at 20°C unless otherwise stated	
Performance characteristic	Method	Result	
14 day drying shrinkage	BS 1920-8	0.025%	
21 day drying shrinkage		0.040%	
28 day drying shrinkage		0.050%	

Indicative strength gain		All tests carried out at max. water addition of 5 litres in laboratory conditions			
Temperature	24 hours	3 Days	7 Days	28 Days	
Compressive strength @ 5°C	0 MPa	17.57 MPa	41.62 MPa	56.67 MPa	
Compressive strength @ 10°C	3.05 MPa	22.07 MPa	40.68 MPa	58.22 MPa	
Compressive strength @ 20°C	16.32 MPa	34.68 MPa	47.97 MPa	64.82 MPa	

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