

webercem advanced repair concrete

Flowing recasting repair concrete

- Ideally situated in structural elements where reinforcement is congested
- Rapid strength development, reducing repair time possession
- Complies with BS EN 1504-3 as an R4 repair mortar

About this product

A pre-blended cementitious repair concrete which complies with the National Highways Specification for Highway Works white book Series 5700 Structural Concrete.

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

Features and benefits

- Permanent structural repair concrete
- Contains non-reactive aggregates and a low soluble alkali cement content
- The repair concrete can be applied to a range of thicknesses, minimum 25mm
- Rapid strength development 35MPa in 3 days 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
- Free-flowing recasting repair concrete allowing formation of intricate falsework
- Ideally suited in structural elements where reinforcement is congested
- Shrinkage-compensated to avoid shrinkage cracks and enhance durability
- Class R4 repair product meeting the requirements of BS EN 1504-3



IDEAL FOR
HIGHWAYS WORK



SHRINKAGE
COMPENSATED



MEETS BS EN 1504-3
AS AN R4 MORTAR



3.1-
3.3L
ADD WATER



12.75L
FLOWABLE
YIELD



webercem 
ADVANCED

Uses

- Replacement of concrete to beams and crossheads
- Repair of car parks and buildings
- Coastal structural repairs and seawall reconstruction
- Repairing concrete columns, beams, walls and soffits
- For use under baseplates where thick sections are required to be grouted: 75 to 500mm

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 the repair concrete.

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.

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** forms a good cementitious bond to the 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 and removal of all surplus water

Mixing

Use only freshly opened bags of **webercem advanced repair concrete** 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 3.1 – 3.3 litres of water per 25kg bag, followed by a gradual addition of repair concrete. For optimum flow use 3.3 litres of water. Mix for 3 minutes. Mix only full bags, do not mix part bags.

NB: do not exceed maximum water addition of 3.3 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 300 minutes.

Winter working

webercem advanced repair concrete 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 with a high efficiency sprayed-on curing membrane for at least 14 days.

This membrane must be removed if it is to be overcoated, alternatively use wet hessian and tightly fitting polythene sheeting to cure the concrete.

Protect from wind, rain and frost.

Packaging

webercem advanced repair concrete is supplied in 25kg bags.

Coverage

Yield per 25 kg bag is 12.75 litres

Coverage per m³ volume is 78 bags of **webercem advanced repair concrete**.

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	62.3 MPa	Pass
Chloride ion content	EN 1015-17	≤0.05 %	<0.01%	Pass
Adhesive bond	EN 1542	≥2.0 MPa	3.3 MPa	Pass
Carbonation resistance	EN 13295	dk ≤ control concrete (1.3)	dk ≤ control concrete	Pass
Elastic modulus	EN 13412	≥20 GPa	23.0 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}	0.1 kgm ⁻² h ^{-0.5}	Pass
Reaction to fire	EN 13501-1	Declared class	Class A1	
Coefficient of thermal expansion	EN 1770	Declared value	13.6*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	6.0 seconds	Pass
Flow in a trough at 5°C : 30 minutes after mixing			7.2 seconds	Pass
Flow in a trough at 20°C : immediately after mixing			6.5 seconds	Pass
Flow in a trough at 20°C : 30 minutes after mixing			7.7 seconds	Pass
10 Day compressive strength at 5°C	EN 12190	≥29.0 MPa	44.5 MPa	Pass
3 Day compressive strength at 20°C	EN 12190	≥29.0 MPa	47.0 MPa	Pass
7 Day compressive strength at 20°C	EN 12190	≤60.0 MPa	58 MPa	Pass
Air content	BS 1881 1: pt 106	≤7.0%	1.87%	Pass
Cement content	BS 4551	≥400 Kg/m ³	720 Kg/m ³	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	20.00 MPa	46.95 MPa	59.47 MPa	
Compressive strength @ 10°C	10.50 MPa	27.63 MPa	56.33 MPa	62.13 MPa	
Compressive strength @ 20°C	16.70 MPa	34.58 MPa	59.00 MPa	64.75 MPa	

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