

# 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 Manual of Contract Documents for Highway Works 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
- The repair concrete can be applied to a range of thicknesses, minimum 25 mm
- Rapid strength development 29 MPa in 3 days at 20°C reducing repair possession times
- Dimensionally stable, forms an integral bond to existing concrete and restores structural integrity with proven durability
- Self-compacting with no vibrating poker required
- Variable application thickness providing flexibility of use
- Free-flowing recasting repair concrete allowing formation of intricate formwork
- 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



NON-SHRINK



MEETS BS EN 1504-3  
AS AN R4 MORTAR



3.1-  
3.3L  
ADD WATER



12.75 L  
FLOWABLE  
YIELD



**webercem**   
ADVANCED

## Uses

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

## 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 20 mm 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 25 kg 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 25 kg 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 50 mm 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 25 kg bags.

## Coverage

Yield per 25 kg bag is 12.75 litres

Coverage per m<sup>3</sup> 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

<b>EN1504</b>		All tests carried out at max. water addition	
Performance characteristic	Method	Requirement	Typical result*
Compressive strength	EN 12190	≥45 MPa	62.3 MPa
Chloride ion content	EN 1015-17	≤0.05 %	<0.01%
Adhesive bond	EN 1542	≥2.0 MPa	3.3 MPa
Carbonation resistance	EN 13295	dk ≤ control concrete	dk ≤ control concrete
Elastic modulus	EN 13412	≥20 GPa	23.0 GPa
Thermal compatibility Part 1 Freeze-thaw	EN 13687-1	Bond strength after 50 cycles ≥2.0 MPa	3.0 MPa
Capillary absorption	EN 13057	≤0.5 kgm <sup>-2</sup> h <sup>-0.5</sup>	0.1 kgm <sup>-2</sup> h <sup>-0.5</sup>
Reaction to fire	EN 13501-1	Declared class	Class A1

<b>Additional test data</b>		All tests carried out at max. water addition at 20°C	
Performance characteristic	Method	Requirement	Typical result*
Flow in a trough at 5°C : immediately after mixing	Specification Clause 1770 AR Class 29F	Flow 750mm in 30 seconds	6.0 seconds
Flow in a trough at 5°C : 30 minutes after mixing			7.2 seconds
Flow in a trough at 20°C : immediately after mixing			6.5 seconds
Flow in a trough at 20°C : 30 minutes after mixing			7.7 seconds
10 Day compressive strength at 5°C	EN 12190	≥29.0 MPa	44.5 MPa
3 Day compressive strength at 20°C	EN 12190	≥29.0 MPa	47.0 MPa
7 Day compressive strength at 20°C	EN 12190	≤60.0 MPa	58 MPa
Air content	BS 1881 1: pt 106	≤7.0%	1.87%
Cement content	BS 4551	≥400 kg/m <sup>3</sup>	720 kg/m <sup>3</sup>

\*These results given were determined through laboratory testing. Batch to batch results may fluctuate due to common cause variation. Field results may vary due to circumstances outside our control

## Technical data

Additional test data		All tests carried out at max. water addition at 20°C	
Performance characteristic	Method	Typical result*	
14 day drying shrinkage	BS 1920-8	825 microstrain	
21 day drying shrinkage		2285 microstrain	
28 day drying shrinkage		2400 microstrain	

Indicative strength gain*		All tests carried out at max. water addition 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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