

webercem mortar CP

R4 mortar for cathodic protection & encapsulation of sacrificial anodes

- Can be used with electro-chemical cathodic protection systems
- Versatile application by pump or trowel
- R4 repair mortar suitable for structural elements

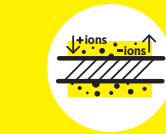
About this product

webercem mortar CP is a pre-batched, single-component mortar needing only mixing with water to produce a mortar with low resistivity, suitable for patch repairs on concrete structures where cathodic protection systems are to be used.

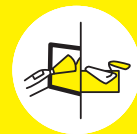
Conforms to BS EN 1504-3 as a Class R4 repair product.

Features and benefits

- Good bond to concrete – damp or wet
- Durable – does not crack or craze when applied and properly cured
- Easy to use – can be mixed by hand or mechanically
- Easy to apply – can be applied easily with a spray pump or by trowel without slumping
- Easy to finish – good smooth finish obtainable with a float or sponge. Provides a cohesive and level surface suitable for overcoating.
- Contains more than 400kg/m^3 of ordinary Portland cement to EN 197-1, the maximum size of aggregate does not exceed 2mm, the total chloride ion content is less than 0.1% of cement, the resistivity at 28 days saturation is between $5\text{k}\Omega\text{cm}$ and $15\text{k}\Omega\text{cm}$.



SUITABLE WITHIN
CATHODIC PROTECTION
SYSTEMS



FOR HAND
OR MACHINE
APPLICATION



MEETS BS EN 1504-3
AS AN R4 MORTAR



ADD WATER



YIELD



IDEAL FOR
HIGHWAYS WORK



Uses

- Encapsulation of sacrificial anodes
- Levelling rough surfaces of concrete
- Levelling and building up thicknesses over low cover to steel reinforcement
- Patch repairs to concrete bridge abutments, parapets, beams and crossheads
- Filling-in of core holes, small voids and shutter tie holes
- For tunnels, car parks, bridges, and marine structures such as jetties where cathodic protection is to be used as a preventative treatment
- For the installation of sacrificial anodes and impressed current cathodic protection systems
- For vertical and horizontal surfaces
- Suitable for external and internal surfaces

Constraints

- Limited to 10mm thickness per layer for levelling
- Do not use where there is a large variation in thickness
- Do not use where the substrates are subject to movement or are cracked
- Do not use on heavily trafficked floors

Preparation

All substrates must be sound, cohesive, free of loose matter, oil, grease and dust.

Concrete surfaces must be adequately prepared by use of scabbling, grit blasting, high pressure water jetting, needle gunning or other appropriate means to provide an adequate mechanical key for the mortar.

Old concrete surfaces contaminated with oil or grease require suitable preparation. New concrete must be cured effectively for at least 14 days or as directed by the engineer using an approved curing method not including use of a permanent curing membrane.

Fill voids with **webercem mortar CP** mixed to a stiffer mortar consistency and allow to cure.

The perimeter of each area where **webercem mortar CP** is to be applied must be cut back square. Feather edging is not permitted. Use temporary battens or a wet mortar thickness gauge to ensure that the correct thickness of mortar is applied. Thoroughly dampen the area with clean water before applying **webercem mortar CP**.

Mixing

Water additions (per 25kg bag)

- As a repair mortar and for core hole filling: 2.75 to 3.0 litres
- For bondcoat and for pumping: 3.25 litres
- For hand application as a levelling coat: 3.0 to 3.25 litres

For hand application

Mix **webercem mortar CP** in a forced-action mixer or in a clean bucket using a paddle and a slow speed drill for at least 2 min. at a speed not exceeding 500rpm. For small quantities less than 2kg, mixing by hand using a spatula is permissible.

For machine application

Use a Putzmeister P11 or similar machine. Machine mix the mortar for at least 2 mins using not more than 3.25 litres of clean water per 25kg bag.

Useable time after mixing: 60 min at 20°C.

Application

Temperature range of application: +5°C to +35°C. Do not apply on frozen surfaces or when frost is expected within 24 hours unless special precautions are taken to protect the substrate and the finished work from falling below 5°C. Do not traffic until 4 days after application.

Hand application as a levelling coat

Apply an initial bondcoat with a plaster float to a thickness of about 2mm pressing well onto the damp substrate, then immediately apply the first layer of **webercem mortar CP** to the required thickness not exceeding 10 mm in total. Leave a rough surface suitable for subsequent bonding of the second coat which should be applied as

soon as the first layer has hardened sufficiently to support the second layer (approx 4 hours at 20°C).

Hand application as a patching mortar

Apply an initial bondcoat with a plaster float to a thickness of about 2mm pressing well onto the damp substrate, then immediately apply the first layer of **webercem mortar CP** mixed to a stiffer consistency to the required thickness: up to 20 – 30mm per layer on vertical surfaces, up to 15mm on soffits (see **size of repairs table**). Any subsequent layers of **webercem mortar CP** should be applied not later than 24 hours after the previous layer (at 20°C).

Machine application

Apply the mixed **webercem mortar CP** by spray pump to the required thickness (max. 10mm in one pass) and level off with a screeding bar. When applying a total thickness of 20mm in 2 layers, leave the first layer 'as screeded', before applying the second layer as soon as the first layer is firm enough to support it.

Apply 2nd layer of **webercem mortar CP** after 4 hours and within 24 hours at 20°C.

Installation of sacrificial anodes

Sacrificial anodes can be installed into the perimeter of patch repairs through breakout areas into pre-drilled holes at specified centres.

The holes should be filled with **webercem mortar CP** before the specified anodes are inserted. A cartridge gun can be used to aid application.

After the specified anodes have been inserted into the wet mortar they are tied to the steel reinforcement using attached titanium connecting wires and the patch repairs can then be carried out.

Finishing

A sponge may be used for a slightly textured finish. Finish off with a float for a smooth finish but over-trowelling can lead to surface crazing.

Curing

Immediately after completion of finishing and thereafter for the curing period, the mortar shall be protected against harmful effects of weather, including rain, rapid temperature changes, frost and from drying out. The method of curing shall prevent loss of moisture from the mortar. The curing time shall be three days at 20°C.

Packaging

webercem mortar CP is supplied in 25kg bags.

Storage and shelf life

When stored unopened in a dry place at temperatures above 5°C, shelf life is 6 months from date of manufacture.

Yield

One bag will yield approx. 12 litres.

Health and safety

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

Size of repairs

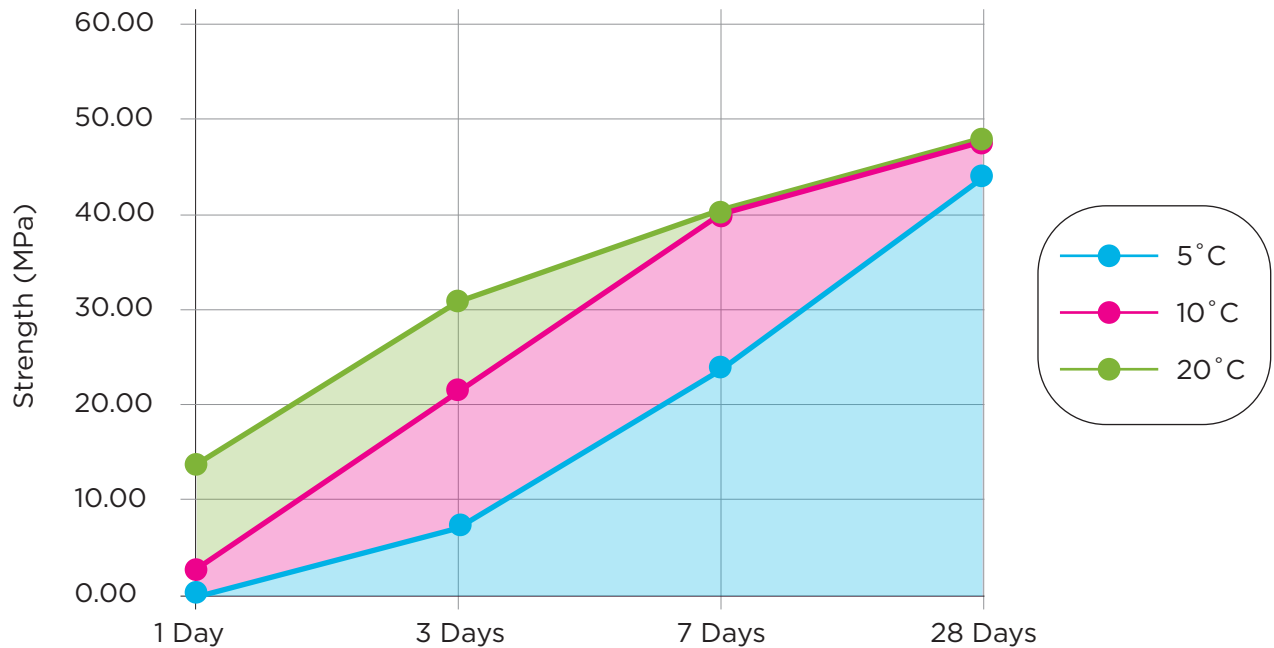
Principal uses of webercem mortar CP	Typical area (mm x mm)	Thickness per layer	Maximum thickness*
As a patch repair mortar on vertical or horizontal surfaces	300 x 300	20 – 30mm	50mm
	600 x 600	up to 15mm	30mm
As a patch repair mortar on soffits	300 x 300 max	15mm	30mm
	600 x 600 max	10mm	20mm
For filling of core holes (holes must be roughened to improve bond)	50 mm dia.	Unlimited	Unlimited
	100 mm dia.	Unlimited	Unlimited
Levelling by spray or by hand	Up to 3 m ² **	10mm	20mm

* For thicker sections or larger areas use **webercem spray CP** (Gunit application) or **webercem advanced repair concrete CP** (flowing concrete in shuttered applications).

** For larger areas, provide suitable joints.

Technical data EN 1504-3

Performance Characteristic	Method	Requirement	Result	
Compressive strength	EN 12190	$\geq 45\text{MPa}$	51.8MPa	Pass
Chloride ion content	EN 1015-17	$\leq 0.05\%$	<0.01%	Pass
Adhesive bond	EN 1542	$\geq 2.0\text{MPa}$	3.3MPa	Pass
Carbonation resistance	EN 13295	$dk \leq \text{control concrete (1,3)}$	$dk \leq \text{control concrete}$	Pass
Elastic modulus	EN 13412	$\geq 20\text{GPa}$	24GPa	Pass
Thermal compatibility Part 1 freeze - thaw	EN 13687-1	Bond strength after 50 cycles $\geq 2.0\text{ MPa}$	3MPa	Pass
Capillary absorption	EN 13057	$\leq 0.5\text{kgm}^{-2}\text{h}^{-0.5}$	$0.3\text{kgm}^{-2}\text{h}^{-0.5}$	Pass
Reaction to fire	EN 13501-1	Declared class		
Coefficient of thermal expansion	EN 1770	Declared value	3.5 E-6	
Tensile strength of hardened mortar	BS 6319-7	Declared value	2.50MPa	



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