

Acrylic-polymer modified, high-build structural repair mortar

webercem HB40



Uses

- Structural concrete repairs, particularly where high, overhead build is required
- Repairs to bridge and highway structures
- Repairs to car park soffits, bridge decks and columns

About this product

webercem HB40 is a single-component, polymer-modified, high-build cementitious mortar, designed for structural concrete repairs. It requires only the addition of clean water to produce a lightweight, low-permeability, high-strength mortar for both soffit and vertical repair situations. The mortar is suitable for repairs to bridges and other structures as specified by the Department of Transport.

This product has been formulated to comply with the requirements of BS EN 1504-3 as an R3 mortar.

Features and benefits

- ▲ Lightweight, low-density structural repair mortar which allows speedier completion of work
- ▲ High-build properties – up to 75 mm vertically and 50 mm in a soffit repair, without formwork
- ▲ Unique shrinkage compensation system provides long-term dimensional stability
- ▲ Contains fibres and spray dried acrylic polymer
- ▲ Low permeability to water, carbon dioxide and chlorides
- ▲ Easy to apply, with excellent application properties
- ▲ This product has been formulated to comply with the requirements of BS EN 1504-3 as an R3 mortar
- ▲ Complies with Department of Transport Departmental Standard BD 27/86

Technical data

Bulk density BS EN 12190: 1999 :	1540 kg/m ³
Fresh wet density	> 1500 kg/m ³
Working time	30 – 45 minutes

Performance to BS EN 1504-3

Test results – all intended uses

Performance characteristic	Method	BS EN 1504-3 requirement
Compressive strength	EN 12190	≥ 25 MPa
Chloride ion content	EN 1015-17	≤ 0.05%
Adhesive bond	EN 1542	≥ 1.5 MPa
Restrained shrinkage/expansion	EN 12617-4	Bond strength after test ≥ 1.5 MPa
Carbonation resistance	EN 13295	$d_k \leq \text{control concrete (1.3)}$

Test results – certain intended uses

Performance characteristic	Method	BS EN 1504-3 requirement
Elastic modulus	EN 13412	≥ 15 GPa
Thermal compatibility Part 2 Thunder shower	EN 13687-2	Bond strength after 30 cycles ≥ 1.5 MPa
Thermal compatibility Part 4 Dry cycling	EN 13687-4	Bond strength after 30 cycles ≥ 1.5 MPa
Coefficient of thermal expansion	EN 1770	Result = $12.0 \times 10^{-6}/^{\circ}\text{C}$
Capillary absorption	EN 13057	$\leq 0.5 \text{ kgm}^{-2}\text{h}^{-0.5}$

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Preparation

Concrete substrates

Concrete substrates must be adequately prepared by use of scabbling, grit blasting, needle gunning or other means, as appropriate. Oil and grease must be removed by steam cleaning together with suitable detergent. Any contaminated concrete must be removed. All damaged concrete should be cut back to a sound surface and at least 15 mm behind any exposed reinforcement. New concrete must be at least 14 days old. Thoroughly saturate the concrete but remove excess water.

Steel substrates

These should be grit blasted to Swedish Standard SA 2^{1/2} equivalent to BS 7079-A1 and degreased immediately prior to application. Where corrosion is absent, wire brushing to a clean, bright surface may be adequate. Care must be taken not to polish the rust. Apply a protective coating of **webercem bondcoat** as described below to act as a holding primer.

Note: Preparation of both concrete and steel must achieve a clean, sound, roughened surface.

Mixing

Mixing of bonding slurry

Mix 2.5 volumes of **webercem bondcoat** powder to 1 volume of clean water. Mix vigorously to a brushable, slurry consistency.

For detailed application instructions, see separate **webercem bondcoat** data sheet.

Mixing webercem HB40

A low-shear, forced-action mixer must be used, e.g. Mixal Mixer or Creteangle. Hand mixing the mortar is not recommended.

Mix for 2 minutes from adding the powder to the water.

Over mixing will entrain air and reduce compressive strength. Do not overmix.

Water addition is 2.4 to 2.7 litres of clean water per 20 kg bag. Start at 2.4 litres and adjust as required upwards to 2.7 litres.

Do not add more than 2.7 litres of water.

Application

Priming of steel reinforcement

Apply one full, unbroken coat of **webercem bondcoat**, ensuring the back of the cleaned reinforcing bars are coated.

Priming of concrete substrate

Ensuring the prepared concrete substrate is saturated but surface damp, use a stiff brush to scrub the slurry well into the surface.

Apply the mortar to the substrate whilst the bonding slurry is still tacky and compact well into place, ensuring no air is trapped.

The minimum application thickness is 10 mm. Where very thick sections are required, multiple applications may be necessary. Intermediate surfaces should be scratched to give a good mechanical key.

Successive applications require the use of **webercem bondcoat**.

Finishing

If subsequent materials or coatings are to be applied, finish with a wooden or plastic float or sponge to present a lightly textured surface. Otherwise, finish with a steel float for a tightly closed surface.

Curing

Unless a levelling mortar, coating, inhibitor, sealer or other system is to be applied to the surface, cure immediately after finishing with a suitable membrane.

Before application of a coating or a levelling mortar, cure the repairs by covering with closely-fitting polyethylene sheeting or use **webertec latex** as an intermediate curing membrane sprayed onto the repaired surfaces in a continuous film.

webercem HB40 can be overcoated by the levelling mortar **webercem fairing coat** or one of the anti-carbonation coatings in the **webercote** range. Overcoating times are dependent on weather conditions.

When cured, **webercem HB40**, and **webercem bondcoat** are stable to freeze/thaw conditions but, following good concreting practice, they should not be applied in freezing weather or onto frozen surfaces or at temperatures below 5°C.

Packaging

webercem HB40 is supplied in 20 kg bags.

Coverage

webercem HB40

Approximately 15.0 litres per 20 kg bag, i.e. 67 bags per m³ or 1.5 m² per bag at 10 mm thickness.

webercem bondcoat

Approximately 5 kg per 1 m².

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

Contains cement (Contains chromium (VI)). May produce an allergic reaction. Harmful by inhalation. Irritating to eyes and skin. Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical help. After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing, gloves and eye/face protection.

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

Technical services

Weber's Customer Services Department has a team of experienced advisors available to provide on-site advice both at the specification stage and during application. Detailed specifications can be provided for specific projects or more general works. Site visits and on-site demonstrations can be arranged on request.

Technical helpline

Tel: 08703 330 070
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Sales enquiries

Weber products are distributed throughout the UK through selected stockists and distributors. Please contact the relevant Customer Services Team below for all product orders and enquiries.

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