

Acrylic-polymer modified, high-build structural repair mortar

weber.cem HB40

mulsifix high build 40 repair mortar



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

weber.cem 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:R3 mortar.

Technical data

All test results were obtained at 20°C, unless otherwise stated. 2.55 litres of water per 20 kg bag

Compressive strength* BS EN 12190:1999	3 days	30 MPa
	7 days	35 MPa
	28 days	43 MPa
Flexural strength	28 days	5.3 N/mm ²
Tensile strength	28 days	3.3 N/mm ²
Modulus of elasticity in compression BS EN 13412:2006	28 days	16.6 kN/mm ²
Drying shrinkage (25 x 25 x 285 mm prisms) 25°C, 50% RH	28 days	< 200 microstrain
Carbon dioxide barrier, equivalent concrete thickness at 10 mm (Taywood method)		250 mm
Water absorption ISAT (BS 1881-208:1996)	10 min.	0.02 ml/m ² /sec
Bulk density BS EN 12190: 1999 :		1540 kg/m ³
Fresh wet density		> 1500 kg/m ³
Working time		30 – 45 minutes

* Value obtained in laboratory conditions.
Achievement at 28 days strength is dependent on site conditions, water addition and application technique.
Typically, compressive strength will vary between 35 and 45 N/mm² at 28 days.

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. Less than 0.02% shrinkage at 28 days
- ▲ 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:R3 mortar
- ▲ Complies with Department of Transport Departmental Standard BD 27/86
- ▲ Agrément approved as part of the **weber.cem** Concrete Repair System



weber.cem HB40

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 **weber.cem keycoat** 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 volumes of **weber.cem keycoat** powder to 1 volume of clean water. Mix vigorously to a brushable, slurry consistency.

For detailed application instructions, see separate **weber.cem keycoat** data sheet.

Mixing weber.cem 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 **weber.cem keycoat**, 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 **weber.cem keycoat**.

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 **weber.tec ritecure**.

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

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

When cured, **weber.cem HB40**, and **weber.cem keycoat** 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

weber.cem HB40 is supplied in 20 kg bags.

Coverage

weber.cem HB40

Approximately 16.0 litres per 20 kg bag, i.e. 63 bags per m³ or 1.6 m² per bag at 10 mm thickness.

weber.cem keycoat

Approximately 1 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: (01525) 722110
Fax: (01525) 718988

Sales enquiries

Weber products are distributed throughout the UK through selected stockists and distributors. For UK sales enquiries and overseas projects, contact **Weber's** Sales office.

Sales office

Tel: (01525) 722100
Fax: (01525) 718988

Saint-Gobain Weber Ltd

Dickens House, Enterprise Way, Maulden Road, Flitwick, Bedford MK45 5BY, UK
Tel: 08703 330070 Fax: (01525) 718988 e-mail: mail@netweber.co.uk

To the best of our knowledge and belief, this information is true and accurate, but as conditions of use and any labour involved are beyond our control, the end user must satisfy himself by prior testing that the product is suitable for his specific application, and no responsibility can be accepted, or any warranty given by our Representatives, Agents or Distributors. Products are sold subject to our Standard Conditions of Sale and the end user should ensure that he has consulted our latest literature.