

*High-build, cementitious mortar
for vertical and soffit repairs*

weber.cem lightweight

multifix lightweight mortar



Uses

- High-build concrete repairs
- Repairs to soffits
- Repairs to building structures

About this product

weber.cem lightweight is a polymer-modified, cementitious mortar mix, with specially selected lightweight fillers. It is preblended, contains a polymer powder and simply requires the addition of clean water to produce a mortar suitable for both soffit and vertical repairs in situations where high-build replacement with conventional concrete is impractical. Since its introduction in 1985 **weber.cem lightweight** has been widely used in concrete repairs because of its ability to be applied on to vertical and soffit surfaces. This product has been formulated to comply with the requirements of BS EN 1504-3:R2 mortar.

Features and benefits

- ▲ High-build up to 75 mm in soffit patch repairs, without formwork.
- ▲ Easy to apply, excellent application properties.
- ▲ Excellent adhesion to well prepared concrete.
- ▲ Factory preblending eliminates on site mixing errors and variations in quality, availability and grading of local cements and aggregates.
- ▲ Formulated to comply with the requirements of BS EN 1504-3:R2 mortar
- ▲ Can be overcoated with **weber.cote** anticarbonation coatings for optimum protection of reinforced concrete.

Technical data

20 kg **weber.cem lightweight** with 2.4 litres of water cured at 20°C.

	3 days	7 days	28 days
Compressive strength (BS EN 12190:1999)	22 MPa	27 MPa	33 MPa
Tensile strength (BS6319-7: 1985)	—	1.6 MPa	2.5 MPa
Flexural strength (BS6319-3:1983)	—	4.5 MPa	5.5 MPa
Plastic density (with 2.4 litres of water)	1420 kg/m ³		
Bulk density BS EN 12190: 1999 :	1540 kg/m ³		

Working life: 30 to 40 minutes depending on temperature

Permeability

Tests carried out by Queens University Belfast using CLAM test. Samples soaked for 24 hours prior to test (permeability coefficient only)

	Permeability coefficient (m/sec)	Initial absorption (m/sec)
weber.cem lightweight with 2.4 litres water per 20 kg	1.21 x 10 ⁻¹⁴	22.1 x 10 ⁻¹⁴
OPC concrete mix, with w/c ratio 0.6	48 x 10 ⁻¹⁴	211 x 10 ⁻¹⁴
OPC Concrete mix, with w/c ratio 0.4	2.3 x 10 ⁻¹⁴	19.6 x 10 ⁻¹⁴

weber.cem lightweight

Preparation

Concrete

Concrete substrates must be adequately prepared to a clean, freshly-exposed surface, whether by use of a suitable mechanical method, such as scabbling, grit blasting or needle gunning, or by such other means as appropriate.

Old concrete surfaces contaminated with oil or grease require preparation such as steam cleaning in conjunction with a suitable detergent. Care must be taken to ensure that the oil or grease is removed from the surface and not simply spread over a larger area. New concrete should be cured for at least 14 days using an approved curing technique, e.g. polythene film. Spray-on curing membranes are unsuitable for use on new concrete where toppings, renders, finishes, etc. are to be subsequently applied.

Where repairs are carried out, feather edging is not recommended; therefore the perimeter of the area to be repaired should be cut back to provide a square edge, minimum 10mm deep.

Steel

Steel reinforcement which has been exposed during preparation should be completely uncovered to the full circumference of the bar. Rust scale, corrosion products and other deposits shall be removed from reinforcement by grit blasting or other approved methods to achieve first quality to BS 7079-A1 (equivalent to Swedish Standard SA 2^{1/2}). Steel cleaning shall include hidden faces at the back of bars and at intersections. Bonding agent/holding primer must be applied immediately after cleaning.

In many instances where chloride-induced corrosion is absent, and where grit blasting is not practical, wire brushing or other techniques may be acceptable to the engineer, provided that care is taken not to polish the surfaces of the rust on the steel.

Mixing

Bonding slurry

Mix **weber.cem keycoat** in the proportions 1 volume water to 2 volumes of **weber.cem keycoat**, adding powder gradually to the water and stirring continuously until a smooth, creamy consistency is obtained.

Lightweight patch repair mortar

A low-shear, forced-action mixer must always be used e.g. Mixal Mixer or Creteangle. Hand mixing is not recommended for this product.

Mixing time should be kept to 2 minutes from adding the powder to the water. Over mixing will entrain air and reduce compressive strength. Do not over mix.

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

Use only potable water for mixing.

Do not add extra water above stated quantities.

Application

Apply **weber.cem keycoat** immediately to the prepared concrete surface which must previously have been thoroughly dampened with water. Use a stiff brush to scrub the slurry well into the surface. The approximate application rate is 1.5 m² per litre. Place the repair material on to the slurry whilst it is tacky. In hot weather the slurry will dry quickly once it is applied and it is prudent to mix the mortar ready for application prior to applying the slurry. If the **weber.cem keycoat** does dry, it should be removed mechanically and a further coat must be applied.

Apply **weber.cem lightweight** mortar to the substrate whilst the bonding slurry is still tacky and compact well into place.

Curing

Unless a coating or other system is to be applied to the surface, cure with **weber.tec ritecure**, applied immediately after finishing.

Where a coating etc. is to be applied, cure with close contact polythene for a minimum of 7 days; the polythene should be tight on the surface and taped around the edges.

Although shrinkage is minimised, some very fine cracking may occur particularly in large flat areas, or in adverse drying conditions – even when curing with polythene. Bond and durability are not affected and a decorative treatment of **weber.cote** should be applied.

Important notes

- When replacing faulty cover on reinforced concrete, using **weber.cem keycoat** and **weber.cem lightweight**, the minimum thickness of cover must be 12 mm. Below this figure, the concrete should not be pre-wetted but the following procedure should be taken:

Apply one coat of **weber.tec EP bonding aid** to the freshly prepared steel reinforcement and allow to become tack-free (3 to 6 hours). Where time restraints do not allow continuous working, to ensure adequate bond, this first protective coat should be dusted with fine, clean, dry sand and allowed to cure thoroughly. Excess sand and any dirt should be removed before the repair process is continued. Apply a second coat of **weber.tec EP bonding** to both the steel and concrete and whilst this is still tacky, apply the **weber.cem lightweight** using a gloved hand. The surface of the mortar should then be finished with a clean, steel float.

- 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 either **weber.cem keycoat** or **weber.tec EP bonding aid**.

When cured, **weber.cem lightweight** and **weber.cem keycoat** are stable to freeze/thaw conditions but following good concreting practice they should not be applied in freezing weather or at temperatures below 5°C.

Packaging and yield

weber.cem lightweight

Approximately 15 litres per 20 kg bag, i.e. about 1 m² at 15 mm thickness.

weber.cem keycoat

Approximately 1 m² per 1 kg.

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

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