



## Betofix EM 4 2K

PCC I (RM) concrete replacement mortar for static repair of concrete structures

Type/Name	Availability				
	Quantity per pallet	24	30	1	1000
	Size / Quantity	25 l	40 kg	1000 l	
	Type of container	Plastic canister	Paper bag	Container	
	Container code	25	40	61	62
	<b>Art. no.</b>				
Betofix EM 4 2K (cement grey)	5778		■		■
Betofix EM LQ	5780	■		■	
<b>Attention!</b> Betofix EM LQ is the corresponding mixing liquid; please order separately under its own article number! Minimum order quantity: 3 pallets; 6 tonnes/silo for silo goods.					

### Application rate

Approx. 2.0 kg/m<sup>2</sup>/mm layer thickness or 2.0 kg/dm<sup>3</sup>



### Range of use

- Concrete replacement for structurally relevant repairs
- Concrete replacement according to
  - DIN EN 1504-3
  - Rili-SIB DAFStb 2001
  - ZTV-ING
- Repair and anode embedding mortar for cathodic corrosion protection

### Property profile

- High mechanical resistance
- High resistance to water penetration
- Very low shrinkage
- Can be applied by machine
- Freeze/thaw-resistant

### Planning information



<b>Betofix EM 4 2K - Classification</b>									
acc. to Rili-Sib 2001	M2								
acc. to DIN EN 1504-3	R4								
Old concrete classes	A3	A4							
Reaction to fire	Class A2fl-s1 (DIN EN 13501-1)								
<b>Impacts from the environment</b>									
Carbonation	XC1	XC2	XC3	XC4					
Chlorides excluding seawater	XD1	XD2	XD3						
Chlorides from seawater	XS1	XS2	XS3						
Frost attack with/without de-icing agent	XF1	XF2	XF3	XF4					
Chemical attack	XA1	XA2*	XA3**						
	* without sulphate attack ** protective measures required for - chemical attack or higher - high flow rate of water and interaction of chemicals								
Moisture class classification	WO	WF	WA						
<b>Impacts from the concrete substrate</b>									
Backfacing water	XBW1	XBW2							
Freshwater or seawater loads	XW1	XW2							
Static effect	XSTAT								
<b>Application</b>									
Repair principles/procedures	3.1	3.2	4.4	5.3	6.3	7.1	7.2	7.4	10.1

**Characteristic data of the product**



Shrinkage	7 days: -0.32 mm/m 28 days: -0.51 mm/m 90 days: -0.61 mm/m
Bulk density	Approx. 1.8 kg/dm <sup>3</sup>
Flexural strength	1 day: 5 N/mm <sup>2</sup> 7 days: 8 N/mm <sup>2</sup> 28 days: 12 N/mm <sup>2</sup> 90 days: 14 N/mm <sup>2</sup>
Compressive strength	1 day: 23 N/mm <sup>2</sup> 7 days: 47 N/mm <sup>2</sup> 28 days: 55 N/mm <sup>2</sup> 90 days: 58 N/mm <sup>2</sup>
Dynamic E-modulus	38 x 10 <sup>3</sup> N/mm <sup>2</sup> (at 23 °C)
Maximum grain size	4 mm
External surveillance	KIWA
Bulk density of fresh mortar	Approx. 2.3 kg/dm <sup>3</sup>
Consistency	Plastic

The values stated represent typical characteristic data of the product and are not to be understood as binding product specifications.

#### Possible system products

- [Betofix KHB EM \(5779\)](#)
- [Betofix EM LQ \(5780\)](#)
- [Betofix NBM \(1230\)](#)

#### Preparation

##### ■ Substrate requirements

###### Concrete surface:

Stable, clean, dust-free

Observe the applicable technical regulations for the following parameters:

- Adhesive pull strength of the substrate
- Minimum roughness/roughness depth

Pre-wet the substrate so that it is slightly moist.

##### ■ Substrate preparation

###### Reinforcement:

Degree of purity SA 2 ½ if applying corrosion protection, otherwise SA 2

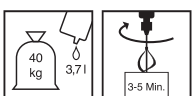
#### Production of the mixture

##### ■ Mixing

3.7 l Betofix EM LQ (art. 5780) with 40 kg Betofix EM 4 2K

Prepare mixing liquid, add dry mortar and mix until homogeneous.

**Mixing time:** approx. 4 minutes



#### Directions

##### ■ Conditions for use

Temperature of the material, air and substrate: from min. +5 °C to max. +30 °C.

Low temperatures increase, while high temperatures decrease the working and setting time.

Once it has hardened, mortar must not be made workable again by adding either water or more wet mortar.





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Working time (+20 °C): Approx. 60 minutes

**Layer thickness**

Single layer 12 mm to 50 mm

A bonding layer is required when applying manually.  
Apply wet-on-wet.

**Subsequent processing**

Protect fresh mortar surfaces from wind, direct sunlight, rain and/or frost for at least 3 days so that they do not dry too quickly.

**Machine working**

Please contact Remmers Technical Service (phone +49 5432 83900) before applying with machine processing.

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**Tools / Cleaning**

Mixer, trowel, aluminium rule, finishing trowel, power trowel

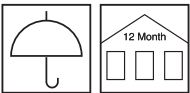


Clean tools with water while the material is still fresh.

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**Storage / Shelf life**

If stored in an unopened container and in a dry place, the product will keep for approx. 12 months.



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**Safety data / Regulations**

For further information on the safety aspects of transporting, storing and handling the product and on disposal and environmental matters, please see the current Safety Data Sheet.

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**Disposal**

Larger quantities of leftover product should be disposed of in the original containers in accordance with the applicable regulations. Completely empty, clean containers should be recycled. Do not dispose of together with household waste. Do not allow to enter the sewage system. Do not empty into drains.



Declaration of  
conformity



Remmers GmbH  
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17  
GBI P61-2  
EN 1504-3: ZA.1a  
5778

Product for structural and non-structural repair for concrete

Compressive strength:	class R4
Chloride ion content:	< 0.05 %
Adhesive bond:	≥ 2 MPa
Carbonation resistance:	passed
Elastic modulus:	≥ 20 GPa
Thermal compatibility part 1 & 4:	≥ 2 MPa
Capillary absorption:	≤ 0.5 kg/(m <sup>2</sup> h <sup>0.5</sup> )
Reaction to fire:	Class A2fl-s1 (DIN EN 13501-1)

Please note that the data and information given above have been calculated as guidelines in the laboratory and from real-life experience and are therefore not binding as a basic principle.

This information is therefore of a general nature only and describes our products and how they are used and worked with. In this respect, it must be borne in mind that the varied and diverse nature of the

prevailing working conditions, materials used and construction sites encountered means that not every individual case can be covered. In this respect, we therefore recommend either conducting tests or liaising with us in the event of any doubt. Unless we have provided express written assurance of the products' specific suitability or characteristics in respect of a contractually stipulated intended use, any technical application-related advice or instruction will never

be binding, even though it is provided to the best of our knowledge. In all other respects, our general terms and conditions of sale and delivery shall apply.

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