



# weber ESL P LUJA

## Frost Mortar for concrete element joints C40/50-4

- The strength development continues even at a temperature of -15 °C without the need for additional heating
- Both vertical and horizontal surfaces
- Freeze thaw resistant 100 cycles
- Plastic fibre-reinforced
- KIWA Inspecta controlled FI-certified domestic product

### About this product

Non-sagging mortar especially designed for vertical and horizontal joints of concrete elements according to EN 1504-4 in winter conditions (max. -15 °C), applied using a pump. Particularly suitable for joints in high-rise apartment buildings.

### Product attributes

- Fibre reinforced

### Application characteristics

- Pumpable

### Area of use

Principally designed for the vertical and horizontal joints of concrete elements in winter conditions. In addition, it is suitable for casting the top and bottom joints of wall elements, for example, and for filling cracks and other holes and grooves without a need to use moulds. The product is certified as special mortar according to guidelines given by The Concrete Association of Finland (BY).

Exposure class (50 and 100 years designed lifetime) XF1, XC4, XS1, XD2 and XA1, SFS-EN 206-1.

Product fulfills the requirements according to SFS-EN 1504-4 (part 4: Structural bonding), product intended for structural bonding as cementitious mortar for jointing of concrete elements both vertically and horizontally according principle 4.4.

### Substrate

The joint must be clean, absorbent and preferably roughened; in winter conditions, the joint must also be free of frost. The width of the joint must be at least 15 mm. Use a stopper board if necessary.

### Substrate type

- Concrete

### Mixing

The mortar can be mixed with a screw mixer, for example. The Frost mortar for concrete element joints is shovelled from the large sack into the mixer. During the mixing, max. 11-12.5% of water is added to the mortar.

Product specification	
Recommended water content	11-12.5 l/100 kg of dry mix (11-12.5%)
Mixed volume	Approx. 470 l/1000 kg
Pot life (Operating time)	Approx. 30 minutes
Binder	CEM I 52,5 N
Aggregate	Natural sand, grain size 0-4 mm
Additive	Additives that improve workability and weather resistance, and compensate for shrinkage. Additives that improve strength development in sub-zero temperatures.
Adhesion strength 28 days	> 4.0 MPa (Flexural bond strength, EN 12636). > 15 MPa (Slant shear strength, EN 12615).
Compressive strength class	C40/50-4 when pumped.
Compressive strength 1 day	Approx. 3 MPa (-5 °C, EN 12190). Approx. 1 MPa (-15 °C, EN 12190).
Compressive strength 7 days	Approx. 25 MPa (-5 °C, EN 12190). Approx. 15 MPa (-15 °C, EN 12190).
Compressive strength 28 days	Approx. 45 MPa (-5 °C, EN 12190). Approx. 35 MPa (-15 °C, EN 12190).
Unrestrained shrinkage 28 days	0.6 mm/m (EN 12617-4)
Fire class	A1 (EN 13501-1)
Frost resistance	XF1 (100-cycle freeze/defrost test SFS 5447)
Modulus of elasticity	> 20 GPa (EN 13412)
Air content	6-10%
Chloride content	< 0.05% (SFS-EN 1015-17)
Density	Approx. 2100 kg/m <sup>3</sup>
Water cement ratio	0.4 (with maximum water volume)
Equipment recommendations	Weber Pump Set. Stator Ü356-0,75. Steel reinforced minimum of 1.5" hose, for vertical use maximum of 40 m and horizontal casts maximum of 60 m.
Storage conditions	Shelf life is 12 months from date of manufacture (unopened package, dry space)
Package	1000 kg large sack.
Certifications	CE, FI

### Work instructions

After mixing, the mortar is pumped into the joint and levelled with a steel trowel. Do not vibrate the Frost mortar for concrete element joints. If the water content is correct, the mortar will not sag out of the joint. If the joint is open on both sides, place a stopper board on one side of the joint. Remove the stopper board once a sufficient amount of time has elapsed (depending on the temperature, relative humidity and other factors affecting the setting time), and use a trowel to finish the joint. Pump the mortar into the joint carefully to ensure a compact and structurally functional joint.

### **After-treatment**

When Frost mortar for concrete element joints is used on bearing structures, strength development at worksite conditions must be ensured before structure is loaded with, for example, concrete elements. The strength development slows down remarkably at temperatures below 0 °C. The additives that ensure strength development at low temperatures only ensure the development of so called freezing strength with Frost mortar for concrete element joints not to be damaged.

### **Disclaimer**

As there are different conditions at every opportunity, Weber can not be held responsible for anything other than the information provided under the heading "Product Specification". Examples of information and circumstances, which are outside Saint-Gobain (whether specifically stated or not) include storage, construction, processing, interoperability with other products, workmanship and local conditions.