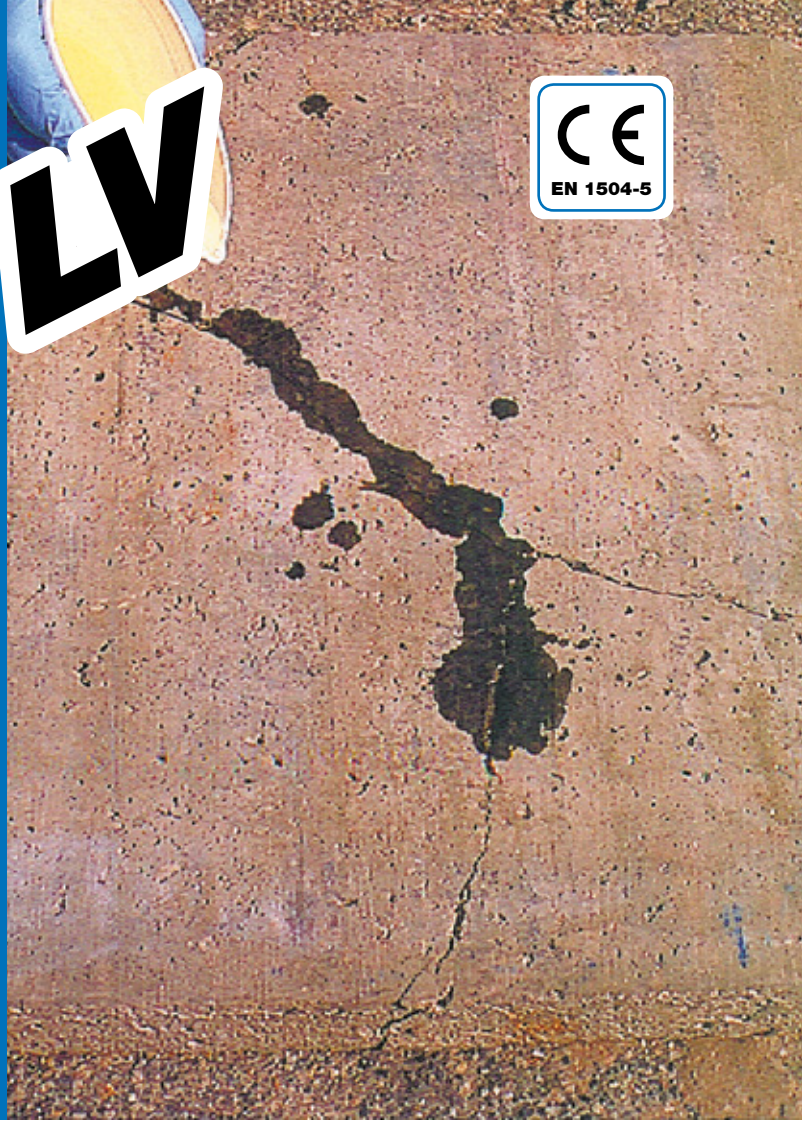
MAPEI

IN COMPLIANCE WITH EUROPEAN STANDARD
EN 1504-5
MAPEI
CONCRETE INJECTION

Epojet LV

CE
EN 1504-5



Two-component epoxy resin, with very low viscosity for injection in microcracks, also on wet surfaces

WHERE TO USE

- Monolithic sealing of cracks.
- Bonding steel plates to concrete (*béton plaqué*) by low pressure injection.

Some application examples

- Structural repair of beams, pillars and cracked floors by low pressure injection.
- Reinforcement of beams and floors by injection with the *béton plaqué* method, when the plates to be bonded are fitted with lateral flaps and it is therefore impossible to apply **Adesilex PG1** or **Adesilex PG2**.
- Repair of architectural concrete, wall coverings and architectural elements that are crumbly.
- Structural consolidation and restoration of civil and industrial road constructions and underground works that show signs of microcracking.
- Sealing of cracks in cementitious screeds.
- Restoration, by injection, of concrete structures damaged by earthquakes, settlements or impacts.

TECHNICAL CHARACTERISTICS

Epojet LV is a two-component epoxy adhesive. The pre-measured components (component A = resin and component B = hardener) must be mixed together before being used.

Once mixed, **Epojet LV** becomes a very fluid liquid that can easily penetrate even in microcracks.

Epojet LV polymerizes without any significant amount of shrinkage, also on wet surfaces and once hardened is waterproof and resists chemical agents present in the atmosphere.

Epojet LV has very good insulating properties and high mechanical strength.

Epojet LV meets the requirements defined by EN 1504-9 ("*Products and systems for the protection and repair of concrete structures - definitions, requirements, quality control and evaluation of conformity - General principles for the use of products and systems*") and the minimum requirements claimed by EN 1504-5 ("*Concrete injection*").

RECOMMENDATIONS

- Do not use **Epojet LV** at temperatures below +10°C.

Epojet LV

- Do not apply **Epojet LV** on dusty, crumbly or weak substrates.
- Do not use **Epojet LV** for sealing expansion joints.

APPLICATION PROCEDURE

Preparation of the substrate

Before injecting **Epojet LV**, the concrete surface must be perfectly sound and clean.

Positioning the steel reinforcement and injection

Clean all traces of rust or grease from the reinforcements by sandblasting to bright metal (SA 2½).

Once these preparation procedures have been completed, securely fix the steel plates to the concrete with expanding bolts. Position the injectors in the space between the structure and the plate reinforcements and seal with **Adesilex PG1** or **Adesilex PG2**. The latter product has a longer pot life. Use the same product to seal any gaps between the concrete structure and the strengthening element. After **Adesilex PG1** or **Adesilex PG2** has hardened, inject **Epojet LV** through the injectors.

Sealing cracks by injection

Make a series of holes of 8-9 mm in diameter on the sides of the cracks and directed so they intercept the same cracks. Blow out the cavities with compressed air to remove all the dust formed during the drilling. Insert the appropriate injection tubes in the holes and seal the entire working surface with **Adesilex PG1** or **Adesilex PG2**.

If it is not possible to drill holes because the cracks are so small and widespread throughout the concrete, use injectors with a flat end plate and fasten them to the concrete over the cracks with expansion plugs, or with **Adesilex PG1** or **Adesilex PG2**.

Wait until **Adesilex PG1** or **Adesilex PG2** has hardened (at least 12 hours) then inject compressed air to make sure that the injection system is completely free.

Preparing the product

The two components of **Epojet LV** must be mixed together. Pour component B into component A and mix by hand using a trowel (for small amounts), or with a low speed heavy duty drill (for large quantities), avoiding the formation of air bubbles, until the mix is completely homogeneous.

Do not use partial quantities of the parts as this may produce an imbalance in the proportions which could lead to incomplete hardening of **Epojet LV**. If partial quantities are required use an electronic precision scale.

Applying the product

Inject **Epojet LV** immediately after its preparation with a suitable pump, starting from the lowest tube. Inject until the resin overflows out of the next tube. Close the lower tube and continue injecting until the entire crack is completely sealed. Horizontal cracks can be sealed simply by pouring **Epojet LV** directly into the crack.

At +23°C **Epojet LV** must be used within 35 minutes of its preparation. Avoid using **Epojet LV** when the exterior temperature and that of the substrate is less than +10°C.

Cleaning

Due to the strong adhesion of **Epojet LV**, it is recommended to clean working equipment with a solvent (ethyl alcohol, toluene etc.) before the product dries.

CONSUMPTION

– Sealing cracks:
  1.1 kg/l of cavity to be filled.
– Bonding concrete-steel:
  1.1 kg/m^2 per mm of thickness.

PACKAGING

4 kg kits (component A: 3.2 kg - component B: 0.8 kg).

2.5 kg kits (component A: 2 kg - component B: 0.5 kg).

STORAGE

24 months if stored in its original packaging. Keep the product stored in an area with a temperature not below +5°C.

SAFETY INSTRUCTION FOR PREPARATION AND APPLICATION

Epojet LV part A irritates the skin and eyes. **Epojet LV** part B is corrosive and may cause burns. If it harmful when inhaled or swallowed.
Both part A and B may cause sensitization in predisposed subjects. **Epojet LV** contains low molecular weight epoxy resins with which can cause sensitization if cross-contamination occurs with other epoxy compounds. During application wear protective gloves and goggles and to take the usual precautions for handling chemicals.
If it comes in contact with the eyes or skin wash immediately with plenty of water and seek medical advice. Work in well ventilated areas. In case of poor ventilation use a mask with a filter. **Epojet LV** part A and B are dangerous

TECHNICAL DATA (typical values)

PRODUCT IDENTITY		
	component A	**component B**
Consistency:	liquid	liquid
Colour:	transparent yellow	transparent yellow
Density (kg/l):	1.1	0.98
Brookfield viscosity (mPa·s):	300 (rotor 2 - 20 rpm)	25 (rotor 1 - 50 rpm)

APPLICATION DATA OF PRODUCT (at +23°C - 50% R.H.)	
Mixing ratio:	component A : component B = 4 : 1
Consistency of mix:	highly fluid liquid
Colour of mix:	transparent yellow
Density of mix (kg/l):	1.10
Brookfield viscosity (mPa·s):	140 (rotor 1 - 20 rpm)
Workability time (EN ISO 9514): **– at +23°C:** **– at +30°C:**	 35 minutes 15 minutes
Setting time: **– at +23°C:** **– at +30°C:**	 7-8 hours 2-3 hours
Application temperature range:	from +10°C to +35°C
Complete hardening time:	7 days

FINAL PERFORMANCE

Performance characteristic	Test method	Requirements according to EN 1504-5	Performance of product	
Bond due to tensile strength:	EN 12618-2	cohesive failure of substrate	meets specifications	
Bond due to inclined shear strength:	EN 12618-3	monolithic failure	meets specifications	
Volumetric shrinkage (%):	EN 12617-2	< 3	2.1	
Glass transition temperature:	EN 12614	> +40°C	> +40°C	
Injection into a column of dry sand and into a column of damp sand:	EN 1771	injection class: – cracks width 0.1 mm: < 4 min – cracks from 0.2 to 0.3 mm: < 8 min	dry	damp
			1 min 30 sec	1 min 30 sec
		indirect tension: > 7 N/mm²	11 N/mm²	10 N/mm²
Durability (freeze/thaw cycles and wet/dry cycles):	EN 12618-2	cohesive failure of substrate	meets specifications	
Development of tensile strength at +10°C (N/mm²):	EN 1543	tensile strength > 3 N/mm² after 72 hours at service temperature	> 3	
Tensile strength (N/mm²):	EN ISO 527	–	50	
Tensile modulus of elasticity (N/mm²):	EN ISO 527	–	2,900	
Deformation at failure (%):	EN ISO 527	–	2.9	
Compressive strength (N/mm²):	ASTM D 695	–	70	

Epojet LV

to aquatic environment – do not dispose of the product to the environment. When the product reacts, it generates considerable heat. After mixing components A and B we recommend applying the product as soon as possible and to never leave the container unguarded until it is completely empty. For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

WARNING
Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

All relevant references for the product are available upon request and from www.mapei.com

365-2-2016-II (GB)

MAPEI®
BUILDING THE FUTURE