EPOJET LV

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



CLASSIFIED AS EUROPEAN STANDARD
EN 1504-5
MAPEI
CONCRETE INJECTION

WHERE TO USE

- Ideal for sealing static 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 epoxy adhesives made up of two pre-measured components (component A = resin and component B = hardener) that must be mixed together before use.
Once mixed, **Epojet LV** become a very fluid liquid that can easily penetrate even in microcracks.

Epojet LV polymerise without any significant amount of shrinkage, also on wet surfaces and once hardened are waterproof and resist chemical agents present in the air. They also have 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 use of products and systems*"), and the minimum requirements of EN 1504-5 ("*Anchoring of reinforcing steel bar*").

RECOMMENDATIONS

- Do not use **Epojet LV** if the temperature is lower than +10°C.
- Do not apply **Epojet LV** on dusty, crumbling or weak substrates.
- Do not use **Epojet LV** for sealing expansion joints.

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APPLICATION PROCEDURE

Preparation of the substrate

Before injecting the product, the concrete surface must be perfectly clean and sound.

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 packers 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.

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 in comparison with **Adesilex PG1**. 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 injectors.

Preparation of the products

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.

Application of the products

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 crack.
Epojet LV must be applied within 35 minutes from preparation at a temperature of +23°C.
Do not use **Epojet LV** when the outside and the substrate temperature is below +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

- **Epojet LV** Sealing cracks: 1.1 kg/l of cavity to be filled.
- **Epojet LV** Bonding concrete-steel: 1.1 kg/m² per mm of thickness.

PACKAGING

- 4 kg kit (component A = 3.2 kg - component B = 0.8 kg).

STORAGE

24 months in their original packaging stored at a temperature between +5°C and +30°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

When the product reacts it generates considerable heat. After mixing components A and B, we recommend applying the product as soon as possible and never leaving the container unattended until it is completely empty.

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.ae.

TECHNICAL DATA (typical values)

PRODUCT IDENTIFICATION		
	Part A	**Part B**
Colour:	transparent yellow	transparent yellow
Consistency:	liquid	liquid
Density (kg/l):	1.1	0.98
Viscosity at +23°C (EN ISO 2555) (mPa·s):	3000 (# 4 - 20 rpm)	200 (# 1 - 20 rpm)
Viscosity (mPa·s):	300 (shaft 2 - 20 revs)	25 (shaft 1 - 50 revs)

APPLICATION DATA	
Mixing ratio:	A : B = 3.2 : 0.8
Consistency of mix:	very fluid liquid
Colour of mix:	transparent yellow
Density of mix (kg/l):	1.1
Brookfield viscosity (mPa.s):	140 (shaft 1 - 50 revs)
Workability time (EN ISO 9514):	at +23°C 35 minutes at +30°C 15 minutes
Setting time:	at +23°C 7-8 hours at +30°C 2-3 hours
Application temperature:	from +10°C to +35°C
Complete hardening time:	7 days

FINAL PERFORMANCE				
Performance characteristic	**Test method**	**Requirement according to EN-1504-5**	**Performance of product**	
Bond due to tensile strength:	EN 12618-2	cohesive failure of the substrate	meets specification	
Bond due to inclined shear strength:	EN 12618-3	monolithic failure	meets specification	
Volumetric shrinkage (%):	EN 12617-2	< 3	21	
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 from 0.1 mm: < 4 min – cracks width from 0.2 to 0.3 mm < 8 min	dry	damp

			1 min and 30 seconds	1 min and 30 seconds
		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 the substrate	meets specifications	meets specifications
Development of tensile strength (N/mm²):	EN 1543	tensile strength > 3 N/mm² after 72 hours at service temperature	at +10°C > 3 N/mm²	at 21°C > 5 N/mm²
Tensile strength (N/mm²):	EN ISO 527	-	50 N/mm²	40 N/mm²
Tensile modulus of elasticity (N/mm²):	EN ISO 527	-	2900	2600
Deformation at failure (%):	EN ISO 527	-	2.9	1.5
Compressive strength (N/mm²):	ASTM D 695	-	70 N/mm²	70 N/mm²

IMPORTANT NOTES

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.ae.

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

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into other project-related documents, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation. The most up-to-date TDS can be downloaded from our website www.mapei.ae.

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