EPOJET LV EPOJET LV 40

Two-component epoxy resins, 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 and **Epojet LV 40** are 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** and **Epojet LV 40** become a very fluid liquid that can easily penetrate even in microcracks.
Epojet LV and **Epojet LV 40** 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 and **Epojet LV 40** meet 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 use **Epojet LV 40** at temperatures lower than +21°C.
· Do not apply **Epojet LV** and **Epojet LV 40** on dusty, crumbling or weak substrates.
· Do not use **Epojet LV** and **Epojet LV 40** for sealing expansion joints.

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 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.

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** or **Epojet LV 40** through injectors.

Preparation of the products

The two components of **Epojet LV** and **Epojet LV 40** 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** or **Epojet LV 40**. If partial quantities are required use an electronic precision scale.

Application of the products

Inject **Epojet LV** or **Epojet LV 40** 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** or **Epojet LV 40** directly into crack.
Epojet LV must be applied within 35 from preparation at a temperature of +23°C.
Epojet LV 40 must be applied within 55 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. Do not use **Epojet LV 40** when the outside and the substrate temperature is below +21°C.

CLEANING

Due to the strong adhesion of **Epojet LV** and **Epojet LV 40** 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.
· **Epojet LV 40** Sealing cracks: 1.05 kg/l of cavity to be filled.
· **Epojet LV 40** Bonding concrete-steel: 1.05 kg/m² per mm of thickness.

PACKAGING

· 5 kg kit (component A = 4 kg - component B = 1 kg).
· 2.5 kg kit (component A = 2 kg - component B = 0.5 kg).

STORAGE

24 months in their original packaging. Store the products in an area with a temperature not lower than +5°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.com.
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)
PRODUCT IDENTITY

	Epojet LV		Epojet LV 40	
	Part A	**Part B**	**Part A**	**Part B**
Consistency:	liquid	liquid	liquid	liquid
Colour:	transparent yellow	transparent yellow	transparent	transparent yellow
Density (kg/l):	1.1	0.98	1.1	0.98
Viscosity (mPa·s):	300 (shaft 2 - 20 revs)	25 (shaft 1 - 50 revs)	300 (shaft 2 - 20 revs)	55 (shaft 1 - 50 revs)

APPLICATION DATAsx

	Epojet LV	Epojet LV 40
Mixing ratio:	A : B = 4 : 1	A : B = 4 : 1
Colour of mix:	transparent yellow	light yellow
Consistency of mix:	very fluid liquid	light yellow liquid
Density of mix (kg/l)	1.1	1.05
Brookfield viscosity (mPa.s):	140 (shaft 1 - 50 revs)	155 (shaft 1 - 50 revs)
Workability time (EN ISO 9514):	at +23°C 35 minutes at +30°C 15 minutes	at +23°C 55 minutes at +45°C 8 minutes
Setting time:	at +23°C 7-8 hours at +30°C 2-3 hours	at +23°C 16-17 hours at +40°C 5-6 hours at +45°C 4-5 hours
Application temperature:	from +10°C to +35°C	from +23°C to +45°C
Complete hardening time:	7 days	7 days

FINAL PERFORMANCE

Performance characteristic	Test method	Requirements according to EN-1504-5	Product performance			
			Epojet LV		Epojet LV 40	
Bond due to tensile strength:	EN 12618-2	cohesive failure of substrate	meets specifications		meets specifications	
Bond due to inclined shear strength:	EN 12618-3	monolithic failure	meets specifications		meets specifications	
Volumetric shrinkage (%):	EN 12617-2	< 3	2.1		2.1	
Glass transition temperature:	EN 12614	> +40°C	> +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	dry	damp	dry	damp

		– cracks width from 0.2 to 0.3 mm < 8 min	1 min and 30 seconds	1 min and 30 seconds	1 min and 30 seconds	1 min and 30 seconds
		indirect tension: > 7 N/mm²	11 N/mm²	10 N/mm²	12.0 N/mm²	11 N/mm²
Durability (freeze/thaw cycles and wet/dry cycles):	EN 12618-2	cohesive failure of 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	

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

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