

# EPOJET

Two-component, super-fluid epoxy resin for injections and anchorings



## WHERE TO USE

- Monolithic repair of structures with cracks or fissures caused by heavy loads, accidental impacts and earthquakes.
- Bonding and reinforcement of structures by low pressure injection.
- Precise anchoring of metallic structures.

### Some application examples

- Structural repairs of beams, pillars and fissured floors by low pressure injection.
- Reinforcement of beams and floors by using injection and *béton plaqué*, the plated concrete technique, when the plates to be bonded are fitted with lateral flaps and it is therefore impossible to apply **Adesilex PG1** or **Adesilex PG2** directly.
- Restoring and waterproofing cracks in reservoirs, tanks and canals.
- Restoring, by injection, various elements of façades, cladding and architectural elements that are loose.
- Protective injections of post-compression cable ducts.
- Structural consolidation and restoration of civil and industrial road constructions which show signs of cracking.
- Sealing of fissures in cementitious screeds.
- Consolidation and restoration, by injection, of concrete structures damaged by earthquakes, settlement or impact.
- Anchoring metallic structural work and steel reinforcement.

## TECHNICAL CHARACTERISTICS

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

Once mixed, **Epojet** becomes a liquid with low viscosity very suitable for injection.

**Epojet** polymerizes without shrinkage and once hardened is waterproof.

**Epojet** has very good insulating properties and high mechanical strength; furthermore it adheres perfectly to concrete and steel.

**Epojet** 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*"), the minimum requirements claimed by EN 1504-5 ("*Concrete injection*") and the minimum requirements for EN 1504-6 ("*Anchoring steel reinforcement*").

## RECOMMENDATIONS

- Do not use **Epojet** at temperatures below +5°C.
- Do not apply **Epojet** to wet surfaces.
- Do not apply **Epojet** on dusty, friable or weak substrates.
- Do not use **Epojet** for sealing expansion joints.

## APPLICATION PROCEDURE

### Preparation the substrate

Before injecting **Epojet**, the concrete substrate must be perfectly sound and clean. Remove all crumbly and loose parts, dust, cement laitance and paint by sanding or brushing. Concrete soaked with oil or grease must be completely demolished.

### Placing the steel reinforcement and injection

Remove all traces of rust or grease by sandblasting down to bright metal (SA 2½) or, if necessary, with emery paper and de-grease with solvents.

Once these preparatory procedures have been completed, fix the steel plates to the concrete with expanding bolts and then seal the injectors with **Adesilex PG1** or **Adesilex PG2**.

### Sealing cracks by injection

Make a series of holes of 8-9 mm in diameter along the sides of the cracks and orient the injectors to intercept the cracks. Blow out the cavities with compressed air to remove all the dust formed during the drilling. Insert the appropriate injection tubes into the holes and seal 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 the **Adesilex PG1** or **Adesilex PG2** has set (at least 12 hours) and then inject compressed air to make sure the system is completely free.

### Preparing the product

First the two components of **Epojet** must be mixed together. Pour component B into component A and manually mix with a trowel (for small amounts), or with a low speed heavy duty drill (for large quantities) avoiding the formation of air bubbles and until the mix is perfectly homogeneous. Do not use partial quantities of the parts to avoid measuring errors that could lead to the incomplete hardening of **Epojet**. If the packs need to be used partially, use an electronic precision scale.

### Applying the product

Begin immediately from the lowest tube and start injecting **Epojet** until the resin overflows out of the next tube. Close the tube used for injection and inject **Epojet** in the next one positioned just above until the fissure is completely sealed.

Horizontal fissures can be sealed simply by pouring **Epojet** directly into the crack.

**Epojet** must be used within 40 minutes from its preparation and at +23°C.

Avoid using **Epojet** when the outdoor temperature and that of the substrate is less than +5°C.



Mixing Epojet



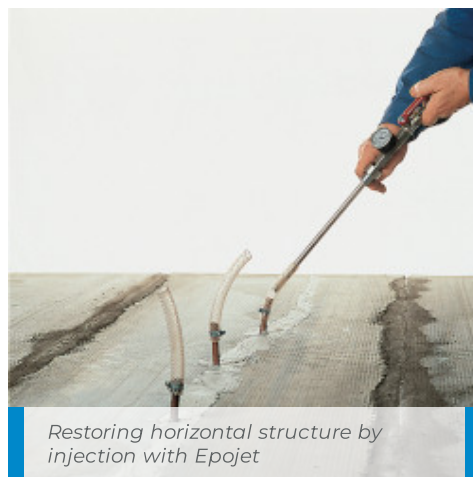
Fixing injection tubes with Adesilex PG1



Injecting Epojet to a fissured pillar



Repairing beam with injection of Epojet



Restoring horizontal structure by injection with Epojet

## CLEANING

Tools used for preparing and injecting **Epojet** must be cleaned immediately after use and before it hardens with solvents (ethyl alcohol, toluene, etc.).

## CONSUMPTION

- Sealing cracks:  
1.1 kg/l of cavity to be filled.
- Bonding concrete to steel:  
1.1 kg/m<sup>2</sup> 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 INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Epojet** component A is irritant for the skin and the eyes, **Epojet** component B is corrosive and can cause burns. Furthermore, it is harmful when inhaled or swallowed. Both component A and component B can cause sensitisation if they come in contact with the skin of those predisposed. The product contains low molecular weight epoxy resins that may cause sensitisation if cross-contamination occurs with other epoxy compounds.

During use, wear protective gloves and goggles and take the usual precautions for handling chemicals. In case of contact with the eyes or the skin, wash immediately with plenty of water and seek medical attention. Use a suitable device for the protection of the respiratory tract.

When the material reacts it generates a high amount of heat. We recommend applying the product as soon as possible after mixing components A and B and to never leave the container unattended until it is completely empty.

**Epojet** component A and component B are dangerous for aquatic life, do not dispose of them in the environment. 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 ONLY FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)		
PRODUCT IDENTITY		
	Component A	Component B
Consistency:	liquid	liquid
Colour:	transparent yellow	transparent yellow
Density (kg/l):	1.15	1.00
Brookfield viscosity (mPa·s):	500 (rotor 2 - 20 revs)	320 (rotor 2 - 20 revs)
APPLICATION DATA OF PRODUCT (at +23°C - 50% R.H.)		
Mixing ratio:	component A : component B = 4 : 1	
Consistency of mix:	fluid liquid	
Colour of mix:	transparent yellow	
Density of mix (kg/l):	1.14	
Brookfield viscosity (mPa·s):	380 (rotor 2 - 5 revs)	
Workability time: – at +23°C: – at +30°C:	40 min 20 min	

Setting time: – at +23°C: – at +30°C:		4 h 3 h			
Application temperature range:		from +5°C to +30°C			
Final hardening time:		7 days			
FINAL PERFORMANCE					
Performance characteristic	Test method	Requirements according to EN 1504-5	Requirements according to EN 1504-6	Performance of product	
Tensile adhesion force:	EN 12618-2	cohesive failure of the substrate	not required	meets requirements	
Inclined shear adhesion strength:	EN 12618-3	monolithic failure	not required	meets requirements	
Volumetric shrinkage (%):	EN 12617-2	< 3	not required	1.9	
Glass transition temperature:	EN 12614	≥ +40°C	≥ +45°C	≥ +45°C	
Sand column injectability (dry state and damp state):	EN 1771	injectability class: – crack width 0.1 mm: < 4 min – crack width 0.2 to 0.3 mm: < 8 min	not required	dry	damp
				4 min and 41 sec	4 min and 50 sec
		indirect traction: > 7 N/mm²	not required	14 N/mm²	11 N/mm²
Durability (freeze/thaw and wet/dry cycles):	EN 12618-2	cohesive failure of the substrate	not required	meets requirements	
Development of tensile strength at +5°C (N/mm²):	EN 1543	tensile strength > 3 N/mm² after 72 hours at minimum operating temperature	not required	> 4.9	
Creep – movement with a load of 50 kN for 3 months (mm):	EN 1544	not required	≤ 0.6	0.46	
Slip-resistance of steel reinforcement rods – movement with a load of 75 kN (mm):	EN 1881	not required	≤ 0.6	0.58	
Compressive strength (N/mm²):	EN 12190	not required	> 80% of value declared by manufacturer after 7 days	95 (after 7 days)	
Tensile strength (N/mm²):	EN ISO 527	–	–	44	
Tensile modulus of elasticity (N/mm²):	EN ISO 527	–	–	3,400	
Deformation at failure (%):	EN ISO 527	–	–	1.0	
Reaction to fire:	EN 13501-1	not required	Euroclass	E	

## 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](http://www.mapei.com)

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