



Adesilex PG1 Adesilex PG2



Two-component thixotropic epoxy adhesives for structural bonding

WHERE TO USE

Structural repair, bonding and reinforcement of concrete elements, natural stone, mortar and brick.

Some application examples

- Structural reinforcement of beams and pillars by bonding steel (beton plaqué method) or composite material (e.g. **Carboplate**) plates to concrete.
- Non-flexible structural bonding of precast concrete elements.
- Sealing injectors and surface damage before injection of **Epojet** by low-pressure pump.
- Sealing large cracks and repairing joint corners in industrial flooring subject to traffic.
- Bonding fibre-reinforced cement slabs and pipes.
- Waterproofing large size joints by bonding PVC strips (e.g. **Mapeband PVC**) to concrete.

TECHNICAL CHARACTERISTICS

Adesilex PG1 and **Adesilex PG2** are two-component products based on epoxy resins, selected fine-grain aggregates and special additives according to a formula developed in the MAPEI research laboratories.

After mixing **Adesilex PG1** or **Adesilex PG2** (Part A) with their hardeners (Part B), a thixotropic, easy to apply even on vertical structures in thicknesses up to 1 cm in a single layer, is obtained. Once prepared, **Adesilex PG1** hardens by chemical reticulation alone in approx. 3 hours, while **Adesilex PG2** hardens in 5 hours

without shrinkage, they become compounds with exceptional bonding and mechanical strength. The products differ from each other in their working time. **Adesilex PG1** is especially suitable for applications in temperatures between +5°C and +23°C, while **Adesilex PG2** is recommended at higher temperatures.

RECOMMENDATIONS

- Do not use **Adesilex PG1** and **Adesilex PG2** for sealing flexible joints or joints subject to movement (use **Mapesil AC** or **Mapeflex PU21**).
- Do not use **Adesilex PG1** and **Adesilex PG2** for shrinkage joints between fresh and old concrete (use **Eporip**).
- Do not use **Adesilex PG1** and **Adesilex PG2** on wet surfaces.
- Do not use **Adesilex PG1** and **Adesilex PG2** on dirty or crumbling surfaces.
- Do not use **Adesilex PG1** and **Adesilex PG2** for bonding and grouting anti-acid ceramic tiles (use **Kerapoxy**).
- Do not use **Adesilex PG1** and **Adesilex PG2** for levelling concrete surfaces before bonding carbon fibre fabrics (e.g. **MapeWrap C UNI-AX**, **MapeWrap C BI-AX** and **MapeWrap C QUADRI-AX**), use **MapeWrap 11** or **MapeWrap 12**.

APPLICATION PROCEDURE

Preparing the substrate

To ensure good adhesion of **Adesilex PG1** and

Adesilex PG1 Adesilex PG2



Fixing injection tubes and sealing cracks for structural consolidation



Column clad with Adesilex PG1



Application of Adesilex PG1 with a notched trowel for structural bonding of pre-fabricated steps

Adesilex PG2, special care must be taken for the preparation of surfaces to be bonded. The concrete, natural stone or brick substrate must be clean, sound and dry. Sand-blasting is ideal to remove all loose and crumbling parts, efflorescence, cement laitance and traces of form-release oils. Then remove all dust with compressed air. All traces of rust, paint and oil must be removed from metal surfaces, preferably by means of sand-blasting (SA 2 1/2) down to bright metal.

With regards to fresh placed concrete, it is necessary that the concrete cures for at least 28 days before applying **Adesilex PG1** or **Adesilex PG2**. This is to avoid tensions induced by hygrometric shrinkage of the concrete concentrated in the interface of the bonding.

The application temperature of **Adesilex PG1** must not be below +5°C and +10°C for **Adesilex PG2**.

Preparing the mixes

The two parts of **Adesilex PG1** and **Adesilex PG2** must be mixed together. Pour Part B (white) into Part A (grey) and mix at a slow speed with a drill fixed with an agitator until a uniform paste is obtained (a uniform grey). The product is already pre-dosed. To avoid incomplete hardening of **Adesilex PG1** and/or **Adesilex PG2**, do not use partial quantities. When partial quantities are necessary, use a precision electronic scale.

The mixing ratio is:

- 3 parts by weight of Part A;
- 1 part by weight of Part B.

Applying the mixes

Adesilex PG1 and **Adesilex PG2** can be applied on concrete, stone, brick or metal with a flat trowel or float.

To obtain good bonding, it is recommended to spread the adhesive on both surfaces that need bonding and let the product penetrate well, especially on irregular surfaces. After applying the adhesive, unite the two pieces that need bonding and keep firm until the adhesive has completely hardened. The sufficient thickness to obtain an excellent bonding strength is approximately 1-2 mm. Because of the excellent thixotropic property, **Adesilex PG1** and **Adesilex PG2** can be also applied vertically or on ceilings without slipping.

The environmental temperature has an effect on the hardening time of the two products. At +23°C **Adesilex PG1** remains workable for approximately 40 minutes while **Adesilex PG2** remains workable for 60 minutes. After this time, the products begin the hardening process.

Adesilex PG1 and **Adesilex PG2** must be applied within the useful pot life time. It is therefore useful to plan the work within the time limit mentioned above.

Precautions to be taken before application

No particular precautions need to be taken with temperatures between +10°C and +30°C.

During summer it is preferable to use **Adesilex PG2**. Do not expose the product to sun light and carry out bonding during the cooler hours of the day in order to prevent the rapid hardening of the product which would make application difficult.

During winter, when outdoor applications at temperatures below +10°C are necessary, it is recommended to use **Adesilex PG1**. Heat the substrate at least 24 hours before bonding and use an appropriate insulating system to avoid freezing. Thermal insulation must be maintained for at least the next 24 hours. Store the product in a heated environment before use.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND INSTALLATION

Adesilex PG1 and **Adesilex PG2** parts A are irritant in direct contact with eyes and skin. Parts B contain corrosive harmful substances and harmful by inhalation and if swallowed. After repeated or prolonged contact, sensitisation phenomena could be caused. Avoid any type of contact with the skin and eyes by always wearing protective gloves and goggles especially when mixing the two parts and when using the products.

In case of contact with the skin immediately wash with plenty of running water and soap. If any sensitisation occur consult a doctor. In case of contact with the eyes, wash with plenty of running water and consult a doctor. If using in a closed environment, provide good ventilation.

Adesilex PG1 and **Adesilex PG2** are dangerous for the aquatic organisms: do not release to the environment.

Cleaning

Due to the high bonding strength of **Adesilex PG1** and **Adesilex PG2** even to metal, it is recommended to clean working tools with solvents (ethyl alcohol, toluol, etc.) before the product hardens.

CONSUMPTION

1.50-1.60 kg/m² per mm of thickness.

PACKAGING

2 kg units (Part A = 1.5 kg Part B = 0.5 kg).
6 kg units (Part A = 4.5 kg Part B = 1.5 kg).

STORAGE

Store the product in original packaging in an environment at temperatures not below +5°C.

FOR PROFESSIONALS.

WARNING

Although the technical details and recommendations contained in this product report 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 applications: 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.

**All relevant references
of the product are available
upon request**

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Customs class:	3907 30 00	
	Part A	Part B
Consistency:	thick paste	thick paste
Colour:	grey	white
Mass density (g/cm³):	1.6	1.5
Brookfield Viscosity (mPa·s):	800000 (F shaft - rev. 5)	300000 (D shaft - rev. 2.5)
Storage:	24 months in original sealed packaging at temperatures between +5°C and +30°C (for Adesilex PG1) and between +10°C and +30°C (for Adesilex PG2).	
Hazard classification according to 99/45 CE:	irritant, dangerous for the environment Before use consult the "Safety instructions" paragraph and the information on the packaging and safety data sheet	corrosive, dangerous for the environment Before use consult the "Safety instructions" paragraph and the information on the packaging and safety data sheet

APPLICATION DATA at +23°C - 50% R.H.

	Adesilex PG1	Adesilex PG2
Mix ratio:	Part A : Part B : = 3 : 1	
Consistency of mix:	thixotropic paste	thixotropic paste
Colour of mix:	grey	grey
Mass density of mix (kg/m³):	1550	1550
Brookfield Viscosity (mPa·s):	500.000 (3 shaft - rev. 5)	
Workability		
- at +10°C:	60'	150'
- at +23°C:	40'	60'
- at +30°C:	25'	35'
Setting time		
- at +10°C:	7-8 h	14-16 h
- at +23°C:	3 h-3 h 30'	4-5 h
- at +30°C:	1 h 30'-2 h	2 h 30'-3 h
Application temperature range:	from +5°C to +30°C	from +10°C to +30°C
Final hardening:	7 days	
Bonding strength concrete-steel (N/mm²):	> 3 (breaking of concrete)	
Bonding strength concrete-Carboplate (N/mm²):	> 3 (breaking of concrete)	
Bonding strength steel-steel (ASTM D 1002) (N/mm²):	19	
Tensile strength (ASTM D 638) (N/mm²):	30	
Elongation due to pulling stress (ASTM D 638) (%):	1	
Compressive strength (ASTM C 579) (N/mm²):	70	
Flexural strength (ISO 178) (N/mm²):	40	
Modulus of elasticity under compression (ASTM C 579) (N/mm²):	8000	
Modulus of elasticity in flexion (ISO 178) (N/mm²):	4000	



Application of Adesilex PG1 on metal sheet



Placing metal sheet for structural reinforcement

Adesilex PG1
Adesilex PG2



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(Quality, Environment and Safety)**

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