



# Adesilex PG1 Rapido



**Two-component,  
ultra rapid-setting  
thixotropic epoxy  
adhesive for  
structural bonding**



## WHERE TO USE

Repairs, bonding and structural strengthening of concrete, reinforced concrete, natural stone, mortar and brickwork structures.

### Some application examples

- Structural strengthening of beams and pillars by bonding steel plates (béton-plaqué technique) or composite material (such as **Carboplate**) to concrete.
- Rigid structural bonding of prefabricated concrete elements.
- Sealing injectors and surface cracks before injecting **Epojet** with a low pressure pump.
- Sealing cracks and repairing the corners of joints in industrial floors for vehicular use.
- Bonding fibre-reinforced cement plates and tubes.
- Bonding hooks used to carry out pull-off tests.
- Waterproofing large joints by bonding TPE membranes (such as **Mapeband TPE**) to concrete.

## TECHNICAL CHARACTERISTICS

**Adesilex PG1 Rapido** is a two-component product, made from epoxy resin, selected fine-grained, aggregates and special additives, according to a formula developed in MAPEI's own research laboratories.

After mixing component A of **Adesilex PG1** with its catalyst (component B), a thixotropic paste is formed which is easy to apply, even on vertical surfaces, at a thickness of up to 1 cm in a single layer. After mixing, **Adesilex PG1 Rapido** hardens without shrinking in 1 hour (at +23°C) by chemical cure, forming a composite material with excellent bond strength and high mechanical strength.

**Adesilex PG1 Rapido** is particularly suitable for application at temperatures between +5°C and +23°C.

**Adesilex PG1 Rapido** 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 the minimum requirements claimed by EN 1504-4 (*"Structural bonding"*).

## RECOMMENDATIONS

- **Adesilex PG1 Rapido** must not be used to seal flexible joints, or joints subject to movement (use **Mapesil AC** or **Mapeflex PU21**).
- **Adesilex PG1 Rapido** must not be used for construction joints between hardened and new concrete (use **Eporip**).
- Do not use **Adesilex PG1** on wet surfaces.
- Do not use **Adesilex PG1** on dirty or crumbly surfaces.

# Adesilex PG1 Rapido

- **Adesilex PG1 Rapido** must not be used for bonding or grouting anti-acid ceramic tiles (use **Kerapoxy**).
- **Adesilex PG1** must not be used to even out concrete surfaces before bonding carbon-fibre fabric (such as **MapeWrap C UNI-AX**, **MapeWrap C BI-AX** and **MapeWrap C QUADRI-AX**). Use **MapeWrap 11** or **MapeWrap 12**.

## APPLICATION PROCEDURE

### Preparation of the substrate

All surfaces must be prepared very carefully to guarantee that **Adesilex PG1** bonds well to the substrate.

Concrete, natural stone and brickwork substrates must be clean, solid and dry. Sandblasting the surface of the substrate is particularly recommended, to remove loose and flaky parts, efflorescence, cement laitance and all traces of stripping oil. Remove dust from the substrate with compressed air.

In the case of metal surfaces, sandblast down to bare metal to remove all traces of rust, paint and oil (SA 2½).

Cure freshly-cast concrete for at least 4 weeks before applying **Adesilex PG1 Rapido**, to avoid the formation of stresses induced by hygrometric shrinkage of the cementitious conglomerate at the interface with the bonded material.

Do not apply **Adesilex PG1 Rapido** if the temperature is lower than +5°C.

### Preparation of the product

The two components which make up **Adesilex PG1 Rapido** must be blended together. Pour component B (white) into component A (grey) and blend together with a low-speed drill with a mixing attachment until thoroughly blended (a uniform grey colour).

The contents of **Adesilex PG1 Rapido** are pre-dosed. Do not use partial quantities of the components to avoid making dosage errors when mixing, otherwise the product may not harden completely. However, if partial quantities are required, use precision electronic scales to weigh out the components.

Mixing ratio:

- 3 parts in weight of component A;
- 1 part in weight of component B.

### Application of the product

**Adesilex PG1 Rapido** may be applied on concrete, brickwork and metal using a flat trowel.

To obtain a good bond, we recommend spreading the adhesive on both surfaces and to make sure it penetrates well into the areas with an irregular surface or shape.

After spreading, press the two parts firmly together until the adhesive has completely hardened. A layer of approximately 1 to 2 mm is required to obtain a good bond. Because

of its thixotropic nature, **Adesilex PG1 Rapido** may also be applied on vertical surfaces and ceilings without running or dripping.

The surrounding temperature has an effect on the time required for hardening: at +23°C, **Adesilex PG1 Rapido** remains workable for approximately 10 minutes at +23°C. The hardening process starts after this period.

**Adesilex PG1 Rapido** must be applied within this time. Therefore, organise work schedules so that the application process may be completed within the period mentioned above.

### Precautions to be taken during and after application

No special precautions need to be taken if the temperature is between +10°C and +30°C.

In hot weather, do not expose the product to direct sunlight, and apply the adhesive during the cooler parts of the day, so that it does not harden too quickly and make application more difficult.

In cold weather, if the product is to be applied outside and the temperature is lower than +10°C, heat the substrate for at least 24 hours before applying the adhesive and install suitable insulating systems, to avoid the risk of freezing. Thermal insulation must be used for at least 24 hours after application. Store the product in a warm place before use.

### Cleaning

**Adesilex PG1 Rapido** bonds extremely well, including to metal, so tools must be cleaned using solvents (such as ethanol, toluene, etc.) before it hardens.

### CONSUMPTION

1.65-1.75 kg/m<sup>2</sup> per mm of thickness.

### PACKAGING

Available in 6 kg kits (component A = 4.5 kg - component B = 1.5 kg).

### STORAGE

24 months if stored in its original packaging. Keep the product at a temperature of at least +5°C.

### SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Adesilex PG1 Rapido** component A may irritate if it comes into direct contact with the skin or eyes. Component B contains substances which are corrosive and harmful if inhaled or swallowed.

If they come into contact repeatedly, they may cause rashes. Therefore, always use protective goggles and gloves to avoid contact with skin and eyes when mixing and applying the product.

If it comes into contact with the skin, wash with soap and water, and if a rash appears, seek medical attention.

If it comes into contact with the eyes, wash well with clean running water and seek medical attention.

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

|   | Component A   | Component B                |
|---|---|----------------------------|
| <b>Consistency:</b>                                   | thick paste   | thick paste                |
| <b>Colour:</b>  | grey  | white                      |
| <b>Density (kg/l):</b>                                | 1.72  | 1.50                       |
| <b>Brookfield viscosity (Pa·s):</b>                   | 700<br>(rotor F - 5 rpm)  | 450<br>(rotor D - 2.5 rpm) |
| <b>Storage:</b>                                       | 24 months in its original, sealed packaging at a temperature of between +5°C and +30°C  |                            |
| <b>Hazard classification according to EC 1999/45:</b> | irritant, hazardous for the environment<br>Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet | corrosive                  |
| <b>Customs class:</b>                                 | 3907 30 00  |                            |

### APPLICATION DATA OF PRODUCT (at +23°C - 50% R.H.)

|  |                                   |
|--|-----------------------------------|
| <b>Mixing Ratio:</b>   | component A : component B = 3 : 1 |
| <b>Consistency of mix:</b>   | thixotropic paste                 |
| <b>Colour of mix:</b>  | grey                              |
| <b>Density of mix (kg/l):</b>  | 1.70                              |
| <b>Brookfield viscosity (Pa·s):</b>                                  | 550<br>(rotor F - 5 rpm)          |
| <b>Workability time (EN ISO 9514):</b><br>- at +10°C:<br>- at +23°C: | 20 minutes<br>10 minutes          |
| <b>Setting time:</b><br>- at +10°C:<br>- at +23°C:                   | 4 hours<br>1 hours                |
| <b>Application temperature range:</b>                                | from +5°C to +23°C                |
| <b>Complete hardening time:</b>                                      | 4 days                            |

### FINAL PERFORMANCE

| Performance characteristic                                   | Test method       | Requirements according to EN 1504-4  | Performance of product                |
|--|-------------------|--|---------------------------------------|
| <b>Linear shrinkage (%):</b>                                 | <b>EN 12617-1</b> | ≤ 0.1  | 0 (at +23°C)<br>0 (at +70°C)          |
| <b>Compressive modulus of elasticity (N/mm<sup>2</sup>):</b> | <b>EN 13412</b>   | ≥ 2,000  | 6,000                                 |
| <b>Coefficient of thermal expansion:</b>                     | <b>EN 1770</b>    | ≤ 100 x 10 <sup>-6</sup> K <sup>-1</sup><br>(taken between -25°C and 60°C)               | 42 x 10 <sup>-6</sup> K <sup>-1</sup> |
| <b>Glass transition temperature:</b>                         | <b>EN 12614</b>   | ≥ 40°C   | > 40°C                                |
| <b>Durability (freeze/thaw cycles and wet/dry cycles):</b>   | <b>EN 13733</b>   | compressive shear load > tensile strength of concrete<br>no failure of steel test sample | meets specifications                  |
| <b>Reaction to fire:</b>                                     | <b>Euroclasse</b> | according to value declared by manufacturer  | C-s2, d0                              |
| <b>Concrete-steel bond strength (N/mm<sup>2</sup>):</b>      | <b>EN 1542</b>    | not required   | > 3 (failure of concrete)             |
| <b>Concrete-Carboplate bond strength (N/mm<sup>2</sup>):</b> | <b>EN 1542</b>    | not required   | > 3 (failure of concrete)             |

### BONDED MORTAR OR CONCRETE

|   |                 |                     |                      |
|---|-----------------|---------------------|----------------------|
| <b>Bond strength to concrete:</b>               | <b>EN 12636</b> | failure of concrete | meets specifications |
| <b>Sensitivity to water:</b>                    | <b>EN 12636</b> | failure of concrete | meets specifications |
| <b>Shear strength (N/mm<sup>2</sup>):</b>       | <b>EN 12615</b> | ≥ 6                 | > 10                 |
| <b>Compressive strength (N/mm<sup>2</sup>):</b> | <b>EN 12190</b> | ≥ 30                | > 70                 |

### STRENGTHENING USING BONDED PLATE

|   |                 |                                  |                                  |
|---|-----------------|----------------------------------|----------------------------------|
| <b>Shear strength (N/mm<sup>2</sup>):</b>                               | <b>EN 12188</b> | ≥ 12                             | 50° > 39<br>60° > 34<br>70° > 31 |
| <b>Bond strength:<br/>- pull out (N/mm<sup>2</sup>):</b>                | <b>EN 12188</b> | ≥ 14                             | > 18                             |
| <b>Bond strength:<br/>- inclined shear strength (N/mm<sup>2</sup>):</b> | <b>EN 12188</b> | 50° ≥ 50<br>60° ≥ 60<br>70° ≥ 70 | 50° > 80<br>60° > 80<br>70° > 98 |

# Adesilex PG1 Rapido

If the product is applied in closed environments, make sure the area is well ventilated.

**Adesilex PG1 Rapido** is hazardous for aquatic life - do not dispose of the product in the environment.

PRODUCT FOR PROFESSIONAL USE.

## WARNING

*While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under*

*all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.*

**All relevant references  
for the product are available  
upon request and from  
[www.mapei.com](http://www.mapei.com)**

