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REPIKIT EP 312

CARTRIDGE SLIGHTLY THIXOTROPIC EPOXY ADHESIVE FOR STRUCTURAL INJECTIONS

Medium viscosity, solvent-free, bi-component epoxy resin-based structural adhesive to strengthen through injections, cracks, fissures and damages in the building and civil engineering sector.

Areas of use

REPIKIT EP 312 is used to carry out structural strengthening injections in passing and blind cracks or 1 to 3 mm wide on compact materials like concrete, bricks, stone, tuff, wood and more in general for:

- Concrete structural welding of beams, pillars and civilian engineering works;
- Strengthening of damaged concrete, solid brick, rock or stone masonry (in this case by previously filling in voids with fluid cement mortar);
- Fixing of steel and plastic reinforced by fibreglass fixed to wood and concrete connectors and with comb stitch of structural damages;
- Strengthening of structural elements using beton-plaquet technique;
- Gluing of steel-concrete-wood elements, composite slab connectors with wooden beams, window sills, steps, unglued cement screeds.

Features

REPIKIT EP 312 structural adhesive is ready to use: it is supplied as a cartridge with all necessary tools to carry out injections with hand or compressed air gun.

Due to its slightly thixotropic consistency, the product has low viscosity when subject to kinetic force (injection pressure) and high viscosity when it is in a quiet state. Injected material easily penetrates even in the thinnest injections and once injection pressure stops, it thickens and hardens without further casting and spreading.

After mixing components inside the cartridge, its contents must be fully used.

- The system features internal mixing with pre-weighed resin and hardening agent which are packaged in two separate chambers in a cartridge;
- It ensures high mechanical properties;
- Excellent adhesion to all building materials with dry or damp bottom;
- Practical and safe use with hand gun or compressed air gun with pressure up to 15 atm;
- High work safety and sanitary conditions of the work: the operator never gets in contact with the product;

REPIKIT has been patented and standardized with PATENT no. 86810563.6

How to use

The system is made of: a cartridge with the product, connecting or injection hose, nipples or nonreturn valve (to be applied on the wall where the chosen injection point is) and a breather pipe.

Preparation of the support

Open the crack or injection point well by removing crumbly parts with an abrasive disc, brush or scraper. Thoroughly clean using a vacuum cleaner or compressed air.

Fix the nipples 20 – 30 cm one from the other, applying epoxy stucco like RESICOL 100 or REPIKIT 315 on the back of the nipple, then press it slightly against the crack or the injection point.

Carefully seal the crack using the same epoxy stucco and by using a small spatula or brush. Let it harden for 4 – 12 hours depending on the temperature.

Preparation of the product

To mix the resin with the hardening agent make a hole in the aluminium seal on the head of the cartridge and slowly insert the stirring rods until the stop. Screw the rod clockwise and carefully push it to the bottom of the cartridge. Move the rod backwards and forwards for at least 3-4 minutes until complete blending. Remove the rod by turning it counter-clockwise, then unscrew the cone-shaped spout of the cartridge and screw the connecting hose in its place.

Application

Insert the cartridge in the gun, attach the connecting rod to the nipple in the lowest injection point and fix it well using the metal ring. Insert a breather pipe in one of the next nipples and then start pumping. When the resin appears in the upper nipple, remove the injection pipe and joint it the same way to the next nipple: continue until complete filling of the crack.

When hardening is complete, which takes 1 – 15 hours, remove the nipples and stucco on the surface using a chisel and level out using an abrasive disc.

Notes

Carefully examine the crack or cleft before starting an injection process: REPIKIT 312 is recommended especially for passing cracks in compact building materials (e.g. concrete) when it is possible to know their depth and length to calculate the volume and therefore the quantity of material necessary for complete filling. We recommend marking the points where injection nipples are going to be glued.

Technical characteristics

Compression strength	(DIN 53454)	> 90 N/mm ²
Tensile strength	(EN ISO 3251)	> 20 N/mm ²
Ultimate elongation	(EN ISO 3251)	0.3%
Traction elasticity modulus	(EN ISO 3251)	5 620 N/mm ²
Adhesion to dry concrete (*)	(ISO 4624)	> 4.5 N/mm ²
Adhesion to damp concrete (*)	(ISO 4624)	> 2.8 N/mm ²
Adhesion to steel (*)		3 N/mm ²
Density at 25 °C		1.40 kg/dm ³

Values achieved after 7 day hardening at 25 °C

(*) adhesion test carried out through direct traction.

Viscosity depending on temperature

10°C 10000-20000 cP

20°C 4000-6000 cP

30°C 2000-3000 cP

Use and hardening times

When mixing the reaction between the two components starts: time available is therefore limited and it depends on the temperature.

Temperature	Use (pot-life)	hardening
10°C	80'	15 h
20°C	50'	8 h
30°C	30'	6 h
40°C	20'	4 h

Full hardening after 7 days.

Consumption

A cartridge has enough material to fill a volume of 0.25 dm³.

Packages and storage

Kit of 12 cartridges	250 ml each (300 g)
Nipple with nonreturn valve	Bag with 30 pieces
Breather pipe	Bag with 4 pieces
Tube with no nonreturn valve with metal ring joint	Bag with 6 pieces
T shaped rod to mix	n. 4

REPIKIT EP 312 is supplied with a 12 cartridge kit with 4 rods to mix, with or without tools. Manual gun must be purchased separately.

Packages must be kept vertically and closed: the product remains unaltered for at least a year if kept in a place with temperature between 10 and 30 °C.

Cleaning of tools and health precautions

To clean tools use solvents such as RESISOLV 111, RESISOLV 196 or alcohol.

Epoxy resins and hardening agents may cause irritations: please avoid any contact with the skin and especially with the eyes and ensure proper ventilation during use.

Wear gloves, protective suit, goggles or protective visor. People who have to work with epoxy resins for long periods are advised to use protective creams.

In case of contact with the skin, immediately clean with a cloth soaked in denatured alcohol and wash with water or neutral soap or handwash paste. Then use a nourishing cream.

In case of contact with eyes or mucosa, do not use alcohol. Rinse immediately with running water and neutral soap for 10/15 minutes, then seek medical advice.

Do not rinse with solvents.

The information supplied in this sheet is the result of the best practical and laboratory experiences of RESIMIX, which guarantees its products when used according to the instructions supplied. It is nonetheless up to the customer to ensure the product is suitable for the intended use. The manufacturer declines any responsibility for incorrect use or uses beyond his control. RESIMIX reserves the right to make changes to the data. For any request, please contact the RESIMIX Technical Assistance Office.