

ZL10 PAGEL®-INJECTION LIME

ZS10 PAGEL®-INJECTION SUSPENSION

PROPERTIES

- consists of only one component. It is ready for use and just mixed with water
- low viscosity and remains flowable for at least 60 minutes at 20 °C
- developed in accordance to the testing- and delivery standards of the **ZTV-RISS 93**
- offers a high depth of penetration with cracks wider than 1.0 mm (ZL10) and 0.2 mm (ZS10) and penetrates the cracks until their end
- used either for dry or moist or cracks containing water. There will be no sedimentation
- good corrosion protection to the reinforcing steel because of its alkalinity
- free of chlorides and other corrosion inducing materials
- shows a controlled expansion with a rigid bond to the sides of the crack
- economic and easy to use. All tools and accessories can be cleaned with water and used again

FIELDS OF APPLICATION

- applied to cracks in concrete, masonry, solid stone walls, cavities, rock pockets, floor toppings, prefabricated concrete parts and others
- used for injecting a concrete surface area in order to strengthen it
- used for the closing, sealing and impregnation of cracks, cavities and porous, low strength concrete



ZL10/ZS10 PAGEL®-INJECTION

TECHNICAL DATA

TYP		ZL10	ZS10
Cement granulometry	µm	<40	<16
Blaine value	cm ² /g	5400	16000
Components		1	1
Crack width	mm	>0,8	>0,2
Condition of crack		trocken, feucht, wasserführend	
Mixing time	min.	8	8
Potlife	min.	60	60
Required water	%	45	50
Density of fresh mortar	kg/dm ³	1770	1770
Density of dry mortar	kg/dm ³	1650	1688
Consumption of dry mortar	g/l	1220	1180
Viscosity			
(Marsch-cone d = 4,76 mm)	10 min. sec.	72	68
	60 min. sec.	92	100

Characteristics	20 °C	(40 × 40 × 160 mm ³)	
Compressive strength	3 d N/mm ²	30	27
	7 d N/mm ²	35	38
	28 d N/mm ²	41	43
Bending strength	2 d N/mm ²	3	2
	7 d N/mm ²	4	3
	28 d N/mm ²	5	5
Adhesive strength	28 d N/mm ²	>2,0	>2,0
Expansion	7 d %	+1,0	+0,6

Characteristics	5 °C		
Compressive strength	4 d N/mm ²	18,0	Erstarren
	7 d N/mm ²	27,0	17,0
	28 d N/mm ²	44,0	39,0
Expansion	7 d %	+0,1	+0,1

All test data are values derived under normal climate conditions. 23/50-2

sealing:	PU1 PAGEL-ADHESIVE RESIN
shelf-life:	9 months
storage:	Dry, in closed bags, > 10 °C
hazard class:	not a dangerous good
containers:	10 kg bag, 20 kg bag

PROCESSING

Ascertain the structure of the cracks: measure the width and length of the cracks and find out, if there are changes. Make a documentation with sketches. Find out those cracks, that can be filled solidly.

Remove all loose or unsound material from the sides of the cracks in a minimum range of 5 cm. Prepare the subsoil in accordance to ZTV-SIB and clean it with a tough wire brush or a comparable tool.

ADHESIVE PACKER: Use preferably adhesive packers for cracks with a width of less than 1 mm: mark the injection points by driving a greasy nail, then fix the adhesive packer at its total bottom surface with PU1 PAGEL-ADHESIVE RESIN.

DRILL PACKER: Drill the hole (Ø 13 or 18 mm) with an angle of 45°-60° that way, that the drilling centre line meets the crack at half the strength of the construction part. Clean the hole and remove the drilling dust before placing the packer. Preferably drill the holes with the core drilling method.

Fix an adhesive tape at both sides of the crack in a distance of about 5 cm. Apply PU1 PAGEL-ADHESIVE RESIN in a sufficient layer thickness (approx. 3 mm) to the dry subsoil beside and over the crack approx. 24 hours before the injection. Seal also the connection to the filling tubes. Use SP20 PAGEL-SPRAY MORTAR for sealing cavities and rock pockets. Seal cracks in masonry with R1/O5 PAGEL-SCREEDING COMPOUND perhaps using the spraying method.

When the sealing has set (after approx. 24 hours at minimum 8 °C) place a gate piece on the packer to avoid reverse flow of the material. Check the function of the whole system by the use of water. Prewater the sides of the crack at the same time.

Fill the complete bag of ZL10/ZS10 under slow mixing into the measured quantity of water and mix the material with a high speed mixer (3000 rpm) for 8-10 min. until it is homogenous. Preferably use a metallic mixing pot. Use a drilling machine with a resin whisk when mixing small quantities. Quantities of more than 10 kg require a mixing station with a dissolver disk. Pour the ready injection grout through a fine sieve into an other pot.

ZL10/ZS10 can be injected in either low- or high pressure method (maximum pressure of the PAGEL pump: 30 bar; maximum pressure of the DESOI membrane pump: 60 bar). Always inject vertical cracks from the bottom to the top. The pumping hose is connected by a connecting piece to the gate piece of the filling tube. Usually the injection in concrete is made with a pressure of 2-3 bar, when the crack sides are wet or 3-6 bar, when they are dry. As soon as the injection grout appears at the next packer the injection is continued from that point. We recommend an additional injection after 60-90 min. (depending on the temperature of the construction part). Occuring leakages in the sealing can be sealed with B1 PAGEL-QUICK REPAIR MORTAR or call for additional advice.

Clean all working equipment and tools as soon as possible with water. Remove filling tubes and sealing after approx. 48 hours. Smoothen the surface of the construction part with R1/O5 PAGEL-SCREEDING COMPOUND.

Information provided in this leaflet, supplied by our applications consulting service and contained in other recommendations is based on exhaustive research work and extensive experience. They are, however, without liability on our part, in particular with regard to third parties proprietary rights, and do not relieve the user of the responsibility for verifying that the products and processes are suitable for the intended application. The given testing dates were found out in a normal climate according to DIN 50014 and mean average values and analysis. Deviations are possible when delivery takes place. Given Recommendations differing from this leaflet are in need of a written confirmation. Planner and user are required to inform themselves regarding the latest development of technology and the valid issue of the according leaflet. Our customer service staff will be glad to provide assistance at any time. We appreciate the interest you have shown in our products. This technical data sheet supercedes previously issued information. Please find the actual and latest leaflets under www.pagel.de



PAGEL®

SPEZIAL-BETON GMBH & CO. KG

WOLFSBANKRING 9 · D-45355 ESSEN

TEL. +49(0)201-68504-0 · FAX +49(0)201-68504-31

Internet: www.pagel-grout.com · eMail: info@pagel-grout.com

ZL10

ZS10