

WILLKAT® PL

Non-foaming, elastified three-component silicate resin

DIBt approval: Z-42.3-523

1. Application

WILLKAT® PL is a non-foaming, elastified three-component resin with good adhesion even to damp surfaces for the rehabilitation and sealing of sewers and pipes using the short liner method in sewer rehabilitation.

The product

- impregnates glass fibre mats or polyester fleeces well,
- adheres even to damp surfaces,
- does not foam, even when water is added,
- cures well in thin layers,
- formwork can be easily demoulded

WILLKAT® PL is supplied in three components. Component C is used to adjust the setting behaviour.

Advantages:

- quickly applied: cycle time approx. 60 min
- no odour nuisance
- cost-effective repair method

2. Substance data*

		WILLKAT® PL -A	WILLKAT® PL -B	WILLKAT® PL -C	Norm
Density at 20°C	g/cm ³	1.48 ± 0.01	1.13 ± 0.01	1.11 ± 0.01	DIN 51757
Viscosity at 25°C	mPa*s	300 ± 100	170 ± 50	34 ± 5	DIN EN ISO 3219
Colour		colourless	dark brown	light brown	
pH value		approx. 12	-	> 12	
Flash point	°C	-	> 200	> 80	DIN EN ISO 2719

3. Reaction and mechanical data*

Determination of times according to DIN EN 14022

Mixing ratio (A: C): B Vol. -P.	Slow			Summer			Winter			Fast			Fast plus		
	(100:0):200			(100:0,5):200			(100:1):200			(100:3):200			(100:4):200		
Output temperature [°C]	15	20	25	15	20	25	15	20	25	10	15	20	5	10	15
Pot life [min]	24	21	18	18	16	15	16	15	12	12	11	9	13	9	7
Insertion time [min]	35	28	26	29	27	24	27	25	22	17	15	13	17	12	10
Demoulding time [min]	150	120	90	90	90	60	60	60	50	60	55	50	60	55	50

Mechanical Data			Norm
Glass transition temperature	°C	> 62	ISO 6721-5
Shore D hardness		> D/15:74	DIN EN ISO 868
Tensile bond strength	Short term Long term	MPa > 3.5 > 5	DIN EN 1542
Circumference modulus of elasticity	MPa	> 4000	DIN EN 1228
Bending modulus of elasticity	MPa	> 4300	DIN EN ISO 178
Print module	MPa	> 3700	DIN EN ISO 604
10.000 h Test			Norm
Long term modulus of elasticity	MPa	5155	DIN EN 761
Reduction factor		1.07	DIN EN 761

4. Composition and Properties

Components:

WILLKAT® PL -A is a special sodium water glass. **WILLKAT® PL -B** is a modified polyisocyanate.

WILLKAT® PL -C is a mixture of additives that improves the miscibility of the A and B components and is adjusted by the pot life of the mixture.

System:

During the reaction, the A component hardens to a silicate, while at the same time a solid polyisocyanurate polyurea forms from the B component.

Final product:

The two interpenetrating solids form a viscoplastic, non-foaming silicate resin (organomineral resin).

5. Preparation/Processing

Mixture:

The system can be adjusted to the respective requirements with regard to temperature, size of the short liner and required application time by selective metering of the C component. Stir component C before use and add it in the appropriate quantity to the A component. Stir this mixture intensively for two minutes with twice the volume of the B component.

6. Safety notes

WILLKAT® PL -A, WILLKAT® PL -B and WILLKAT® PL -C are classified as dangerous according to REGULATION (EC) No. 1272/2008. Before starting processing, it is therefore necessary to obtain information on precautions and safety advice from the safety data sheets.

7. Storage

At least six months from date of delivery or twelve months from date of production when stored in a dry place between 10°C and 30°C. Frost can damage the A-component. The minimum durability is reflected by the batch number on the container. If this time is exceeded, we recommend the material is checked by F. Willich GmbH + Co. KG for compliance with the specification.

8. Delivery form

	WILLKAT® PL -A	WILLKAT® PL -B	WILLKAT® PL -C
20 l tin can à	28 kg	21 kg	-
10 l tin can à	14 kg	10.5 kg	-
1 l PE bottle à	-	-	1 kg

Other delivery forms on request.

9. Waste management

In Germany, empty packaging can be taken back by the KBS or Interseroh-System for steel or plastic packaging. The return is limited exclusively to used, completely empty packaging of the same type, shape, and size that we carry in our product range.

Transport and outer packaging are not included.

For more information on the location and further modalities of the return, please visit the website of the recycling partner acting on our behalf:



Interseroh+ GmbH

www.interseroh.plus
info@interseroh.plus
Tel.: +49 (0)2203 9147 - 1268



Kreislaufsystem

Blechverpackungen Stahl GmbH

www.kbs-recycling.de
info@kbs-recycling.de
Tel.: +49 (0)211 239228 - 0

Reacted product residues can be disposed of in smaller quantities with household waste, in larger quantities as construction waste or incinerated.
Non-reacted product components must be disposed of in accordance with local regulations.

10. Test certificates/Approvals

DIBt approval Z-42.3-523

SBKS type test 14076_118301_0007

SBKS 10.000 h test 14723_118301_0010

SBKS water outlet pressure test PL_SL_PP pipes_B22-69486

11. Legal notice

***The indicated data are laboratory values.**

Our technical application advice, which we give to support the customer or applicator on the base of our experience and to the best of our knowledge according to the current state of knowledge in practice and science, is non-binding and does not represent an agreed quality. The data and processing instructions are based on laboratory tests.

In practice, the measured values may be different due to influences outside our control. We explicitly reserve the right to make technical changes during further development.

The technical documents should be read carefully before starting work.

With the publication of a new version of the technical data sheet, all previous data sheets lose their validity. The applicator must test the products for their suitability for the intended application.

With the publication of this data sheet, previous editions become void.

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