

WILLKAT® FA

Two-component silicate resin with rapid strength development

1. Applications

WILLKAT® FA is a fast reacting, non-foaming, two-component silicate resin with good adhesive properties, very fast strength development and high final strength.

WILLKAT® FA is used in all areas of construction, in mining, tunnelling, building construction, civil engineering, special civil engineering, traffic route construction and hydraulic engineering and serves to

- for pressing under, lifting or fixing solid structures such as foundations, floor slabs, traffic route surfaces
- for the consolidation of unconsolidated rock and soil
- for force-locking injection of cracks > 0.2 mm
- for filling smaller cavities

Advantages:

- high compressive strength
- more than 90% of final strength already after 15 min non-foaming even in contact with water

2. Substance data*

		WILLKAT® FA -A	WILLKAT® FA -B	Norm
Density at 23°C	g/cm ³	1.420 ± 0.03	1.185 ± 0.03	DIN 51757
Colour		yellowish	blackbrown	
Flash point		-	> 100	DIN EN ISO 2719
Viscosity at 5°C	mPa*s	1342 ± 150	396 ± 80	DIN EN ISO 3219
Viscosity at 10°C	mPa*s	729 ± 100	244 ± 70	DIN EN ISO 3219
Viscosity at 15°C	mPa*s	529 ± 80	167 ± 60	DIN EN ISO 3219
Viscosity at 20°C	mPa*s	428 ± 80	146 ± 60	DIN EN ISO 3219
Viscosity at 25°C	mPa*s	253 ± 60	111 ± 40	DIN EN ISO 3219
Viscosity at 35°C	mPa*s	176 ± 50	75 ± 25	DIN EN ISO 3219
Viscosity at 40°C	mPa*s	105 ± 40	34 ± 10	DIN EN ISO 3219

3. Reaction and mechanical data*

Mixing ratio of the components:

	WILLKAT® FA -A	WILLKAT® FA -B
Parts by volume	100	100
Parts by weight	100	80

Changing the mixing ratio can change the reaction times and the mechanical values.

Product temperature	Flow time	Setting time	Norm
5°C	8 min 00 s ± 40 s	9 min 50 s ± 60 s	PV_FW21
10°C	6 min 00 s ± 35 s	7 min 20 s ± 50 s	PV_FW21
15°C	4 min 55 s ± 30 s	6 min 10 s ± 40 s	PV_FW21
20°C	3 min 25 s ± 25 s	4 min 50 s ± 30 s	PV_FW21
25°C	2 min 05 s ± 20 s	3 min 40 s ± 30 s	PV_FW21
30°C	1 min 45 s ± 20 s	3 min 00 s ± 20 s	PV_FW21
40°C	0 min 55 s ± 10 s	2 min 10 s ± 20 s	PV_FW21

		Norm
Foaming factor 25°C	1	PV_FW16

			Norm
Compressive strength after 1 hour	N/mm ²	48	DIN EN ISO 604:2003-12
Compressive strength after 24 hours	N/mm ²	56	DIN EN ISO 604:2003-12
Compressive strength after 7 days	N/mm ²	47	DIN EN ISO 604:2003-12
Compressive strength after 28 days	N/mm ²	47	DIN EN ISO 604:2003-12
E-modulus after 7 days	N/mm ²	476	DIN EN ISO 604:2003-12
Flexural elongation break after 7 days	%	4.6	DIN EN ISO 604:2003-12

4. Composition and properties

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

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

WILLKAT® FA is a non-foamed, flame-retardant silicate resin. Once the two components are sufficiently mixed, the resulting viscous emulsion does not absorb any more water and does not mix with water but sinks down in the water. Cured **WILLKAT® FA** is resistant to acids, salt solutions and many organic solvents.

5. Preparation/Processing

The two components are first conveyed separately, in a volume ratio of 1 : 1, via a two-component pump. At the end of the delivery lines, the two components are then brought together in the mixing head and conveyed through two mixing tubes arranged one behind the other (item no. WPAC-MIX-320-MR-13-15), each with two integrated static mixers type 13-15 (item no. WPAC-MIX -13-15-MXEL). This is where the intensive, homogeneous mixing of the two resin components takes place. The resin is then injected into the structure, the ground or under traffic route surfaces via a borehole plug, a packer or an injection lance. The initially liquid resin mixture quickly reaches a consistency where it can no longer flow freely (flow time) and then hardens without foaming. If it is necessary to flush the mixing head due to work interruptions, we recommend carrying out the flushing process with the **B-component**. After completion of the injection and prolonged shutdown of the pump, the pump and the hose lines must be sufficiently flushed with oil.

Applicable at ambient temperatures between 5°C and 40°C

Recommendation

We recommend storing the products at a minimum temperature of 15°C for at least 12 hours prior to application to achieve the recommended application temperature between 15°C and 30°C. When heating, local overheating, e.g. on the container wall, must be avoided at all costs.

6. Safety notes

WILLKAT® FA -A and **WILLKAT® FA -B** are classified as dangerous according to REGULATION (EC) No. 1272/2008. Before starting processing, it is necessary to inform yourself about precautionary measures and safety advice by means of 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® FA -A (item no.)	WILLKAT® FA -B
20 l tin can à	28 kg (WKAT-FA-2-A28)	24 kg (WKAT-FA-1-B24)
1000 l IBC à	1390 kg (WKAT-2-A1390)	1150 kg (WKAT-FA-B1150)

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

Hygiene examination, Hygiene-Institut des Ruhrgebiets February 2023
Test certificate according to KTW recommendations D2, LADR November 2022

11. Legal notes

***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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