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 bonding properties, very rapid 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 is used for

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

Advantages:

- High compressive strength
- more than 90% of the final strength after just 15 min
- Non-foaming, even in contact with water

2. Substance data*

		WILLKAT® FA -A	**WILLKAT® FA -B**	**Norm**
Density at 23°C	g/cm³	1.46± 0.03	1.16± 0.03	DIN 51757
Colour		yellowish	Black-brown	
Flash point		-	> 100	DIN EN ISO 2719
Viscosity at 5°C	mPa*s	1360 ± 300	540 ± 150	DIN EN ISO 3219
Viscosity at 10°C	mPa*s	840 ± 200	300 ± 100	DIN EN ISO 3219
Viscosity at 15°C	mPa*s	550 ± 150	200 ± 50	DIN EN ISO 3219
Viscosity at 20°C	mPa*s	390 ± 100	130 ± 50	DIN EN ISO 3219
Viscosity at 25°C	mPa*s	265 ± 100	90 ± 25	DIN EN ISO 3219
Viscosity at 30°C	mPa*s	195 ± 50	60 ± 25	DIN EN ISO 3219
Viscosity at 40°C	mPa*s	130 ± 50	30 ± 10	DIN EN ISO 3219

3. Reaction and mechanical data*

Mixing ratio of the components:

	WILLKAT® FA -A	WILLKAT® FA -B
Vol. parts	100	100
Threaded parts	100	80

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

Product temperature	Flow time	Solidification time	Norm
5°C	4 min 55 s ± 30 s	6 min 10 s ± 40 s	PV_FW21
10°C	4 min 00 s ± 30 s	5 min 00 s ± 30 s	PV_FW21
15°C	2 min 25 s ± 20 s	3 min 50 s ± 30 s	PV_FW21
20°C	2 min 00 s± 20 s	3 min 10 s± 20 s	PV_FV21
25°C	1 min 35 s ± 20 s	2 min 40 s ± 20 s	PV_FW21
30°C	1 min 00 s ± 10 s	1 min 50 s ± 20 s	PV_FW21
40°C	0 min 45 s ± 10 s	1 min 30 s ± 20 s	PV_FW21

			Norm
Tmax	°C	approx. 104	PV_FW21
Foam factor at 25°C		approx. 1	PV_FW16

			Norm
Compressive strength after 24 hours	N/mm²	approx. 59	DIN EN ISO 604:2003-12
Compressive strength after 7 days	N/mm²	approx. 58	DIN EN ISO 604:2003-12
Compressive strength after 28 days	N/mm²	approx. 62	DIN EN ISO 604:2003-12
E-modulus after 7 days	MPa	approx. 614	DIN EN ISO 604:2003-12
Bending strain Break after 7 days	%	approx. 5.1	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 to form a silicate, while at the same time a solid polyurea is formed from the B component.

WILLKAT® FA is a non-foaming, 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 to the bottom in water. Cured **WILLKAT® FA** is resistant to acids, salt solutions and many organic solvents.

5. Preparation/Processing

The two components are initially pumped separately in a volume ratio of 1:1 using a two-component pump.
At the end of the delivery lines, the two components are then brought together in the mixing head and fed through a mixing tube (art. no. 6559) with two integrated static mixers.
Type 13-15 (art. no. WIAC4-00052). 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, packer or 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 rinse the mixing head due to work interruptions, we recommend carrying out the rinsing process with the **A component.** After injection is complete and the pump has been out of operation for a longer period of time, 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 before processing in order to achieve the recommended processing temperature of between 15°C and 30°C. When heating, localised 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. The minimum durability is reflected by the batch number on the container.

8. Delivery form

	WILLKAT® FA -A (item no.)	WILLKAT® FA -B (item no.)
20 l tin can à	28 kg (WKAT-FA-3-A28)	22 kg (WKAT-FA-2-B22)
1000 l IBC à	1430 kg (WKAT-FA-3-A1430)	1130 kg (WKAT-FA-2-B1130)

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
zero waste solutions
244922

Interseroh+ GmbH

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

KBS 0234

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 Institute of the Ruhr Area 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.

F. Willich GmbH + Co. KG

Planetenfeldstr. 120
44379 Dortmund
Germany

Phone: +49 (0) 231 9640 - 0
Fax: +49 (0) 231 9640 - 232
info@f-willich.com
www.f-willich.com