

WILLPUR® WS

Fast reacting 2-component injection resin

1. Applications

WILLPUR® WS is a fast-setting 2-component injection resin, free of CFCs and halogens for sealing and consolidating in water-bearing zones, especially against pressurised water.

The product is used for:

- Solidification in humid and water-bearing environments
- Stabilisation and sealing in tunnel construction
- Solidifying, permanent sealing in the area of accessible sewers and manholes
- Sealing against pressurised water

2. Substance data*

		WILLPUR® WS A	WILLPUR® WS B	Norm
Colour		colourless	brown	
Viscosity at 25°C	mPa*s	200 ± 100	200 ± 100	DIN EN ISO 3219
Density at 20°C	g/cm³	1.00 – 1.10	1.21 – 1.25	DIN 51757

3. Reaction and mechanical data*

Initial temperature	[°C]	15	20	25	Norm
Curing time	sec	30 ± 5	20 ± 5	16 ± 3	PV_FW23
Foaming factor		1	1	1	PV_FW16
Reaction temperature	°C	< 140	< 140	< 140	

		With 1 % water (related to the mixture)		With 2 % water (relative to the mixture)	
		sec	Foaming factor	sec	Foaming factor
15 °C	Start of foaming*	50 ± 5	6	50 ± 5	9
	End of foaming*	100 ± 10		100 ± 10	
25 °C	Start of foaming*	35 ± 3	7	34 ± 3	10
	End of foaming*	78 ± 8		76 ± 8	

*The times stated are laboratory values (100 g A + 119 g B) with a scattering of ± 15%.

Compressive strength*	MPa	88
Bending tensile strength*		80
E-modulus*		1734

*Scattering of ± 5%.

Adhesive strength (3mm gap)		30 min	1 h	3 h	5 h	1 d	2 d	7 d
	MPa	4,4	4,6	4,2	4,6	4,6	4,6	4,0

4. Composition and properties

WILLPUR® WS A is a mixture of various polyols and additives that reacts with the B component to form a tough, hard polyurethane resin.

WILLPUR® WS B is a polyisocyanate based on 4.4'-diphenylmethane diisocyanate (MDI).

5. Preparation/Processing

Processing with a 2K injection system

WILLPUR® WS A and **WILLPUR® WS B** are pumped in a volume ratio of 1:1 via a 2K injection system, mixed intensively with each other by a static mixer before entering a previously prepared borehole and injected into a borehole seal (injection packer) behind the manhole or sewer wall.

Processing with a 2-component cartridge dispenser

WILLPUR® WS A and **WILLPUR® WS B** are delivered in a volume ratio of 1:1 via a 2-component cartridge dispenser, mixed intensively with each other by a static mixer before entering a previously prepared borehole and injected behind the manhole or sewer wall via a borehole seal (injection packer).

6. Safety Notes

WILLPUR® WS A and **WILLPUR® WS 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

	WILLPUR® WS A	WILLPUR® WS B
400 ml 2K cartridge	200 ml	200 ml
1500 ml 2K cartridge	750 ml	750 ml
20 l tin canister à	21 kg	25 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

Hygiene Institute of the Ruhr Area, test report on the examination of **WILLPUR® WS** from a groundwater hygiene perspective.

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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