CIVIL ENGINEERING & GEOTECHNOLOGY

Construction Materials & Injection Technology for Civil Engineering

F.Willich
SINCE 1882

CIVIL ENGINEERING & GEOTECHNOLOGY

Anchoring • Sealing • Filling • Stabilising • Repairing

The application fields of our products in engineering construction and geotechnics, as well as in other areas of construction, include soil/rock consolidation, waterproofing, safe and economical void filling, anchoring technology and structural repair.

To solve demanding technical challenges, we provide a comprehensive range of proven injection materials and repair products, as well as the required injection technology such as injection pumps, data recording, injection anchors and injection accessories.

We are happy to support you with our experience and technical expertise in anchoring, sealing, filling, stabilising and repair — worldwide.

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MARKET SEGMENTS

TUNNEL CONSTRUCTION

Tight. Safe. Precise.

In tunnel construction we offer proven solutions for anchoring, sealing, void filling and ground consolidation — both in mechanised and conventional excavation. Our specialised systems secure structures reliably even under demanding geological conditions.

CIVIL ENGINEERING

Stability begins below ground

Civil engineering forms the foundation of our infrastructure — where structures are built below ground. We supply coordinated solutions from excavation support to soil stabilisation.

HYDRAULIC ENGINEERING

Waterproofing against every element

For the protection of hydraulic structures, our injection systems provide proven solutions for waterproofing, stabilisation and consolidation. They reliably protect dikes, dams, base slabs and bank structures against pressurised water and scour/ undermining.

STRUCTURAL ENGINEERING

System solutions for structures

In structural and special civil engineering, our injection systems secure demanding infrastructure structures — from bridges and tunnels to drinking-water reservoirs and complex industrial constructions.

SPECIAL CIVIL ENGINEERING

Safety at every depth

For complex foundation and shoring projects, we deliver reliable system solutions for sealing diaphragm walls, sheet pile walls and secant pile walls, as well as for ground consolidation and subsoil stabilisation.

TRANSPORT INFRASTRUCTURE

Built to last

We improve subsoil, stabilise track systems and rehabilitate bridge structures and concrete carriageways — for sustainable stability of roads, railways and transport routes.

MINING

Safe in mountainous ground

In active mining and in rehabilitation of abandoned mines, our injection systems ensure the stability of underground workings. We secure and fill large voids, seal drifts and shafts against water ingress, and consolidate unstable rock formations.

REHABILITATION & REPAIR

Preserve sustainably, improve selectively

In structural rehabilitation we subsequently waterproof existing structures and stabilise load-bearing components. Our system solutions enable economical restoration of functionality, load-bearing capacity and durability — even under demanding conditions.

APPLICATION AREAS

Sealing of pressurised water inflows

To stop water ingress in mining and tunnelling, or for waterproofing underwater concrete base slabs, excavation enclosures in specialist foundation engineering, pipe jacking start/target shafts, and horizontal drillings in microtunnelling, one- or two-component polyurethane resins are used.

Material selection depends on site conditions. Depending on requirements, flexible systems (e.g. **WILLSTOP® FLEX+**), tough-elastic systems (e.g. **WILLPUR® WX**), fast or slow reacting systems with low foam factor (e.g. **WILLPUR® SL**) or very high foam factor systems (e.g. **WILLPUR® WS HF**) can be applied.

Hybrid injections

In highly water-bearing or unstable ground, such as in tunnelling and mining, pure cement suspensions are often insufficient: they can be washed out, react slowly and lose effectiveness under water pressure.
Combining cement with **WILLPUR® WI** or **WILLPUR® WX** creates a hybrid grout that combines cement volume with the fast, washout-resistant reaction of PU resin. The resin fraction is dosed precisely using modern pumping technology and can be adapted flexibly to water inflow.

Cavity filling

Void filling is used in mining and tunnelling activities and also in operational assets such as rail, transport infrastructure, port facilities or abandoned mines. When cavities in rock mass or soil are encountered, rapid action is usually required to fill them safely, quickly and economically.
The silicate resin **WILLKAT® Foam** is especially suitable for void filling due to short reaction times and very high foam factors, enabling high filling performance. The product is tested regarding its impact on soil and groundwater for its intended use.

Curtain injection for below-grade structures

If moisture damage occurs in areas difficult to access from outside due to missing or defective external waterproofing, curtain injection is an effective solution.
Injected from the outside using drive lances or from the inside via packers, a retrofitted waterproofing barrier – a gel curtain of special acrylic gels (e.g. **WILLGEL® SWIFT**) – is installed outside the structure, providing durable protection against water.

Joint sealing

Sealing water-bearing movement joints is challenging because the joint often cannot be fully cleared and back-pressing water limits sealing options. In addition, climatic conditions continuously change the joint width.

Only an acrylic gel combined with a polymer component (e.g. **WILLGEL® SWIFT** / **WILLGEL® Poly**) meets the requirements for high sealing performance under water ingress, excellent adhesion to joint flanks and a flexible, extensible structure.

The initially water-like product penetrates well into the structure – even in incompletely cleared joints – passes potential damage in waterstops and finally cures to a flexible material with outstanding adhesion to the joint flanks.

Soil, rock and ground consolidation

Consolidation is important in tunnel advance and excavation in unstable soils. Product selection depends on soil type. For fine-grained or water-saturated soils, acrylic gels such as **WILLGEL® PRO**, **WILLGEL® SWIFT** and **WILLGEL® Y** are used, featuring low viscosity, good penetration and adjustable reaction times. For coarser or highly permeable soils, silicate resins such as **WILLKAT® Foam** or PU resin systems such as **WILLPUR® WX** are used. These systems can react fast or slow and can expand to different degrees.

Lifting injections

Lifting injections are used, for example, in road construction. There, they are used, amongst other things, to lift or stabilise concrete slabs on motorways. In railway construction, they are used to compensate for track subsidence. Silicate resins (e.g. **WILLKAT® FA**) or special polyurethane resins (e.g.**WILLPUR® SL** and **WILLPUR® HF+**) are used here.

The advantages of these products in road construction lie primarily in their fast curing times, the high mechanical strength achieved as a result, and the associated rapid reopening to traffic.

Crack injections

In crack repair, cracks in concrete, masonry and other components are sealed by injecting materials via specifically placed packers. Special crack injection resins are used for sealing cracks in concrete construction, for repair (sealing, filling and closing) and for rigid or flexible bonding of concrete components, as well as for sealing construction joints using injection hose systems.

These products feature low viscosity and high penetration. They act as rigid-bonding (e.g. **WILLPOX® 7147**) or flexible (e.g. **WILLPUR® CL**) systems and are highly resistant even to chemical exposure.

Screen injection

Screen injection serves to secure the tunnel advance against falling loose rock and to control geological fault zones.
As a specialised measure for advance consolidation, it creates a protective injection body against uncontrolled rockfalls, particularly in unstable roof areas. Polyurethane resins are used here for efficient sealing against inflowing water.
Silicate resins are preferred for the stabilising backfilling of fissures and cavities.

Anchor bonding

In loose or converging rock, stability can be ensured by anchors.
However, However, conventional anchors reach their limits in unstable rock. This is where injection drill anchors (IBO/SDA) come into play: using lost drill bits and subsequent injection, the annular space between the anchor and the rock is filled and the surrounding rock is simultaneously consolidated.

Whether for securing embankments, slopes, traffic routes or in tunnel and underground construction – our grout injection anchors in combination with **WILLBOLT®** anchor resin or **WILLGROUT®** mortar offer a safe, time-saving and economical solution.

Annular space filling

In pipe jacking and microtunnelling, reliable filling of the annular gap between the jacking pipe and the surrounding ground is crucial for the bedding, sealing and durability of the entire system. Depending on the geotechnical conditions, specialised injection solutions are used for this purpose: For larger cavities or highly permeable soils, the very fast-reacting ,highly expansive silicate foam resin **WILLKAT® FOAM** is used.

Thanks to its high foam factor, it reliably fills large-volume cavities and ensures a load-bearing, dense backfill and stabilisation of the surrounding rock.
Low-viscosity acrylate gels such as **WILLGEL® PRO** or **WILLGEL® SWIFT** are particularly suitable for fine-pored, water-bearing soils. With their water-like viscosity, they penetrate deep into the pore structure and enable reliable sealing and stabilisation even with low permeability of the subsoil.

Masonry reinforcement

Old or damaged masonry often has reduced load-bearing capacity – caused by missing binders, cavities, washouts or weathered joints. Targeted injection can contribute to structural improvement and sustainable consolidation . **WILLPUR® WX** is a two-component polyurethane-based injection resin with a variable reaction time.

Depending on the environmental conditions, the material either cures slowly to form a tough, elastic, force-fitting body with high compressive strength or reacts on contact with water to form a stable foam. This allows the load-bearing properties of weakened areas of masonry to be restored while reliably sealing off potential waterways.

Traffic route construction & hydraulic engineering

Transport and hydraulic engineering infrastructure such as bridges, locks and dams is exposed to heavy loads and water, which can lead to damage such as cracks or cavities. The fast-reacting, non-foaming silicate resin **WILLKAT® FA** is ideal for specifically grouting, stabilising and sealing load-bearing components – even under water.

It is used to fill small cavities, consolidate substrates and inject cracks in bridges, dams and water-bearing structures.
Thanks to its rapid strength development, good adhesion and chemical resistance, **WILLKAT® FA** is a reliable solution.

Surface sealing in building components

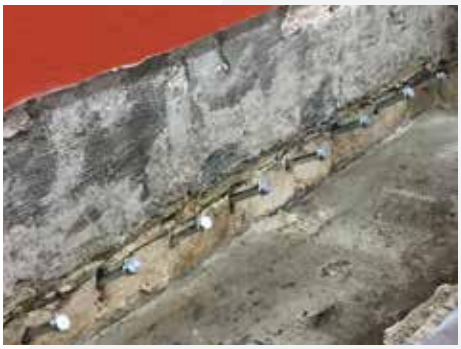
In the case of extensive moisture penetration – for example, through porous wall areas, gravel pockets or dissolved structural areas – selective sealing is often insufficient.
In such cases, the component is drilled through in specific places and injected with reaction resins or gels to create a closed sealing zone.

WILLGEL® SWIFT or **WILLPUR® CL** can be used to create such seals in a targeted manner. Through systematically arranged drill holes and coordinated reaction times, the injection material is distributed evenly throughout the component and permanently seals the damp area against water.

Filling injection hoses

Injection hose systems are an essential component for the planned and subsequent sealing of construction joints in building construction, civil engineering and structural engineering. They are installed prior to concreting in areas such as wall-floor connections or tunnel joints to ensure permanent watertightness of the structure after completion of the typical shrinkage processes. Depending on the desired repair objective and the prevailing moisture conditions, different reaction resins are used.

With the very low-viscosity acrylate gel **WILLGEL® PRO**, which has water-like penetration properties, even the finest voids within the joint can be filled evenly and reliably. For force-fit connections to restore the static composite in structurally stressed joints, epoxy resins such as **WILLPOX® 7147** are used, which are characterised by high tensile and compressive strengths. The polyurethane resin **WILLPUR® CL**, on the other hand, is ideal for the flexible sealing of water-bearing joints, as it cures to form an elastic and chemically highly resistant PU body.



Waterproofing against rising damp

If moisture is penetrating the structure from below due to a defective and/or missing horizontal barrier, causing damage to the structure, then the installation of a retrofitted horizontal barrier is the ideal solution.

Very low-viscosity acrylate gels (e.g. **WILLGEL® PRO**) with excellent penetration and sealing properties are injected into the masonry above the floor and form a retrofitted horizontal seal.

PRODUCT MATRIX

1K-POLYURETHANE RESINS (SPUR)

Product	Reaction time at 20°C	Advantages	Applications
WILLSTOP® 1K+ **WILLSTOP® 1**	~ 00:18 sec – 2:30 min ~ 00:48 sec – 06:00 min	• Reacts on contact with water in the injection area, producing intense foaming • Expands freely with a foam expansion ratio of up to 50–70 times • Reaction time can be quickly and precisely adjusted using the catalyst • Ready to use – easy to apply with 1K pumps	• To stop water leaks • Sealing of pressure-water-carrying cracks in concrete and masonry • Stabilising the ground, for example when the pipe-jacking machine enters the target excavation pit
WILLSTOP® Flex+ **WILLSTOP® Flex**	~ 01:20 – 07:50 min ~ 01:40 – 11:15 min	• Ready to use – single-component polyurethane resin • Easy to apply using single-component pumps • Closed-cell, elastic foam – highly flexible, tear-resistant and able to accommodate movement	• Sealing cracks in reinforced concrete structures or masonry • To stop water seepage • Excavation shoring systems such as sheet pile, slotted or bored pile walls, particularly where movement occurs
WILLSTOP® 42	~ 07:45 min	• Ready to use – single-component polyurethane resin • Cured floors can be easily machined • Low foaming factor ~ 2–3 • Very low viscosity	• Stabilisation of unconsolidated soils and loose rock • To improve soil properties beneath foundations or other heavy structures
WILLADD® 1 **WILLADD® 42** **WILLADD® Flex**		• Enables precise control of the reaction time • Accelerator for 1K polyurethane resins • Observe the correct mixing ratios for the different products	• To speed up reaction times, particularly at low temperatures

2K-POLYURETHANE RESINS (PUR)

Product	Reaction time at 20°C	Advantages	Applications
WILLPUR® CS	~ 75:00 min	• Low-viscosity, slow-curing, highly elastic injection resin • Reaction time can be quickly and precisely adjusted using the catalyst • Suitable for 1-component and 2-component application • Can be injected into dry and damp sand; compatible with concrete in accordance with DIN EN 1504-5	• For closing, sealing and flexibly bridging cracks in reinforced concrete • For grouting injection hoses • For consolidating and sealing soil and rock in difficult ground conditions
WILLPUR® CL	~ 135:00 min	• Low-viscosity, slow-curing, highly elastic injection resin • Curing time can be quickly and precisely adjusted using the catalyst • CE marking in accordance with 1504-5 • Drinking water test report in accordance with KTW-BWGL	• For closing, sealing and flexibly bridging cracks in reinforced concrete and masonry • For grouting injection hoses • For sealing tunnel lining joints in tunnel construction • For sealing and stabilising soil
WILLPUR® SL	~ 00:50 sec	• Rapid strength development – high mechanical properties/final strength • Low foaming factor and fast reaction time • Excellent adhesive properties • Low viscosity	• For compacting, lifting or stabilising solid structures such as foundations and floor slabs, as well as road surfaces. • For rock stabilisation in the vicinity of fault zones • Stabilisation of loose rock, soil or rock fill
WILLPUR® HF+	~ 01:25 min	• Fast-curing two-component polyurethane resin • High-strength, pressure-water-resistant rigid foam, even without contact with water • Fast curing time and permanent seal • High expansion ratio (FF 14–16)	• For waterproofing • For stabilising unstable ground • For filling small cavities, including joints, cracks and pipes
WILLPUR® WX	~ 106:00 min	• Slow-curing two-component polyurethane resin • Can be used in both single-component and two-component applications • Adjustable curing time from 25 seconds to 106 minutes at 20°C • Penetrates well into the areas to be sealed; tested and approved for groundwater safety	• For sealing against water ingress from rock, soil or cracks in concrete and masonry • Seals cracks in rock during tunnel boring and prevents water flow along the tunnel axis • Used for surface sealing (Curtain injection) • For stabilising ground beneath foundations and other monolithic structures

WILLPUR® WS-F	~ 02:05 min	• Fast-curing two-component polyurethane resin • Foams on contact with water (FF 4–5 at 1% water) • Short curing time even at low temperatures • Tested for its impact on soil and groundwater	• For permanent sealing and consolidation in dry and highly water-bearing areas • Reliably seals pressurised water inflows from rock, soil or structures • Permanently seals cracks in concrete and masonry, such as in tunnels, sewers, shafts, sluices, underwater concrete bases and excavation pit enclosures • Also serves to fill the annular gap between the rock and the standpipe for the secure bonding of de-icing pipes
WILLPUR® WS-FA	~ 00:36 sec	• Very fast-curing two-component polyurethane resin • Reacts rapidly when mixed with water; the product cures to form a compact, solid foam • Suitable for use at ambient temperatures between 15°C and +40°C • Tested for its impact on soil and groundwater	• Reliably seals pressurised water inflows with high flow rates from rock, soil or structures • Is used for the permanent consolidation and sealing of wet and water-bearing rock in mining and tunnelling • Permanently seals pressurised water-carrying cracks in concrete and masonry, such as in tunnels, sewers, shafts, sluices, underwater concrete bases and excavation pit enclosures
WILLUR® WS HF	~ 00:33 sec	• Fast-curing, high-expansion 2-component polyurethane resin • Lightweight, tough and resilient foam • Free from CFCs and halogens • Tested for its impact on soil and groundwater	• Soil stabilisation in damp and water-bearing environments • Stabilisation and waterproofing in tunnel construction • Waterproofing against pressurised water • Stabilising waterproofing for walk-in sewers and manholes
WILLADD® Fast		• Catalyst for reducing reaction times, particularly at low temperatures or in the presence of a high water flow	• Suitable for WILLPUR® WX, WS-F, WS-FA
WILLADD® Thix		• Adding WILLADD® Thix to the respective A-component causes the injection resin to thicken after mixing • When WILLADD® Thix is added, the resin performs well even in the strongest water currents • Thixotropic agent for two-component polyurethane resins	• Suitable for WILLPUR® WX, WS-F, WS-FA

SILICATE RESINS

Product	Reaction time at 20°C	Advantages	Applications
WILLKAT® Foam	~ 00:20 – 00:45 sec	• Highly foaming and very fast-setting silicate foam (FF 25–45) • Foams with or without contact with water; slightly flexible injection foam • Flame-retardant • Tested for impact on soil and groundwater & LOBA approval	• Specifically designed for mountain, civil and tunnel engineering for the safe, rapid and cost-effective backfilling of voids • For sealing and stabilising loose soil or fault zones during tunnel excavation, ensuring excavation proceeds according to schedule • For stabilising rock and soil • For stopping water outbursts
WILLKAT® FA	~ 02:00 - 03:10 min	• Does not foam, even when in contact with water • Rapid strength development, with more than 90% of the final strength achieved after just 15 minutes. High compressive strengths of up to 62 N/mm² • Flame-retardant, resistant to acids, alkalis, salt solutions and many organic solvents • Tested for impact on soil and groundwater & test certificate in accordance with KTW recommendations D2	• For consolidating loose rock and soil • For the mechanical injection of cracks > 0.2 mm • For filling small voids • For underpinning, lifting or securing solid structures such as foundations, floor slabs and road surfaces.
WILLKAT® LV	~ 00:60 - 00:80 sec	• Does not foam, even when in contact with water • Good adhesive properties ~ 4.0 N/mm² after 1 hour • Very fast-curing • Tested for impact on soil and groundwater & LOBA approval	• For consolidating fault zones in dry, damp and wet environments in mining and tunnel construction. • For embedding injection drill anchors • For sealing water ingress
WILLBOLT® Fast/ Slow/ 900	~ 03:30 min / 07:00 min / 15:00 min	• Thixotropic, fast-curing, non-foaming two-component silicate resin • CFC- and halogen-free • Good adhesive properties • Rapid strength development	• For bonding injection drill anchors (steel/ GRP) whilst simultaneously consolidating the rock • Waterproofing • For filling small voids • For force-fit injection into cracks > 0.3 mm

ACRYL GEL (AY)

Product	Reaction time at 20°C	Advantages	Applications
WILLGEL® PRO	~ 05:38 min	• Extremely low viscosity, rubber-like hydrogel, stretchable • Adjustable reaction time • Good chemical resistance (many acids, alkalis, hydrocarbons) • CE marking in accordance with 1504-5; tested for effects on soil and groundwater	• Curtain injection, masonry, concrete structures, civil engineering and tunnelling • Sealing of cracks, joints and voids (in combination with WILLGEL® POLY), for embedding grouting hoses • Retrofitted horizontal damp-proof course • Soil stabilisation
WILLGEL® Swift	~ 00:30 sec	• Very low-viscosity hydrogel, excellent penetration properties • High elasticity • Adjustable reaction time • CE marked in accordance with 1504-5, tested for effects on soil and groundwater • Fast-curing	• Curtain injection • Joint and crack grouting, e.g. expansion joints (when using WILLGEL® Poly) • Waterproofing in microtunnelling • Soil stabilisation
WILLGEL® 91	~ 00:17 sec	• Extremely low viscosity, excellent penetration • Limited elasticity • Adjustable reaction time • Purple in colour	• Soil stabilisation • Sealing of water inflows • Sealing of water-bearing or water-filled joints
WILLGEL® 81	~ 00:30 sec	• Extremely low viscosity, excellent penetration • Adjustable reaction time • Limited elasticity • Blue in colour • High elongation	• Curtain injection • Ground stabilisation • Stopping minor water inflows
WILLGEL® Poly		• Increased flexibility, higher tear resistance • Prevents or reduces shrinkage and swelling • Better adhesion to mineral surfaces • Polymer reinforcement for acrylates – increases bonding strength	• WILLGEL® PRO for crack and pipe injections and WILLGEL® SWIFT for crack injections and the repair of expansion joints • Filling and sealing annular gaps in tunnel or shaft structures

EPOXY RESIN (EP)

Product	Reaction time at 20°C	Advantages	Applications
WILLPOX® 7147	~ 100:00 min	• Very low viscosity • Can also be used on slightly damp substrates • Excellent penetration properties • CE marking in accordance with 1504-5 • Dual component structural epoxy resin for structural crack repair	• For the mechanical filling of cracks, voids and defects in dry or slightly damp concrete or masonry structures • Used in civil engineering and underground construction for the bond-type injection of cracks in tunnels, reinforced concrete elements, dams and other concrete and masonry structures

FLUSHING OIL / CLEANER

Product	Advantages	Applications
WILLCLEAN® Cleaner	• Cleaner for polyurethane and epoxy resins	• For degreasing and cleaning injection pumps and tools used to process injection-grade building materials • Can also be used to clean metallic and mineral surfaces
WILLCLEAN® Flushing oil	• Not hazardous – Classification in accordance with Regulation (EC) No 1272/2008 (CLP) • Flushing oil/maintenance oil for pumps used with polyurethane and epoxy resins	• Rinsing out any uncured resin residue • Pump preservative during storage

BUILDING MATERIALS

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1

WILLSTOP® 1K-POLYURETHANE RESINS & CATALYSTS

WILLSTOP® 1K products are single-component polyurethane foam resins for stopping groundwater ingress, sealing cracks in concrete structures or soil stabilisation in geotechnical engineering. The products require water as a reaction partner and only react when they come into contact with moisture or water by foaming. Depending on the system, the end product is a solid or flexible lightweight foam, with low or high foaming.

The reaction times of all **WILLSTOP®** systems can be adjusted by adding catalysts. Processing is carried out using light compressed air-powered piston pumps or electrically powered diaphragm pumps. The injection pumps are cleaned with **WILLCLEAN® Cleaner** and then with **WILLCLEAN® Flushing oil** as a final flushing and care agent.

WILLSTOP® 1

Single-component, water-reactive, highly foaming SPUR for sealing water inflows, adjustable reaction times

For stopping water ingress in civil engineering, tunnelling and hydraulic engineering, for sealing pressure-water-bearing cracks in concrete and masonry, for stabilising soil, for example at the entry point of pipe jacking into the target excavation pit.

- High foaming factor ~ 70
- Reaction times adjustable by adding WILLADD® 1 between 1 - 10% (weight percentage)

Article Designation	Size	Packaging	Article number
WILLSTOP® 1	1 kg	Tin can	WSTOP-1-1-1
	10 kg	Metal can	WSTOP-1-1-10
	20 kg	Metal can	WSTOP-1-1-20

WILLSTOP® 1K+

Single-component, water-reactive, high-foaming SPUR for sealing water inflows (pre-catalyzed)

For sealing cracks in reinforced concrete structures or masonry, for sealing excavation pit enclosures such as sheet pile, slotted or bored pile walls, especially in cases of movement. For stopping flowing water and for injection in civil engineering and tunnel construction.

- Fast reaction
- Reaction time (foaming) at 20°C after 2 min. 30 s
- Foam factor ~ 50 - 70
- Ready to use
- Can be further accelerated if necessary by adding max. 5% (by weight)
- Tested for effects on soil and groundwater

Article Designation	Size	Packaging	Article number
WILLSTOP® 1K+	10 kg	Metal can	WSTOP-1K+-2-10
	20 kg	Metal can	WSTOP-1K+-2-20

WILLSTOP® FLEX

CE MARKING IN ACCORDANCE WITH EN 1504-5

Single-component, water-reactive, flexible SPUR for sealing water inflows

CE

For sealing cracks in reinforced concrete structures or masonry, for sealing excavation pit enclosures such as sheet pile, slotted or bored pile walls, especially in cases of movement.

- High foaming
- Foam factor ~ 10 - 15
- Flexible
- Closed-cell foam
- Reaction times adjustable by adding WILLADD® FLEX between 1 - 5% (weight percentage)

Article Designation	Size	Packaging	Article number
WILLSTOP® FLEX	1 kg	Tin can	WSTOP-FLEX-1-1
	10 kg	Metal can	WSTOP-FLEX-1-10

WILLSTOP® FLEX+

CE MARKING IN ACCORDANCE WITH EN 1504-5

Flexible, single-component, water-reactive SPUR for sealing water inlets (pre-catalyzed)

For sealing cracks in reinforced concrete structures or masonry, for sealing excavation pit enclosures such as sheet pile, slotted pile or bored pile walls, especially in cases of movement. For stopping flowing water and for injection in civil engineering and tunnel construction.

- Ready to use
- Reaction time (foaming) at 25°C after 435 - 485 seconds
- Foam factor ~ 10 - 15
- Flexible
- Closed-cell foam
- Reaction times can be accelerated by adding WILLADD® FLEX (maximum 2% by weight)

Article Designation	Size	Packaging	Article number
WILLSTOP® FLEX+	10 kg	Metal can	WSTOP-FLEX+-1-10

WILLSTOP® 42

Single-component, water-reactive, low-viscosity SPUR specifically for soil stabilization

For stabilising non-cohesive soils and loose rock, to increase soil parameters under foundations or other solid structures.

- Foam factor ~ 2 - 3
- Very low viscosity
- Solidified floors can be easily machined
- Reaction times can be adjusted by adding WILLADD® 42 between 1 - 2.5% (weight percentage)

Article Designation	Size	Packaging	Article number
WILLSTOP® 42	5 kg	Metal can	WSTOP-42-1-5
	20 kg	Metal can	WSTOP-42-1-20

WILLADD® 1

Accelerator for WILLSTOP® 1 and WILLSTOP® 1K,+ 1K polyurethane foam resins

To accelerate response times, especially at low temperatures or with high water inflow.

- Dosage 1–10% (by weight) for WILLSTOP® 1
- Dosage max. 5% (by weight) for WILLSTOP® 1K+

Article Designation	Size	Packaging	Article number
WILLADD® 1	1 kg	Metal can	WADD-1-1-1
	5 kg	Metal can	WADD-1-1-5

WILLADD® FLEX

Accelerator for WILLSTOP® FLEX and WILLSTOP® FLEX+ 1K polyurethane foam resin

To accelerate response times, especially at low temperatures or with high water inflow.

- Dosage 1–5% (by weight)

Article Designation	Size	Packaging	Article number
WILLADD® FLEX	1 kg	Tin can	WADD-FLEX-1-1
	5 kg	Metal can	WADD-FLEX-1-5

WILLADD® 42

Accelerator for WILLSTOP® 42 1K polyurethane foam resin

To accelerate response times, especially at low temperatures.

- Dosage 1–2.5% (by weight)

Article Designation	Size	Packaging	Article number
WILLADD® 42	1 kg	Metal can	WADD-42-1-1
	5 kg	Metal can	WADD-42-1-5

2

WILLPUR® 2K-POLYURETHANE RESINS & CATALYSTS

Depending on the product, our **WILLPUR®** 2K products are 1- or 2-component polyurethane resin systems. All systems are pure liquids and consist of a polyol component on the A side and a modified isocyanate on the B side. Processing is carried out in a volume ratio of 1:1. Depending on the system selected, the product cures to form an elastic or tough polyurethane resin with high or low foaming when in contact with water and high mechanical properties.

The reaction times of **WILLPUR®** 2K systems range from a few seconds to more than an hour. **WILLPUR®** systems are versatile and the ideal solution for sealing and reinforcement purposes in dry, damp or heavily water-bearing areas, as well as in concrete repair for force-resistant or limited-elasticity crack injection.

At low temperatures or in the event of very heavy water ingress, the typical **WILLPUR®** systems can be further accelerated in their reaction or made highly thixotropic by adding catalysts.

WILLPUR® CL

CE MARKING IN ACCORDANCE WITH EN 1504-5

Two-component resin for elastic sealing and consolidation of water-bearing areas, crack injection resin

For closing, sealing and flexibly bonding cracks in reinforced concrete in accordance with EN 1504-5, for grouting injection hoses, for sealing and strengthening cracks and fissures in rock, or for sealing and strengthening soil.

- Processing in a volume ratio of 1:1
- Single- and two-component processing possible
- Expandable crack filler
- Processing time approx. 30 min.
- Pot life (at 23°C) approx. 130 min. at 25 °C
- Foam factor ~ 1 (without water)

WTA - Approval

Article Designation	Size	Packaging	Article number
WILLPUR® CL A	10 kg	Metal can	WPUR-CL-1-A10
WILLPUR® CL B	12 kg	Metal can	WPUR-CL-1-B12

WILLPUR® CS

CE MARKING IN ACCORDANCE WITH EN 1504-5

Two-component polyurethane resin, low viscosity, elastic, slow reaction time

For sealing crack injection in reinforced concrete structures in accordance with EN 1504-5, for injecting construction joints, for grouting injection hoses, for sealing ring joint gaps in tunnel construction and for stabilising and sealing soil and rock in difficult ground conditions.

- Processing in a volume ratio of 1 : 1
- Single- and two-component processing possible
- Expandable crack filler
- Pot life (1000 mPa*s) 40 - 60 min. at 25°C
- Foam factor ~ 1 (without water)

Article Designation	Size	Packaging	Article number
WILLPUR® CS A/B	1 kg	Tin can	WPUR-CS-2-A-B-1
WILLPUR® CS A	4.5 kg	Metal can	WPUR-CS-2-A4,5
WILLPUR® CS B	5 kg	Metal can	WPUR-CS-2-B5
WILLPUR® CS A	18 kg	Metal can	WPUR-CS-2-A18
WILLPUR® CS B	20 kg	Metal can	WPUR-CS-2-B20
WILLPUR® CS A	195 kg	Metal drum	WPUR-CS-2-A195
WILLPUR® CS B	214 kg	Metal drum	WPUR-CS-2-B214
WILLPUR® CS A	965 kg	IBC	WPUR-CS-2-A965
WILLPUR® CS B	1080 kg	IBC	WPUR-CS-2-B1080

WILLPUR® HF+

Fast-reacting two-component polyurethane resin with high foam factor

For sealing against water, for stabilizing unstable soil, for filling small cavities, joints, gaps, pipes, hollow bodies, etc. Even without contact with water, the product reacts strongly to form a tough, hard PUR rigid foam.

- Reaction time (foaming) at 25°C after approx. 65 - 95 s
- Foam factor 14 - 16

Article Designation	Size	Packaging	Article number
WILLPUR® HF+ A	20 kg	Metal can	WPUR-HF+-1-A20
WILLPUR® HF+ B	23 kg	Metal can	WPUR-HF+-1-B23
WILLPUR® HF+ A	200 kg	Metal drum	WPUR-HF+-1-A200
WILLPUR® HF+ B	230 kg	Metal drum	WPUR-HF+-1-B230
WILLPUR® HF+ A	1040 kg	IBC	WPUR-HF+-1-A1040
WILLPUR® HF+ B	1210 kg	IBC	WPUR-HF+-1-B1210

WILLPUR® WX

CE MARKING IN ACCORDANCE WITH EN 1504-5

Slow-reacting, two-component polyurethane resin, faster reaction upon contact with water

CE

For sealing and strengthening dry and water-bearing areas. For sealing surface injection (curtain injection) behind structures in contact with the ground, such as tunnels, galleries, caverns, and underground parking garages, and for force-fit crack repair. Also particularly suitable for hybrid injections.

- Can be processed as a one-component or two-component system
- Variable reaction time adjustable from 25 s up to 106 min at 20 °C without water contact
- Foam expansion factor ~1 (without water)
- Foam expansion factor ~3.5 (with 1 % water)
- By adding WILLADD® FAST (accelerator) or WILLADD THIX® (thixotropic agent), the system can be adapted to site-specific requirements; the effects on soil and groundwater have been evaluated.

Article Designation	Size	Packaging	Article number
WILLPUR® WX	20 kg	Metal can	WPUR-WX-1-A20
WILLPUR® WX	24 kg	Metal can	WPUR-WX-1-B24

WILLPUR® WS-F

Fast-reacting, water-reactive, expanding two-component polyurethane resin with a short reaction time even at low temperatures.

For permanent sealing and consolidation in dry and heavily water-bearing areas.
Reliably seals pressurized water inflows from rock formations, soil, or structures, closes cracks and fissures in the rock, and prevents water migration along the tunnel axis. The product is also used for structural (load-transmitting) injection into concrete and masonry.
WILLPUR® WS-F is also used for the secure bonding of freezing pipes by filling the annular gap between the rock formation and the standpipe.

- Foaming reaction time at 15 °C: approx. 3 min 20 s
- Foam expansion factor ~1 (without water contact)
- Foam expansion factor ~4–5 (with 1 % water)
- Applicable at ambient temperatures down to −15 °C
- Can be used in combination with WILLPUR® WS-FA
- By adding WILLADD® FAST (accelerator) or WILLADD® THIX (thixotropic agent), the system can be adapted to site-specific requirements.

Article Designation	Size	Packaging	Article number
WILLPUR® WS-F A	21 kg	Metal can	WPUR-WSF-1-A21
WILLPUR® WS-F B	25 kg	Metal can	WPUR-WSF-1-B25

WILLPUR® WS FA

Very fast-reacting, water-reactive, expanding two-component polyurethane resin.

For permanent sealing and consolidation in dry, wet, and pressurized water-bearing areas with high water flow rates.
WILLPUR® WS FA is also used for the bonding of rock anchors.
Applicable at ambient temperatures down to −15 °C.

- Foaming reaction time at 15 °C: approx. 1 min 15 s
- Foam expansion factor ~1 (without water contact)
- Foam expansion factor ~5–8 (with 1 % water)
- Can be used in combination with WILLPUR® WS-F
- By adding WILLADD® FAST (accelerator) or WILLADD® THIX (thixotropic agent), the system can be adapted to site-specific requirements
- Tested with regard to its effects on soil and ground water

Article Designation	Size	Packaging	Article number
WILLPUR® WS FA A	21 kg	Metal can	WPUR-WSFA-1-A21
WILLPUR® WS FA B	25 kg	Metal can	WPUR-WSFA-1-B25

WILLPUR® SL

Two-component polyurethane resin with high mechanical properties, low foam expansion factor, and fast reaction time.

For underpinning, lifting, or stabilizing massive structures such as foundations, floor slabs, and traffic-bearing surfaces.
Suitable for the consolidation of loose rock, soil, or rock fill (gravel/ballast), for ground consolidation in fault zones, and for the encapsulation of contaminated areas.

- Start of foaming at 20 °C: approx. 50 s
- Foaming reaction time at 20 °C: approx. 50 s
- Limited foam expansion factor: 1.5 – 3
- High final strength
- Tough, rigid foam
- Tested with regard to its effects on soil and ground water

Article Designation	Size	Packaging	Article number
WILLPUR® SL A	20 kg	Metal can	WPUR-SL-1-A20
WILLPUR® SL B	24 kg	Metal can	WPUR-SL-1-B24
WILLPUR® SL A	200 kg	Metal drum	WPUR-SL-1-A200
WILLPUR® SL B	240 kg	Metal drum	WPUR-SL-1-B240
WILLPUR® SL A	1000 kg	IBC	WPUR-SL-1-A1000
WILLPUR® SL B	1200 kg	IBC	WPUR-SL-1-B1200

WILLPUR® WS HF

Very fast-reacting two-component polyurethane resin with a very high foam expansion factor.

Lightweight, tough-elastic foam for sealing and consolidation in wet to pressurized water-bearing areas with high water flow rates.

- Foaming reaction time at 20 °C: approx. 15 s
- Foam expansion factor: ~ 30
- Tested with regard to its effects on soil and ground water

Article Designation	Size	Packaging	Article number
WILLPUR® WS HF A/B	400 ml	Double chamber cartridge	WPUR-WSHF-1-A/B2K
	1500 ml	Double chamber cartridge	WPUR-WSHF-1A/B2K-1500
WILLPUR® WS HF A	22 kg	Metal can	WPUR-WSHF-1-A22
WILLPUR® WS HF B	25 kg	Metal can	WPUR-WSHF-1-B25
WILLPUR® WS HF A	29 kg	Plastic can	WPUR-WSHF-1-A29
WILLPUR® WS HF B	32 kg	Plastic can	WPUR-WSHF-1-B32
WILLPUR® WS HF A	1060 kg	IBC	WPUR-WSHF-1-A1060
WILLPUR® WS HF B	1210 kg	IBC	WPUR-WSHF-1-B1210

WILLADD® FAST

Accelerator for the two-component polyurethane resin systems WILLPUR® WS, WILLPUR® WS-F and WILLPUR® WS-FA.

Catalyst for reducing the reaction times, particularly at low temperatures or in the presence of high water inflow.

- Dosage: 1–5 % (by weight) of the respective WILLPUR® A Component.

Article Designation	Size	Packaging	Article number
WILLADD® FAST	5 kg	Metal can	WADD-FAST-1-5

WILLADD® THIX

Thixotropic agent for the two-component polyurethanes WILLPUR® WS, WILLPUR® WS-F and WILLPUR® WS FA.

By adding WILLADD® THIX to the respective A component, the injection resin thickens significantly after mixing. This allows the injection system to be effectively used even in the presence of very strong water flows.

- Dosage: 1–5% (by weight) of the respective WILLPUR® A Component.

Article Designation	Size	Packaging	Article number
WILLADD® THIX	4 kg	Metal can	WADD-THIX-1-4


WILLKAT® Foam - A
WILLKAT® Foam - B

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SILICATE RESINS

WILLKAT® and **WILLBOLT®** injection resins are two-component silicate resin systems.
They consist of a water-glass component (A-side) and a modified isocyanate component (B-side).
Processing is carried out at a mixing ratio of 1:1 by volume.

With **WILLKAT®** and **WILLBOLT®**, a wide range of applications can be optimally performed, including rock and soil consolidation, cavity filling, anchor bonding, and underpinning of massive structures. Depending on the specific application (filling, consolidation, sealing, or anchoring), either highly expanding or non-expanding products are used.

Water does not play a role in the reaction. The products are emulsions that do not react with water by foaming; instead, they displace the water. As silicate resins, they cure unfoamed even under water. The viscosity of the products also depends on the specific application and ranges from low-viscosity systems to stable, thixotropic products, for example when used as anchor resins.

A key characteristic of silicate resin systems is that, in contrast to hard to tough-elastic polyurethane resins, they can be easily mechanically processed after curing.
This means, for example, that areas consolidated with **WILLKAT® FOAM** can be mechanically removed from the surrounding rock mass, without causing additional collapses during excavation due to excessive consolidation.

WILLKAT® FOAM

Two-component, very highly expanding and very fast-reacting silicate resin for rock consolidation and cavity filling.

WILLKAT® Foam is a highly expanding filling foam that enables safe, fast, and economical filling of cavities.
It is used for sealing and consolidating loose (non-cohesive) soils or fault zones during tunnel excavation. Due to the low shear strength of the foam, the mechanized excavation of the consolidated ground is easily possible.

- The cured foam can be easily mechanically processed
- Start of foaming (20 °C): 20 s
- End of foaming: 45 s
- Foam expansion factor: 25–45
- Tested with regard to its effects on soil and groundwater
- Approved by LOBA

Article Designation	Size	Packaging	Article number
WILLKAT® Foam A	26 kg	Metal can	WKAT-FO-1-A26
WILLKAT® Foam B	24 kg	Metal can	WKAT-FO-1-B24
WILLKAT® Foam A	34 kg	Plastic can	WKAT-FO-1-A34
WILLKAT® Foam B	32 kg	Plastic can	WKAT-FO-1-B32
WILLKAT® Foam A	1400 kg	Metal drum	WKAT-FO-1-A1400
WILLKAT® Foam B	1330 kg	Metal drum	WKAT-FO-1-B1330

WILLKAT® FA

Two-component silicate resin with rapid strength development.

WILLKAT® FA is a fast-reacting, non-expanding two-component silicate resin with good adhesion properties and high final strength.
It is used for underpinning, lifting, and stabilizing massive structures such as foundations, floor slabs, and traffic-bearing surfaces, as well as for structural (load-transmitting) injection of cracks > 0.2 mm and for the filling of smaller cavities.

- Flow time (20 °C): 3 min 40 s
- Setting time: 4 min 50 s
- Compressive strength after 1 hour: ~ 48 N/mm²
- No reaction with water
- Foam expansion factor: 1

Article Designation	Size	Packaging	Article number
WILLKAT® FA A	28 kg	Metal can	WKAT-FA-3-A28
WILLKAT® FA B	24 kg	Metal can	WKAT-FA-2-B22
WILLKAT® FA A	1390 kg	IBC	WKAT-FA-3-A1430
WILLKAT® FA B	1150 kg	IBC	WKAT-FA-2-B1130

WILLKAT® LV

Very fast-reacting, non-expanding two-component silicate resin with good adhesion properties

For the consolidation of fault zones in dry, damp, and wet conditions in mining and tunnelling.
Injection resin for bonding injection drill anchors.

- Flow time (20 °C): 60 s
- Setting time: 80 s
- Adhesive strength: ~ 4.0 N/mm² after 1 hour
- Approved by LOBA

Article Designation	Size	Packaging	Article number
WILLKAT® LV A	27 kg	Metal can	WKAT-LV-1-A27
WILLKAT® LV B	21 kg	Metal can	WKAT-LV-1-B21
WILLKAT® LV A	37 kg	Plastic can	WKAT-LV-1-A37
WILLKAT® LV B	30 kg	Plastic can	WKAT-LV-1-B30
WILLKAT® LV A	280 kg	Metal drum	WKAT-LV-1-A280
WILLKAT® LV B	224 kg	Metal drum	WKAT-LV-1-B224

WILLBOLT®

Thixotropic, fast-reacting, non-expanding two-component silicate resin.

Used for injection drill anchors (steel/GFRP) with simultaneous rock consolidation, for sealing against water, or for crack injection in cavities.
Drill holes (including overhead applications) can be easily filled with WILLBOLT®, into which rod anchors made of steel or GFRP are subsequently inserted and bonded.

- Particularly suitable for overhead application
- Curing time (20 °C): 7 min (Slow), 3.5 min (Fast), and 900 s (900)
- Compressive strength: > 28 N/mm²
- Approved by LOBA

Article Designation	Size	Packaging	Article number
WILLBOLT® A/B	400 ml	Double chamber cartridge	WBOLT-1F-A/B2K-400
WILLBOLT® Fast A	27 kg	Metal can	WBOLT-1F-A27
WILLBOLT® Slow A	27 kg	Metal can	WBOLT-1S-A27
WILLBOLT® 900 A	27 kg	Metal can	WBOLT- 1S900-A27
WILLBOLT® - B	21 kg	Metal can	WBOLT-1-B21KK
WILLBOLT® Fast A	290 kg	Metal drum	WBOLT-1F-A290
WILLBOLT® Slow A	290 kg	Metal drum	WBOLT-1S-A290
WILLBOLT® B	225 kg	Metal drum	WBOLT-1-B225
WILLBOLT® Fast A	1450 kg	IBC	WBOLT-1F-A1450
WILLBOLT® Slow A	1450 kg	IBC	WBOLT-1S-A1450
WILLBOLT® B	1130 kg	IBC	WBOLT-1-B1130

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ACRYLATE GELS & ADDITIVES

Our **WILLGEL®** systems are acrylate-based injection gels. They consist of three components: components A1, A2, and component B. A fourth component (water) is added to the B component on site.

After preparing mixtures A and B, the product is processed as a two-component system at a mixing ratio of 1:1 by volume. The injection solution is a pure liquid with extremely low viscosity and, due to its low surface tension, exhibits excellent penetration properties.

Depending on the **WILLGEL®** System selected, the product cures into a limited-elastic or highly flexible material with excellent sealing performance. The reaction times can be adjusted from a few seconds to several minutes by varying the dosage of component B. Acrylate gels are used for sealing of below-grade structures and for soil stabilization.

For swelling crack repair systems and sealing of movement joints, a polymer component is used instead of water on the B side.

WILLGEL® PRO

CE MARKING IN ACCORDANCE WITH EN 1504-5

Rubber-elastic, water-swellable three-component acrylate gel.

The gel is used for structural waterproofing, including curtain grouting, the installation of retrofitted horizontal barriers, and for crack injection and injection hose grouting—in these applications using WILLGEL® POLY—as well as for soil stabilization.

- Very low viscosity (close to water)
- Excellent penetration properties
- Adjustable reaction times
- Flexible and elastic
- Depending on the dosage of component B, the product is fully cured after approx. 5 min 38 s (20 °C)

Article Designation	Size	Packaging	Article number
WILLGEL® PRO - A1	20 kg	Plastic can	WGEL-PRO-A1-20
WILLGEL® PRO - A2	1 kg	PE bottle	WGEL-PRO-A2-1,0
WILLGEL® PRO - B	0.4 kg	PE bottle	WGEL-PRO-B-0,4

WILLGEL® SWIFT

CE MARKING IN ACCORDANCE WITH EN 1504-5

Soft-elastic, water-swellable three-component acrylate gel.

The gel is used for structural waterproofing by curtain grouting, particularly for the sealing of construction joints using WILLGEL® POLY, as well as for sealing water ingress and for soil consolidation.

- Low viscosity
- Very good penetration properties
- Adjustable reaction times
- High elongation capacity
- Very good adhesion to mineral surfaces
- Depending on the dosage of component B, the product is fully cured after approx. 30 s (20 °C)

Article Designation	Size	Packaging	Article number
WILLGEL® SWIFT - A1	20 kg	Plastic can	WGEL-SWIFT-A1-20
WILLGEL® SWIFT - A2	1 kg	PE bottle	WGEL-SWIFT-A2-1,0
WILLGEL® SWIFT - B	0,4 kg	PE bottle	WGEL-SWIFT-B-0,4
WILLGEL® SWIFT - A1 Rot	20 kg	Plastic can	WGEL-SWIFT-A1-ROT-20
WILLGEL® SWIFT - A1 Blau	20 kg	Plastic can	WGEL-SWIFT-A1-BLAU-20

WILLGEL® 91

Limited-elastic three-component acrylate gel.

The gel is used for soil stabilization, for the sealing of water ingress, and for the sealing of structural joints (e.g. expansion joints), particularly in the presence of large volumes of water.

- Low viscosity
- Very good penetration properties
- Adjustable reaction times
- Depending on the dosage of component B, the product is fully cured after approx. 42 s (20 °C)

Article Designation	Size	Packaging	Article number
WILLGEL® 91 - A1	20 kg	Plastic can	WGEL-91-A1-1-20
WILLGEL® 91 - A2	1 kg	PE bottle	WGEL-91-A2-1-1,0
WILLGEL® 91 - B	0.4 kg	PE bottle	WGEL-91-B-1-0,4

WILLGEL® 81

Elastic three-component acrylate gel, colored blue.

Used for the sealing of all types of below-grade structures as well as for the stabilization of geological formations (e.g. sands).

- Curtain injection
- Soil stabilization

- Low viscosity
- Very good penetration properties
- Adjustable reaction times
- Depending on the dosage of component B, the product is fully cured after approx. 30 s (20 °C)

Article Designation	Size	Packaging	Article number
WILLGEL® 81 BLAU A1	20 kg	Plastic can	WGEL-81-A1-BLAU-1-20
WILLGEL® 81 A2	1 kg	PE bottle	WGEL-81-A2-1-1,0
WILLGEL® 81 B	0.4 kg	PE bottle	WGEL-81-B-1-0,4

WILLGEL® POLY

WILLGEL® POLY is a polymer component used as an alternative to water in the preparation of the B component for acrylate gels.

The polymer component has a flexibilizing effect, improves the adhesion of the gel to mineral substrates, and at the same time reduces the potential for shrinkage in the absence of moisture.

- Aqueous dispersion
- Low viscosity

Article Designation	Size	Packaging	Article number
WILLGEL® POLY	20 kg	Plastic can	WGEL-POLY-20

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EPOXY RESINS

WILLPOX® 7147 is a low-viscosity, two-component epoxy reaction resin, processed at a mixing ratio of 2:1 (A:B) by volume. The two components must be thoroughly mixed in the exact ratio until the mixture is homogeneous and free of streaks.

The mixture is then processed as a single-component material, using piston pumps (e.g. **WILLPUMP ERM 1**) or diaphragm pumps (e.g. **WILLPUMP ARK 1**). The product cures to form a thermosetting plastic with excellent mechanical properties as well as good temperature and chemical resistance.

WILLPOX® 7147 is used for structural (load-transmitting) crack injection and for the injection of hose systems. Cleaning of the injection pumps is carried out using **WILLCLEAN® Cleaner**, followed by **WILLCLEAN® Flushing oil** as a final flushing and maintenance agent.

WILLPOX® 7147

CE MARKING IN ACCORDANCE WITH EN 1504-5

Low-viscosity, two-component crack injection resin based on epoxy resin.

WILLPOX® 7147 is used for the structural (load-transmitting) sealing of cracks in reinforced concrete structures, as well as for the filling of cracks and voids in concrete and masonry.

- Mixing ratio: 2:1 (by volume)
- Pot life: 40 min at 23 °C
- Mixed viscosity: 165 mPa·s
- Solvent-free

Article Designation	Size	Packaging	Article number
WILLPOX® 7147	2 kg	Combination packaging	WPOX-7147-1-2,0
	20 kg	Combination packaging	WPOX-7147-1-20

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PHENOLIC RESINS

WILLFLEX® 09 is a two-component, fast-reacting phenolic resin-based filling foam for the safe, fast, and economical filling of cavities, for the prevention of gas accumulations, and for the sealing of mine workings during mine fire fighting operations.

The two components are pumped at a mixing ratio of 4:1 by volume using a two-component pump and hoses, and are mixed and discharged at the outlet via a static mixer. Due to the immediate dimensional stability and the low density of the foam, little or no formwork is required.

The product is non-flammable and can extinguish open fire while approved by LOBA for mining operation underground.

WILLFLEX® 09

Two-component, fast-reacting injection resin based on phenol-formaldehyde resin.

For the safe, fast, and economical filling of cavities in underground mining, for the filling of breakouts in longwall and roadway areas, for the construction of fire protection stoppings, for the sealing of ventilation stoppings, and for the filling of cavities to prevent methane gas accumulation.

- Compressive strength: > 20 kPa
- Foam expansion factor: > 40
- Consumption: approx. 25 kg/m³
- Approved by LOBA

Article Designation	Size	Packaging	Article number
WILLFLEX® 09 A	30 kg	Plastic can	WFLEX-09-1-A30
WILLFLEX® 09 B	35 kg	Plastic can	WFLEX-09-1-B35
WILLFLEX® 09 A	1240 kg	IBC	WFLEX-09-1-A1240
WILLFLEX® 09 B	1450 kg	IBC	WFLEX-09-1-B1450

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FLUSHING OIL / CLEANER

WILLCLEAN® FLUSHING OIL

Agent for flushing and maintenance of injection pumps.

WILLCLEAN® Flushing oil an effective agent for flushing and maintaining injection pumps.

Article Designation	Size	Packaging	Article number
WILLCLEAN® Flushing oil	7.5 kg	Metal can	WCLEAN-SPÜLÖL-1-7,5

WILLCLEAN® CLEANER

Cleaner for polyurethane resins.

WILLCLEAN® Cleaner a universal cleaning agent for degreasing and cleaning pumps and equipment used for processing polyurethane or epoxy resins.

Article Designation	Size	Packaging	Article number
WILLCLEAN® Cleaner	8 kg	Metal can	WCLEAN-REINIGER-1-8
	4 kg	Metal can	WCLEAN-REINIGER-1-4

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MINERAL-BASED CONSTRUCTION MATERIALS

WILLBOLT® GROUT

Sulfate-resistant injection and anchoring mortar.

A ready-to-use, non-shrink, sulfate-resistant cementitious grout for injection and grouting. It is suitable for the injection and grouting of anchors in rock, soil, concrete, and masonry, as well as for the filling of joints, cracks, and voids. The product can be applied on vertical and horizontal surfaces, as well as overhead, with appropriate water dosing during the preparation phase.
The material penetrates into the structure to be sealed, largely displaces water due to its viscous and hydrophobic properties, and cures into a stable, load-bearing cementitious grout.

- Good pumpability and non-shrinking properties
- Water- and frost-resistant
- Chloride-free
- Low chromate content in accordance with Directive 2001/53/EC
- Sulfate-resistant, in accordance with EN 13501-1 / DIN 4102

Article Designation	Size	Packaging	Article number
WILLBOLT® Grout	1050 kg	Pallets with 42 paper bags weighing 25 kg each	WBOLT-G-0-08

WILLBOLT® GROUT FAST

Sulfate-resistant injection and anchoring mortar.

A ready-to-use, non-shrink, sulfate-resistant cementitious grout for injection and grouting. It is suitable for the injection and grouting of anchors in rock, soil, concrete, and masonry, as well as for the filling of joints, cracks, and voids. The product can be applied on vertical and horizontal surfaces, as well as overhead, with appropriate water dosing during the preparation phase.
The material penetrates into the structure to be sealed, largely displaces water due to its viscous and hydrophobic properties, and cures into a stable, load-bearing cementitious grout.

- Good pumpability and non-shrinking properties
- Water- and frost-resistant
- Chloride-free
- Low chromate content in accordance with Directive 2001/53/EC
- Sulfate-resistant, in accordance with EN 13501-1 / DIN 4102, building material class A1 (non-combustible), approved for fire protection barriers
- Applicable vertically, horizontally, or overhead
- Grain size: 0–0.8 mm
- Compressive strength: 45 MPa after 24 h, 65 MPa after 7 days, 70 MPa after 28 days

Article Designation	Size	Packaging	Article number
WILLBOLT® Grout Fast	1050 kg	Pallets with 42 paper bags weighing 25 kg each	WBOLT-GF-0-08

WILLBOLT® INJECTION GROUT

Ready-to-use dry mix, non-shrink, sulfate-resistant cementitious grout for injection and grouting.

A ready-to-use, non-shrink, sulfate-resistant cementitious grout for injection and grouting. It is suitable for the injection and grouting of anchors in rock, soil, concrete, and masonry, as well as for the filling of joints, cracks, and voids.
The product can be applied on vertical and horizontal surfaces, as well as overhead, with appropriate water dosing during the preparation phase. The product penetrates into the structure to be sealed, largely displaces water due to its viscous and hydrophobic properties, and cures into a stable, load-bearing cementitious grout.

- Good pumpability and non-shrinking properties
- Water- and frost-resistant
- Chloride-free
- Low chromate content in accordance with Directive 2001/53/EC
- Sulfate-resistant
- Complies with DIN EN 1504-6 and can also be used as a cement suspension for grouting injection hose systems
- In accordance with EN 13501-1 / DIN 4102, building material class A1 (non-combustible), approved for fire protection barriers
- Applicable vertically, horizontally, or overhead
- Grain size: 0–0.125 mm
- Compressive strength: 60 MPa after 24 h, 80 MPa after 7 days, 90 MPa after 28 days

Article Designation	Size	Packaging	Article number
WILLBOLT® Injection Grout	1050 kg	Pallets with 42 paper bags weighing 25 kg each	WBOLT-IG-0-0125

WILLIT® S-WS

Single-component, ready-to-use dry mix based on cement.

For sealing water ingress points in rock, concrete, and masonry—ideal for sealing between floor slabs and rising masonry, as well as for stopping flowing water, even under water.

- Working time at 20 °C: approx. 30 s; compressive strength after 1 h: 18.0 N/mm²
- Low chromate content in accordance with Directive 2003/53/EC
- Sulfate-resistant and resistant to oil, frost, and de-icing salts
- Waterproof material
- Contains no chlorides
- Does not cause efflorescence or corrosion damage to metal parts
- Expands during setting, ensuring excellent adhesion

Article Designation	Size	Packaging	Article number
WILLIT® S-WS	720 kg	Pallets with 48 plastic buckets, each weighing 15 kg	WIT-S-WS15-15_KG

WILLIT® S-WS 30

Single-component, ready-to-use, cement-based dry mix

Used for immediately sealing water ingress points in rock, concrete, and masonry; for sealing cable and pipe penetrations; and for surface sealing of cracks during injection work.

- Working time at 20°C: approx. 60 seconds, initial setting: approx. 90 seconds
- Compressive strength: 18 N/mm² after 1 hour, 30 N/mm² after 24 hours, 60 N/mm² after 28 days
- Low-chromium, sulfate-resistant, resistant to oil, frost, and de-icing salt
- Water-impermeable, chloride-free, does not cause efflorescence or corrosion

Article Designation	Size	Packaging	Article number
WILLIT® S-WS 30	720 kg	Pallets with 48 plastic buckets, each weighing 15 kg	WIT-S-WS30-15_KG

WILLIT® S-KBM

Single-component, ready-to-use, cement-based dry mix

WILLIT® S-KBM is used for all structural (load-transmitting) applications where rapid load-bearing capacity is required, such as:

- Installation of step irons (ladder rungs)
- Jointing and masonry work for shafts, channels, and berms
- Bricklaying of sewer clinker bricks

In addition, WILLIT® S-KBM can also be processed at low temperatures due to its short setting time.
The application thickness should not exceed 50 mm.

- Working time (20 °C): approx. 25 min
- Compressive strength after 90 min: 8 N/mm²
- Compressive strength after 1 day: 21 N/mm²
- Compressive strength after 7 days: 45 N/mm²
- Compressive strength after 28 days: 55 N/mm²

Article Designation	Size	Packaging	Article number
WILLIT® S-KBM	25 kg	Paper bag	WIT-S-KBM-25_KG

WILLGROUT® TW

Potable water mortar

For internal coating and structural rehabilitation of potable water tanks and other water supply structures.

- Purely mineral (Type 1, DVGW W 300-5) with high resistance to hydrolysis and low water penetration depth
- Meets the requirements for use in potable water applications in construction (DVGW W 300) and has hygienic suitability (tested according to W 347)
- Low rebound and high bond strength to the substrate
- Low chromate content, free of organic additives

Article Designation	Size	Packaging	Article number
WILLGROUT® TW	25 kg	Paper bag à 25 kg	WGROUT-TW-1-25

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ADHESIVES & SEALANTS

WILLAN® MS1

One-component adhesive and sealant.

Versatile adhesive and sealant for interior and exterior applications.

This adhesive and sealant based on silane-modified polymers (MS polymers) cures upon exposure to moisture to form an elastic, water-resistant, and highly durable product with low shrinkage.

Article Designation	Size	Packaging	Article number
WILLAN® MS1	600 ml	Tubular bag	WIL-HS-1-MS1-SCHWARZ-600

WILLAN® 1H

One-component adhesive and sealant.

A versatile adhesive and sealant based on silane-modified polymers (MS polymers) that cures under the influence of moisture to form an elastic, water-resistant, and highly durable product with low shrinkage.
WILLAN® 1H features optimized adhesion to EPDM membranes and is suitable as a surface adhesive for outdoor applications.

Article Designation	Size	Packaging	Article number
WILLAN® 1H	600 ml	Tubular bag	WIL-HS-1-1K-SCHWARZ-600

WILLAN® SWL

One-component, water-swellable, paste-like sealant based on polyurethane for sealing smooth and rough construction joints and pipe penetrations.

WILLAN® SWL is used for the sealing of joints, profile or reinforcing steels, precast elements, manhole components, annular gaps, pipe penetrations, and similar applications.

Article Designation	Size	Packaging	Article number
WILLAN® SWL	600 ml	600 ml Tubular bag à 0.875 kg	WIL-SWL-1-600
	310 ml	310 ml Cartridge à 0.416 kg	WIL-SWL-1-310

WILLAN® ST

Silicone-based impregnation and injection agent.

Specifically designed for masonry drying by means of pressureless borehole injection (horizontal barrier), as well as for application on mineral construction material surfaces.

WTA approval

Article Designation	Size	Packaging	Article number
WILLAN® ST	600 ml	Tubular bag à 0.54 kg	WIL-ST-WEISS-1-600
	13 kg	Metal drum	WIL-ST-WEISS-1-13

WILLAN® ST L

Silicone-based impregnation and injection agent.

WILLAN® ST L is a VOC-free, low-viscosity impregnation cream based on silanes and siloxanes. It provides long-lasting and reliable water repellency on mineral substrates such as masonry and façades.
Suitable for use with pumps.

WTA approval

Article Designation	Size	Packaging	Article number
WILLAN® ST L	13 kg	Metal drum	WIL-STL-WEISS-1-13

OUR PACKAGING

PLASTIC BUCKET

1 Liter / 12 Liter / 20 Liter

DOUBLE CHAMBER CARTRIDGE

400 ml / 1500 ml

COMBINATION PACKAGING

2 Liter / 20 Liter

PLASTIC CAN

10 Liter / 20 Liter / 26 Liter

PE BOTTLE

500 ml / 1 Liter

PAPER BAG

25 kg

METAL HOBBOCK

20 kg

METAL CAN

5 Liter / 10 Liter / 20 Liter

TUBULAR BAG

600 ml

PLASTIC DRUM / METAL DRUM

200 Liter

METAL BUCKET

1 Liter / 12 Liter / 20 Liter

IBC

1000 Liter

INJECTION ACCESSORIES

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T-SLEEVE/ Y-SLEEVE

DN 10, Steck-O

Version	Article number
T-Sleeve	WIAC4-00014
Y-Sleeve	WIAC4-00087

MIXING PIPE

For 2-component systems, DN 10, push-on O-nipple – M 20 × 1.5 ET
Including mixing elements (WIAC4-00052), without screw-on nipple (9515)

Version	Article number
Length: 320 mm, including 2 mixing elements	6559
Length: 640 mm, including 4 mixing elements	WIAC4-00086

For 2-component systems, DN 10, push-on O-nipple – M 10 × 1 ET
Mixing elements (110090SC), without screw-on nipple (WIAC4-00080)

Version	Article number
Length: 350 mm, including 2 mixing elements	WIAC4-00082

For 2-component systems, especially for the product WILLBOLT®, DN 10, push-on O-nipple – R 1/4“ ET
Including mixing elements (WIAC4-00083), without screw-on nipple (WIAC4-00037)

Version	Article number
Length: 450 mm, including 2 mixing elements	WIAC4-00081

MIXING ELEMENT

Blue, 24 elements: suitable for WIAC4-00081 / WIAC4-00082
Yellow, 15 elements: suitable for 6559 / WIAC4-00086

Diameter / Length in mm	Article number
10 mm / 235 mm	WIAC4-00083
8 mm / 190 mm	110090SC
12.7 mm / 155 mm	WIAC4-00052

HP TUBE

DN 10, Steck-O, Typ 2 SN

Length in m	Article number
2 m	WIAC4-00004
10 m	WIAC4-00003

SECURING CLIP

DN 10, Steck-O

Article number
WIAC4-00015

CHECK VALVE

DN 10, Steck-O, Coupling / nipple, flow direction nipple

Article number
WIAC4-00016

BALL VALVE

DN 10, Steck-O, Sleeve / nipple

Article number
WIAC4-00009

GRID MIXER

static mixer plastic Ø 9,4 mm

Lengthin mm	Article number
9.5 mm	WIAC4-00048

SCREW NIPPLE

DN 10, Steck-O

Thread	Article number
IT M 10 x 1“	WIAC4-00080
IT M 20 x 1,5“	9515
IT R 1/4“	WIAC4-00037

STRAIGHT SLEEVE

Version	Article number
DN 10, push-in O, rigid	WIAC4-00019
50 mm, steel, IT M 20 x 1.5 on both sides	WIAC4-00079

SCREW-IN NIPPLE

DN 10, Steck-O

Thread	Article number
M 20 x 1,5 ET	WIAC4-00061
R 3/8“ ET	WIAC4-00062
R 1/4“ ET	WIAC4-00063

DOUBLE NIPPLE

DN 10, Steck-O

Article number

WIAC4-00017

PLUG SLEEVE

DN 10, Steck-O

Article number

WIAC4-00064

PLUG NIPPLE

DN 10, Steck-O

Article number

WIAC4-00077

WELDABLE NIPPLE

DN 10, Steck-O

Article number

WIAC4-00078

SCREW SLEEVE

DN 10, Steck-O

Thread	Article number
R 1/4 IT	WIAC4-00060
M 10 x 1 IT	WIAC4-00084
G 3/8“ IT	WIAC4-00059

REDUCTION NIPPLE

Thread	Article number
1“ AG - 1/2“ IT	WIAC4-00076
1/2“ AG - 3/8“ IT	WIAC4-00089

INJECTION ADAPTER

DN 10, Steck-O, Nipple

Thread	Article number
Trapez Titan 30/11	T30-DN10

SCREW-IN SLEEVE

DN 10, Steck-O, turnable

Thread	Article number
R 3/8“ ET	WIAC4-00066

RIGHT-ANGLE COUPLING

DN 10, Steck-O, Sleeve/nipple

Article number
WIAC4-00043

O-RING / SUPPORT RING

DN 10

Article number
WIAC4-00074
WIAC4-00075

INJECTION FEED PIPE SLEEVE / INJECTION FEED PIPE SLEEVE WITH CROSS HANDLE

sleeve DN 10, injection lance M 20 × 1.5 IT, pipe: 12 mm outer diameter

Lengthin m	Article number
1 m	WIAC4-00071
2 m	WIAC4-00090
3 m	WIAC4-00091
1 m with cross handle	WIAC4-00072

INJECTION FEED PIPE

Made of plastic, M 20 × 1.5 IT / ET, extensible

Length	Article number
1.5 m	WIAC4-00073

INJECTABLE BOREHOLE PLUG

Type “HS”: steel

Diameter in mm	Article number
Ø 36 mm (Borehole Ø 38 - 51 mm)	WPAC4-00027
Ø 40 mm (Borehole Ø 42 - 55 mm)	WPAC4-00037
Ø 52 mm (Borehole Ø 54 - 80 mm)	WPAC4-00024

INJECTABLE BOREHOLE PLUG

Type: plastic

Diameter in mm	Article number
Ø 36 mm (Borehole Ø 38 - 51 mm)	WPAC4-00026
Ø 40 mm (Borehole Ø 42 - 55 mm)	WPAC4-00002

RAM GROUTING LANCE ML

Length: 1000 mm, base section with conical tip, 6 drill holes per meter, spacing 160 mm, outlet holes Ø 5 mm
Perforated injection tube

Version	Article number
Base piece, G 3/8“ IT	WRAM4-00023
Extension, G 3/8“ ET / IT	WRAM4-00024

RAM GROUTING LANCE OL

Length: 1000 mm, for sacrificial tip, without lateral outlet holes

Version	Article number
Base piece, G 3/8“ IT	WRAM4-00005
Extension, G 3/8“ ET / IT	WRAM4-00006

CHECK VALVE

Length: 52 mm, Ø 16 mm

Version	Article number
Length: 52 mm, Ø 16 mm, G 1/4“ IT	WRAM4-00019
Length: 67 mm, Ø 21.3 mm, G 3/8“ ET / IT, threads on both sides	WRAM4-00025

LOST CONICAL TIP

Injection tip with O-ring, shaft diameter 14.9 × 25 mm
For the base section of driven injection lance OL

Version, Diameter / Length in mm	Article number
Shaft Ø 14.9 × 25 mm, 22 × 50 mm	WRAM4-00001
Shaft Ø 8.9 × 25 mm, 13 × 42 mm	WRAM4-00020

PILE DRIVER

Connecting piece between Ram grouting Lance and Mounting tool, Ø 21.3 mm
For WRAM4-00024 or WRAM4-00006

Version	Article number
G 3/8“ ET/ SW 24	WRAM4-00008

MOUNTING TOOL

Length: 350 mm, outer Ø 50 mm, inner Ø 26 mm, hex shaft for pneumatic driving hammer
For driving attachment WRAM4-00005

Version	Article number
hexagonal SW 22	WRAM4-00021

PLACING TOOL

Outer Ø 45 × 220 mm, inner Ø 26 mm, SDS-Max shaft for electric hammer drill
For Pile Driver WRAM4-00005

Version	Article number
SW 24	WRAM4-00007

POINTING TOOL

mounting help for Pile Driver, with hexagonal for battery screwdriver

Version	Article number
SW 24	WRAM4-00009

PULL AND INJECTION HEAD

Aid for pulling the ram Lances (toweye) with simultaneous injection ccoupling

Thread	Article number
G 1/4“ IT/ ET	WRAM4-00012

DOUBLE NIPPLE

Connection between ram grouting lance and pull & injection head, with O-ring, free passage Ø 8 mm, spanner size 19 Mandatory when using 1/2“ driven injection lances and pulling & injection head
For pull & injection head WRAM4-00012

Thread	Article number
G 3/8“ EG - G 1/4“ IT	WRAM4-00013

STEEL PACKER

ET G 1/4“, free passage Ø 8 mm, for ram grouting lance, connection thread G 3/8“

Diameter / Length in mm	Article number
25 x 200 mm	WRAM4-00014
18 x 170 mm	WRAM4-00022

ET M 10 × 1, free passage Ø 6 mm, coupling G 1/4“ IT as connection thread for driven injection lance

Diameter / Length in mm	Article number
18 x 170 mm	WRAM4-00022

RAM GROUTING LANCE - BASE PIECE ML

Length: 1000 mm, with conical tip, lateral drill holes at 125 mm spacing, Ø 4 mm, perforated injection tube, single-sided ET

Thread	Article number
Base piece, G 1/4“ ET	WRAM4-00015
Extension, G 1/4“ ET	WRAM4-00017

RAM GROUTING LANCE - BASE PIECE OL

Length: 1000 mm, for lost conical tip, without lateral outlet holes, single-sided ET

Thread	Article number
Base piece G 1/4“ ET	WRAM4-00016
Extension, G 1/4“ ET	WRAM4-00018

COUPLING SLEEVE

Ø 16 × 33 mm, IT on both sides

Thread	Article number
G 1/4“ IT	WRAM4-00002

RAM AND INJECTION HEAD

Aid for ramming lances with simultaneous injection coupling, SDS Plus shaft

Thread	Article number
G 1/4“ ET	WRAM4-00026

HDPE PIPE

For the targeted introduction of injection materials into fissures, cracks, and cavities

Diameter in mm	Article number
AD/ID 13/9 mm	WIAC4-00070
AD/ID 21/11 mm	WIAC4-00085

IBC CONNECTION HOSE

3 m suction and pressure hose 1“, with connection hose barb 1“ (injection pump) to S 60 × 61 (IBC).System consists of: 1 pc. hose adapter 1“, 1 pc. ball valve, 4 pcs. hose clamps 1

Version	Article number
S 60 × 6 to 1“ adapter	WSPA4-00041

MANOMETER

Diameter 63 mm, 0–400 bar, bottom connection

Version	Article number
1/4“ ET	WSPA4-00002

STEEL PACKER WITH HD CONICAL HEAD NIPPLE

For the injection of polyurethane and epoxy resins – for area injection in brick masonry, for crack injection in reinforced concrete structures, HD conical head nipple M 6, SW 10

Pressure piece 110 mm, tension rubber 40 mm

Diameter / Length in mm	Article number
10 x 160 mm	WPAC4-00032

Pressure piece 70 mm, tension rubber 30 mm

Diameter / Length in mm	Article number
13 x 110 mm	WPAC4-00031

STEEL PACKER WITH HP FLAT HEAD NIPPLE

Pressure piece 70 mm, tension rubber 40 mm, M 8 IT, free passage 2.5 mm, with HD flat head nipple M 8, SW 12
Without check valve (non-return valve)

Diameter / Length in mm	Article number
16 x 130 mm	WPAC4-00030

STEEL PACKER WITH GEL-FLAT HEAD NIPPLE

Tension rubber 40 mm, M 10 × 1 ET, free passage Ø 4 mm
For the injection of acrylate gels for curtain and area injections, retroactive horizontal barriers in brick masonry, crack injection in reinforced concrete structures, and for the rehabilitation of expansion joints

Diameter / Length in mm	Article number
18 x 170 mm, pressure element 110 mm	WPAC4-00028
18 x 300 mm, pressure element 240 mm	WPAC4-00005
16 x 170 mm, pressure element 125 mm	WPAC4-00009

STEEL PACKER

Pressure piece 70 mm, tension rubber 40 mm, R 1/4“ ET, free passage 4 mm, without flat head nipple
Without check valve (non-return valve)

Diameter / Length in mm	Article number
16 x 130 mm	WPAC4-00029

Tension rubber 70 mm, male thread M 10 × 1, free passage Ø 6 mm, SW 17

Diameter / Length in mm	Article number
20 x 300 mm	WPUR-INA-00102
22 x 300 mm	WPAC4-00035

1-DAY PACKER - STEEL WITH CONICAL HEAD NIPPLE

Pressure piece 70 mm, tension rubber 40 mm, HD conical nipple M 6, with check valve (non-return valve)

Diameter / Length in mm	Article number
10 x 120 mm	WPAC4-00014
13 x 120 mm	WPAC4-00038

LAMELLA KNOCK-IN PACKER

Type D18 C, for 18 mm borehole, quick coupling connection

Diameter / Length in mm	Article number
27 x 107 mm	WPAC4-00034
14 x 100 mm	WPAC4-00033

Lamella knock-in packer with ET R 1/4“, free passage Ø 7 mm, for boreholes Ø 14 mm

Diameter / Length in mm	Article number
14 x 100 mm	WPAC4-00033

PLACING TOOL

Suitable for lamella knick-in packers

Article number
WPUR-INA-00101

PLASTIC-FLAT HEAD NIPPLE

IT R 1/4“, max. 60 bar
Without check valve (non-return valve)

Diameter in mm	Article number
16 mm	WPAC4-00039

GEL-FLAT HEAD NIPPLE

Sealing ring, SW 17, Ø 4.5 mm passage

Thread	Article number
M 10 x 1	WPAC4-00003
IT R 1/4“	WPAC4-00018

STEEL-SWIVEL JOINT

Working pressure up to 250 bar

Thread	Article number
IT/EG R 1/4“	WIAC4-00067

HOSE INJECTION PLUG

Connection for quick release fastener, IT, free passage Ø 7 mm

Thread	Article number
R 1/4“	WIAC4-00068
M 10 x 1	WIAC4-00092

QUICK-RELEASE FASTENER

Up to 100 bar, free passage 9 mm, with safety clip

Thread	Article number
R 1/4“ ET	WIAC4-00058

INJECTION CONNECTION HOSE («WHIP»)

With sliding coupling for flat head nipple, Ø 16 mm, side connection, HD whip hose 500 mm long

Version / Thread	Article number
With sliding coupling R 1/4“	WIAC4-00088
With gripping head R 1/4“	WAAC4-00015

SLIDING COUPLING

For flat head nipple, side connection with IT, blue sealing rubber, passage Ø 2.5 mm
For WIAC4-00088

Thread	Article number
M 10 x 1	WPAC4-00020

RUBBER SEAL

For sliding coupling with metal ring, blue, for WPAC4-00020

Diameter in mm	Article number
4 mm	WAAC4-00013

MOUTHPIECE

With 4 jaws and seal, for high-pressure injection and for HD conical head nipples

Version	Article number
IG M 10 x 1	WAAC4-00008

UNIVERSAL MIXER

Version	Article number
60 x 400 mm	WKAT-SLA-00105
80 x 400 mm	WKAT-SLA-00106

MIXING BUCKET

Mixing bucket made of plastic

Version	Article number
30 l	WAAC4-00014

PLASTIC MEASURING CUPS

PVC with handle

Version	Article number
1.0 l	WKAT-SLA-00100
2.0 l	WKAT-SLA-00101
3.0 l	WKAT-SLA-00102
5.0 l	WKAT-SLA-00103

CARTRIDGE GUN

Robust cartridge gun for 290–320 ml cartridges, for processing silicone, acrylate, silane, PUR, adhesive and sealing compounds

Version	Article number
hand operated	WAAC4-00012
Battery driven	WAAC4-00011

SAUSAGE GUN

Robust sausage gun for 600 ml foil packs, for processing silicone, acrylate, silane, PUR adhesive and sealing compounds

Article number
WLAN-AG-600

WILLHOSE

Injection hose made of PVC with corrugated surface, for sealing construction joints in concrete structures, injectable with polyurethane or epoxy resins, acrylate gels, and injection grouts, reinjectable multiple times with acrylate gels and injection grouts, roll of 50 m

Diameter (inside/outside) in mm / Colour	Article number
6/12 mm / Red	WJSS4-00005

PVC BRAIDED HOSE

Filling and venting hose, PVC braided hose for assembling the WILLHOSE injection hose, roll of 50 m

Diameter (inside/outside) in mm / Colour	Article number
6/12 mm / Red	WJSS4-00008
6/12mm / Blue	WJSS4-00007
6/12 mm / Green	WJSS4-00030

SCREW-IN GROMMET

Plastic connector for hoses with inner diameter 4–6 mm, free passage 3 mm

Version	Article number
Screw-in hose barb, 8 x 58 mm	WJSS4-00009
Double hose barb, 8 x 58 mm	WJSS4-00016
Elbow screw-in hose barb, Ø 6 mm	WJSS4-00018

2-LOBED CLAMP

For hose outer diameter 12 mm

Article number
WJSS4-00013

SHUTTERPLUG

For closing filling and venting hoses with 6 mm inner diameter, yellow

Number of items	Article number
Bag a 100 pcs.	WJSS4-00019

NAIL PACKER

Plastic with protective cap, HD conical nipple M 8 (enclosed separately)

Inner diameter in mm	Article number
4 - 6 mm	WJSS4-00020

EXTENSION PIPE

With HD conical nipple M 8

Version	Article number
M 8 x 35 mm / SW 11	WJSS4-00021

FOAM COVER PLATE

For nail packers, self-adhesive, 10 mm thick, grey

Diameter in mm	Article number
50 mm	WJSS4-00022

METAL CLAMP

Fixing clamp 13 mm for hoses with an outer diameter of 12 mm, hole diameter 6.1 mm

Number of items	Article number
Box a 100 pcs.	WJSS4-00023

NAIL AND DOWEL

Hammer-in anchor for metal clamps, 5 × 40 mm

Number of items	Article number
Box a 100 pcs.	WJSS4-00024

PLASTIC CLIPS

For pressing into fresh concrete or into 8 mm drill holes for fastening the injection hose

Number of items	Article number
Bag a 100 pcs.	WJSS4-00011

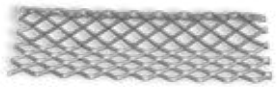
WATERSTOP CLAMP

For fastening the injection hose to the joint sheet

Number of items	Article number
Bag a 100 pcs.	WJSS4-00025

FIXING GRID

For fastening/laying injection hoses



Length per piece	Article number
1 m	WJSS4-00026

HOSE PACKER

Plastic, for hose inner diameter 4–6 mm, shank diameter 8 × 75 mm, free passage 3 mm

Version	Article number
With HD conical nipple M 8	WPAC4-00016
With HD flat head nipple M 8	WPAC4-00036

WILLSWELL

Water-swelling rubber profile with integrated hydrophilic resins

Height x Width	Article number
10 x 20mm	WJSS4-00001
20 x 20mm	WJSS4-00027
20 x 25mm	WJSS4-00028
30 x 30mm	WJSS4-00029

WILLPUMP ERM 1

1K diaphragm pump, electric, complete with 5 m high-pressure hose, ball valve M 10 × 1.5, 6-liter hopper, 220 V connection, max. delivery rate 2.2 l/min
For PUR/EP

Height x Width x Length in mm / Weight	Article number
500 x 440 x 400 mm / 20 kg	WPUM4-00013

WILLPUMP ARK 1

1K piston pump, pneumatic, complete with 7.5 m high-pressure hose with nozzle, 6-liter hopper, drive pressure 2–6 bar, max. delivery rate 2 l/min
For PUR/EP

Height x Width x Length in mm / Weight	Article number
500 x 440 x 400 mm / 16 kg	1K-IG-31800-00003

WILLPUMP ARK S 2

2K piston pump, pneumatic, complete with 2× HD 10 m delivery hoses (WIAC4-00003), 2× HD 2 m flushing hoses (WIAC4-00004), 2× suction hoses 3/4“, 2× check valves (WIAC4-00016), 2× ball valves DN 10 push-in O (WIAC4-00009), 4× sealing couplings (WIAC4-00064), coupling clamp DN 10 (WIAC4-00015), 1× adapter 3/4“ cord bayonet, alternatively adapter RD 32 to quick coupling compressed air socket, drive pressure 4–6 bar, max. delivery rate 4–5 l/min
For PUR/SIL

Height x Width x Length in mm / Weight	Article number
320 x 200 x 630 mm / 28 kg	WPUM4-00018

WILLPUMP ARK B 2

2K piston pump, pneumatic, complete with 2× HD 10 m delivery hoses (WIAC4-00003), 2× HD 2 m flushing hoses (WIAC4-00004), 2× suction hoses 1“, 2× check valves (WIAC4-00016), 2× ball valves DN 10 push-in O (WIAC4-00009), 4× sealing couplings (WIAC4-00064), coupling clamp DN 10 (WIAC4-00015), 1× adapter 3/4“ cord bayonet, drive pressure 4–6 bar, max. delivery rate 20 l/min
For PUR/SIL

Height x Width x Length in mm / Weight	Article number
420 x 450x 1000 mm / 82 kg	WPUM4-00017

WILLPUMP AGK 3

3K piston pump, pneumatic, complete with 3× 7.5 m high-pressure material hoses and 3K mixing head, drive pressure 4–6 bar, max. delivery rate 14 l/min
For AC

Height x Width x Length in mm / Weight	Article number
450 x 310 x 830mmm / 45 kg	WPUM4-00016

WILLPUMP EZR 2

2K gear pump, electric, drive power 440 V – 60 Hz, max. delivery rate 27 l/min
For PUR/SIL

Height x Width x Length in mm / Weight	Article number
1120 x 522 x 612 mm / 122 kg	WPUM4-00002

WILLPUMP AZR 2

2K gear pump, pneumatic, drive pressure 5–7 bar, air consumption 4–6 m³/min, max. delivery rate 27 l/min
For PUR/SIL

Height x Width x Length in mm / Weight	Article number
1120 x 522 x 500 mm / 100 kg	WPUM4-00001

WILLPUMP APH 2

3K piston pump, pneumatic, mixing ratio 4:1 (A:B), delivery distance 800 m, max. operating pressure 240 bar, max. delivery rate 10 l/min (2× 4 l component A + 2 l component B)
For PHENOL

Height x Width x Length in mm / Weight	Article number
1500 x 535 x 600 mm / 150 kg	WPUM4-00011

INSULATION

COATINGS

SEWER REPAIR

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