



Your project deserves it.



## WIWA PORTFOLIO FOR TUNNELING



[WWW.WIWA.COM](http://WWW.WIWA.COM)

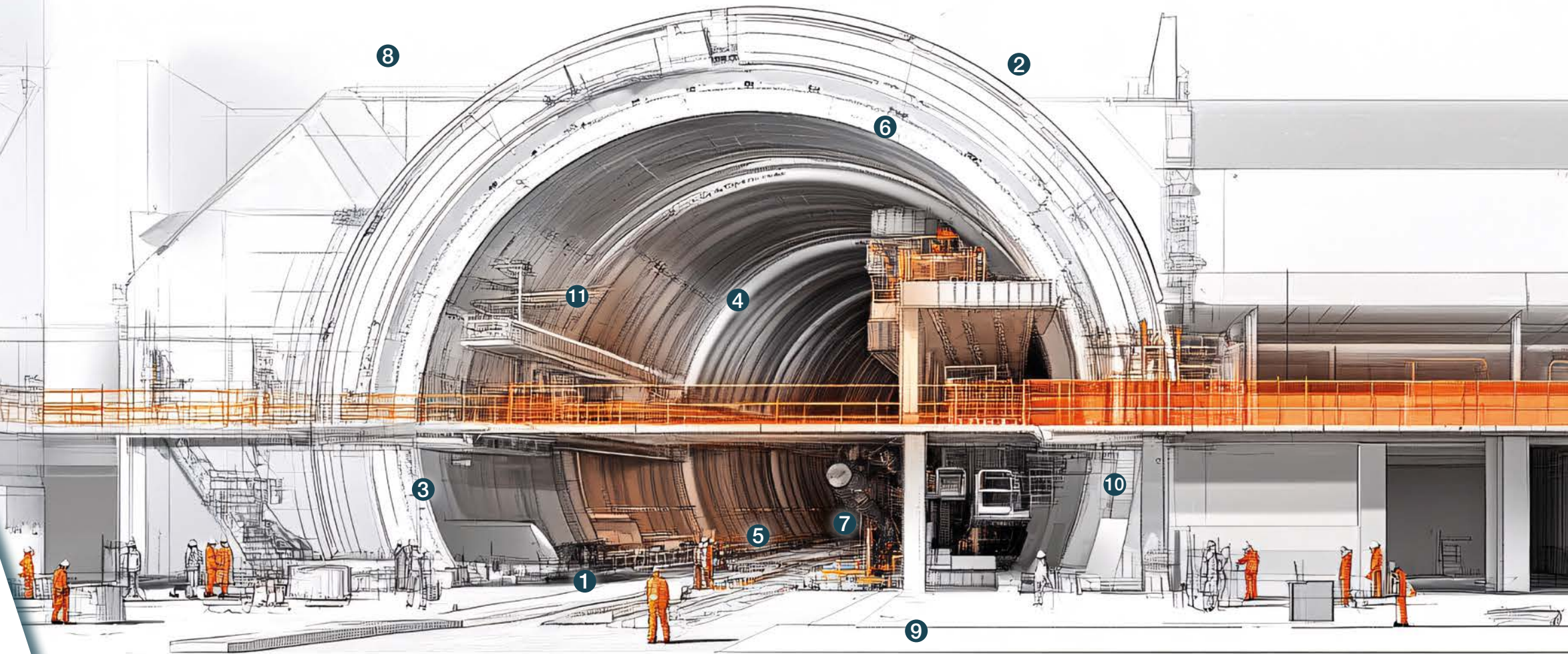


# WIWA – Your partner for successful tunnel construction projects

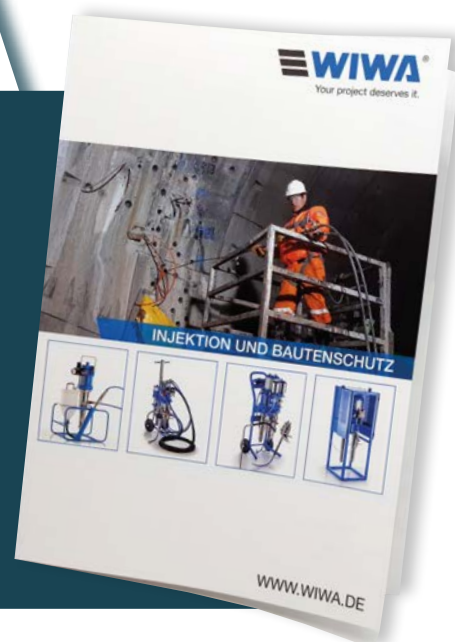


Your project deserves the best solutions and WIWA provides them. We are a full-service manufacturer of coating and injection equipment for tunneling, special underground engineering and infrastructure. Among other things, we offer solutions for:

- ① Sealing of floor slabs
- ② Strengthening and reinforcement
- ③ Crack repair / crack injection
- ④ Joint sealing
- ⑤ Horizontal barriers
- ⑥ Stopping heavy water inflows
- ⑦ Structure waterproofing using curtain and surface injection
- ⑧ Cavity filling
- ⑨ Strengthening and stabilizing the soil and subsoil
- ⑩ Concrete cosmetics
- ⑪ Bondings



Simply scan the QR code to download the entire WIWA injection catalog!



## Your project deserves it!

We do not offer off-the-peg solutions! At WIWA, we provide customized solutions specifically for the requirements at your construction site. In addition to your individual conditions, efficiency and sustainability are our top priorities. Short closing times, consistent quality with optimal material consumption and full cost control.

WIWA products are known for their high quality, low maintenance and durability. This makes them ideal for larger volumes and also available with ATEX M1.

Is this what you are looking for for your project? Then let's talk – we look forward to assisting you!



# WIWA 1K INJECT SOLUTIONS

The WIWA INJECT HD series consists of 5 versatile and high quality pneumatic piston pumps for the 1K injection range. They are particularly suitable for injecting and grouting of low viscosity epoxy or polyurethane resins and meet the requirements of the ZTV Riss.

### MATERIALS

- PUR injection foam resins
- PUR combination injection foam resins
- PUR combination injection resins
- PUR injection resins
- EP injection resins
- Also suitable for processing 2K injection materials with longer reaction time.

### AREAS OF APPLICATION

- Crack injection
- Subsequent horizontal barrier
- Grouting of injection hoses
- Filling of small cavities
- Sewer renovation
- Sealing of joints
- Connection of broken components
- Renovation of floor slabs



HD 1

Output per cycle	14 cm³
Pressure ratio	33:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	264 bar/3829 psi
Material feed hopper	1,5 l



HD 2

Output per cycle	14 cm³
Pressure ratio	33:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	264 bar/3829 psi
Material feed hopper	6 l



HD 3

Output per cycle	27 cm³
Pressure ratio	33:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	264 bar/3829 psi
Material feed hopper	1,5 l




HD 4

Output per cycle	43 cm³
Pressure ratio	30:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	240 bar/3480 psi
Material filling	DAS¹




HD 5


Output per cycle	43 cm³
Pressure ratio	30:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	240 bar/3480 psi
Material filling	6 l Trichter ASL²




Building renovation




Building and corrosion protection




Mining




Tunnel



Insulations



Tubes and pipelines



Civil engineering

¹ Direct suction  
² Suction hose



# WIWA 2K INJECT-SOLUTIONS



2K 14025 GX



2K 14015 GX



2K 230



2K 333 GX

Output per cycle	80 cm <sup>3</sup>
Pressure ratio	25:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	200 bar/ 2900 psi
Mixing ratio	1:1

Output per cycle	144 cm <sup>3</sup>
Pressure ratio	15:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	120 bar/ 1740 psi
Mixing ratio	1:1

Output per cycle	144 -194 cm <sup>3</sup>
Pressure ratio	40:1 / 30:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	240-256 bar 3480-3712 psi
Mixing ratio	1:1/4:1

Output per cycle	536 -1100 cm <sup>3</sup>
Pressure ratio	37:1 / 18:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	144-256 bar 2088-3712 psi
Mixing ratio	1:1

The proven WIWA DUOMIX technology guarantees safe working due to the always constant mixing ratio. With the WIWA 2K INJECT solutions you can process all common 2K injection materials.

With the WIWA 2K INJECT solutions you can choose from three different air motor sizes (140, 230 and 333). The sizes 230 and 333 can also be configured with different mixing ratios.


Depending on the required output, WIWA therefore offers the right device for every construction site.

### MATERIALS


The WIWA INJECT 2K systems are designed for your injection material (PU resin, PU foams, silicates, acrylates or phenol).

### AREAS OF APPLICATION


- Construction pit and joint sealing
  - Foundation injection/soil stabilization
  - Cavity filling
  - Subsequent horizontal barrier
  - Sewer renovation
  - Gravel bonding
- Water Stop
  - surface and curtain injection
  - 2K crack injection
  - Ideal for use in tunnels and underground for filling cavities and for bonding anchors




Building renovation




Building and corrosion protection




Mining




Tunnel



Insulations



Tubes and pipelines



Civil engineering

### WE ALSO PROVIDE QUALITY INJECT ACCESSORIES.



Agitators



Material heater



Mixing units



INJECT Guns



Packers

We will be happy to advise you!





# Full cost control

Provides you with process reliability and cost optimization by recording and documenting injection processes.

The INJECT GUARD monitors set parameters and documents them. In addition to recording pressures and volumes per packer, the system warns of malfunctions or shifts in the mixing ratio. The data can be displayed directly via the browser of a WLAN-enabled end device.

To protect your sensitive data, the end device and INJECT GUARD communicate via a password-protected WiFi connection using state-of-the-art TLS technology, so that only authorized employees can change and view the parameters.

## DOCUMENTATION OF:

- Total volume per packer
- Pressure per packer
- Charge numbers for A and B
- Volume per construction phase and day
- Date
- Time

## SCOPE OF DELIVERY

- Control cabinet with control system
- Tablet with touch display
- Flow-through measuring cells up to 350 bar
- Pressure sensors
- Temperature sensor

Technical Data	
Rated voltage	230 V
Frequency	50/60 Hz
Number of phases	1
Rated current	1,6 A
Wide	622 mm
Height	890 mm
Depth	600 mm
Max. operating pressure	350 bar/ 5076 psi
Max. air inlet pressure	8 bar/116 psi

Optimized workflows

Suitable for all WIWA 2K injection systems

Safety through shut-off parameters

WIWA INJECT GUARD Basic unit	Order No.
Electronic recording unit for 2K INJECT systems	on request
WIWA INJECT GUARD for INJECT 2K 140	Order No.
INJECT GUARD complete - Electronic recording unit for 2K INJECT systems for INJECT 2K 140	on request
Hose package	on request
Mixing unit	on request
WIWA INJECT GUARD for INJECT 2K 230	Order No.
INJECT GUARD complete - Electronic recording unit for 2K INJECT systems for INJECT 2K 230	on request
Hose package	on request
Mixing unit	on request





Evaluation in eguana

When a previously defined pressure or volume is reached, this is indicated to the operator by a light signal or the unit switches off on request. The operator can terminate the end of the injection process and switch to the next packer. This has the advantage that the operator can continue working and the unit remains in operation. In addition to the pressure per packer, the total volume per packer and post-injections, the product

batch of the injected material, the user, the time and the duration of the injections. The temperature of the material can also be displayed.

The reports can be retrieved depending on the previous definition of a trade, such as a tunnel section. The documentation of the work of the day or the entire construction section are continuous.

### INJEKTIONSPROTOKOLL

16.3\_1  
04.03.2025

#### BAUSTELLENDATEN

Baustelle: geoinjektion

#### EQUIPMENT / AUSFÜHRUNG

Maschine: 1202404052301/120240405210

#### INJEKTIONSSTELLE

Injektionsstelle 16.3

#### INJEKTIONSMITTEL

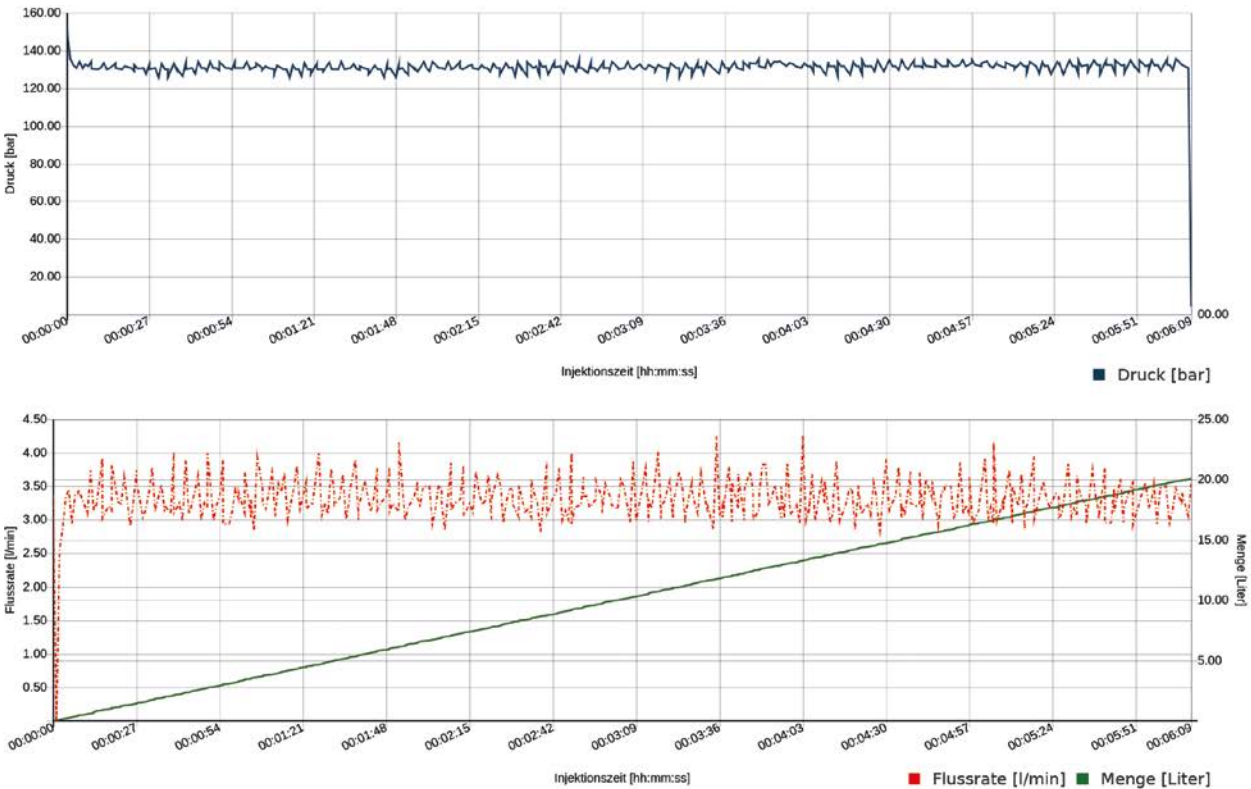
Mischung: Test WIWA

#### HERSTELLUNGSDATEN

T<sub>inj</sub> [h dez]: 0,103  
T<sub>inj</sub>: 10:17 - 10:23  
V<sub>tot</sub> [l]: 20,1  
P<sub>Max</sub> [bar]: 135,81

#### KOMMENTAR

2,50m







# Highly viscous 2K materials perfectly dosed

The WIWA DOSYS XL was developed especially for large-scale purchases of highly viscous 2-component fillers and sealants that require a continuous material flow. It has a wide range of uses in tunnel construction. In addition to concrete cosmetics, plugging cracks and bonding packers, it is ideal for gluing sealing tape, for example.

With the system, which is equipped with either feet or wheels, you can count on bubble-free mixing with a constant mixing

ratio and therefore consistent quality in your application. The fact that it takes its products from a range of different large containers makes it an environmentally friendly and economical partner for any project. Day- and user-dependent results, irregularities in the material surface and expensive and time-consuming equalization work are an issue of the past.

Many more variants can be configured with different outputs, mixing ratios or supply variants. We will be happy to advise you!

Technical data	Example systems WIWA DOSYS XL		
Mixing ratio*	1:1	2:1	5:1
Output per cycle	2106 cm³	1578 cm³	1263 cm³
Max. operating pressure	208 bar/ 3016 psi	270 bar/ 3916 psi	192 bar/ 2784 psi
Max. air inlet pressure	8 bar/116 psi		
Max. lifting force A-side	7200 N	7200 N	7200 N
Max. lifting force B-side	7200 N	7200 N	4400 N
Order No.	On request	On request	On request

\* Other mixing ratios also available.

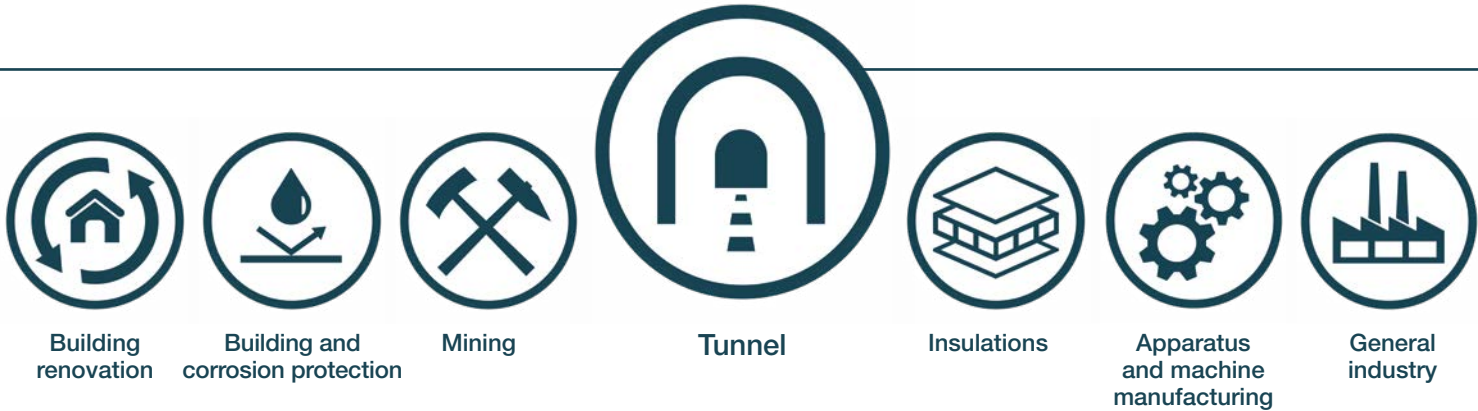
## MATERIALS

- Filling materials based on epoxy resin, polyurethane or peroxide
- Adhesives
- Sealants
- Thick materials
- Mastics
- Insulating materials
- Waterproofing materials

A huge time saver thanks to automatic mixing

Consistently high mixing and material quality

Less waste due to complete emptying of containers





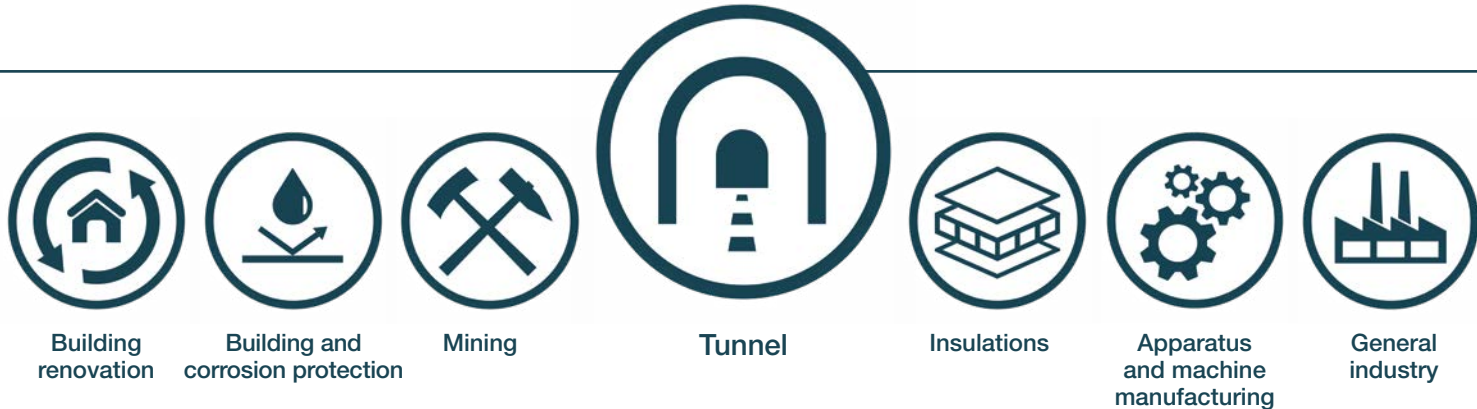


Cost efficient due to short closing times

Liquid plastic PMMA is a faster alternative to the bitumen method. With the WIWA DUOMIX HYDRAULIK, you can apply the liquid plastic quickly, efficiently and with much less energy consumption via lance to seal the floor. This significantly reduces the time that tunnels have to be closed during renovation work. The system is equipped with an energy-saving mode as standard. This recognizes the system status during coating

and automatically switches off consumers that are not currently needed.

The innovative design of the dosing pumps allows for improved material flow. As a result, the wear on dynamic parts has been significantly reduced. The mixing ratio can be changed by exchanging the material pumps. The system is extremely quiet and allows the user a comfortable and pulsation-free operation. The control panel was consciously kept simple.



Technical data WIWA DUOMIX HX 400 V, 3-phase+N, 50/60 Hz, 63 A	
Output per cycle	1.100 cm³
Output with 30 cycles	33 l/min.
Mixing ratio	1:1
Pressure ratio	0,86:1
Max. air inlet pressure	8 bar/116 psi
Max. operating pressure	215 bar/3118 psi
Max. oil inlet pressure	250 bar/ 3625 psi
Power supply connector.	63 A
Power of hydraulic unit	18 kW
Voltage	400 V

MATERIALS

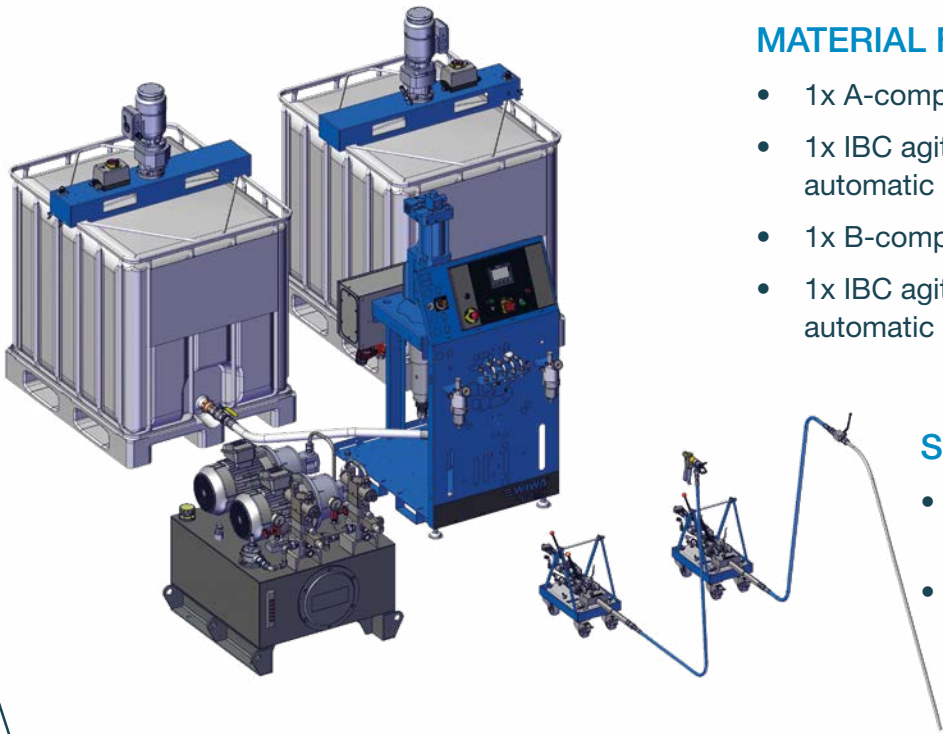
- Spray plastics
- Sealing resins
- Flooring

STANDARD EQUIPMENT

- Electric agitators: 0.75kW-400V, 50 Hz, 170 rpm
- Electrical pressure and dosing control with pressure sensors for A + B component
- control cabinet with main switch
- Flushing pump 32:1 with suction line for 25 liter containers (pneumatic)
- Sensor for quantity determination
- Including 15 m unheated hose packag
- External, manual, mobile mixing unit with carrying handle and static mixer

MATERIAL FEED

- 1x A-component suction line for IBC
- 1x IBC agitator for component A, incl. automatic safety shutdown
- 1x B-component suction line for IBC
- 1x IBC agitator for component B, incl. automatic safety shutdown



SPRAYING EQUIPMENT

- 1x WIWA 500F gun complete with nozzle and 5.0 m spray hose
- 1x spray lance incl. ball valve and 5.0 m spray hose

Equipped with an energy saving mode as standard

More than 200 different mixing ratios possible

For the energy-efficient processing of PMMA waterproofing resins



Foaming  
Sealing  
Stabilizing



Optimal for high application rate

Faster reaction times due to heating of the material up to 80° C

Processes almost all polyurethane foams and fast reacting polyurea

WIWA DUOMIX PU 540 is the ideal choice for the renovation of tunnels, pipes, clarifiers, waste water basins and sewers – regardless of whether it is a coating or an injection. High application rates are no problem. The mixing ratio can be changed by exchanging the material pumps. The clearly structured design allows the user to work quickly and comfortably. The control panel has been consciously kept simple.

The latest safety aspects of the EU machinery directives have already been taken into account in the design to ensure the highest standard here as well.

Feed pumps can be easily transported and stored in the integrated holder. The change from the stand frame to the cart can be realized within minutes by means of a conversion kit.

The WIWA DATALOGGER offers an ideal supplement for quality management. All processing parameters, setting values

and the alarm history can be read out and saved customer-specifically with commercially available smartphones, tablets or PCs via Wi-Fi.

MATERIALS

- Polyurethane foams
- Polyurea
- Injection foams

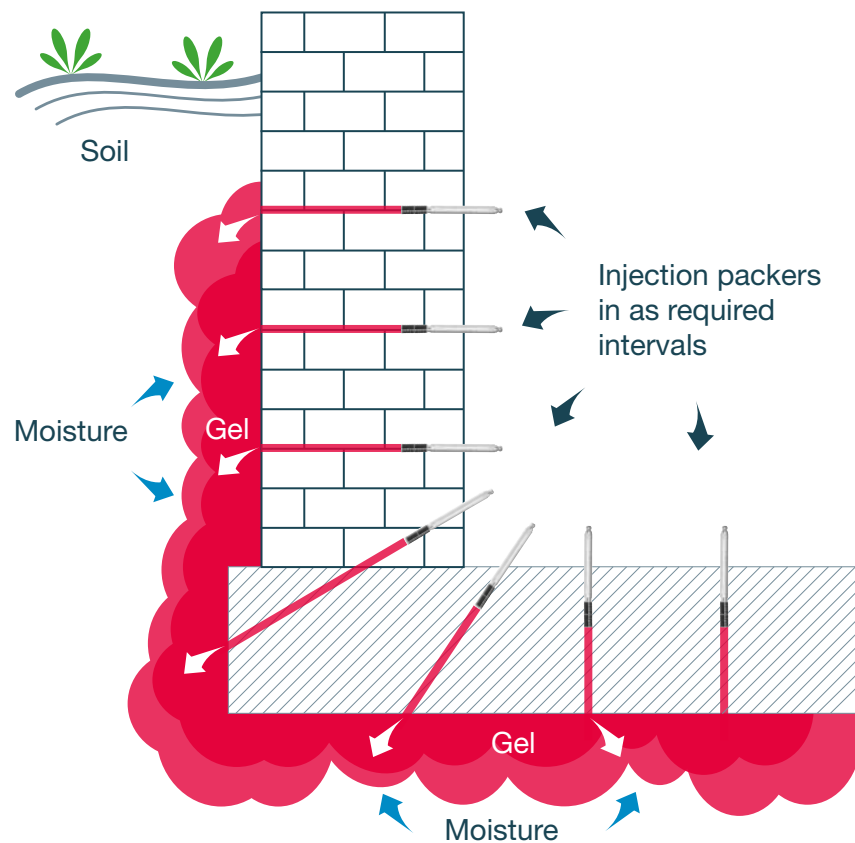
OPTIONAL ACCESSORIES

- Hose holder
- Holder for feed pumps
- Conversion kit to cart
- WIWA DATALOGGER
- Feed pump 146.03,7 N-L complete with connecting hose 2,2 m and suction angle
- Membrane pump G 1/2“ complete with suction pipe, suction angle and connecting hose 2.2 m

Technical data WIWA DUOMIX PU 540			
Output per cycle	264 cm³	Description	Order No.
Theoretical pressure ratio	31:1	DUOMIX PU 540 (without accessories)	
Mixing ratio	1:1 (others on request)		
Max. air inlet pressure	8 bar/116 psi		
Max. operating pressure	248 bar/3596 psi	230 V, 3-phase, 60 Hz	0665041
Material flow heater	12 kW	400 V, 3-phase, 50 Hz	0664250
Heating capacity hose package	47 W/m	DUOMIX PU 540 incl. 18 m hose package, PU GUN 4040 spray gun	
Max. hose length	138 m		
Voltage / phases	400 V/3 P		
Max. power consumption	16.5 kW	230 V, 3-phase, 60 Hz	0665040
		400 V, 3-phase, 50 Hz	0664300



# Injection methods

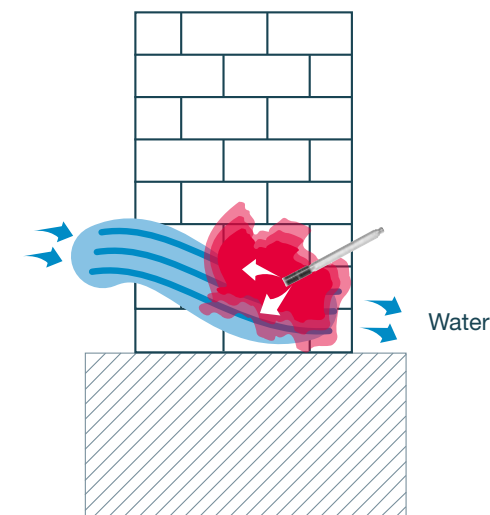


## Curtain injection

This is a retrofitted waterproofing of structures in contact with the ground, such as basements, sewers, shafts and tunnels.

Sealing is carried out from the inside to the outside. Additional costs for the external uncovering of the wall can thus often be avoided. A curtain is built up on the component in contact with the ground, which repels the moisture.

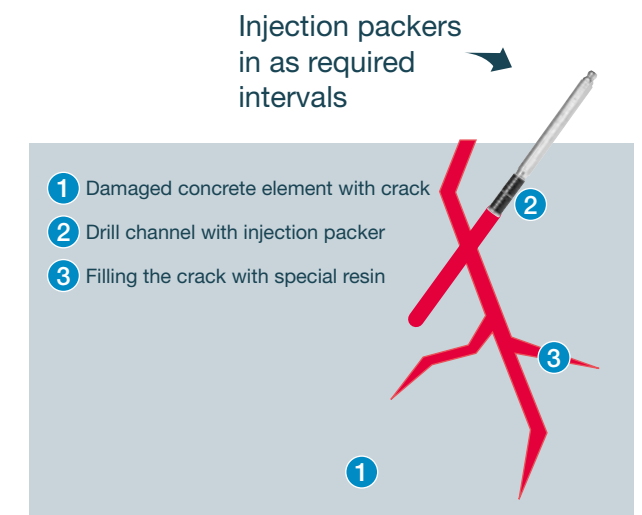
**Our recommendation:**  
WIWA INJECT 14025 GX RS



## Stop water inflows

With fast reacting 1K or 2K injection materials, the water inflow is stopped. As a rule, this is a temporary procedure, which requires subsequent sealing.

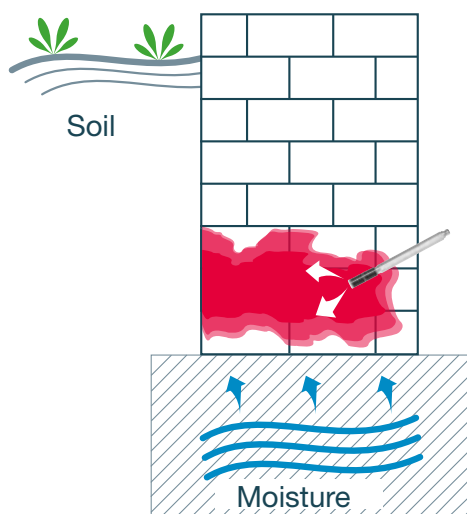
**Our recommendation:**  
WIWA INJECT HD4  
WIWA INJECT 14015 GX  
WIWA INJECT 2 K 230



## Crack injection

Cracks in masonry or concrete are sealed by the injection materials via packers force-fitted or expandable.

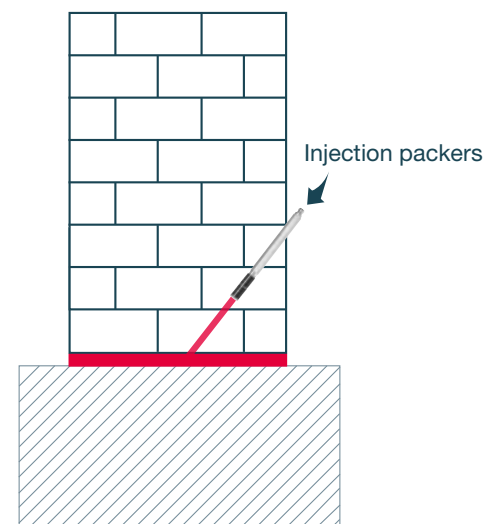
**Our recommendation:**  
WIWA INJECT HD1  
WIWA INJECT ND1



## Horizontal barrier

The horizontal barrier is subsequently injected into the masonry to prevent rising moisture. The injection material impregnates the masonry so that the moisture cannot penetrate.

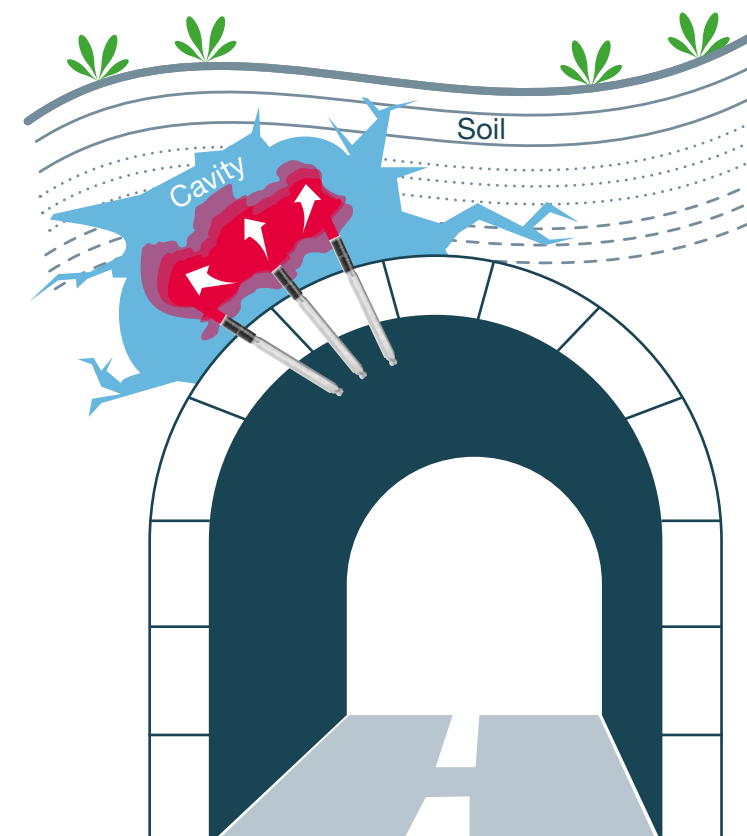
**Our recommendation:**  
WIWA INJECT HD1  
WIWA INJECT HD2  
WIWA INJECT 14015 GX



## Joint sealing

In this process, vertical or horizontal joints are sealed in an expandable manner.

**Our recommendation:**  
WIWA INJECT HD4/HD5  
WIWA INJECT 14025 GX



## Cavity filling

Injection method for backfilling and sealing of dry or filled cavities (e.g. behind the tunnel lining, see Fig.), porous soils and rock (karst), scouring, cavities or existing tunnels and drifts.

**Our recommendation:**  
WIWA INJECT 2 K 230  
WIWA INJECT 2 K 333 GX

Do you already know the  
WIWA YouTube channel?

Here you can find a Playlist  
„Injection“ with exciting  
projects around the  
WIWA INJECT portfolio:








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