

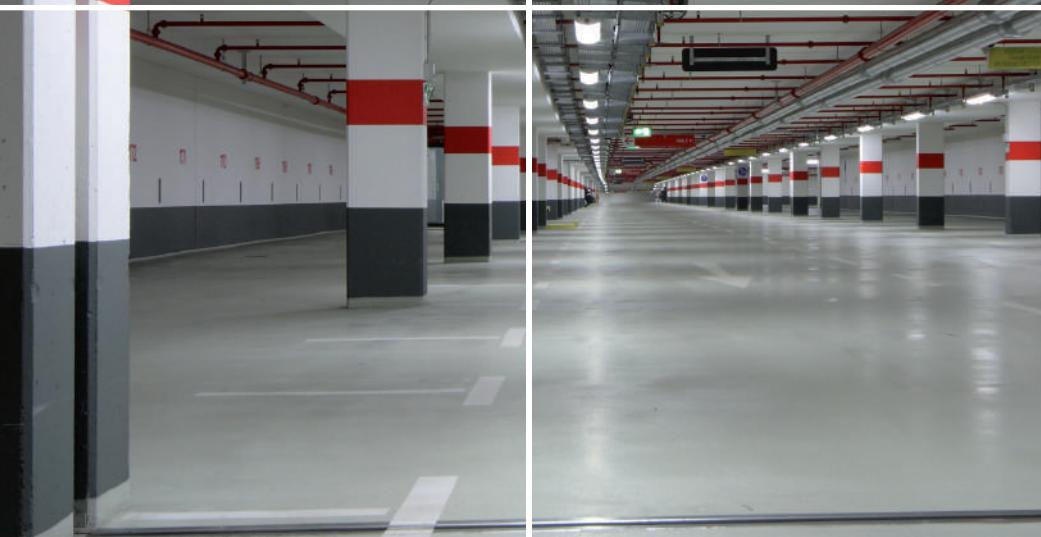
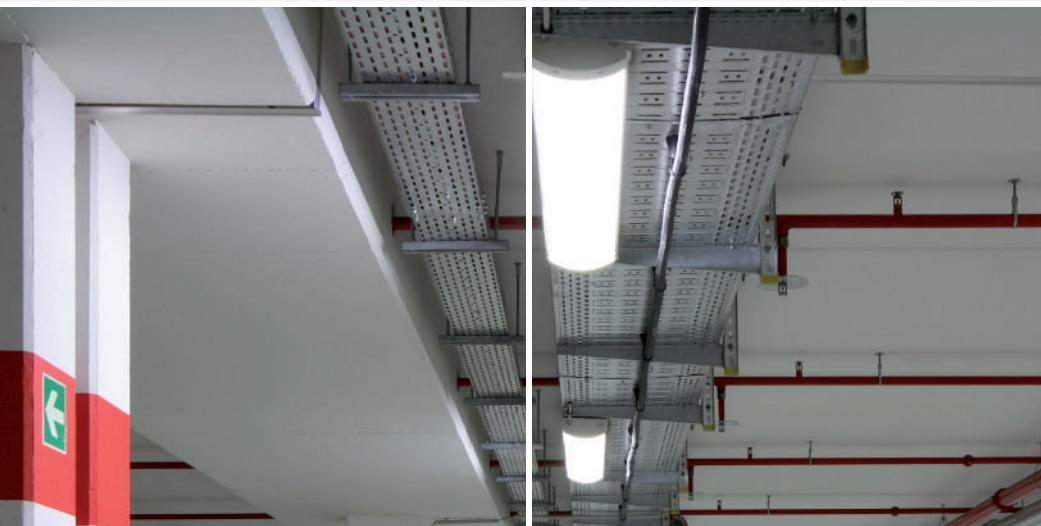
DESOI®

Australian Distributors



Building Chemical Supplies

Technology for Injection



DESOI®

Application of injection packers

Range of application

- Dry and damp structural elements
- Water bearing and pressurised water bearing cracks
- Filling of cavities and voids
- High-pressure injection into concrete structures
- Maximum injection pressure:
½ of the nominal compressive strength of concrete to avoid damage to the structure of concrete

Demands on the injection packers

- The material of the packers must be appropriate for the injection material
- Safe fixation in the structural element
- No cross-section reduction in the connection and packer system on injecting mineral materials
- Corrosion resistance of the parts remaining in the structure
- Possibility of shutting off
- High pressure stability

Placing of the injection packers

- Distance between packers dependent on thickness of structural element
(normally: ½ thickness of structural element = distance between packers)
- Drill holes alternately at an angle of 45° to cross the crack halfway down its depth
- Clean boreholes (e.g. with compressed air) and prepare them appropriate to injection material
- Place packers and tighten them
- Seal crack surface with sealing material but stop before the end of crack for de-aeration
- Inject packer until injection material comes out of the adjacent packer, re-inject each packer within the pot life of the filling material
- After the injection remove packers, non-corroding parts may remain in the structural element
(as agreed upon with the building owner)
- Seal boreholes

Sealing of the crack surface

- Sealing the crack surface prevents the filling material from escaping during the injection
- For changes in crack width flexible sealing material is used
- Fix leakages with quick curing material
- Provide de-aeration – if vertical, at the highest point of crack



Stahlpacker / Steel packer

Druckstück, Spanngummi, HD-Kegelnippel M6, SW10
thrust piece, clamping rubber, HP round head nipple M6, AF10



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
Druckstück 70 mm	thrust piece 70 mm	10x110	200	20431
Spanngummi 30 mm	clamping rubber 30 mm			
Druckstück 70 mm	thrust piece 70 mm	13x110	100	20491
Spanngummi 30 mm	clamping rubber 30 mm			
Optional	Optional		Nr./No.	
HD-Flachkopfnippel M6	HP pan head nipple M6		-2	

1-Tagespacker-Stahl / 1-day steel packer

Druckstück, Spanngummi, HD-Kegelnippel M6, Rückschlagventil, Spezialhaltefeder, SW10
thrust piece, clamping rubber, HP round head nipple M6, check valve, special retaining spring, AF10



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
Druckstück 70 mm	thrust piece 70 mm	13x120	100	20296
Spanngummi 40 mm	clamping rubber 40 mm			

1-Tagespacker-Edelstahl 1-day stainless steel packer



Druckstück, Spanngummi, HD-Kegelnippel M6, Rückschlagventil, Spezialhaltefeder, Unter teil aus Edelstahl, SW10
thrust piece, clamping rubber, HP round head nipple M6, check valve, lower part, lower part of stainless steel, AF10



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
Druckstück 70 mm,	thrust piece 70 mm,	13x120	100	20278
Spanngummi 40 mm	clamping rubber 40 mm			

Optional	Optional	Nr./No.
HD-Flachkopfnippel M6	HP pan head nipple M6	-2

Zubehör	Accessories	VE/Unit	Nr./No.
Entlüftungswerzeug für 1-Tagespacker-Stahl	De-airing tool for 1-day steel packer	indv	25040



Progressiv-Lamellenschlagpacker Progressive lamella drive-in packer

HD-Kegelnippel M6 lang
HP round head nipple M6 long



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
Kegelnippel (lose beigelegt)	HP round head nipple (separately enclosed)	10x70	100	31620

Zubehör	Accessories	VE/Unit	Nr./No.
Setzwerkzeug 130 mm lang	Mounting tool 130 mm long	indv	35104



Stahlpacker / Steel packer

Druckstück, Spanngummi, HD-Kegelnippel M6, SW10
thrust piece, clamping rubber, HP round head nipple M6, AF10



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
Druckstück 30 mm,	thrust piece 30 mm,	6x65	200	20010
Spanngummi 20 mm	clamping rubber 20 mm			

Advantage/Information

- When the packer is tightened the clamping rubber is pushed on the cone.

Mundstück / Mouth piece

Innengewinde M10x1, freier Durchgang Ø 2 mm
internal thread M10x1, free passage Ø 2 mm



Variante	Variant	VE/Unit	Nr./No.
		indv	16820

Advantage/Information

- The 4 clamping jaws are circularly arranged so that the round head nipples are tightly clamped.

Application of adhesive packers

Application range

- Dry structural elements
- Structural elements with dense reinforcement
- Prestressed concrete and post tensioned
- High pressure injections up to max. 60 bar

Placing of the adhesive packers

- Roughen the surface on both sides of the crack depending on the structural element, remove any debris or loose particles, dust etc.
- Distance between packers depends on thickness of structural element (normally: thickness of structural element = distance between packers)
- Keep the injection canal free by driving a greased steel pin into the crack
- Spread sealing material on the adherend of the packer, slip the packer over the steel pin and press the packer on the crack surface
- Seal the crack surface with sealing material also embedding the flanges of the adhesive packers but stop before the end of crack for deaeration
- Remove all steel pins and screw a round head nipple on the first packer to be injected
- Inject the packer until injection material comes out of the adjacent packer, screw in round head nipple
- After the injection material has cured remove packers and sealing material
- Recondition surface

Information

- Adhesive steel or polymer packers are available
- The adhesive bonding between packer and structural element is decisive
- The adhesive pull strength of the surface as well as the properties of the adhesive (sealing material) have an important effect on the possible injection pressure.



HD-Klebepacker / HP adhesive packer

Schutzrille, HD-Kegelnippel M6 lang
safety groove, HP round head nipple M6 long



Variante	Variant	VE/Unit	Nr./No.
Klebefläche Ø 50 mm, Höhe 26 mm	adhering Ø 50 mm, height 26 mm	100	32001
Optional	Optional		Nr./No.
ND-Kegelnippel M6	LP round head nipple M6	-1	
Zubehör	Accessories	VE/Unit	Nr./No.
Stahlstift Ø 2 x 70 mm Kopf Ø 2,5 mm	Steel pins Ø 2 x 70 mm head Ø 2.5 mm	100	25122

**Winkel-Klebepacker / Angle adhesive packer**

Außengewinde R 1/4", Innengewinde M6, HD-Kegelnippel M6
external thread R 1/4", internal thread M6, HP round head nipple M6



Variante	Variant	VE/Unit	Nr./No.
Höhe 35 mm	height 35 mm	100	31800
Optional	Optional		Nr./No.
ND-Kegelnippel M6	LP round head nipple M6	-1	

Mundstück / Mouth piece

Innengewinde M10x1, freier Durchgang Ø 2 mm
internal thread M10x1, free passage Ø 2 mm



Variante	Variant	VE/Unit	Nr./No.
		indv	16820

Uni-Klebepacker / Universal adhesive packer

Querschiebeventil, angespritzter Luftkupplung Ø 16 mm
cross sliding valve, moulded pan air hosecoupling Ø 16 mm



Variante	Variant	VE/Unit	Nr./No.
Klebefläche Ø 50 mm, Höhe 58 mm	adhered Ø 50 mm, height 58 mm	50	32037

Material to be used

- Injection resin
- Mineral injection material

Lamellenschlagpacker / Lamella drive-in packer

Rückschlagventil, Luftstecker
check valve, air plug



Variante	Variant	Ø x l [mm]	VE/Unit	Nr./No.
Öffnungsdruck 1 bar Bohrungs-Ø 6,9	opening pressure 1 bar	14x95	100	31776

Advantage/Information

- For injection with micro emulsion in brick walls.

Luftkupplung G 1/4" / Air hose coupling G 1/4"

Messing, Außengewinde G 1/4", freier Durchgang Ø 7 mm
brass, external thread G 1/4", free passage Ø 7 mm



Variante	Variant	VE/Unit	Nr./No.
		indv	10980

Curtain injection and masonry injection

Range of application

- Curtain injection
- Masonry injection in structural elements
- Injection of movement joints
- Masonry injection in spaces between structures

Examples of application

- Sealing from the inside of ground contacting structures or structures covered with earth
- Filling of voids and cracks etc.
- Housing construction and civil engineering

Demands on the injection packers

- Safe retention in the structural element during the injection at pressures depending on the injection method
- Corrosion resistance of elements remaining in the structural element
- Shut off option
- Cross section adjusted to the required delivery and flow properties of the injection material
- Check valves for low opening pressure

Suitable objects

- Houses and industrial structures
- Civil engineering structures
- Underground engineering and sewer construction
- Hydraulic engineering
- Tunnelling

Types of packers

- Steel packers
- Polymer drive-in packers



Injection method - curtain injection

- The leaking structural element is drilled through from the inside to the outside.
- The low-viscosity, liquid injection material displaces the existing water, and forms an elastic sealing layer and/or an elastic injection body, together with the surrounding building ground.

Procedure

- Bore holes arranged in a grid-like pattern are drilled through the structure from the inside to the outside.
- The bore hole pattern depends on the construction and geometry of the structural element, the pore structure and the quality and condition of the building ground and on the selected injection technique.
- The packers through which the injection material will be injected are inserted into the bore holes.
- The success of the gel injection depends on the selection of the suitable injection method, e.g. single-stage or two-stage injection.



Injection method - masonry injection

- The sealing layer is created in structural elements which initially have not been planned to be sealed.
- The water transporting capillaries are sealed.

Procedure

- Bore holes are drilled into the leaking structural element from the inside to the outside, up to approximately $\frac{2}{3}$ of the thickness of the structural element, at a slightly inclining angle.
- The bore hole pattern depends on the geometry of the structure.
- The packers through which the injection material will be injected are inserted into the bore holes.



Lamellenschlagpacker / Lamella drive-in packer

Rückschlagventil, Luftstecker
check valve, air plug



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
Öffnungsdruck 1 bar	opening pressure 1 bar	14x95	100	31776
Bohrungs-Ø 6,9				

Zubehör	Accessories	VE/Unit	Nr./No.
Setzwerkzeug	Mounting tool	indv	35100
Innen-Ø 12 mm, 130 mm lang	internal-Ø 12 mm, 130 mm long		



Zubehör	Accessories	VE/Unit	Nr./No.
Luftkupplung G 1/4"	Air hose coupling G 1/4"	indv	10980
Messing, Außengewinde G 1/4", freier Durchgang Ø 7 mm	brass, external thread G 1/4", free passage Ø 7 mm		



Gel-Flachkopfnippel / Gel pan head nipple



Variante	Variant	VE/Unit	Nr./No.
Innengewinde M10x1, Dichtring, SW17	internal thread M10x1, sealing ring, AF17	200	20881

Schiebekupplung / Sliding coupling

Ø 16 mm, seitlich, Innengewinde M10x1, Dichtungsgummi blau
Ø 16 mm, lateral, internal thread M10x1, joint rubber blue



Variante	Variant	VE/Unit	Nr./No.
freier Durchgang Ø 4 mm	free passage Ø 4 mm	indv	16837

Lamellenschlagpacker / Lamella drive-in packer

Außengewinde R 1/4", freier Durchgang Ø 7 mm
external thread R 1/4", free passage Ø 7 mm



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
		14x95	100	31780

Zubehör	Accessories	VE/Unit	Nr./No.
Setzwerkzeug	Mounting tool	indv	35101
Innen-Ø 14 mm, 130 mm lang	internal-Ø 14 mm, 130 mm long		



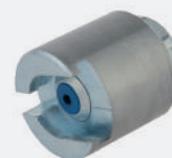
Verschlussstück / Locking tappet



Variante	Variant	VE/Unit	Nr./No.
Innengewinde R 1/4"	internal thread R 1/4"	100	33000

Schiebekupplung / Sliding coupling

Ø 16 mm, gerade, Innengewinde M10x1, Dichtungsgummi blau
Ø 16 mm, straight, internal thread M10x1, joint rubber blue



Variante	Variant	VE/Unit	Nr./No.
freier Durchgang Ø 4 mm	free passage Ø 4 mm	indv	16831

Zubehör	Accessories	VE/Unit	Nr./No.
Dichtungsset	Set of sealings	indv	16831-01
Metallring, Dichtung blau, Feder für Schiebekupplung gerade, freier Durchgang Ø 4,0 mm	metal ring, blue joint rubber, spring for sliding coupling straight, free passage Ø 4.0 mm		



Schnellschnappverschluss / Quick snap

Außengewinde R ½", Kugelhahn R ½", freier Durchgang Ø 9 mm
external thread R ½", ball valve R ½", free passage Ø 9 mm



Variante	Variant	VE/Unit	Nr./No.
		indv	10920

Stahl-Konuspacker / Steel cone packer

Spanngummi, Außengewinde M10x1, mehrfach geschlitzte Kunststoffhülse, Rändelmutter
clamping rubber, external thread M10x1, polymer bushing multiple slotted, knurled nut

**Hohlblock-Schraubpacker**
Screw packer for hollow blocks

Außengewinde M10x1, freier Durchgang Ø 6 mm, Flügelgriff
external thread M10x1, free passage Ø 6 mm, wings



Variante	Variant	VE/Unit	Nr./No.
Ø 18 x 85 mm	Ø 18 x 85 mm	50	20450

**Advantage/Information**

- Easy Injection of Hollow Blocks

Problem:

- Due to the thin walls of hollow blocks conventional packers are not suitable.

Solution:

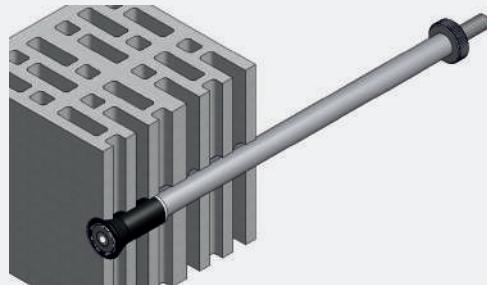
- Insert the developed screw packer for hollow blocks.
- Clamp the rubber piece with the wing nut
- Mount locking tappet
- Carry out injection
- Remove locking tappet after the injection. Release the wing nut and remove the screw packer from the hollow block
- High retention force
- Easy operation

Advantage/Information

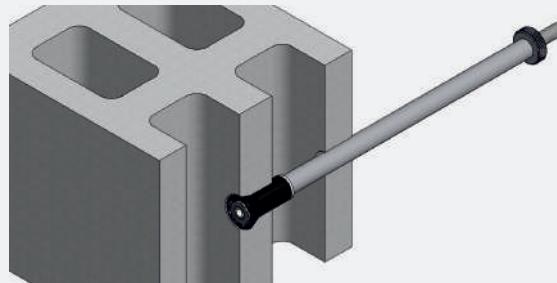
- The thin walled plastic sleeve is mounted with the clamping rubber.
- Due to the gliding properties of the polymer sleeve the clamping rubber can easily be released to its initial diameter.
- The packer loosens and can be removed.



Clamping rubber with polymer sleeve, detail



Injection packer clamped in the checker brick



Injection packer clamped in the hollow brick

Zubehör	Accessories	VE/Unit	Nr./No.
Gel-Flachkopfnippel	Gel pan head nipple	indv	20881
Innengewinde M10x1, Dichtring, SW17	internal thread M10x1, sealing ring, AF17		
Schiebekupplung freier Durchgang Ø 4 mm	Sliding coupling free passage Ø 4 mm	indv	16831
Schiebekupplung Ø 16 mm, seitlich, Innengewinde M10x1, Dichtungsgummi blau, freier Durchgang Ø 4 mm	Sliding coupling Ø 16 mm, lateral, internal thread M10x1, joint rubber blue, free passage Ø 4 mm	indv	16837

Stahl-Kombipacker / Steel combi packer

Druckstück, Unterteil M6, Spanngummi, Außengewinde M10x1, freier Durchgang Ø 2,7 mm, SW10

thrust piece, lower part M6, clamping rubber, external thread M10x1, free passage Ø 2.7 mm, AF10



Variante	Variant	Ø x l [mm]	VE/Unit	Nr./No.
Druckstück 60 mm, Spanngummi 40 mm	thrust piece 60 mm, clamping rubber 40 mm	10 x 100	100	20040
Druckstück 60 mm, Spanngummi 40 mm	thrust piece 60 mm, clamping rubber 40 mm	13 x 100	100	20042

Gel-Flachkopfnippel / Gel pan head nipple



Variante	Variant	VE/Unit	Nr./No.
Innengewinde M10x1, Dichtring, SW17	internal thread M10x1, sealing ring, AF17	200	20881

Schiebekupplung / Sliding coupling

Ø 16 mm, gerade, Innengewinde M10x1, Dichtungsgummi blau

Ø 16 mm, straight, internal thread M10x1, joint rubber blue



Variante	Variant	VE/Unit	Nr./No.
freier Durchgang Ø 4 mm	free passage Ø 4 mm	indv	16831

Schiebekupplung / Sliding coupling

Ø 16 mm, seitlich, Innengewinde M10x1, Dichtungsgummi blau

Ø 16 mm, lateral, internal thread M10x1, joint rubber blue



Variante	Variant	VE/Unit	Nr./No.
freier Durchgang Ø 4 mm	free passage Ø 4 mm	indv	16837

Steckschlüssel / Socket wrench

für Akkuschrauber

for cordless screwdriver



Variante	Variant	VE/Unit	Nr./No.
SW10	AF10	indv	25010

Steckschlüssel / Socket wrench

Handbetrieb

manual operation



Variante	Variant	VE/Unit	Nr./No.
SW7	AF7	indv	25020

Application

- Backfilling of tiles, screed, slabs, clinker

Function

- The borehole is sealed by the rubber cone
- Through the outlet in the packer shaft the injection material first flows into the free canal of the bore
- Due to the closed system the injection material is distributed all over into the cavities and voids

Procedure

- Locate voids under the tiles
- Select appropriate injection material and injection pressure (about 1 - 2 bar)
- Drill boreholes (ideal: centre of cross joint)
- Depth of borehole according to aim of injection and soil
- Clean boreholes
- Place packer and carry out injection work
- Remove packer after the injection material has cured
- Seal the holes with appropriate material

Advantage

- For repair works tiles do not have to be removed any more

Stahlfliesenpacker / Steel tile packer

HD-Kegelnippel M6, Dübel, Gummikonus, seitliches Austrittsloch Ø 1,5 mm; SW10
HP round head nipple M6, dowel, rubber cone, outlet opening lateral Ø 1.5 mm, AF10



Variante	Variant	ØxL [mm]	VE/Unit	Nr./No.
		8x60	200	20290

Advantage/Information

- Timesaving due to reduced number of work steps when placing the packers
- The wedge packer is driven directly into the crack, (no time-consuming drilling work needed)
- The packer can be easily removed after the injection work
- For the use of steel wedge packers the minimum width of crack is 2.0 mm

**Kunststoff-Keilpacker / Polymer wedge packer**

30 mm lang, HD-Kegelnippel M6
30 mm long, HP round head nipple M6



Variante	Variant	VE/Unit	Nr./No.
ab 2 mm Rissbreite, HD-Kegelnippel M6 (lose beigelegt)	for a width of crack from 2 mm, HP round head nipple M6 (separately enclosed)	100	32089

Zubehör	Accessories	VE/Unit	Nr./No.
Setzwerkzeug Ø 16 x 120 mm	Mounting tool Ø 16 x 120 mm	indv	25098



Manufacturer of Injection Equipment

DESOI GmbH

Gewerbestraße 16
D-36148 Kalbach/Rhön

Telefon: +49 6655 9636-0
Fax: +49 6655 9636-6666
info@desoi.de
www.desoi.de

Made in Germany



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EQUIPMENT
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**Building Chemical Supplies
(Australia) Pty Ltd**
P.O. Box 3321
Tingalpa DC, QLD 4173

sales@bcсаustralia.com
phone: + 61 7 3890 8306
www.bcсаustralia.com