



Injection Systems for Structures

EXPERTISE
INJECTION



Injection Systems for Structures

Injection systems can make a sustained contribution to the regular maintenance and repair of buildings and structures, helping to significantly extend their service lifetime.

Successful injection measures result from high-performance materials combined with optimum application technology, with expert planning and execution ensuring that the injection systems perform to their maximum.

This brochure presents a range of injection systems for buildings, structures and their components, for:

- sealing cracks, crevices, cavities and voids
- upgrading, consolidating and reinforcing
- sealing joints
- external waterproofing with curtain injection

We offer a comprehensive overview of the many possibilities of injection technology based on practice-proven materials and efficient techniques combined as complete, integrated systems, along with useful application instructions and information.

Even the most comprehensive presentation of system components cannot replace individual advice, which is why MC's expert consultants

will be on hand to help at all stages of your project from planning to completion.

You will also be supported – when required – by expert advisers and application engineers who are active at the super-regional and international level.

We are pleased to invite installation and application companies to have their personnel trained and qualified in our widely recognised application training courses, complete with external certification.

Geo-technical injections represent a particular challenge, and MC maintains its own production line for this speciality field. If you require solutions in this domain, please ask about our MC-Montan Injekt injection systems and their capabilities in:

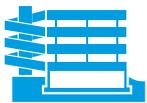
- sealing and reinforcing subsoil, rock and other strata
- consolidation of foundation soil
- stabilisation and raising of building components



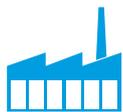
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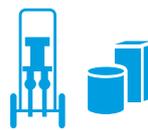
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Real estate

Real estate investments will invariably retain their functional, monetary and prestige value for investors, owners and users, provided that the properties in question are maintained. Nowadays, damp walls, cracked ceilings and unstable floors can be permanently repaired using minimally invasive injection measures, protecting and strengthening a building before such defects can cause major damage. Occasionally, injections are also required to introduce subsequent waterproofing under floor slabs or at other locations which cannot be reached from the outside. MC's injection systems offer all the technological prerequisites to enable such work to be carried out successfully.



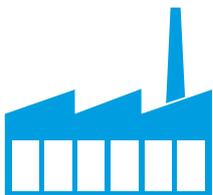
Your tasks:

- Protection of the concrete against ingress of water and other harmful substances through cracks and cavities
- Reinforcement of concrete components in the area of cracks and cavities to better resist tensile and compressive loading
- Corrosion protection of the reinforcing steel and similar inserts
- Waterproofing of external components, particularly in areas in contact with subsoil
- Sealing of construction and expansion joints

Your solutions:

MC-Injekt 2300 top/2300 rapid elastomer resins will prevent ingress of water or other harmful substances likely to impair the durability and utility value of reinforced concrete in real estate properties. The structural integrity of reinforced and prestressed concrete components under conditions of tensile and compressive loading can be reinstated through injection of rigid-setting **MC-Injekt 126 compact**. Larger cavities are permanently reinforced with **Centricrete HCS**. Meanwhile, **MC-Injekt 3000 HPS**, a flexible and swellable hydrostructural resin, can be used for both waterproofing structures in contact with the ground and the subsequent sealing of the adjacent subsoil. And **MC-Injekt GL-95 TX** has proven to be particularly effective in the repair-sealing of leaky movement joints in structures that are in contact with the ground.





Industrial buildings

Floors in industrial buildings – including warehouses and material handling concourses – have to be built to withstand not just static and dynamic loads but also, in many cases, chemical attack. Such highly stressed concrete surfaces need to be densely compacted, waterproof, homogeneous and flat. Permanent, effective concrete repairs start with the sealing or rigid filling of cracks and cavities. And should you also require a solution for foundation soil rehabilitation, MC offers a range of speciality products in its MC-Montan Injekt range of injection systems.



Your tasks:

- Protection of the concrete against the ingress of harmful substances through cracks and cavities
- Prevention of liquid ingress and leaks
- Corrosion protection of the reinforcing steel
- Rigid filling of cracks and cavities resistant to compressive and tensile forces
- Pressure-grouting of traffic-carrying surfaces for the purpose of stabilisation and levelling

Your solutions:

Rigid-setting [MC-Injekt 1264 compact](#) is an effective injection sealant for strengthening concrete and reinforced concrete components under conditions of tensile and compressive loading, ensuring that the reinforcing steel and similar inserts are firmly bonded to the concrete matrix. This duromer resin even cures under dynamic load cycling and is non-susceptible to moisture. [MC-Injekt 2300 top/2300 rapid](#) elastomer resins are injected to provide flexible protection against the penetration of contaminants through cracks and cavities, while rigid cracks and cavities in concrete can be effectively repaired by injecting [Centricrete HCS](#) with its concrete-like properties.





Bridges

Whether made of prestressed concrete, reinforced concrete, rammed concrete or masonry, bridges are vital to the transport infrastructure. However, with increasing traffic volumes, higher axle loads and consistently aggressive environmental influences, they are under increasing strain. Injection systems offer innovative and effective solutions for the protection, maintenance, repair and reinforcement of bridges.



Your tasks:

- Protection of the concrete against the ingress of harmful substances through cracks and cavities
- Tensile strengthening of cracked reinforced concrete
- Compressive reinforcement of concrete prone to high levels of cavitation
- Corrosion protection of the reinforcing steel
- Repair and upgrade of components prior to surface coating or the adhesive bonding of CFRP strips

Your solutions:

Rigid-setting **MC-Injekt 1264 compact** serves as an effective injection sealant for components of reinforced and prestressed concrete under conditions of tensile and compressive loading. The low-viscous duromer resin produces the required injection results even under the influence of dynamic load cycling. Major cavities are permanently reinforced with **Centricrete HCS**, a mineral suspension that possesses the special properties required to improve and reinforce concrete and natural rock. For the flexible sealing of cracks, the outstanding injection properties of **MC-Injekt 2300 top/2300 rapid** make these elastomer resins a particularly effective solution. **MC-Injekt 3000 HPS** can be used to counter and prevent any wide-area dampness in concrete or masonry bridge structures in contact with the earth, and can also be employed for subsequent sealing work on the adjoining subsoil.





Potable water structures

Drinking water is our most vital resource and must be protected from contamination during processing, transport and storage. While the lining of facilities, piping and containers must meet certain functional requirements relating to stability and impermeability, so too must the materials of the buildings that house them. There are also water-hygiene requirements that need to be met by repair systems. This is where speciality injection resins can have a significant beneficial impact.



Your tasks:

- Protection of the concrete against the ingress of harmful substances through cracks and cavities
- Waterproofing of the building structure against infiltration and exfiltration
- Sealing of cracks and cavities in order to create smooth, hygienically sound surfaces that are easy to clean
- Filling of cracks, flaws and cavities in structural concrete

Your solutions:

Classic sealing and injection tasks involving the filling of cracks and cavities are reliably carried out with high-performance [MC-Injekt 2300 top/2300 rapid](#) elastomer resins. Verified as hygienically harmless, these highly flexible reaction products are well suited to applications in potable water systems. [MC-Injekt 3000 HPS](#) hydrostructural resin carries similar hygiene credentials while offering elasticity and swelling properties that are ideal in constructions permanently exposed to water contact. Subsequent sealing of the adjacent subsoil can also be carried out with [MC-Injekt 3000 HPS](#). Larger cavities are efficiently filled with the mineral suspension [Centricrete HCS](#) serving to strengthen and upgrade the structure. If geotechnical injection work is required, resins from the MC-Montan Injekt series are highly recommended.





Sewerage structures

Despite being exposed to high mechanical loading and chemical attack, the structures and ducting used for the collection and disposal of wastewater, effluent and sewage are required to exhibit exceptionally long service lifetimes. Regular maintenance and repair measures must take into account the high physical and chemical attrition to which both the original network components and the repair products are exposed. MC offers a selection of speciality solutions in the form of its MC-Montan Injekt range of injection systems tailored to meeting the particular requirements encountered in subterranean infrastructure.



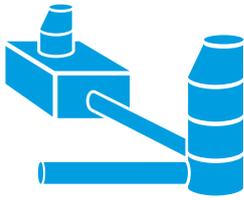
Your tasks:

- Waterproofing of structures against infiltration and exfiltration
- Elimination of manufacturing defects such as cracks, voids and cavities in the concrete and masonry
- Embedding of injection hoses in critical construction joints
- Reinforcement of the construction

Your solutions:

Classic sealing injection tasks involving the filling of cracks and cavities can be reliably executed using high-performance [MC-Injekt 2300 top/2300 rapid](#) elastomer resins. These exceptionally flexible reaction products are chemically resistant and environmentally compatible. Larger cavities can be efficiently filled with the mineral suspension [Centricrete HCS](#) to strengthen the construction. Impressive in terms of its moisture tolerance, chemical resistance and durability as a rigid-setting crack and cavity filler, [MC-Injekt 1264 compact](#) duromer resin offers even higher strengths with faster curing. The adjacent subsoil can be subsequently sealed with [MC-Injekt 3000 HPS](#). More extensive geotechnical injection work requires use of resins from the MC-Montan Injekt series.





Subterranean infrastructure

Subterranean infrastructure performs a wide range of functions, providing essential lifelines for efficient, comfortable urban existence. Media channels serve to enhance the ease and convenience with which we pursue our lives. However, because they are invariably embedded in foundation soil and building developments, their maintenance and repair are particularly complicated and expensive. Subterranean ducting can often only be strengthened and sealed from the inside using injection techniques. Minimally invasive injection technologies reduce the cost of application without disrupting municipal life. The MC-Montan Injekt range of injection systems offer a range of speciality products for the unique applications encountered in underground networks.



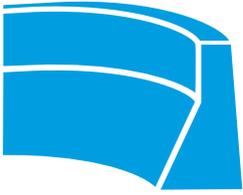
Your tasks:

- Protection and waterproofing of manholes and shaft structures
- Sealing of joints, cracks and cavities in ducting and sewerage to prevent infiltration and exfiltration
- Sealing of pipe transits
- External waterproofing through curtain injection
- Backfilling and consolidation of foundation soil

Your solutions:

Cavities in sewerage structures can be effectively filled with the [Centricrete HCS](#) mineral suspension, which also serves to strengthen the construction. [MC-Injekt 1264 compact](#) offers more rapid strength development. This duromer resin is also particularly impressive in terms of its moisture compatibility, chemical resistance and durability, with its rigid-setting and sealing action enabling the effective filling of cracks and cavities. Meanwhile, [MC-Injekt 2300 top/2300 rapid](#) elastomer resin sealants are ideal when it comes to preventing water and contaminant penetration. The adjacent subsoil can be subsequently sealed using [MC-Injekt 3000 HPS](#), and for geotechnical injections, the resins of the MC-Montan Injekt range offer proven performance.





Hydraulic structures

Hydraulic structures are important for energy production, drinking water supply, waterway navigation and regulation of the ecological water balance, making them integral to public life, industry and the environment. Like the adjacent rock and soil, the concrete or masonry construction materials must meet special requirements in terms of stability and water impermeability. Injection systems are often the best solution when it comes to ensuring the protection, reinforcement and sealing of these structures. MC offers a range of specialised products for the unique requirements encountered in the massive constructions and geotechnical work involved in such projects. Take a look at our MC-Montan Injekt range of systems.



Your tasks:

- Stabilisation and reinforcement of the construction
- Ensuring water impermeability in line with specifications
- Sealing of joints and surfaces against pressurised and non-pressurised water
- Grouting and backfilling of voids and cavities
- Sealing and consolidation of adjacent subsoil and rock

Your solutions:

Ensuring water impermeability is often beset with problems, most of which can be successfully solved using [MC-Injekt 2300 top / 2300 rapid](#) elastomer resins. [MC-Injekt 2133 flex](#) offers a superior alternative for the injection of cracks and joints in the construction. [MC-Injekt GL-95 TX](#) hydrostructural resin has proven extremely successful in the sealing of movement joints, while irregularities, inhomogeneities and cavities in the concrete or natural stone can be efficiently back-filled with [Centricrete HCS](#) to reinforce the construction. For geotechnical injection work, the MC-Montan Injekt range offers products of proven performance.





Tunnels

Tunnel building is one of the most demanding engineering disciplines in the construction industry. Tunnel structures have to meet extremely high standards in terms of their strength, water impermeability and durability. With the process always susceptible to the interaction between manmade building, natural rock and water, injection measures are invariably a necessary part of the construction project. MC offers a complete product portfolio for the special tasks encountered in tunnel construction. For further information on this subject, please ask for our separate tunnelling brochure.



Your tasks:

- To support, safeguard and waterproof start and end shafts, as well as the shield tail when carrying out maintenance measures to prevent unwanted water ingress
- Advanced stabilising and waterproofing injection in order to secure the freshly excavated tunnel tube
- Shield tail sealing for maintenance work as tunnel boring continues
- Protection of the concrete against the penetration of contaminants via cracks and cavities
- Waterproofing and subsequent sealing of tubing joints

Your solutions:

An injected annular seal made of **MC-Montan Injekt TR-X** secures the transition area between the tunnel boring machine and the subsoil. **MC-Montan Injekt TR-X** can also seal the tunnel tube as heading proceeds, providing stability in critical areas where the rock is loose, for example when the shield tail seal has to be replaced. The hydrostructural resin is also used in tunnel construction to subsequently seal surfaces and movement joints between the tunnel segments. Injections into cracks in concrete components are best carried out using **MC-Injekt 2300 top/2300 rapid** elastomer resin sealants. For rigid and reinforcing seals, **MC-Injekt 1264 compact** is an ideal option. Under certain circumstances, **MC-Injekt 2133 flex** may also contribute to ensuring that cracks and joints are durably sealed. For geotechnical injections, resins of the MC-Montan Injekt range are particularly effective.



Concrete bearing surfaces



Concreted trafficable surfaces are essential for the transport, storage and trans-shipment of goods on roads, in ports, on airfields and on all the adjacent logistics and handling areas. Specialised injection systems serve to successfully stabilise concrete slabs through consolidation of the subsoil while lifting and levelling where required.



Your tasks:

- Grouting and stabilisation of concrete slabs
- Consolidation of the subsoil
- Grouting of cavities, crevices, gaps and voids
- Raising and levelling concrete slabs
- Protection against erosion and other undermining phenomena

Your solutions:

Solid and reliable, MC-Montan Injekt resins are ideal for the consolidation or raising of components and ensuring that they are externally sealed. The resins available offer a tailorable spectrum of performance features such as strength development, modulus of deformation and reactive expansion. [MC-Montan Injekt FF](#), with reactive expansion and a defined level of strength, is an efficient solution for stabilising and securing the position of concrete slabs. [MC-Montan Injekt CB](#) is a mineral-organic hybrid system that offers enhanced fire protection and cures even in the presence of moisture and water. With both resins, floor slabs can also be raised and levelled with accuracy by metering the injection process. With selectable reaction times, the [MC-Montan Injekt FR/FN/FS](#) range is ideally suited to filling gaps and penetrating crevices and voids in the loose rock or subsoil. The resin systems of the MC-Montan Injekt series are further characterised by their proven environmental compatibility.





Ballast beds

Regional and super-regional railways form the backbone of essential infrastructure serving commerce, industry and the public at large. Quality in railways is essentially determined by the standard of track engineering. Ballast bonding systems can contribute to reducing construction and reconstruction costs. They offer increased operational reliability and safety, coupled with reduced vehicle wear and tear. Embankments and rocky areas can also benefit from the provision of secured, bonded gravel surfaces.



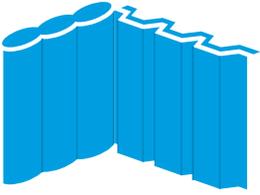
Your tasks:

- Bonding, stabilisation and retention of loose rock
- Bonding, stabilisation and retention of ballast-mounted track superstructure components required to withstand rapid loading
- Waterproofing of gravel surfaces
- Blending of the ballast bed in transitions between earthworks and manmade structures
- Securing ballast beds during track construction work
- Environmentally compatible, permanent vegetation growth restriction

Your solutions:

There are three resin systems available for bonding, stabilising and retaining loose rock. [MC-Ballastbond 70](#) offers the widest performance range. This resin system penetrates into the ballast bed and bonds the gravel at the contact points, delivering a rapid increase in strength without impairing drainage capacity. [MC-Ballastbond 70](#) is also particularly environmentally compatible. [MC-Ballastbond 80](#) is a mineral-organic hybrid system that is unaffected by moisture or water as it reacts, offering a higher level of fire safety coupled with lower strength levels. And [MC-Ballastbond 60/60 SC](#) is a transparent duromer resin system capable of achieving very high strength values.





Excavation pits and foundation soil

Without subsoil, there can be no building. Structural stability depends on having foundation soil of sufficient bearing capacity despite differing strata, compositions and varying water interference. Water penetrating into the excavation pit, and loose rock slipping down trench walls can considerably disrupt the construction process. MC injection systems ensure safe and secure building conditions and reliable construction scheduling. If the foundation of a building has to be corrected even long after its completion, consolidating, reinforcing and lifting injection technologies can be reliably deployed to resolve the issue.



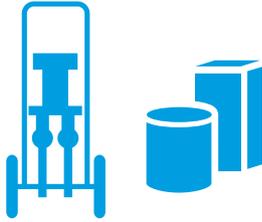
Your tasks:

- Consolidation and securing of excavation pit surrounds
- Prevention of inflowing water
- Filling of crevices, cavities, voids and gaps
- Reinforcement and sealing of subsoil
- Lifting injections

Your solutions:

Quick-setting resins are required to seal the surrounding subsoil and thus secure excavation pits. MC-Montan Injekt injection resins offer easy injectability and variable reaction times, with reactive expansion just one of the options available. The [MC-Montan Injekt FR/FN/FS](#) range is universally applicable for the stabilisation and retention of excavation envelopes. It can be adjusted to a broad array of different application conditions. [MC-Montan Injekt CB](#) is a mineral-organic hybrid system that is unaffected by moisture and water as it reacts. This resin can be injected into subsoil that has to be penetrated later by an excavator or some other machine. [MC-Montan Injekt DR/DS](#) offers outstanding injectability and binding forces for effective flexible sealing.





System components and application information

Standard systems for structural engineering

FLEXIBLE SEALANT	Sealing injection with extendable elastomer resin
	MC-Injekt 2300 top/2300 rapidPage 17

SWELLABLE SEALANT	Sealing injection with swellable hydrostructural resin
	MC-Injekt 3000 HPSPage 18

RIGID-SETTING SEALANT	Sealing injection work with rigid-setting duromer resin
	MC-Injekt 1264 compactPage 19

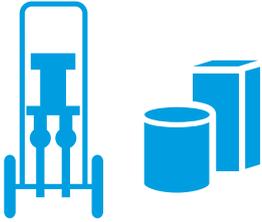
RIGID-SETTING FILLER	Rigid-setting filling injection with reinforcing cement suspension
	Centricrete HCSPage 20

Speciality systems for structural and civil engineering

FLEXIBLE SEALANT	Sealing injection with flexible expansion resin
	MC-Injekt 2133 flexPage 21

SWELLABLE SEALANT	Sealing injection with polymer-modified hydrostructural resin
	MC-Injekt GL-95 TXPage 22

RIGID-SETTING SEALANT	Sealing compound with highly viscous duromer resin
	MC-Injekt 2700/2700 LPage 23



MC-Injekt 2300 top/2300 rapid

FLEXIBLE SEALANT



Injection

of cracks, joints, crevices, cavities and voids in

- concrete and reinforced concrete
- masonry
- subsoil

with a flexible resin for the protection of components, structures and building work against penetrating water and other harmful substances.



Performance features:

- Very good injectability
- Curing reaction unaffected by water
- Reaction time can be varied
- High elasticity and cold flexibility
- Good chemical resistance
- Very good environmental compatibility
- Approved for potable water applications

System components:

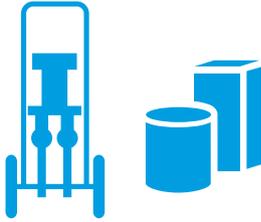
Injection resin	MC-Injekt 2300 top/2300 rapid
Injection pump	MC-I 510 (for long application times) MC-I 700 (for short and long application times)
Injection packers	MC-Injektionspacker DS 14 MC-Klebspacker (adhesion packer)
Auxiliary materials	MC-Injekt 2033 MC-Adhesive PU-solid

Range of applications:

- Dry, damp, wet and water-bearing components
- Cracks and crevices from 0.1 mm in width
- Construction joints and expansion joints of limited width movement
- Damp-proof course membranes in masonry
- Loose rock, subsoil

Alternative injection products:

- MC-Injekt 2300 NV with a longer application time and higher viscosity
- MC-Fastpack 2300 top with the MC-Fastpack system



MC-Injekt 3000 HPS

SWELLABLE SEALANT



Injection

of cracks, joints, cavities and voids in

- concrete and reinforced concrete
- masonry
- subsoil

with a swellable hydrostructural resin for the protection of building components, structures and construction work to prevent the penetration of water and other harmful substances.



Performance features:

- Very good injectability
- Fast, adjustable reaction time
- High swellability and elasticity
- Good chemical resistance
- Very good environmental compatibility
- Approved for potable water applications

System components:

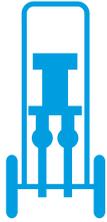
Injection resin	MC-Injekt 3000 HPS
Injection pump	MC-I 700
Injection packers	MC-Injektionspacker LS 18 MC-Schlagpacker (tap-in packer)

Range of applications:

- Permanently damp, wet and water-bearing components
- Cracks and crevices from 0.1 mm in width
- Construction joints and expansion joints of significant width movement
- Damp-proof course membranes in masonry
- Loose rock, subsoil

Alternative Injection products:

- MC-Injekt GL-95 TX with a short reaction time



MC-Injekt 1264 compact

RIGID-SETTING SEALANT



Injection

of cracks, joints, crevices and cavities in

- concrete and reinforced concrete
- masonry

with a resin of high tensile and compressive strength that reinforces the construction through the creation of a solid bond, ideal for the protection of components and structures against the penetration of water and other harmful substances.



Performance features:

- Good injectability
- High penetration activity
- Curing reaction unaffected by water
- High tensile and compressive strength
- Good chemical resistance

System components:

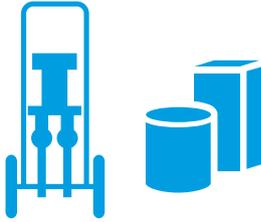
Injection resin	MC-Injekt 1264 compact
Injection pump	MC-I 510
Injection packers	MC-Klebepacker (adhesion packer) MC-Injektionspacker DS 14
Auxiliary material	MC-Adhesive PU solid

Range of applications:

- Dry and damp components
- Cracks and crevices from widths of 0.2 mm
- Construction joints and expansion joints of limited width movement

Alternative Injection products:

- MC-Injekt 1264 TF of low viscosity
- MC-Fastpack 1264 compact with the MC-Fastpack system
- MC-Injekt 2700/2700 L with adjustable reaction time
- MC-Fastpack PU solid for cracks with widths wider than 0.5 mm



Centricrete HCS

RIGID FILLING



Injection

of crevices, cavities, cracks and joints in

- concrete and reinforced concrete
- masonry

with a mineral suspension that cures to a highly adhesive solid of significant compressive strength to reinforce and protect structures and building components against the penetration of water and other harmful substances.



Performance features:

- Good injectability
- Curing reaction unaffected by water
- High compressive strength
- Realkalisation effect
- High resistance values

System components:

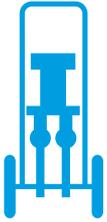
Injection resin	Centricrete HCS
Injection pump	MC-I 910
Injection packers	MC-Schlagpacker (tap-in packer) MC-Hammerpacker LP 12 (tap-in packer)
Auxiliary material	MC-Fix ST

Range of applications:

- Dry, damp and wet components
- Cracks and crevices from widths of 0.8 mm
- Construction joints and expansion joints with no width movement
- Cavities and voids

Alternative injection products:

- Centricrete UF with a finer particulate
- Oxal injection adhesives for masonry



MC-Injekt 2133 flex



FLEXIBLE SEALANT



Injection

of cracks, joints, crevices, cavities and voids in

- concrete and reinforced concrete
- masonry
- subsoil

with a flexible resin for the protection of components, structures and building work against the penetration of water and other harmful substances.



Performance features:

- Very good injectability
- Simple single-component application system
- Extensive depth penetration
- Curing reaction unaffected by presence of water
- High elasticity and cold flexibility
- Good chemical resistance
- Very good environmental compatibility

System components:

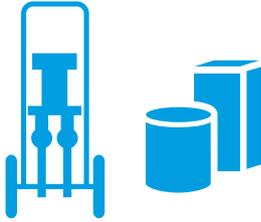
Injection resin	MC-Injekt 2133 flex
Injection pump	MC-I 510
Injection packers	MC-Injektionspacker DS 14

Range of applications:

- Dry, damp, wet and water-bearing components
- Cracks and crevices of widths larger than 0.3 mm
- Construction joints and expansion joints of limited width movement
- Loose stone and rock

Alternative injection products:

- MC-Injekt 2300 top / 2300 rapid with low viscosity and no expansion



MC-Injekt GL-95 TX

SWELLABLE SEALANT



Injection

of joints, cracks, crevices, cavities and voids in

- concrete and reinforced concrete
- masonry
- subsoil

with a polymer-modified, highly reactive hydrostructural resin for the protection of components, structures and ongoing building work against the penetration of water and other harmful substances.



Performance features:

- Very good injectability
- Fast but adjustable reaction time
- High level of swellability and elasticity
- Good chemical resistance
- Very good environmental compatibility
- Approved for potable water applications

System components:

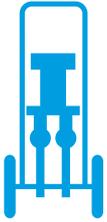
Injection resin	MC-Injekt GL-95 TX
Injection pump	MC-I 700
Injection packers	MC-Injektionspacker LS 18 MC-Schlagpacker (tap-in packer)

Range of applications:

- Permanently damp, wet and water-bearing components
- Cracks and cavities of widths greater than 0.1 mm
- Construction joints and expansion joints of significant width movement
- Damp-proof course membranes in masonry
- Loose rock

Alternative injection products:

- MC-Injekt 3000 HPS for a lower viscosity



MC- Injekt 2700/2700 L

RIGID-SETTING SEALANT



Injection

of gaps, crevices, cavities and voids in

- mountainous zones
- subsoil
- structures

with a resin of high tensile and compressive strength to create a solid bond for the reinforcement and protection of components and structures against the penetration of water and other harmful substances and also for the protection of excavation pits from inflowing water and soil slippage.



Performance features:

- Good injectability
- Adjustable reaction time
- High tensile and compressive strength values
- Good chemical resistance
- Very good environmental compatibility
- Approved for potable water applications

System components:

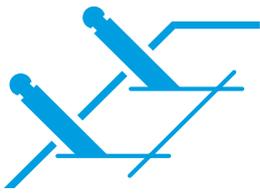
Injection resin	MC-Injekt 2700/2700 L
Injection pump	MC-I 700 (for short and long application times)
Injection packers	MC-Injektionspacker LS 18
	Injection lances

Range of applications:

- Sealing and consolidation of rock strata and earthworks against pressurised water
- Excavation pit stabilisation
- Consolidation and strengthening of subsoil, floor slabs and foundations to improve their load-bearing capacity
- Sealing and strengthening of cavities and cracks in concrete and masonry
- Sealing of rigid joints

Alternative injection products:

- MC-Montan Injekt FR/FN/FS



Application techniques for the filling, grouting and sealing of subsoil, joints, cracks, crevices, cavities and voids

Component filling from the surface

Dry and moderately damp cracks in components can be filled from the surface. This has to be prepared and then provided with appropriate packers to enable the injection work to be carried out. The injection packers are bonded into place at intervals corresponding to the depth of the crack (up to max. 60 cm). The cracked surface needs to be sealed. Cracks that are accessible from both faces need to be sealed on both faces. From depths of 60 cm, these may again be provided with adhesion packers in order to optimise the level of fill. On surfaces that are horizontal or only slightly inclined, cracks can be simply filled under gravity. To ensure a continuous material flow, a cut should be made along the line of the crack for feeding in the injection compound. Further information is available in the form of instructions relating to each specific injection material.



Adhesion packers: These are bonded onto the component surface at intervals corresponding to the crack depth (with surface sealant).



Gravitational filling: Gravitational filling is performed under pressureless conditions (and without packers). Wide cracks can be filled without preparation, whereas narrow cracks will need to be ground out first.

Filling of components through drilled channels

Damp, moist and water-bearing cracks and cavities in components can be filled via channels drilled at a certain angle crossing the crack or cavity. The intervals between the drilled channels should correspond to half the crack depth (up to a maximum of 60 cm). Further information is available in the instructions relating to the relevant injection compound.



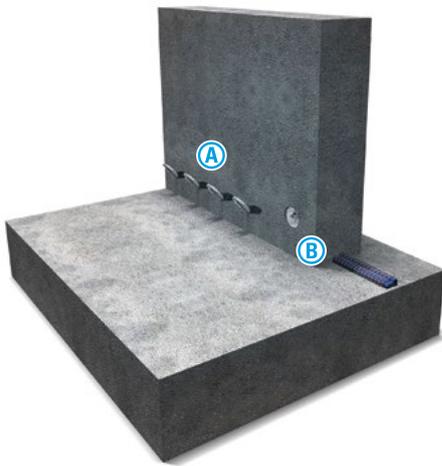
Borepacker drill hole packers: These are inserted in the drilled holes at a distance corresponding to half the crack depth in a staggered formation on both sides of the crack (usually without surface sealant).



Borepacker drill hole packers: Shown inserted in drilled holes (usually without surface sealant).

Joint injection

Water-bearing construction joints or expansion joints can be filled via drilled channels or injection hoses. For injection via drilled channels, the holes required are made at a certain inclined angle crossing the joint or at 90° through the rear material. The intervals in the case of construction joints should correspond to half the component thickness (up to max. 60 cm). Significantly larger packer intervals are possible in the case of expansion joint injection work, depending on the flow path configuration. For further information, please consult the application instructions relating to the injection material used.



Borepacker and hose injection: Packers arranged at intervals corresponding to half the component thickness at an angle of 30–45° to access the joint. **A**

Hose injection at construction joints. **B**



Borepacker arrangement: Drilled holes with inserted packers crossing construction joints through the joint strip flange. Techniques **A+B**

For solutions with no joint strip contact, see “Subsequent interface sealing” below.

Subsequent interface sealing

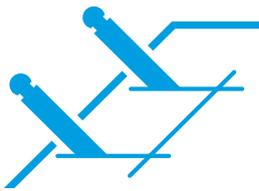
Damp components may be subsequently sealed from the outside (curtain injection) or through provision of a barrier membrane (horizontal and vertical). For this, injection holes are drilled through the component (illustration left) or crossing relevant joints (illustration right).



Borepacker use: Packer arrangement for concrete interfaces



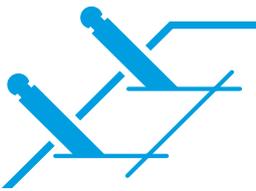
Borepacker use: Packer arrangement for masonry



Summary of injection products and applications

	MC-Injekt 2300 top/2300 rapid	MC-Fastpack 2300 top	MC-Injekt 2300 NV	MC-Injekt 2133 flex	MC-Injekt 1264 compact	MC-Fastpack 1264 compact	Centricete 1264 TF	Centricete HCS	Centricete UF	MC-Injekt 3000 HPS	MC-Injekt GL-95/GL-95 TX	MC-Fastpack 2700	MC-Fastpack PU solid	
Component														
Protection against penetration of water and contaminants	■	■	■	■	-	-	-	-	-	■	■	-	-	-
▪ Flexible														
▪ Solid	-	-	-	-	■	■	■	□	□	-	-	■	■	■
Rigid-setting reinforcement	-	-	-	-	■	■	■	■	■	-	-	■	■	■
Construction and expansion joints														
Protection against penetration of water and contaminants	■	■	■	■	-	-	-	-	-	■	■	-	-	-
▪ Flexible														
▪ Solid	-	-	-	-	■	■	■	□	□	-	-	■	■	■
Rigid-setting reinforcement	-	-	-	-	■	■	■	■	■	-	-	■	■	■
Subsoil														
Sealing applications to prevent the penetration of water and contaminants	■	■	-	■	-	-	-	-	-	■	■	-	-	-
▪ Flexible														
▪ Solid	-	-	-	-	-	-	-	□	□	-	-	■	■	-
Reinforcement/consolidation	-	-	-	-	-	-	-	■	■	-	-	■	■	-

■ Well suited / □ Reasonably suitable / - Not recommended



Summary of injection products, injection pumps and packers

	MC-Injekt 2300 top/2300 rapid	MC-Fastpack 2300 top	MC-Injekt 2300 NV	MC-Injekt 2133 flex	MC-Injekt 1264 compact	MC-Fastpack 1264 compact	MC-Injekt 1264 TF	Centricete HCS	Centricete UF	MC-Injekt 3000 HPS	MC-Injekt GL-95/GL-95 TX	MC-Fastpack 2700/2700 L	MC-Fastpack 2700	MC-Fastpack PU solid
Injection pump														
MC-I 510 Single-component High-pressure piston pump Pressure range: up to 264 bar	■	-	■	■	■	-	■	-	-	-	□	-	-	
MC-I 700 Two-component High-pressure piston pump Pressure range: up to 200 bar	■	-	-	-	-	-	-	-	■	■	■	-	-	
MC-I 910 Single-component Low-pressure diaphragm pump Pressure range: up to 8 bar	-	-	-	-	-	-	■	■	-	-	-	-	-	
MC-Fastpack Power-Tool Two-component Low-pressure piston pump Pressure range: up to 20 bar	-	■	-	-	-	■	-	-	-	-	-	■	■	
Packers														
MC-Injektionspacker DS 14 Aluminium threaded packer for 14 mm bores with ball head Pressure range: approx. 10 to 200 bar	■	-	■	■	■	-	■	-	-	■	□	□	-	-
MC-Injektionspacker LS 18 Steel threaded packer for 18 mm bores (300 mm long) with flat head Pressure range: approx. 5 to 200 bar	■	-	■	■	-	-	-	□	□	■	■	■	-	-
MC-Klebepacker Steel adhesion packer with ball head Pressure range: approx. 10 to 60 bar	■	-	■	■	■	-	■	-	-	-	□	-	-	
MC-Schlagpacker Plastics tap-in packer for 16–18 mm bores with fast-release connector Pressure range: approx. 1 to 30 bar	□	□	□	□	-	-	-	■	■	■	■	■	■	-
MC-Hammerpacker LP 12 Plastics tap-in packer for 12 mm bores with quick-release connector Pressure range: approx. 1 to 50 bar	■	■	■	□	□	■	■	■	■	■	■	■	■	-
MC-Surfacepacker LP Plastics adhesion packer with quick-release connector Pressure range: 0 to 30 bar	■	■	■	□	□	■	■	■	■	■	■	■	■	■

■ Well suited / □ Reasonably suitable / - Not recommended

Injection systems for structures

MC offers innovative solutions on the basis of a wide range of injection materials tailored to your application. Aside from the compounds, we also supply you with a complete injection system comprising packers, auxiliary materials and pumps on a single source basis.

- Duromer resins
- Elastomer resins
- Hydrostructural resins
- Mineral suspensions
- Injection pumps/Packer systems
- Training
- On-site service

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