



**ombran**

**System solutions for underground infrastructure**

**EXPERTISE  
UNDERGROUND SEWER**



## ombran: Maintenance With a System

The maintenance of underground infrastructure places tough requirements on the planners and the companies carrying out the work. The tasks involved are complex and require suitably matched product systems that can ensure long-term protection of the structures involved. Only individual designed concepts and the choice of high-quality systems ensure the long-term success of the renovation work.

ombran is the specialist for the renovation of underground infrastructure and has been developing high-quality systems that meet these requirements optimally for decades now. Our research and development department stands

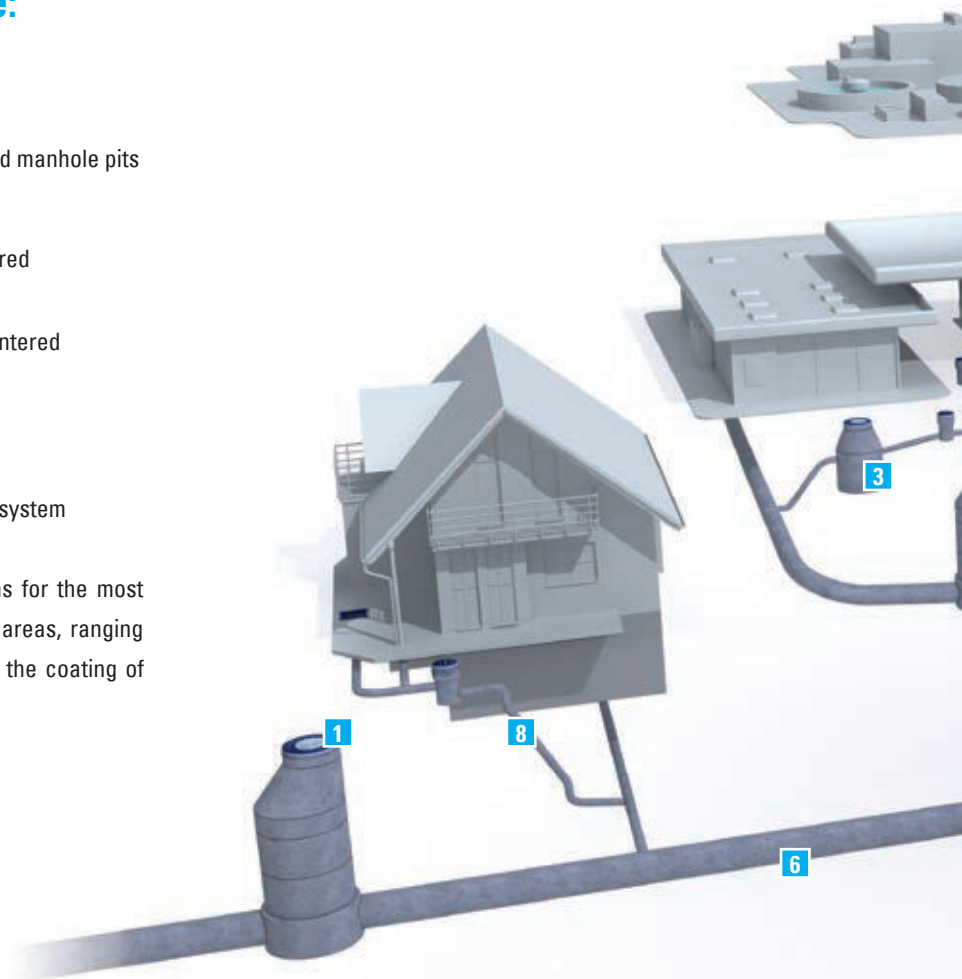
for practice-oriented technologies and optimised product properties that allow an efficient work flow while ensuring successful results to the maximum extent possible.

In addition to a widespread and comprehensive service network ombran can offer you a seamless package for your maintenance tasks. Everything from damage analysis to individual planning to the execution of the renovation work; our technical consultants support you, when and where you need us. Take advantage of the many years of experience that makes ombran a leading system provider throughout Europe.

### ombran offers you solutions for the:

- 1** Renovation of manholes
- 2** Renovation of drainage pump stations
- 3** Renovation of separators for light liquids and manhole pits
- 4** Renovation of grease traps
- 5** Renovation of sewer pipes that can be entered for inspection
- 6** Renovation of sewer pipes that cannot be entered for inspection
- 7** Renovation of industrial sewer systems (with especially tough conditions)
- 8** Renovation of house connecting sewerage system

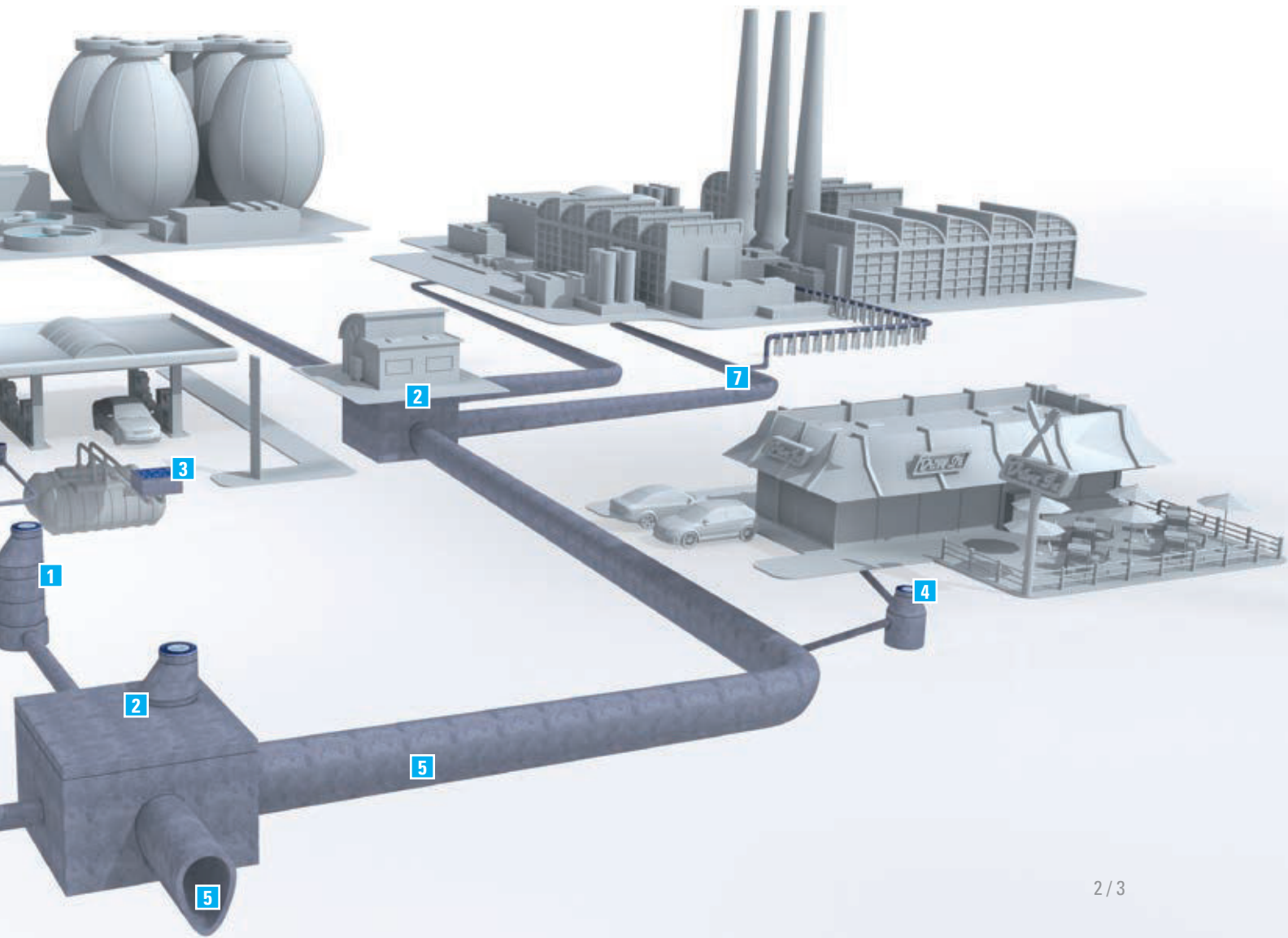
The ombran range of products offers solutions for the most varied tasks within each of these application areas, ranging from the sealing off of local infiltrations up to the coating of entire structures over a large area.





# Contents

	Page
<b>Sealing by Mineral-Based, Fast Setting Mortars</b> .....	4 / 5
<b>Sealing by Reaction Resins</b> .....	6 / 7
<b>Mineral-Based Reprofilng and Coating Systems</b> .....	8 / 9
<b>Automated Manhole Rehabilitation</b> .....	10 / 11
<b>Hybrid-Silicate Coating Systems</b> .....	12 / 13
<b>Short Liner Systems</b> .....	14 / 15
<b>Cured In Place Pipe (CIPP) Liner Systems</b> .....	16 / 17
<b>Robot Systems</b> .....	18 / 19
<b>Rehabilitation of Manhole Tapers and Cover Frames</b> .....	20 / 21
<b>Service and Consultation</b> .....	22 / 23



ombran IW

ombran W





## Sealing by Mineral-Based, Fast-Setting Mortars

Infiltration to our sewage networks are a common kind of damage. These leakages are not only a problem for sewage purification. Due to the prevention of an adequate bond between substrate and protective system, local and laminar infiltration even endanger the sustainability of whole rehabilitation measure. In these cases a quick and uncomplicated pre-sealing is necessary to allow an easy progress of rehabilitation works.

### Solution for

- Pressurised water
- Leaking manhole taper joints
- Laminar soaking areas
- Voids and disruption



### Your advantages

- Sealing even without any machine technology
- Quick and uncomplicated application
- Short curing times due to high-reactive cements

Laminar soaking areas can be sealed with fast-curing mortars of ombran. Hereby the basis for a long-lasting rehabilitation result is given. In case of local infiltration and pressurised water the ombran plugging mortar is the best solution. Make use of the extremely short curing times as well for reprofiling measures of manhole taper rings or for sealing of pipe penetrations.



MC-Fastpack 2700

MC-Fastpack SewerInject

MC-Fastpack PowerTool

MC-Injekt 2033





Cracks within sewage structures are common reasons for infiltration. In dependence of the severity of the damage, the structural safety of the whole construction might be at risk. In these cases a sealing and stabilizing injection of reaction resins is necessary. High reactivity and herewith the rapidness of these resins is especially important. In addition the suitability of the whole system, consisting of reaction resin and injection pump, for cramped areas within sewage structures is of extreme importance.

## Solutions for

- Dry cracks
- Water- and pressurised water-bearing cracks
- Leaking manhole taper joints
- Leaking pipe bushings and connections
- Cramped space available



## Your advantages

- Compact injection systems
- Quick reaction even under heavy infiltration
- Cost-efficient cartridge system for small injection tasks
- One- and two-component injection technology
- Reduced material consumption

For a sealing injection in case of extensive rehabilitation tasks, some high-reactive elastomer and duromer resins are available for you. They are to be applied using one- or two-component injection pumps. Especially in poorly accessible areas or under cramped circumstances, where extensive equipment effort does not make sense from the economical point of view, the compact cartridge system MC-Fastpack is well established.



ombran MHP

ombran MHP 15

ombran MHP rapid

ombran HB

ombran R





# Mineral-Based Reprofilng and Coating Systems



The success of any renovation measure particularly depends on the strict observation and the thorough carrying out of the single steps of procedure. Reprofilng will be necessary if the substrates are very uneven or broken or if the concrete covering is missing. First of all, a substrate that is suitable for coating is produced. The subsequent coating with ombran protects the structure against the effects of the atmosphere within sewers.

## Solutions for

- Manholes
- Accessible sewer mains
- Inspection manholes
- Drainage sumps
- Concrete and masonry substrates
- Reprofilng of separators
- Reprofilng of pump stations



## Your advantages

- DualPerformance Systems (reprofilng and coating in one product)
- Systems that are highly resistant to sulphates
- Easy to apply
- Long-term protection in areas involving municipal wastewater and sewage (pH 3.5 – pH 14)
- High degree of security due to very good adhesion to the substrate
- Permanently resistant to water through the use of high-performance cements
- Low degree of porosity due to optimised water-cement ratios
- Short return to service times due to fast setting mortars

Depending on the requirements and the extent of the damage, it is possible to renovate with certainty concrete or masonry structures to handle waste water and sewage by using the DualPerformance Systems. Mineral cement-based systems using high-performance grades of cement ensure the long-term success of your reprofilng and coating work. The use of binders that are free of tribasic calcium aluminate prevents sulphates from reacting with an expanding effect.



MRT Blasting Unit

MRT Spinning Unit

ombran MHP-SP





# Automated Manhole Rehabilitation

A cost efficient reprofiling and coating of large-scale areas within sewage systems is only possible by automatic application. In dependence of the type of construction the usage of spraying or spinning technology is common. Such an application of cement-bound products makes high demands on the flowability of the mortar and requires longer pot life.

## Solutions for

- Large scale reprofiling and coating of sewage construction
- Rehabilitation of a large quantity of manholes within a short spell
- Rehabilitation of particularly deep manholes, additionally complicated by bad accessibility



## Your advantages

- Cost effective application
- Highly compacted mortar matrix
- Reproducible rehabilitation result
- Precise uniform layer thickness

Especially manholes with round or square geometry can be renovated in a cost-effective and reliable manner by the spin- and sprayable DualPerformance-System of ombran and the unique MRT-technology of HDT GmbH. The MRT Blasting Unit enables an ideal substrate preparation. A homogeneous coating within a short spell can be applied by MRT Spinning Unit. In case of highly strained constructions even the hybrid-silicate coatings of ombran can be applied with a modified MRT Spinning Unit.

ombran CPS

ombran FT





# Hybrid-Silicate Coating Systems

A conventional mineral-based cement-bound coating is not adequate in the case of components that are highly stressed, as in separators for light fluids or grease. The same applies to attack by biogenic sulphuric acid corrosion (BSAC). The cross-linked hybrid-silicate technology from ombran is used to provide long-term protection for such units. The dense matrix also resists the lowest pH values or attack by aromatic organic compounds.

## Solutions for

- Manholes attacked by BSAC
- Sewer pump stations attacked by BSAC
- Sewers attacked by BSAC
- Grease traps
- Separators for light liquids
- Bund storage areas for light liquids and chemicals



## Your advantages

- High resistance to chemicals
- Resistant to impact and scratches
- Allows the diffusion of water vapour
- Sealing of capillaries
- Can be applied by hand or spraying
- Conductive version available

The cement-free hybrid-silicate coating systems from ombran also offer optimal renovation results also in the case of structures suffering from rising damp. In particular, the ability to allow the diffusion of water vapour ensures that the renovation will be long lasting.

Konudur 250 OM-PL Sommerharz (summer grade)

Konudur 250 OM-PL Winterharz (winter grade)





## Short Liner Systems

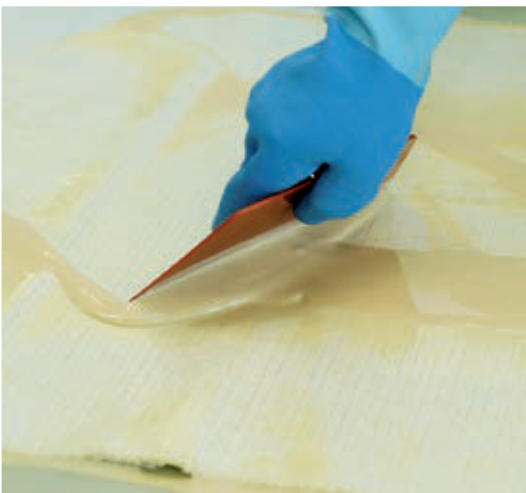
The damage found does not always require complete renovation of the pipe. Damage that is only local can be repaired specifically by using the short liner process. The sealing and stabilisation of the damaged section is the primary concern. In the event of severe infiltration and damage to the pipe a short liner may also be necessary as a preparatory measure for a comprehensive renovation using the CIPP liner process.

### Solutions for

- Leaking joints
- Flaking
- Cracks
- Missing wall sections

### Your advantages

- Hardens quickly for a long processing time
- Organic mineral resins that are highly resistant to chemicals
- Corrosion-resistant E-CR fibreglass complexes
- Improved ring stiffness due to high E-modulus
- Variable hardening times according to the amount of accelerator used
- Safer cutting to length through compact fibreglass complexes



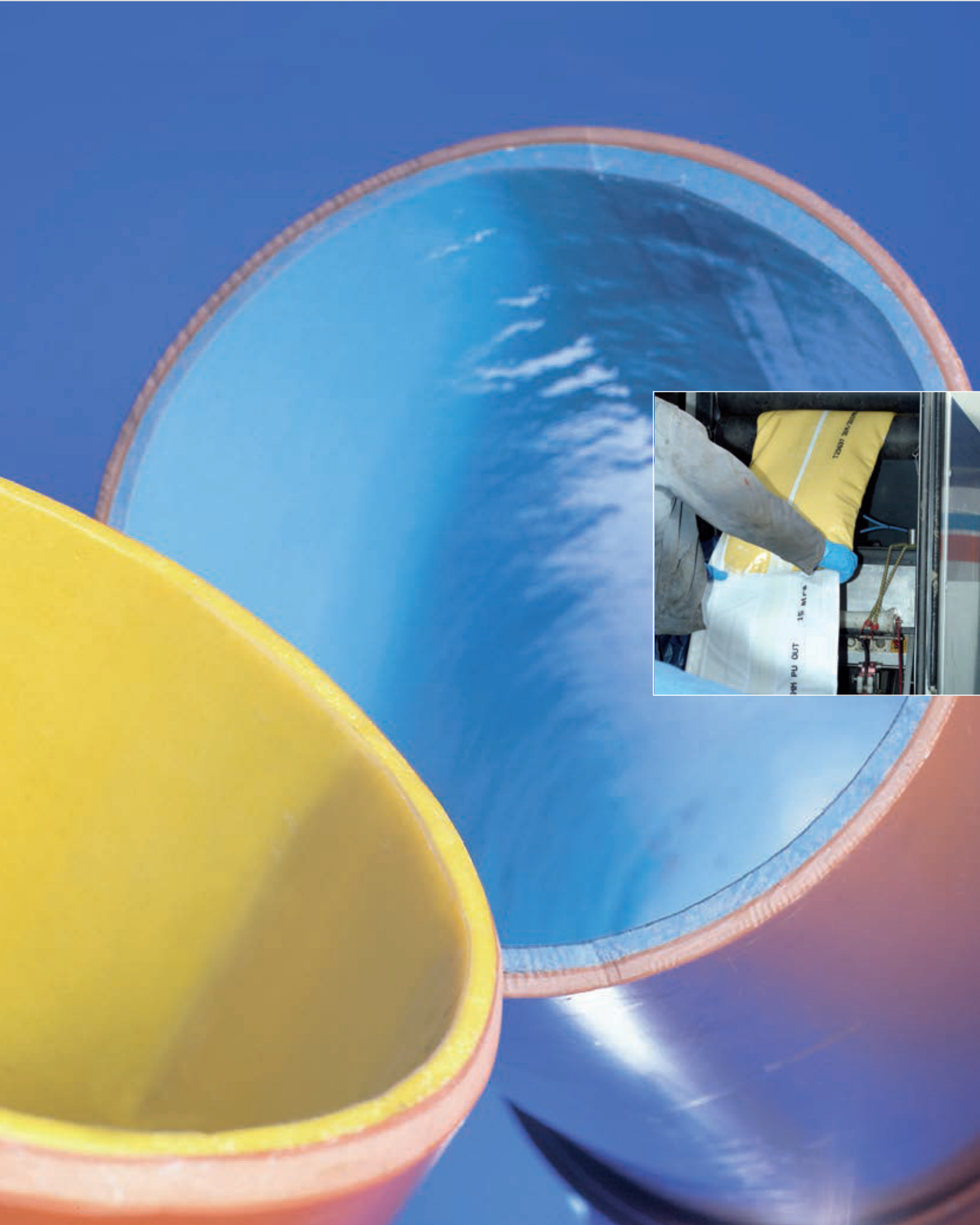
It is precisely in the field of short liner systems that variable processing and hardening times are required, since various diameters and lengths need to be installed. Matched systems whose hardening can be controlled individually are available both for summer and for winter use at low application temperatures. This is possible due to the use of specially formulated organic mineral resins.

Konudur 102

Konudur 160 PL

Konudur 160 PL-XL

Konudur 170 TL-NV





# Cured In Place Pipe (CIPP) Liner Systems

When renovating drainage pipes that cannot be entered for inspection, CIPP is often the most economic solution, since no trenches need to be dug. Various kinds of damage such as flaking, leaking joints, cracks and penetration by roots into the cross-section of the pipe can be dealt with in a secure and permanent way with these renovation methods.

## Solutions for

- House connecting sewer pipes
- Downpipes
- Inaccessible sewer pipes
- Industrial sewer pipes



## Your advantages

- Pigmented resins to control impregnation
- Liner able to cross bends due to the flexible carrier materials
- Thermosetting resins with high chemical and thermal resistance
- Easy to use at the construction site due to variable application and hardening times
- No ring gaps since it seats flush on the old pipe
- Certified to be environmentally compatible with the groundwater

Especially capable systems are required in cases with very difficult access such as the renovation of land drainage pipes. In addition to using carrier materials that cross bends, the thermosetting resin systems must be matched with respect to viscosity and hardening time. Here too ombran offers customised system solutions.

Konudur 134 RH/K-S

Konudur Robopress 07

Konudur Robopox 10

Konudur Robopox CI

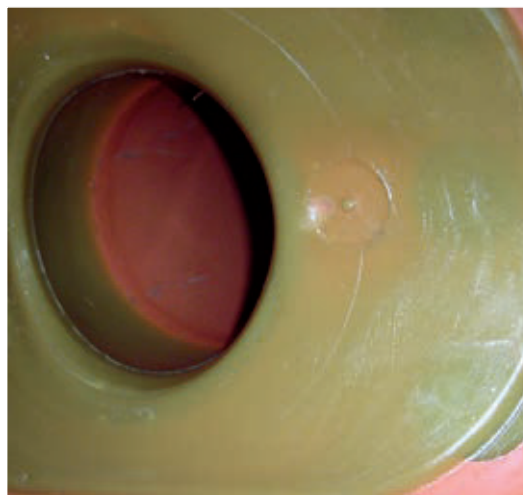
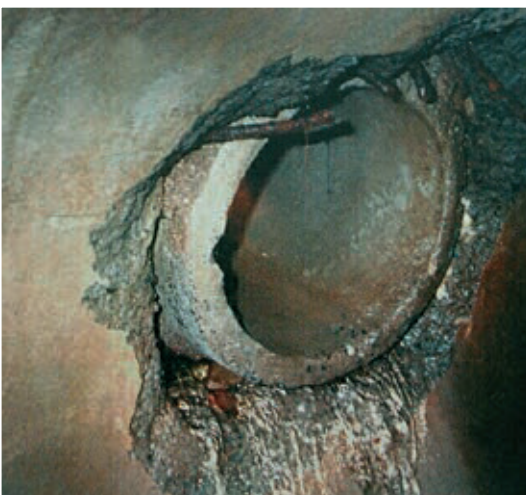




When renovating sewer pipes that cannot be entered for inspection, robot systems can be used as well as carrying out repairs by using the short liner system. Using robot technology, damaged areas can be grouted either by mineral or reaction resin systems from ombran.

### Solutions for

- Leaking joints
- Leaking laterals
- Caulking of cracks
- Injection of sockets and sleeves
- Injection in the event of flaking



### Your advantages

- Short stripping times due to systems that harden quickly
- Easy application
- Reaction resins matched to all the current robot systems
- Superior adhesion to the substrate
- Reaction times can be set as required

Renovation by robotic systems places stringent demands on the processing of the injection materials. The various robotic procedures demand suitably matched product systems. The developers of ombran have worked closely with the machine manufacturers to ensure optimal results.



ombran FG plus

ombran FG rapid

ombran flex



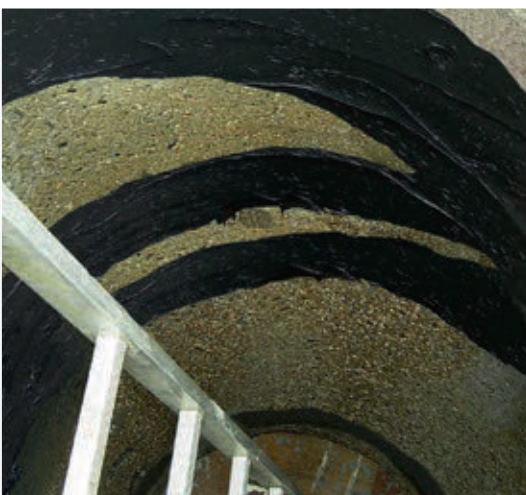


# Rehabilitation of Manhole Tapers and Cover Frames

The continuous repair rate related to manhole covers within the last years demonstrates these exposed parts of manholes to be attacked by extreme loads, caused by increasing traffic volume. Those defects get visible by depressed manhole covers; shafts and manhole tapers get damaged, too. The resulting cracks lead to leakages that allow pollutants as de-icing salts to unhamperedly penetrate the inner concrete matrix. As well for these kinds of damages, ombran serves you with product systems for a long-lasting reconditioning.

## Solutions for

- Depressed manhole frames
- Filling measures of structural elements
- Permanent flexible coating of manhole tapers
- Permanent flexible sealing of taper ring joints



## Your advantages

Due to an extremely high flowability and a minimised heat development during hydration process the ombran grouts are particularly easy to handle. Furthermore the permanence under loads by frost-thaw and de-icing salts is approved in accordance to CDF/CIF test procedure.

The flexible coating for manhole tapers from ombran provides a permanent sealing and long-lasting concrete protection even at low temperatures. Due to its high chemical resistance, this coating is perfectly suitable to complement the hybrid-silicate coatings of ombran.

Object Consulting

Training

Application Engineering

Research

Development





## Service and Consultation

Carrying out protective and maintenance work on structures that are part of the underground infrastructure is an involving complex tasks. Experience and know-how are required here. For decades now the name ombran has stood for technically sophisticated materials and system solutions. As a technical department within a company that is active internationally, we provide consulting for our partners in many countries around the world. We capably support planners, builders and applicators in the implementation of their projects, in person. You can find us where you need us: in the planning office and on your construction site.

### The comprehensive package

- Consultation at all stages from planning to actual execution
- Inspections of the object
- On-site service
- Technical support
- Support in condition analysis
- Providing detailed solutions
- REACH evaluation

### Intensive know-how transfer

- Training courses for applicators
- MC forum renovation dialogue
- International symposia

An intensive transfer of know-how between planners, technical operators and the specialists of ombran ensures the professional application of the product technologies for permanent results. Due to decades of international experiences, based on various individual scopes of work and ongoing research and development, ombran provides reliability for design and application.



**ombran**

## Competence and quality

With ombran you get comprehensive system solutions for the fields of sewer and manhole maintenance. The mature product systems have proven their worth over decades through their high quality and good economy.

- Renovation of sewers
- Renovation of manholes
- Liner technology
- Systems for the application of robots
- Sealing systems
- Pipe cladding and covering

### Headquarter

MC-Bauchemie Müller GmbH & Co. KG  
Infrastructure, Industry and Buildings  
Am Kruppwald 1-8  
46238 Bottrop  
Germany

### Regional Office

MC-Bauchemie Middle East L.L.C.  
Jebel Ali Industrial 1, Dubai  
United Arab Emirates

Phone: +971 4 880 4429  
Fax: +971 4 880 4439

info.uae@mc-bauchemie.com  
www.mc-bauchemie.com



**BE SURE. BUILD SURE.**

Get straight to  
the MC website:  
[www.mc-bauchemie.ae](http://www.mc-bauchemie.ae)

