

Main-to-House Sewer Lining System

TRENCHLESS PIPE REHABILITATION WITH THE MTH METHOD

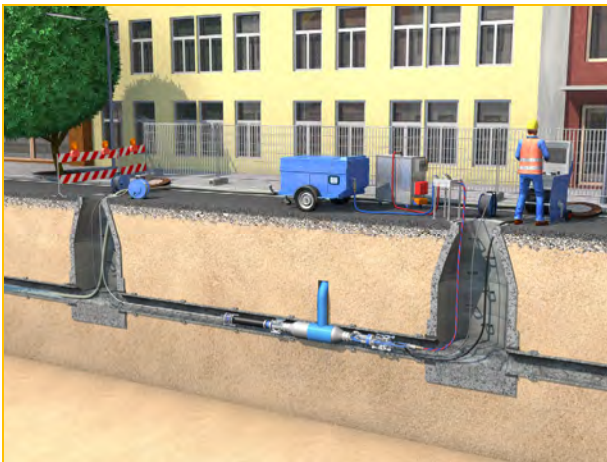


1.0 What is the epros® Mth system?

Trelleborg Pipe Seals Duisburg is among the leading specialist companies in innovative technologies for the upkeep of sewer systems.

The brand name epros® DrainSystems stands for more than 20 years of experience, continuous research and further development of technical systems for modern trenchless repair of pipelines in sewer systems, buildings and industries.

The epros® DrainMth system is both a pipe repair device and a method for the trenchless rehabilitation ("no-dig" application) of lateral connections and lateral pipes. The specific feature of this system is the capability of sealing and stabilizing the house connection pipes from the main pipe direction into the lateral. There is no need to make an access pit or hole inside or outside the building.



In this system, a flexible tube (liner) made of a corrosion-proof polyester fibre, coated outside, is wetted inside with a reaction resin (two component epoxy).

It is then positioned in the main pipe with the help of the epros® DrainMth Packer and then inverted by compressed air, from the main/lateral interface into the lateral connection pipe to be relined.

Thus the film-coated surface is turned inward for contact with the sewer. The resin-wetted (previously inner) liner surface is turned

inside-out and pressed against the host pipe wall in a form fit and maintained in this position by compressed air until the resin is cured completely.

The resin-impregnated liner in the pipe section is cured with steam.

epros® epoxy resin systems are specifically designed for long pot times but shortest cure times while providing very good mechanical properties.

After complete cure of the reaction resin, the liners form a tight form fit against the host pipe wall. The pipe-in-pipe system forms a unit with the host pipe.

It provides a sealing barrier against infiltration and exfiltration and fully meets the future hydraulic and structural stability requirements. The nominal bore of the pipe is reduced to a slight extent only.

Sealing the main-to-house interface is part of the lining process with the epros® DrainMth System. For this purpose, the system uses a specific Mth-liner.

A final CCTV inspection is performed to document the renovation result. The tightness test is performed according to EN 1610 or its national standard equivalent.

The epros® DrainMth System is applied in a differentiated manner and adjusted to the specific requirements and local conditions of the rehabilitation job.

Before starting a given CIPP lining job, it is important to check and make sure that the system fits according to the intended purpose, if necessary, with the help of the technical support department of Trelleborg Pipe Seals Duisburg and/or an expert acting for the client or project owner.

Benefits at a glance

- **Clean Technology:**

Trenchless technology. No VOC's, no styrene, no environmental or health issues

- **No admission restrictions**

Rehabilitation system from the main sewer to the house. No need to enter private property. No need to make an access pit or hole inside or outside the building.

- **Wide operating range**

rehabilitation length: up to 30 m / 100 ft
line distance between access manhole and lateral junction: up to 150 m / 492 ft

- **Current application areas**

Packer Type I

Mainline DN 200 – DN 225 (8" – 9")

Lateral DN 100 – DN 200 (4" – 8"9

Connection angle: 30° – 90°

Packer Type II

Mainline DN 250 – DN 350 (10" – 14")

Lateral DN 100 – DN 250 (4" – 8"9

Connection angle: 30° – 90

- **Value for money:**

Fast installation – due to steam cure - allows multiple installations per day

- **User-friendly:**

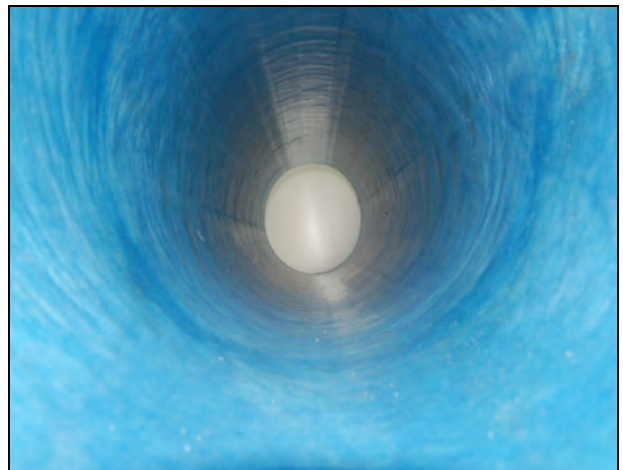
Packers bendable. Easy to bring into position and to handle. liner material are easy to impregnate.

Appropriate resin systems are designed to have both comfortable pot times and quick cure times as soon as the chemical reaction has been started. This reduces time pressure, increases work security and leads to better product quality.

- **Quality and Sustainability:**

No shrinkage.

Sustainable results due to excellent mechanical properties.



2.0 Schematic View



3.0 Technical Components



Basic Components


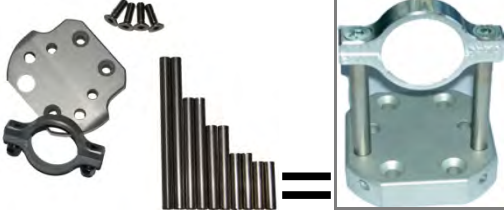
- Device for dosing and mixing the resin system, e.g. eproMix14 resin mixing unit
- Electrically or manually operated epros® Impregnation Tables
- epros® Vacuum Unit
- epros® DrainMtH Control Unit with 150 m / 492 ft wire length
- epros® DrainMtH Packer (Type I, Type II, Type III, Type IV)
- epros® DrainMtH wheelset “inversion side”
- epros® DrainMtH wheelset “pivot side”
- epros® DrainMtH camera
- epros® DrainMtH rotary drive
- epros® DrainMtH packer calibration hose
- epros® DrainMtH inversion hoses – diverse lengths
- epros® DrainMtH inversion hose end fitting
- epros® Steam Hoses 1“
- epros® DrainMtH pull and retaining ropes
- epros® DrainMtH liner control rope




Technical Components For Steam Cure


- epros® SteamGen M150 steam generator
- epros® Steam Mixing Lance for manual control
- epros® Temperature Measuring Unit, digital
- epros® Steam Hoses 1"
- epros® Precision Pressure Gauge
- epros® Steam Outlet Valve

3.1 Basic equipment for rehabilitation [control unit]

Art. No.:	Description	Product illustration (actual appearance may vary)
233133	<p>MtH control unit (German) The MtH control unit controls the compressed air and the vacuum for the MtH packer, the motor and the camera.</p> <p>The unit includes a high-quality monitor and a keyboard for data input as well as a video output (keyboard and programming in the German language) Other languages available on request.</p> <p>MtH Hose Reel with rotary feed through incl. camera cable and all supply lines</p> <p>Equipment:</p> <ul style="list-style-type: none"> • combined Air/electricity/video-hose package (150 m) • multi-function plug for packer connection • colour camera (PAL) with LED lights sapphire crystal camera head for LCR packer • fill and release valve for nitrogen <p>Components are sold separately on request (see Spare Part Catalogue)</p>	 <p style="text-align: center;">Hose package with camera</p>
147100	<p>MtH camera bracket set</p> <p>incl. assembly plate, camera assembly bracket and screws. Fixing rods 40, 60, 80, 110 and 170 mm (DN 200 – DN 450)</p>	





3.2 Basic equipment for rehabilitation [packer]

1	2	3	4	5	6	7	8	9	10
									
					MtH Packerbase with calibration hose				
1 Inversion hose Endelement with wheel set 2 Inversion hose Endelement (max. Length 30 Meter) 3 MtH set bow and sealing (for Inversion hose) 4. Wheel set „Inversionside“ 5 Calibration Hose					6. Camera on Camera bracket 7. MtH Rotary Drive 8. MtH Steam nozzle swivel 9. Wheel set swivel side 10. Connection for steam hose 1“				


Description	Product illustration (actual appearance may vary)
MtH Packer – Type I – Base (without Calibration hose) DN 200 – DN 225 (main pipe) DN 100 – DN 200 (lateral pipe) MtH Packer – Type II – Base (without Calibration hose) DN 250 – DN 350 (main pipe) DN 100 – DN 200 (lateral pipe)	See above
MtH Inversion hose with couplings and protection hose . For Packer Type I DN 200 – DN 225 (in different lengths) For Packer Type II DN 250 – 350 (in different lengths)	 [Image with wheelsets]
MtH Bow and sealing Set for Inversion hose	

Description	Product illustration (actual appearance may vary)
<p>MtH Inversion Hose Endelement with wheel set DN 200-225 (Packer Type I)</p> <p>MtH Inversion Hose Endelement with wheel set DN 250-350 (Packer Type II)</p>	
<p>MtH wheel set „Inversion side“ for Packer type I.</p> <p>MtH wheel set „Inversion side“ for Packer type II</p>	
<p>MtH wheel set „swivel side“ Packer type I.</p> <p>MtH wheel set „swivel side“ Packer type II</p>	
<p>MtH Steam nozzle swivel for Packer type I and type II incl. coupling for steam hose 1”</p>	
<p>MtH / LCRS Rotary Drive – extra strong for exact long distance positioning,</p> <p>The MtH-packer can be turned to the left and the right with a rotation of 360°.</p>	
<p>Reel with galvanized steel wire rope ø 3mm / 300m</p>	

4.0 Packer Conversion and calibration hose repair

Description	Product illustration (actual appearance may vary)
<p>LCR repair set for calibration hose (in plastic systainer):</p> <ul style="list-style-type: none"> • Super glue (tube) • All-purpose cleaner (bottle) • LCR silicone patches (190 x 280 mm) • Silicone glue • (Tube with roll-up enhancing agent and spray tip) • Cleaning rag (380 x 380 mm) 	
<p>MtH Calibration hose for Packer type I Main pipe DN 200 – DN 225 lateral pipe DN 100 – DN 225 Angle 45° oder 90°</p> <p>MtH Calibration hose for Packer type II Main pipe DN 250 – DN 350 lateral pipe DN 100 – DN 225 Angle 45° oder 90°</p>	
<p>MtH Packer basket Type Standard (for unrepaired lateral pipes)</p> <p>For Packer type I For Packer type II</p>	
<p>MtH Packer basket Type H (half of height) (for repaired lateral pipes)</p> <p>For Packer type I For Packer type II</p>	


5.0 Tool boxes for repairs and Packer conversion

5.1	Basic toolbox	
	<p>LCR / MtH Basic Tool Box compl.</p> <p>Basic equipment for rehabilitation with epros®MtH, epros®LCR-S or epros®LCR-B system used in connection with a particular supplementary kit</p> <p>Alu box</p>	
5.1.1	MtH supplementary kit for the basic toolbox	
	<p>This kit contains MtH specific small spare parts, e.g. couplings, screws, seals, air hoses and a combination wrench set.</p>	<p>For details and article numbers pl. refer to system catalogue</p>





Easy Service for you!



Now even easier: With only one basic toolbox or a basic integration box for both the LCR systems and the MtH System you have the best equipment and the right supplementary system set. You can have on hand everything you need on the work site!

5.2	Packer conversion tool box	
	<p>(Basic equipment for packer conversion of MtH-, LCR-S and LCR-B system used in connection with respective supplementary kit)</p> <p>Plastic box (Systainer type IV)</p> <p>Dimensions approx. 600 x 400 x 240 mm</p>	
5.2.1	Supplementary kit for MtH Packer conversion	
	<p>Spare parts especially for the LCR-S Packer conversion requirements</p>	<p>For details and article numbers pl. refer to system catalogue</p>

6.0 Resin System for the Mth rehab system

Description	Product illustration (actual appearance may vary)
 <p>epros®EPROPOX HC120 Pot life 120 min (25 °C) Cure time 90 min (60°C hot water)</p> <p>For more technical details pl. refer to Technical Data Sheet For Package sizes and Art. Numbers or prices pl. refer to price catalogue)</p>	

7.0 Mth- liner and Liner End Cap

Description	Product illustration (actual appearance may vary)
<p>Mth-Basic Liner multidimensional for the main!</p> <p>For main pipes DN 100 – DN 600 For laterals DN 100 – DN 200 45° or 90°.</p> <p>Different lateral lengths (from 1 m up to 30 m)</p> <p>Material as described above.</p>	
<p>Calibration hose Heavy Duty DN 100 [orange] 10 m for Liner End Cap production</p>	
<p>Calibration hose Heavy Duty DN 125 [orange] 10 m for Liner End Cap production</p>	
<p>Calibration hose Heavy Duty DN 150 [orange] 10 m for Liner End Cap production</p>	
<p>Calibration hose Heavy Duty DN 200 [orange] 10 m for Liner End Cap production</p>	

Further Information available :

- ✓ <http://www.trelleborg.com/de/Epros/Produkte/epros-Drain-MtH/>
- ✓ Video: <http://www.youtube.com/watch?v=kT7unf8vP7g>
- ✓ Case studies
- ✓ MtH System catalogue
- ✓ Current price catalogue
- ✓ Technical Data Sheets
- ✓ Method statement (handed over with training course)



Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative engineered solutions accelerate performance for customers in a sustainable way. The Trelleborg Group has local presence in over 40 countries around the world.

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