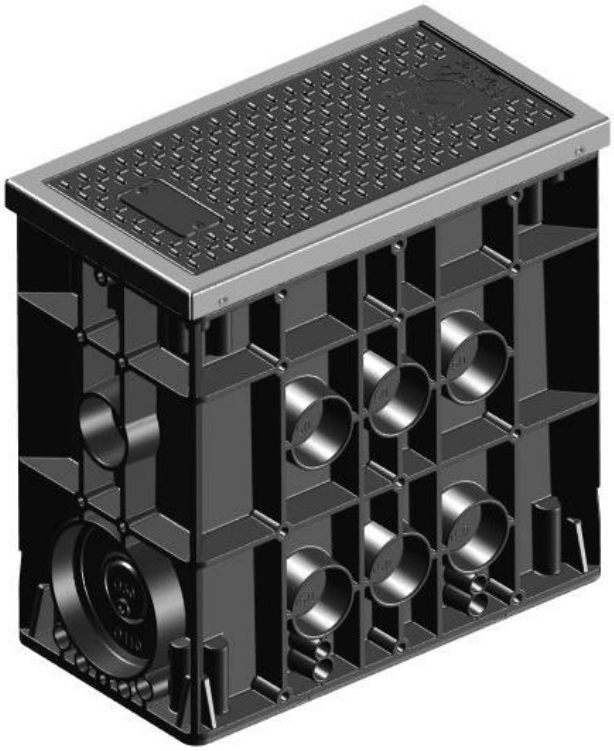
Langmatz

Installation Instructions for Small Manhole

EK437



Contents

English

1 General information

These instructions are supplied with the equipment.

Caution!
Any person involved in the installation, operation and repair of the product must first read, understand, and follow these instructions. We accept no liability for damage and operational malfunctions caused by failure to comply with these instructions.

In the interest of further development, we reserve the right to change individual assemblies and accessories as considered necessary for enhanced safety and performance improvements, while preserving the main features.

2 Safety information

“Small manholes” are designed for stationary use underground as - cable draw manholes,

- telecommunication distribution points / fibre distribution points,
- energy distribution systems,
- systems to accommodate electronic components.

When the “small manhole” is used for electronic components, it is not suitable for use in potentially explosive atmospheres.

The product complies with the state-of-the-art technology at the time of printing and is delivered in an operationally safe condition. Unauthorised modifications, particularly to safety-related parts, are prohibited.
Langmatz GmbH warns against the misuse of the product. Only allow qualified electricians / optical fibre specialists to work on electrical or electronic fixtures.

The operator is responsible for installing, operating and maintaining the fixtures.

The operator is responsible for the following:

- Preventing danger to the life and limb of users and third parties.
- Ensuring operational safety.
- Preventing downtime and environmental impact caused by incorrect handling.
- Ensuring that protective clothing is worn when working with or on the product.

Use of a damaged product is prohibited. Please contact the hotline (see section 12).

Caution!

Comply with applicable occupational safety and environmental protection regulations during installation, operation, maintenance, and repair.

3 Product description

The small manhole EK437 (polycarbonate manhole) with clear dimensions (CD) of 140 x 330 mm / 400 mm high, is primarily used in rough terrain and also on public streets and roads. It features ducts with predetermined breaking points (Ø10 / Ø15 / Ø50 / Ø110 mm), which can be used for the installation of optical fibre cables etc. The cover is also made of plastic with a locking mechanism.

3.1 Dimensions

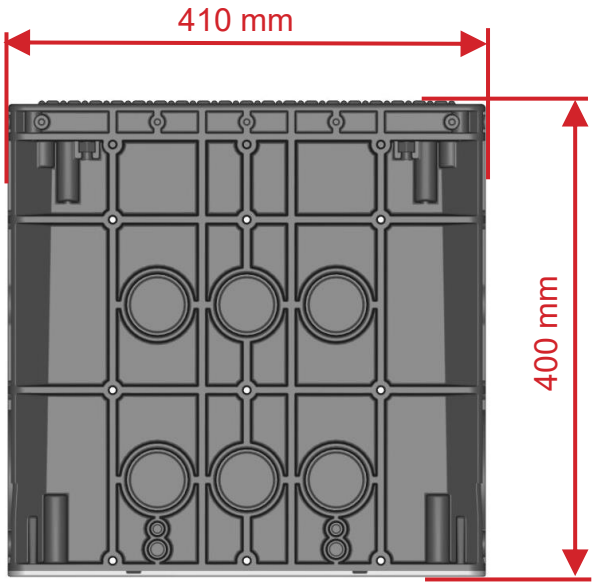


Fig. 1

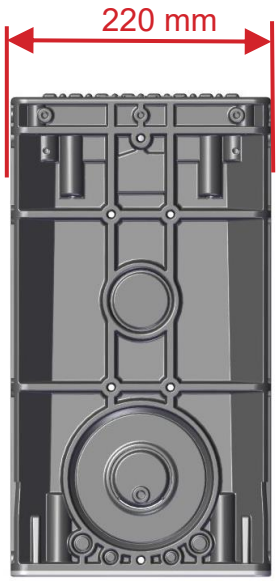


Fig. 2

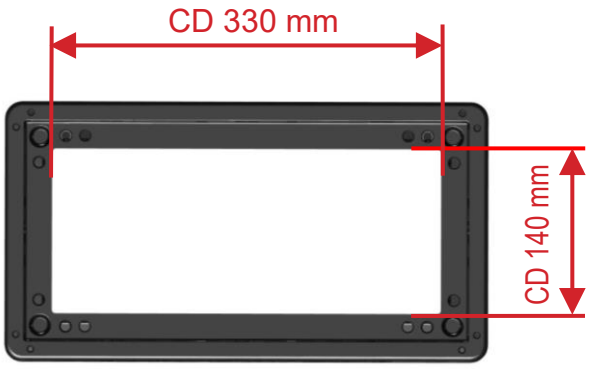
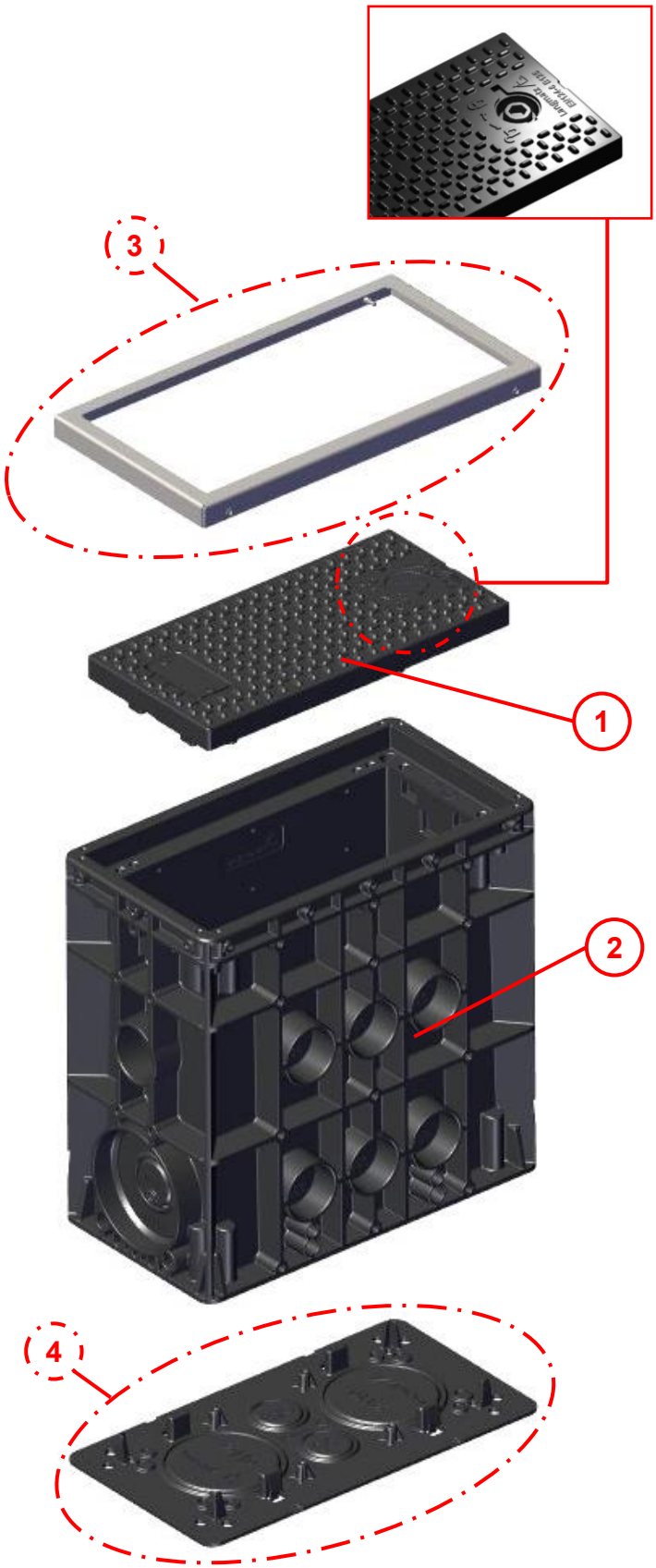


Fig. 3

3.2 Technical data

Dimensions L x W x H:	410 x 220 x 400 mm
Total weight	Approx. 7.2 kg
Manhole body material:	Polycarbonate (PC)
Manhole cover material:	Polypropylene (PP) / load class **B 125**
Manhole closure versions:	90° locking mechanism Type: “Colt–Telenet” / “LIC-Lock” / “Hex socket and external hex”

4 Package includes



Item 1 1x cover
- plastic
- load class **B 125**
- with locking mechanism

Item 2 1x manhole body

Optional:
Recommendation when installing in vehicle traffic areas:

Item 3 1x edge protection frame
- galvanised steel (see section 8 - Accessories)

Optional:

Item 4 1x base plate
- plastic (see section 8 - Accessories)

Fig. 4

4.1 Required tools (not included)

No.	Designation	Use
1	Key (see section 8 Accessories).	Locking mechanism type: - Colt-Telenet - LIC-Lock - hex socket and external hex
2	Hammer	for predetermined breaking points
3	Slotted screwdriver	to open the: - cover of the small manhole - cover locking mechanism
4	Splint driver	for smaller predetermined breaking points

Fig. 5

The following tools are needed to open the cover depending on the locking mechanism of the manhole cover:

Hexagonal head	Hexagonal socket head	LIC-LOCK	COLT / TELENET /OTC
AF 24	AF 14	Special tool	

5 Foundation pit base

5.1 General

The manhole must be installed by a specialist company.
Assess the ground conditions before preparing a load-bearing foundation pit base.

- The manhole must be installed in “non-cohesive” to “cohesive” mixed soils.

- Group G1 to G3 soil types as per ATV-DVWK-A (German Association for Water, Waste Water and Waste) 127, and/or soil groups GE, GW, GI, SE, SW, SI, GU, GT, SU, ST, GU*, GT*, SU*,ST*, UL and UM as per DIN 18196.

5.2 Preparing the foundation pit base

When preparing the foundation pit, comply with the following documentation from the Gütegemeinschaft Leitungstiefbau e.V. (Underground Cable Line Construction Quality Association):

“Procedural instructions for working in underground cable line construction”.

Ensure that the position and depth of the foundation pit base matches the installation situation.
Make sure that the upper edge of the small manhole cover lies completely flush with the surrounding ground level and does not project.

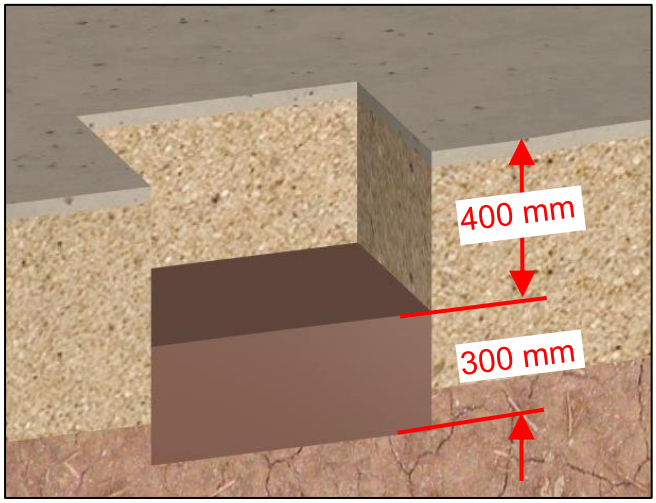


Fig. 6

Situation “A”
For pedestrian areas:

- Use an underfill/bottom layer at least 300 mm thick.
- The underfill/bottom layer must consist of “non-cohesive” soil (group G1 soil types as per ATV-DVWK-A127).
- Layer and compact the underfill/bottom layer to $D_{Pr} \geq 98\%$.

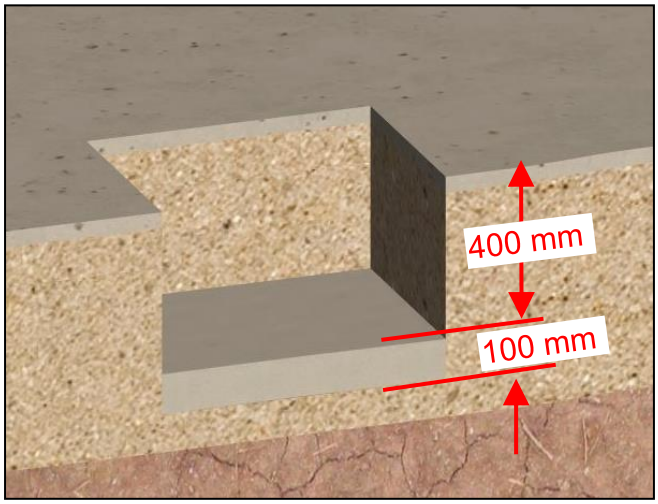


Fig. 7

Situation “B”
For vehicle traffic areas:

- Compact the pit base according to the requirements.
- With group G1/G2 soil types as per ATV-DVWK-A 127 (soil groups GE, GW, GI, SE, SW, SI, GU, GT, SU, ST as per DIN 18196):
- Use a concrete load-bearing layer at least 100 mm thick (tamped concrete, strength class ≥ C8/10).

6 Installation of the small manhole

6.1 Insertion into the foundation pit

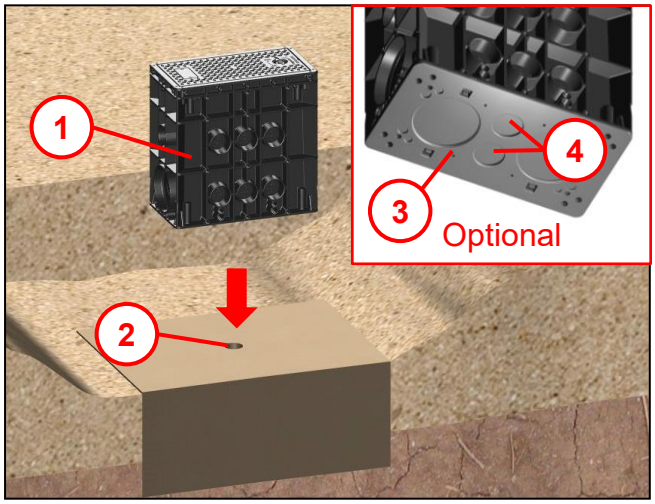


Fig. 8

- Place the small manhole **without** the base plate **(1)** onto the base of the foundation pit.
- **Drainage:**
  Langmatz recommends connecting a water pipe DN 50 **(2)** to drain any water that has penetrated into the small manhole.
- **With installations with optional base plate (3):**
  In this case, a DN 50 drainage hole can be drilled **(4)**.
  - Break through the predetermined breaking point.

6.2 Opening the locking mechanism of the cover

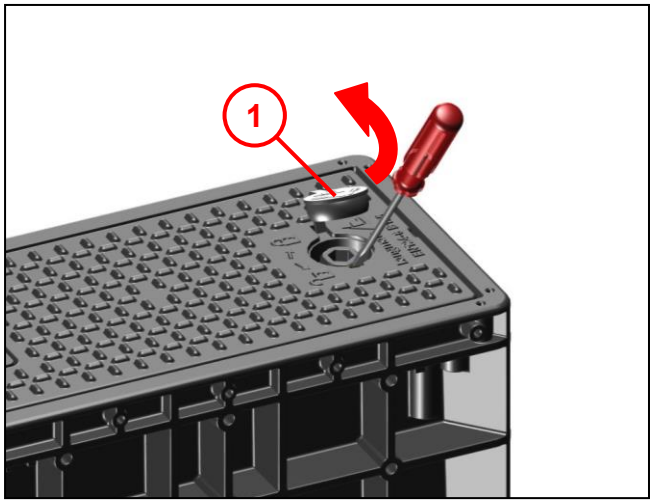


Fig. 9

- Position a screwdriver at the recess provided and snap open the cover **(1)**.

6.3 Opening the cover

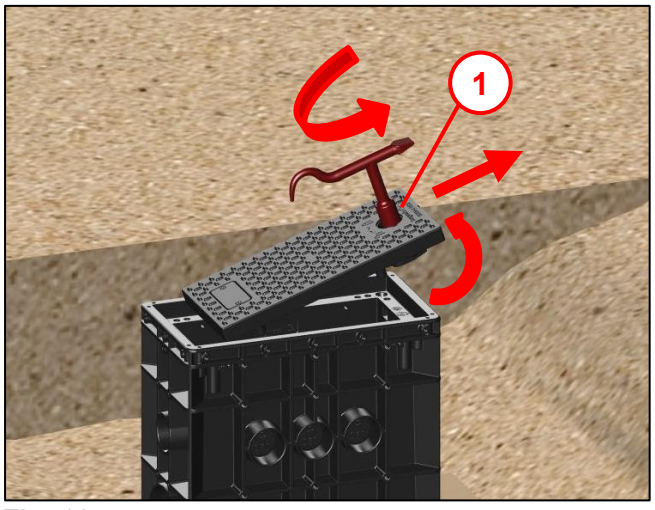


Fig. 10

- Use the appropriate key to open the manhole cover, by turning the lock catch **(1)** to the “OPEN” position (counter-clockwise as far as the end stop).
- Pull out the cover to the side.

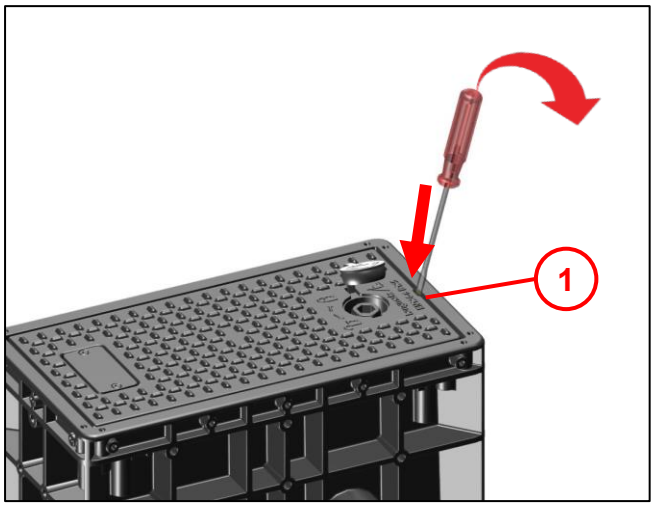


Fig. 11

If the cover does not open easily:

- Position the screwdriver at the recess provided **(1)**.
- Lift the cover and pull it out to the side.

6.4 Optional: Assembly / disassembly of the base plate

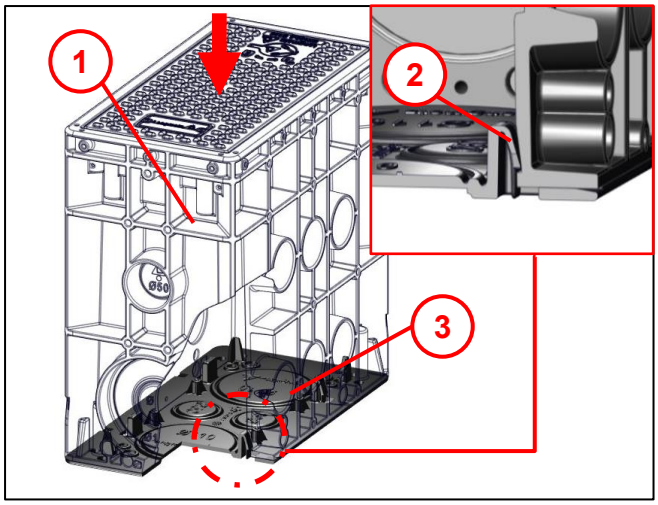


Fig. 12

Installation:

- There are spring-mounted tabs **(2)** located on the base plate **(3)**.
- Place the small manhole **(1)** on the base plate as far as the end stop.

The small manhole and base plate are now firmly connected to each other.

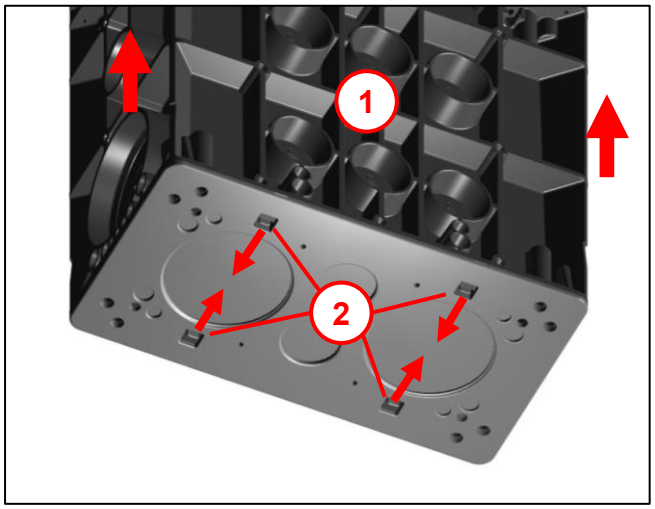


Fig. 13

Disassembly:

- Press the spring-mounted tabs **(2)** on the underside to the middle and unlatch them.
- Lift the small manhole **(1)**.

6.5 Removing the predetermined breaking points for cable ducts

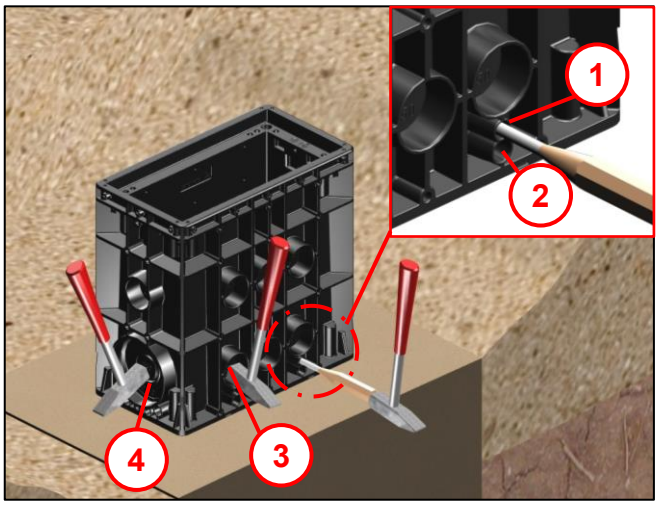


Fig. 14

- Determine the required number of cable ducts and their position.
- Knock out the relevant predetermined breaking points with a hammer.
- Use another tool (splint driver) for small diameters.
  - Ø 10 mm **(1)**
  - Ø 15 mm **(2)**
  - Ø 50 mm **(3)**
  - Ø 110 / 50 mm **(4)**
- Use a suitable tool to remove any swarf or burrs produced.

6.6 Installing the protective pipe seal / stepped grommet

(Illustrative example with cables)

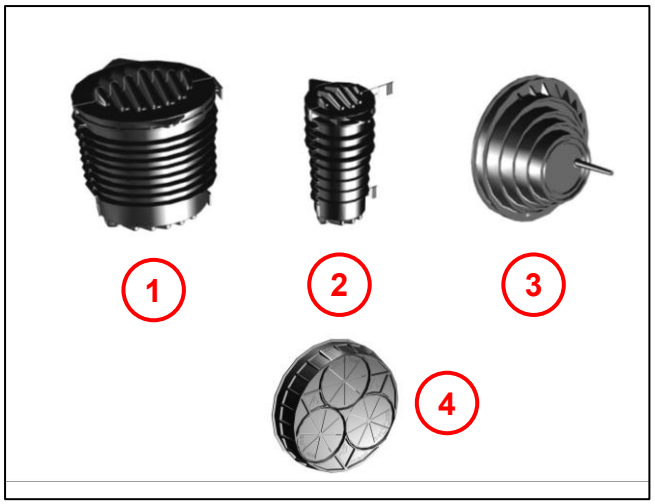


Fig. 15

The use of protective pipe seals / stepped grommets / micro-duct pipe adapters is recommended when laying grounding cables / micro-duct cables to prevent the polycarbonate manhole from silting up.

- Protective pipe seal Ø 110 mm **(1)**
- Protective pipe seal Ø 50 mm **(2)**
- Stepped grommet Ø 110 mm **(3)**
- Micro-duct pipe adapter Ø 110 mm **(4)**

These products are not included with the standard delivery and need to be ordered separately (see section 8 Accessories).

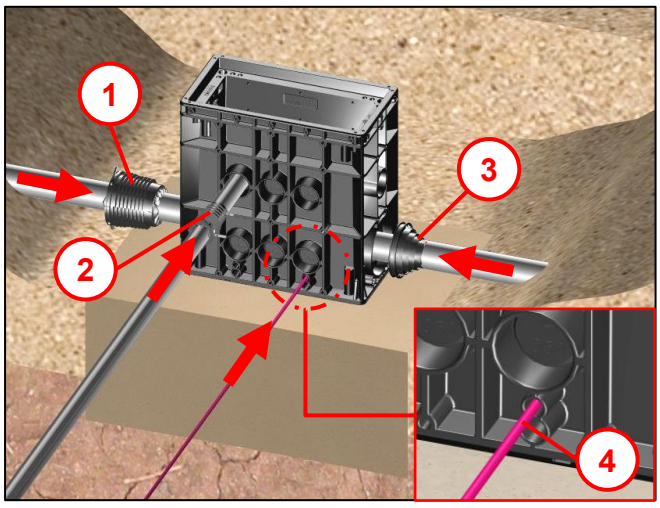


Fig. 16

- Position the protective pipe seal **(1 and 2),** with the internal foam sealing insert, around the cable / pipe and seal with tabs.
- Push the protective pipe seal, as shown, firmly into the opening (Ø110 / 50 mm).
- Using a suitable tool, open up the required pipe diameter at the predetermined breaking point on the stepped grommet **(3)**.
- Insert the stepped grommet into the opening (Ø110 mm) as shown.
- Insert the individual micro-duct pipes **(4)** into the corresponding opening.

6.7 Fitting the micro-duct pipe adapter
(Illustrative example)

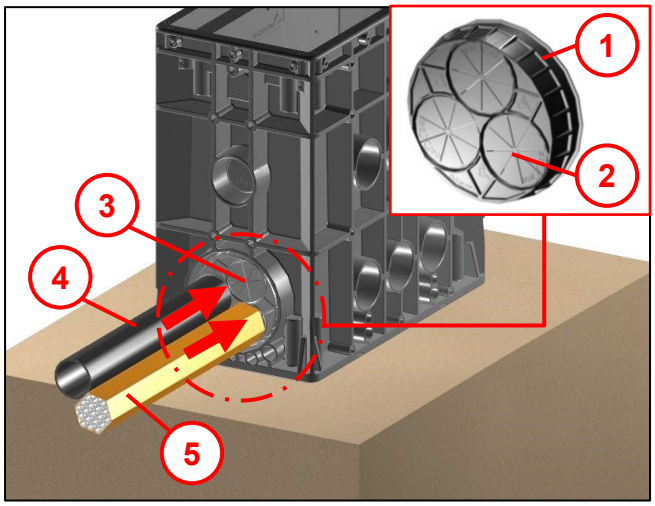


Fig. 17

- The micro-duct pipe adapter **(1)** is not included with the standard delivery and must be ordered separately (see section8 – Accessories).
- Insert the micro-duct pipe adapter into the open cable duct Ø110 mm **(3)** until the circumferential groove clicks into the opening over the circumferential edge.
- Insert the micro-duct pipe bundle / cable **(5)** (max. Ø46 mm) through the slotted openings in the micro-duct pipe adapter **(2)**.
  Note! With pipes with max. Ø50 mm **(4)**, grip the slotted openings **(2)** at the marked tab ↺ and remove.

6.8 Backfilling the foundation pit up to the lower edge of the top layer

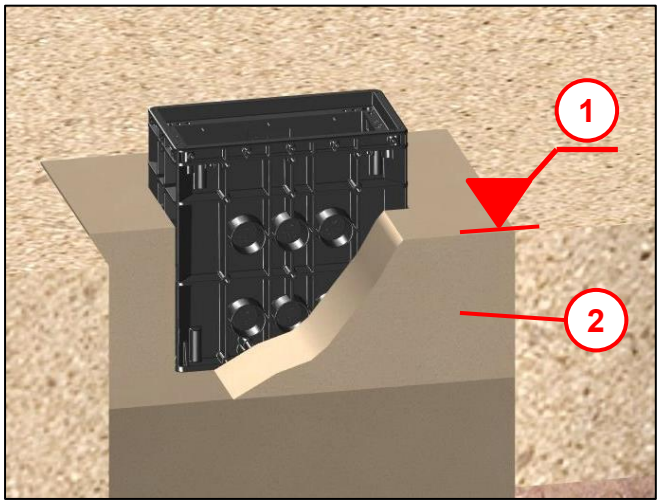


Fig. 18

- Backfill and compact the foundation pit in layers using material suitable for compacting **(2)** in accordance with
  ZTV E-StB 09 up to the lower edge of the top layer **(1)**.

  Define the height for paving / asphalt / soil.

  (See also section 6.10).

6.9 Inserting the cover

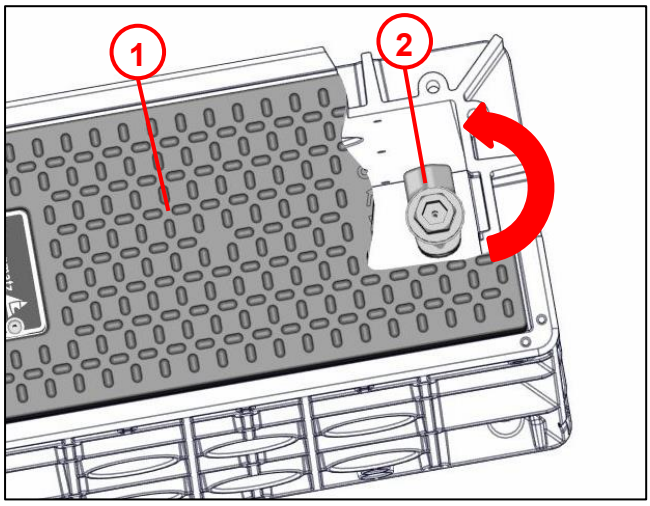


Fig. 19

- Before inserting the cover **(1)**, turn the lock catch **(2)** to the “OPEN” position.
- Counter-clockwise as far as the end stop.

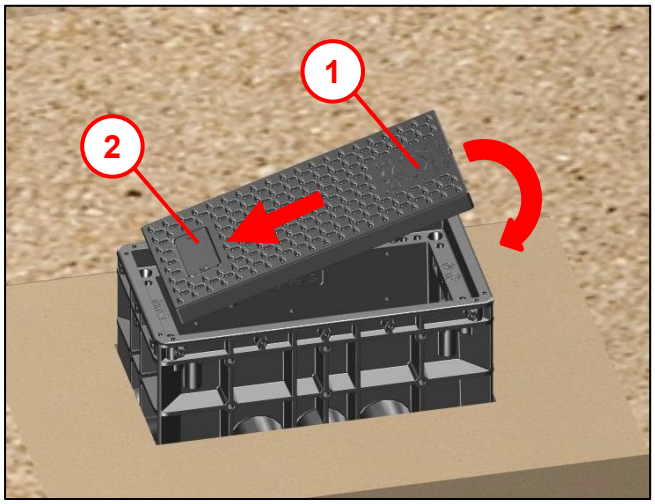


Fig. 20

- Position the cover with the logo side **(2)** at an angle.
- Push down the locking mechanism side **(1)** and insert the cover.

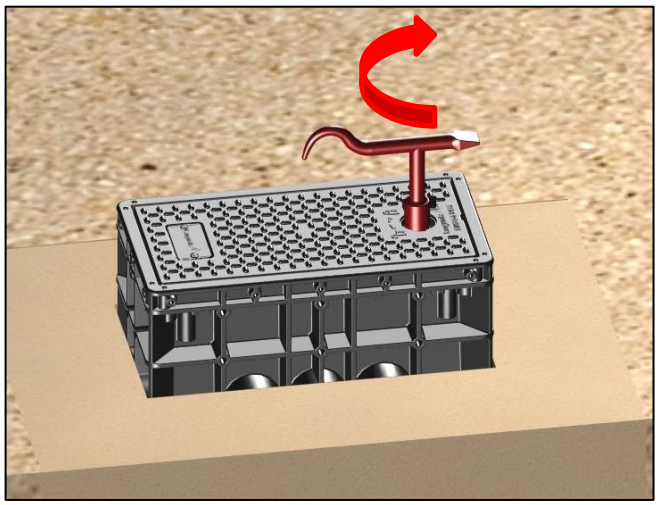


Fig. 21

- To lock the cover, turn the lock catch to the “CLOSED” position.
- Clockwise as far as the end stop.

6.10 Constructing the top layer

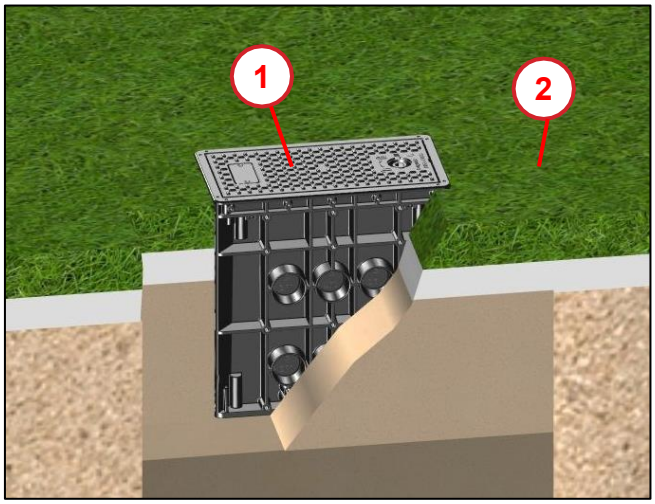


Fig. 22

Recommendation!

Standard:

Polycarbonate manhole **without** edge protection frame **(1)** in predominantly **pedestrian** areas or rough terrain.

- Construct the top layer **(2)** (e.g. grass) in accordance with ZTV A StB 12 (and/or RStO 2012).

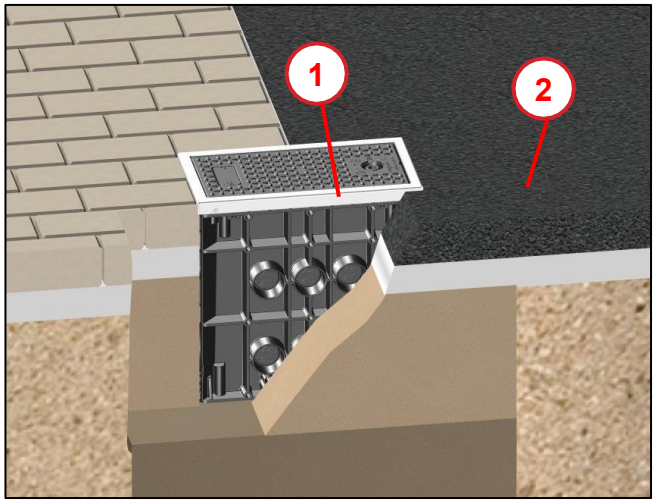


Fig. 23

Recommendation!

Optional:

Polycarbonate manhole **with** edge protection frame **(1)** in primarily **vehicle traffic areas**.

- Construct the top layer **(2)** (e.g. paving / asphalt) in accordance with ZTV A StB 12 (and/or RStO 2012).

7 Maintenance

Measures	Intervals	Remarks
Before opening, check and clean the manhole surface and locking mechanism.	Before each use.	Only open and close the locking mechanism with the operating key supplied for this purpose.

8 Accessories

Article	Article number	
Protective pipe seal Ø 110 mm	08 186 3110	
Protective pipe seal Ø 50 mm	08 186 0050	
Stepped grommet Ø 110	06 268 0008	
Key for head style: - Colt / Telenet / OTC - LIC-Lock	70 046 5200 70 046 5202	
Edge protection frame (galvanised steel)	70 089 1000 E	
Base plate	06 437 0003	

9 Material defects

Langmatz GmbH accepts liability for material defects in the product as per Section 434 BGB (German Civil Code) for 24 months, starting from the date on the purchase receipt.

Within the scope of liability, all parts that become damaged due to manufacturing faults or material defects will be replaced or repaired free of charge.

The purchaser must report any deficiency complaints immediately in writing.

Claims by the purchaser for damages due to material defects or for whatever legal reason will not be accepted.

Any damage or failure caused by the following are also excluded from liability

- Incorrect use,
- Natural wear and tear
- Intervention by third parties.

We accept no liability for damage caused by force majeure or transport.

Repairs due to a complaint about a defect do not extend the warranty period for the replaced parts or for the product.

10 Quality management

The Langmatz GmbH quality management system is certified to DIN EN ISO 9001.

11 Disclaimer/Warranty

The information in this technical document is presented appropriately and correctly in compliance with the technical regulations, and to the best of our knowledge. However, this does not confer any guarantee of particular characteristics. In this context, the company that operates the products supplied by Langmatz GmbH is expressly obliged to decide, based on its own judgement, whether the products are suitable and appropriate for the application or use being considered. The product liability accepted by Langmatz GmbH relates exclusively to our conditions of sale, delivery, and payment. Langmatz GmbH accepts no liability on the basis of random, indirect and resultant consequential damage, or of any damage attributable to any use of the product other than its intended purpose as described.

12 Contact

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