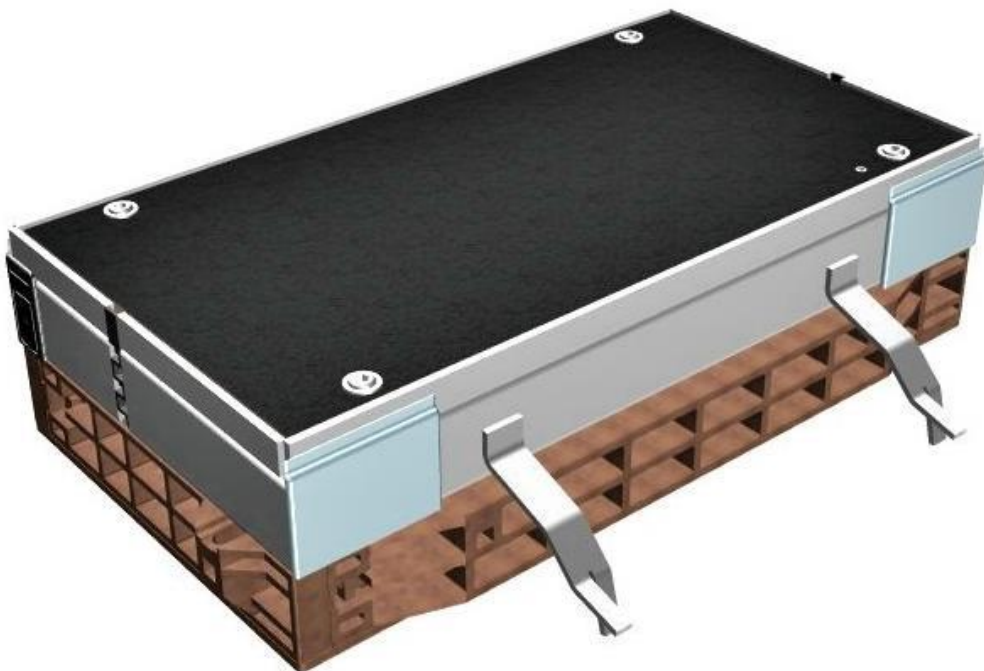
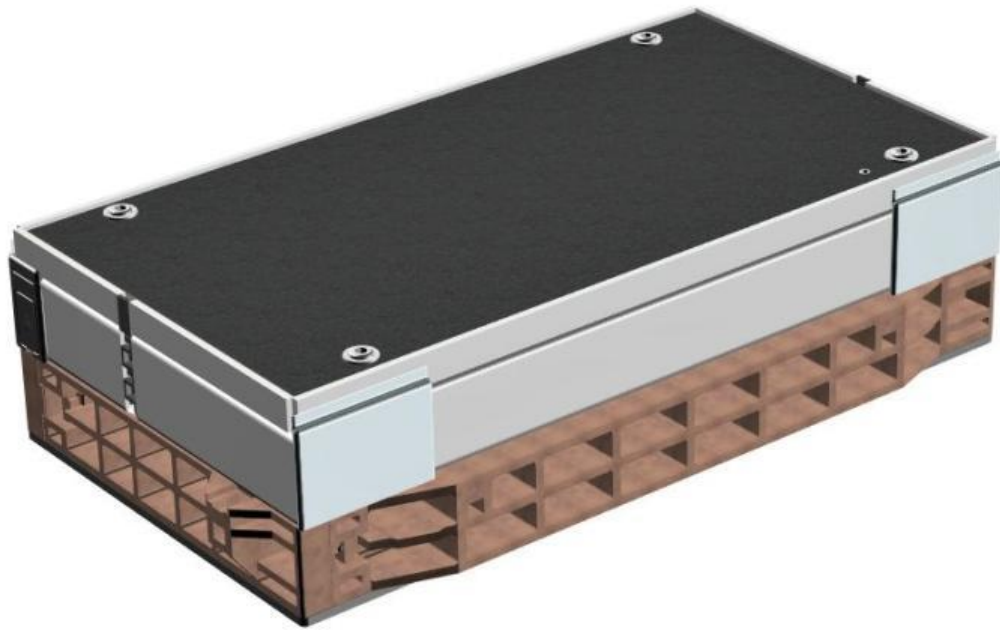


# Installation and Assembly Instructions for Antenna Manholes

EK278 | EK528 | EK548

Covers support loads up to 125 kN



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English

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## 1 General information

These instructions are included with delivery.



**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 operating 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 further safety and performance improvements, while preserving the main features.

The copyright to these instructions remains with Langmatz GmbH.

## 2 Safety information

The product is designed for stationary use underground as an antenna manhole. Where the product is used to accommodate electronic components, it is not suitable for use in explosive atmospheres.

The product corresponds to the latest 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 misuse of the product.

Work on electrical or electronic fixtures may only be performed by qualified electricians/optical fibre specialists.

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

### **The operating company is responsible for the following:**

- Preventing danger to 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.



Do not use the product if it is damaged. Please contact the hotline (see section 13 Contacts).



**Caution!**  
Applicable occupational safety and environmental protection regulations must be complied with during installation, operation, maintenance, or repair.

### 3 Product description

These instructions are based on one Langmatz product by way of example:

- Antenna Manhole EK278;
- Clear dimension (CD) 250 x 550 mm, height 170 mm;

#### 3.1 Dimensions

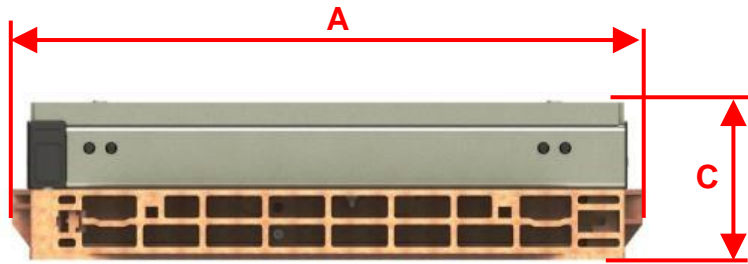


Fig. 1

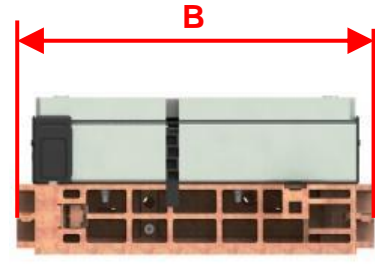


Fig. 2

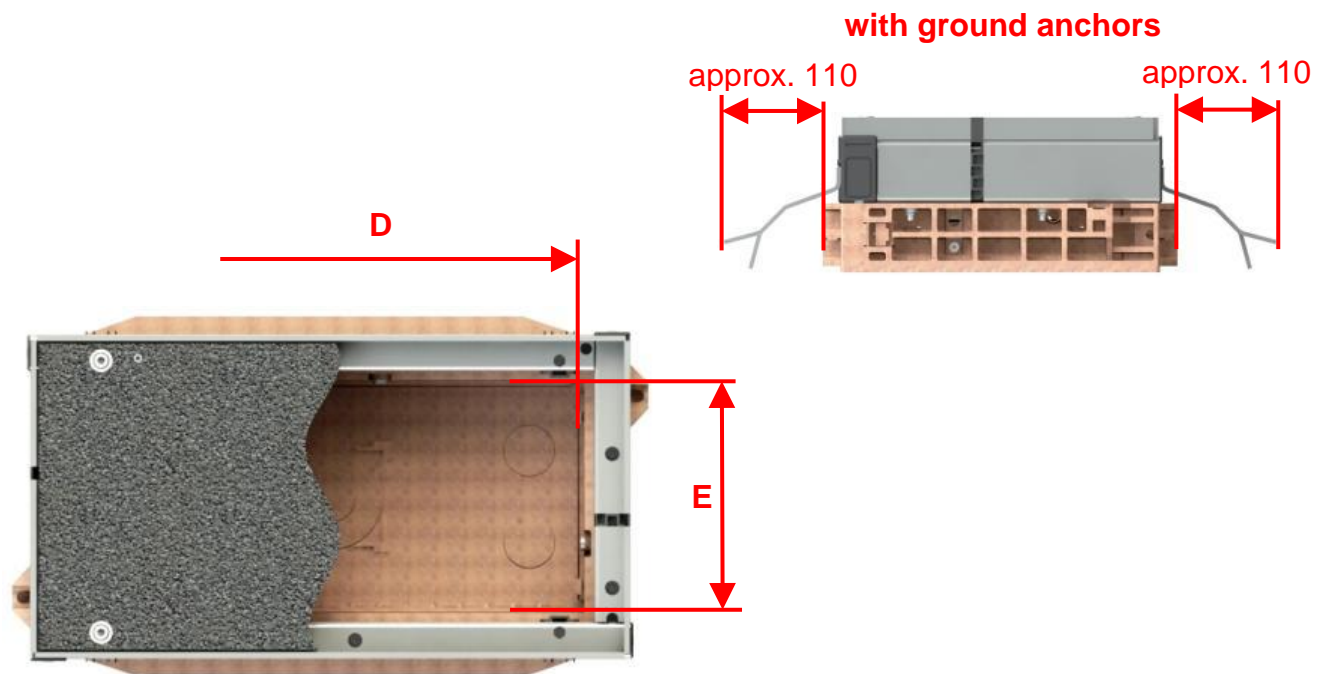


Fig. 3

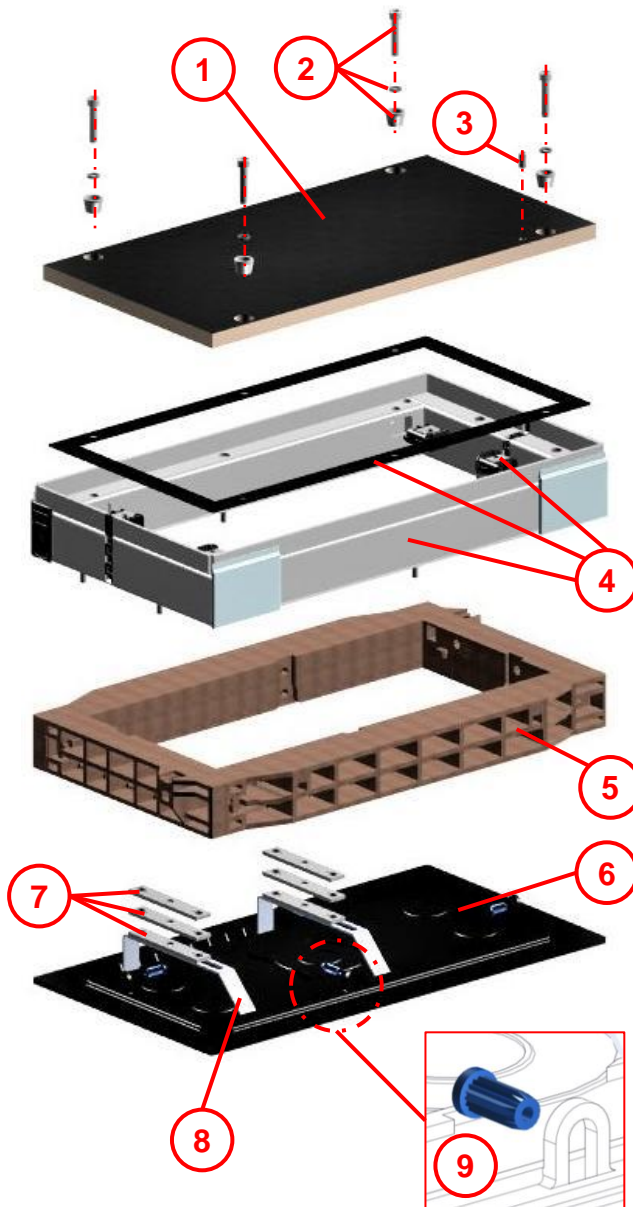
	<b>EK278 CD 250x550</b>	<b>EK528 CD 250x400</b>	<b>EK548 CD 250 x 800</b>
<b>A</b>	693 mm	538 mm	936 mm
<b>B</b>	393 mm	353 mm	413 mm
<b>C</b>	170 mm	170 mm	170 mm (special size 312 mm)
<b>D</b>	550 mm	400 mm	800 mm
<b>E</b>	250 mm	250 mm	250 mm

### 3.2 Technical data

	<b>EK278 CD 250x550</b>	<b>EK528 CD 250x400</b>	<b>EK548 CD 250x800</b>
Total weight:	Approx. 27 kg	Approx. 24.2 kg	Approx. 43.5 kg
Material:	<ul style="list-style-type: none"> <li>- Frame components: - ecopolytec (WPC)</li> <li>- Base plate: - PC - optical fibre</li> </ul>		
Steel frame material:	Hot-dip galvanised steel		
Antenna manhole cover:	Epoxy resin with non-slip coating, maximum load 125 kN		
Antenna manhole closing plate:	Screw connection (hexagon socket)		

## 4 Scope of delivery

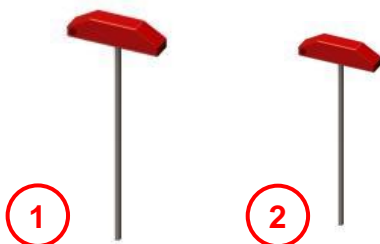
(Product example CD 250 x 550 mm)



- Item 1** 1x antenna manhole cover (epoxy resin) with non-slip coating
- Item 2** Mounting kit:  
4x M10x50 socket head cap screws;  
4x pairs lock washers;  
4x cone bushings.
- Item 3** 1x M10 hexagon socket grub screw, (for ease of opening cover - see section 6.3).
- Item 4** 1x steel frame with nut mount and damping pad (elastomer).
- Item 5** 1x ecopolytec frame (WPC) CD 250 mm x 550 mm, 70 mm high
- Item 6** 1x base plate.
- Item 7** Height adjustment spacers (in accessories kit; use if needed).
- Item 8** 2x mounting brackets for antenna (in accessories kit).  
Special version differs!
- Item 9** 4x mounting plugs.

Fig. 4

### 4.1 Required tools (not included)



- 1** SW8 Allen key
- 2** SW5 Allen key

Fig. 5

## 5 Foundation pit base

### 5.1 General

- The antenna manhole must be installed by a specialist company.
- Assess the ground conditions before preparing a load-bearing foundation pit base.
  - For antenna manholes with an overall height less than 680 mm, the highest groundwater level must be at least 1,200 mm below ground level.
  - The antenna 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, Wastewater 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.



**Caution! Comply with ZTV A-StB 12 (Supplementary Technical Contract Conditions and Guidelines for the Construction of Asphalt Roads) for the construction of the road surface!**

### 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 performing tasks in underground cable line construction"*.

The position and depth of the foundation pit base or the concrete pit in the tram track must be matched to the installation position.

The upper edge of the antenna manhole cover must lie completely flush with the surrounding ground level, and must not project.

The cable entry or drainage conduit (e.g. DN100) must be laid such that it can be fed vertically below the centre of the manhole after preparing the foundation pit base.



## 5.2.1 Diagrams of foundation pit base

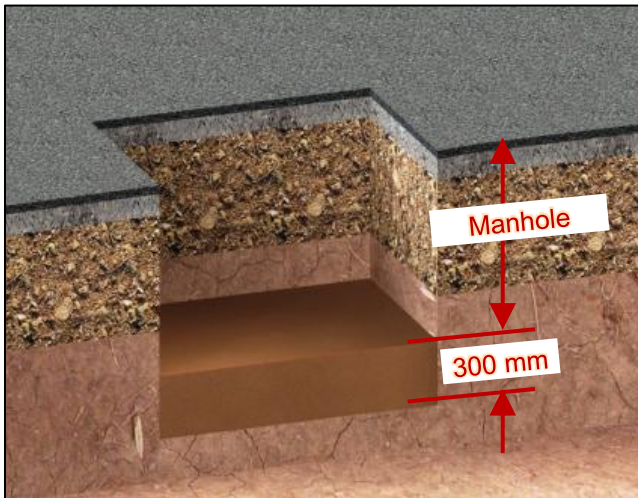


Fig. 6

### Situation A

#### For pedestrian areas:

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

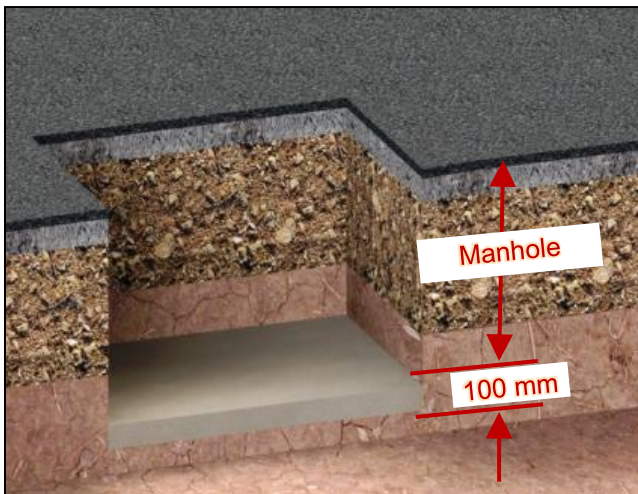


Fig. 7

### 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):
- Lay a concrete load-bearing layer at least 100 mm thick (tamped concrete, strength class  $\geq C8/10$ ).

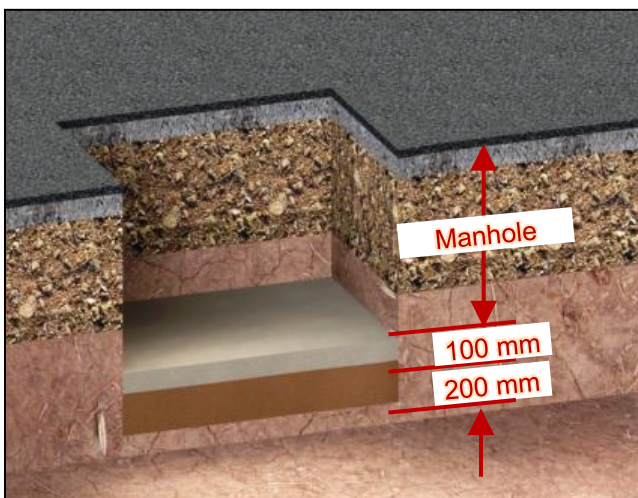


Fig. 8

### Situation C

#### For vehicle traffic areas:

- With group G3 soil types as per ATV-DVWK-A 127 (soil groups GU\*, GT\*, SU\*, ST\*, UL, UM as per DIN 18196):
- With group G1 soil types, use an underfill as per ATV-DVWK-A 127. Minimum thickness 200 mm. The underfill must be layered and compacted to  $D_{Pr} \geq 98\%$ .
- Lay a concrete load-bearing layer at least 100 mm thick (tamped concrete, strength class  $\geq C8/10$ ).



## 6 Antenna manhole installation

### 6.1 Preparing the drainage

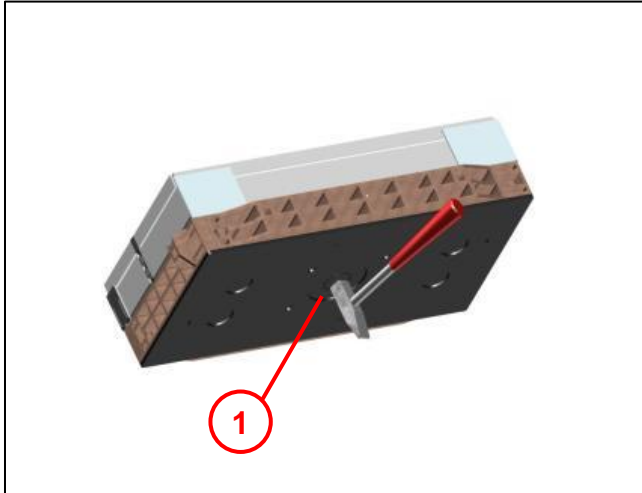


Fig. 9

- **Note:**  
Before positioning the antenna manhole, knock out the predetermined breaking point **(1)** (Ø50 mm or Ø100 mm) on the base plate.

### 6.2 Positioning the antenna manhole

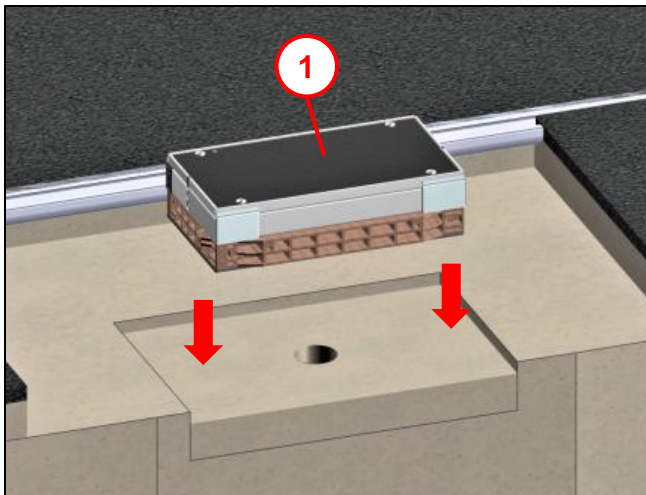


Fig. 10

- Position the whole antenna manhole **(1)** in the foundation pit.



#### Warning:



Risk of crushing injuries when positioning the antenna manhole. Crushing of body parts.



### 6.3 Opening the antenna manhole cover

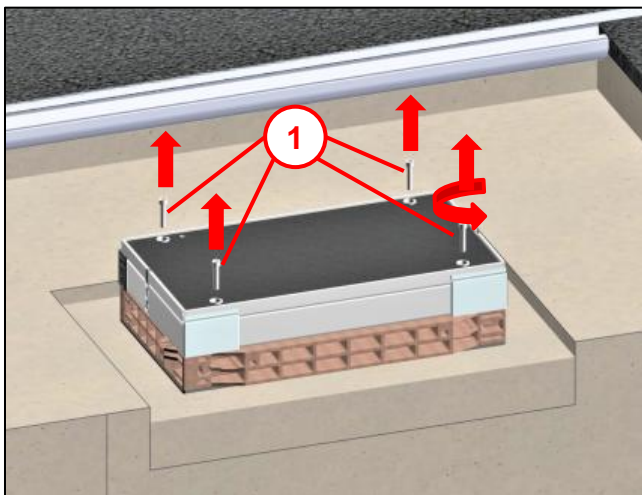


Fig. 11

- Unscrew and remove the 4x socket head cap screws **(1)** using an SW8 Allen key.

## 6.4 Removing the antenna manhole cover

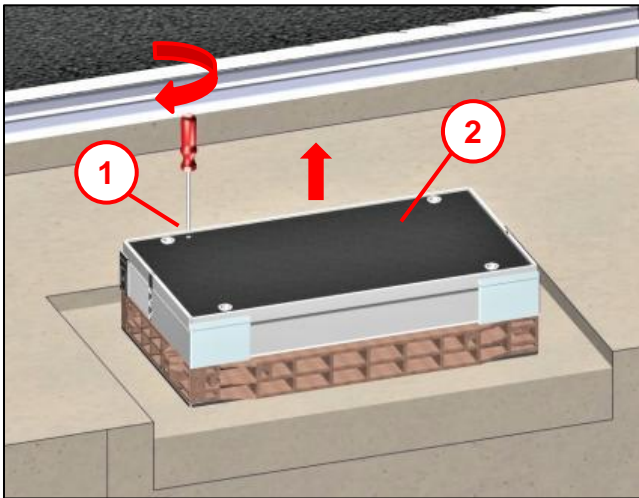


Fig. 12

- Screw in the M10 hexagon socket grub screw (1) using an SW5 Allen key.
- The antenna manhole cover (2) will lift and can be removed with the aid of a suitable tool.

## 6.5 Installing the antenna mounting brackets

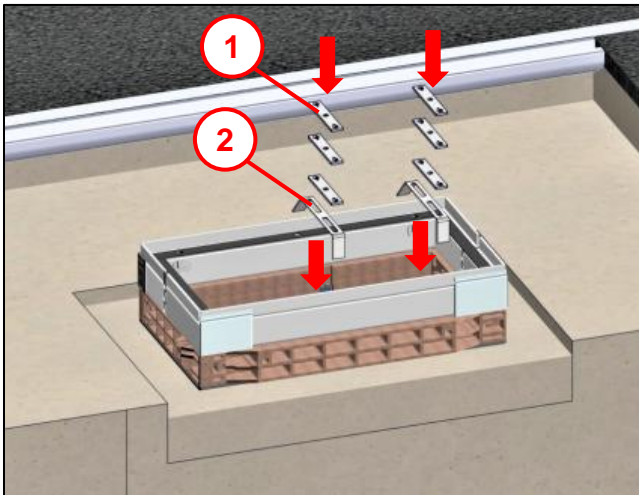


Fig. 13

- Position the antenna mounting brackets (2) (accessories kit) correctly in the manhole (Do not screw them on).
- If necessary, position spacers (1) (accessories kit) on the mounting brackets so that the antenna is as close as possible to the cover.

Clearance between bottom of cover and top of antenna  
= approx. 5 mm.

## 6.6 Positioning the antenna manhole cover

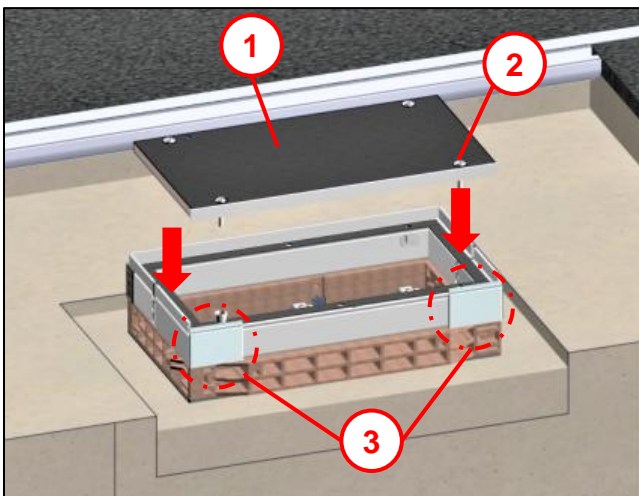


Fig. 14

- Place the antenna manhole cover (1) on the steel frame.
- Apply anti-seize paste to the 4x M10 socket head cap screws (2) and tighten them.  
Torque = 32 Nm.  
(Anti-seize paste included in accessories kit).

### Note:

The exterior of the steel frame has a silver aluminium strip on each of the 4x nut mounts and end caps (3). This prevents concrete from penetrating the antenna manhole.

## 6.7 Constructing the superstructure

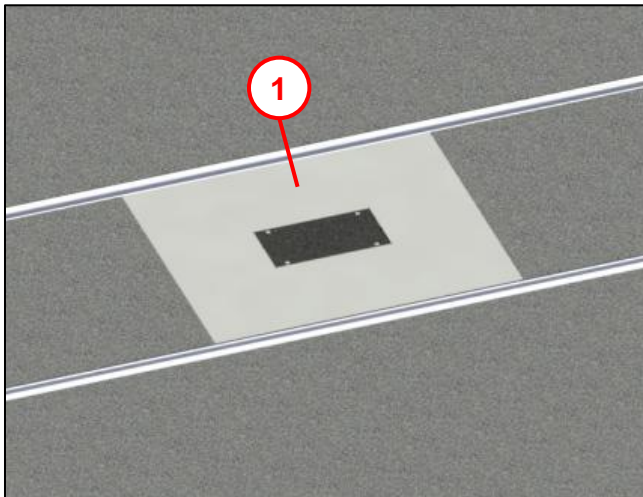


Fig. 15

- **Note:** Inspect the aluminium strip (see 6.6) for damage and, if necessary, replace it before constructing the superstructure.
- Construct the superstructure (1) as per ZTV A-StB 12 (and/or RStO 2001).

## 6.8 Note on using ground anchors in concrete

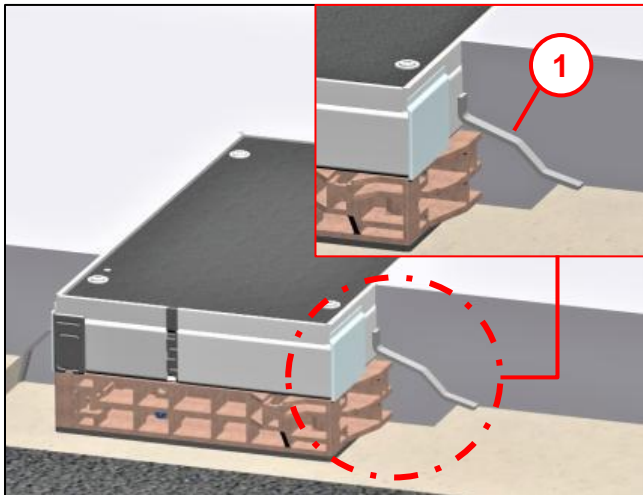


Fig. 16

- The ground anchors (1) mounted on the steel frame anchor the antenna manhole securely in the concrete.

**Note:**

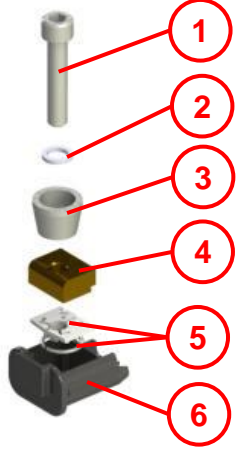
Anchoring the ground anchors in the asphalt may reduce stability, depending on the quality of the asphalt.

Langmatz therefore recommends anchoring the ground anchors in concrete.

## 7 Maintenance

Procedures	Intervals	Remarks
Before opening, check and clean the manhole surface and screw connections.	Before each use.	Tighten/loosen the screw connections using only the Allen key supplied for the purpose.
Check the cover damping pad.	Once per year.	Replace if damaged.
Clean the cover damping pad.	After each use.	Sweeping it off with a broom is sufficient.
Check the fit of the lock washers.	After each use.	
Treat screw connections in the cover with anti-seize paste before screwing in.  Recommended tightening torque = 32 Nm.	After each use.	Screw in screw connections by hand only!  Anti-seize paste is available from Langmatz. (For info, see section 13 Contacts).
Check the cover and the non-slip coating.	After every use.	Replace if damaged.

## 8 Accessories

Product	Packaging unit	Langmatz Article no.	Figure
<p>Mounting kit for manhole cover</p> <p><b>1</b> 4x M10x50 socket head cap screws</p> <p><b>2</b> 4x pairs lock washers</p> <p><b>3</b> 4x cone bushings</p> <p><b>4</b> 4x M10 nuts</p> <p><b>5</b> 4x lock washers with round-wire snap ring</p> <p><b>6</b> 4x mountings for M10 nuts</p>	1 set	062780201 E	

## 10 Material defects

Langmatz 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 deficiency complaint do not extend the warranty period for the replaced parts or the product.

This product conforms to the latest state-of-the-art technology. Nevertheless, if you experience any problems with it, please contact our hotline (see section 13 Contacts).

## 11 Quality management

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

## 12 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.

## 13 Contacts

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