

Installation Instructions

L and XL polycarbonate foundation for EK980 charging stations



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1 General information

These instructions form an integral part of the delivery.



Warning!

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.

The copyright to these instructions remains with Langmatz GmbH.

Please refer to the operating / installation instructions for the system to be installed on the foundation.

2 Basic safety information

2.1 Target group / Personnel qualifications

- Civil engineering company
- Trained civil engineering and road construction personnel
- Qualified electricians

2.2 Intended use

The polycarbonate foundation is designed for stationary use underground as

- Anchoring for charging stations for electric vehicles (see DIN EN 61439-7),
- Cable draw manholes,
- Energy distribution systems.

Langmatz GmbH warns against the misuse of the product.

Work on electrical or electronic fixtures may only be performed by qualified electricians.

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.

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

The operating company 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 due to incorrect handling.
- Ensuring that protective clothing is worn when working with or on the product.

3 Product description

As Langmatz polycarbonate foundations come in a wide variety of sizes and versions, these instructions are based by way of example on one product with clear dimensions (CD) of 650 x 800 mm and a height of 650 mm.

3.1 Transport



1x polycarbonate foundation can be carried on one pallet for transport.

Check the product for completeness and integrity before unloading.

Do not use the product if it is damaged. Please contact the hotline (see section 14).



Warning!

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

3.2 Dimensions

L version: CD 650 x 800 mm

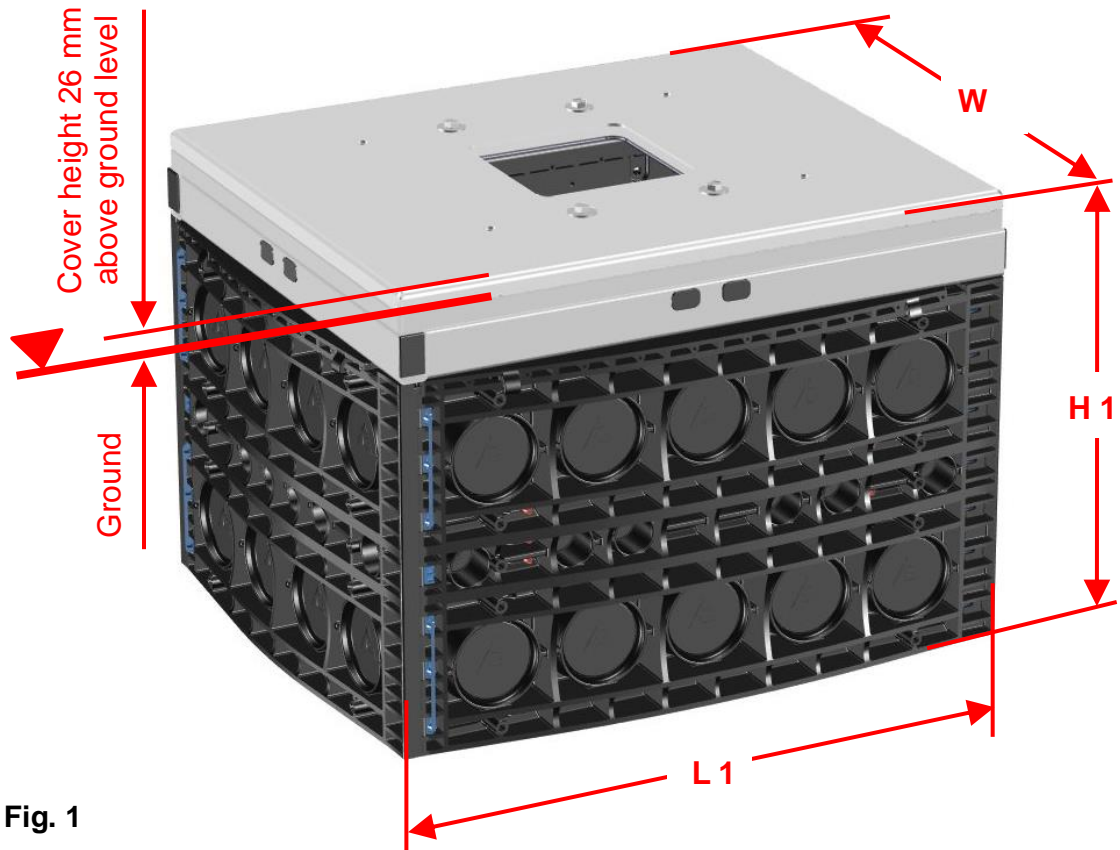


Fig. 1

XL version: CD 1165 x 1165 mm

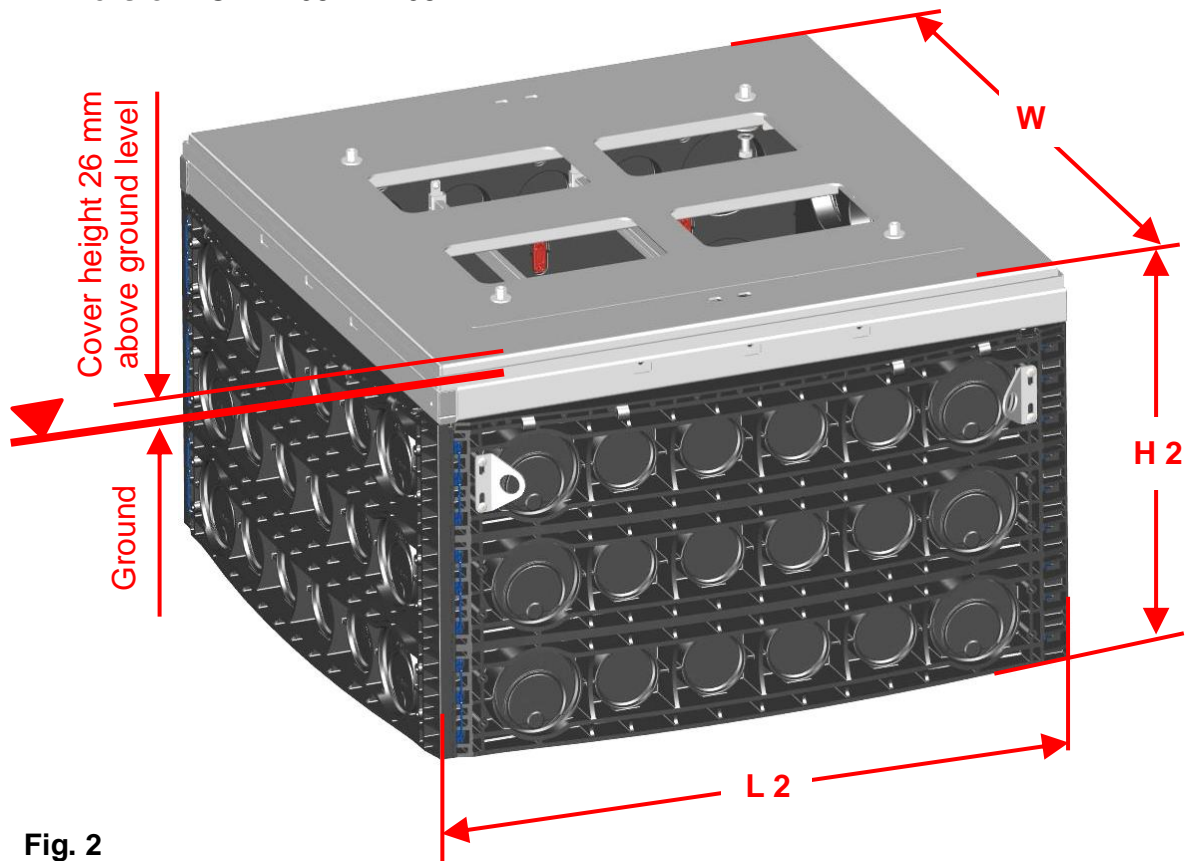


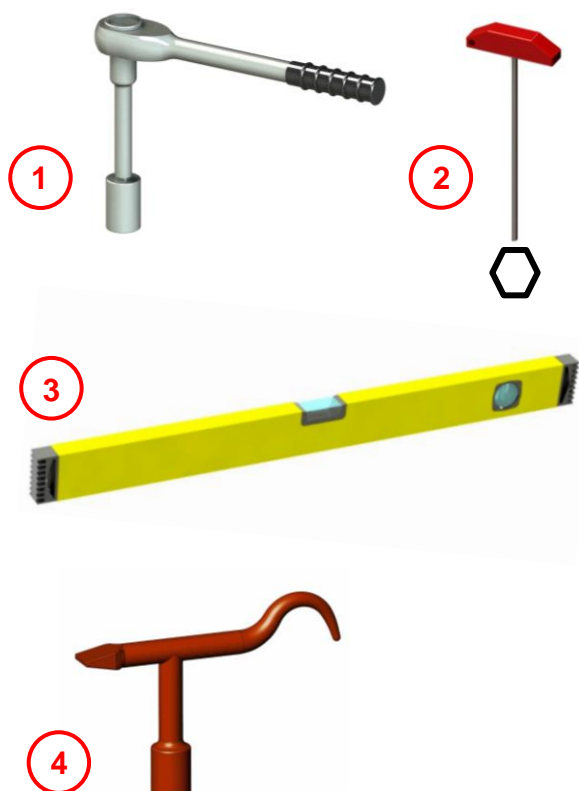
Fig. 2

3.3 Technical data

Dimensions L1 x W1 x H1:	950 x 810 x 650 mm
Dimensions L2 x W2 x H2:	1356 x 1356 x 790 mm
Total weight of L version	Approx. 110 kg
Total weight of XL version	Approx. 230 kg
Frame component material	Polycarbonate (PC)
Metal parts material:	Galvanised steel/coated steel
Screw connection material:	Stainless steel
Max. weight of the installation	1800 kg
Max. charging station dimensions - L	H = 2500 mm / L = 875 mm / W = 725 mm
Max. charging station dimensions - XL	H = 2000 mm / L = 1230 mm / W = 1230 mm

4 Required tools

(not included)



1 Torque wrench with a box of ratchets

2 AF5 Allen key
(height adjustment).

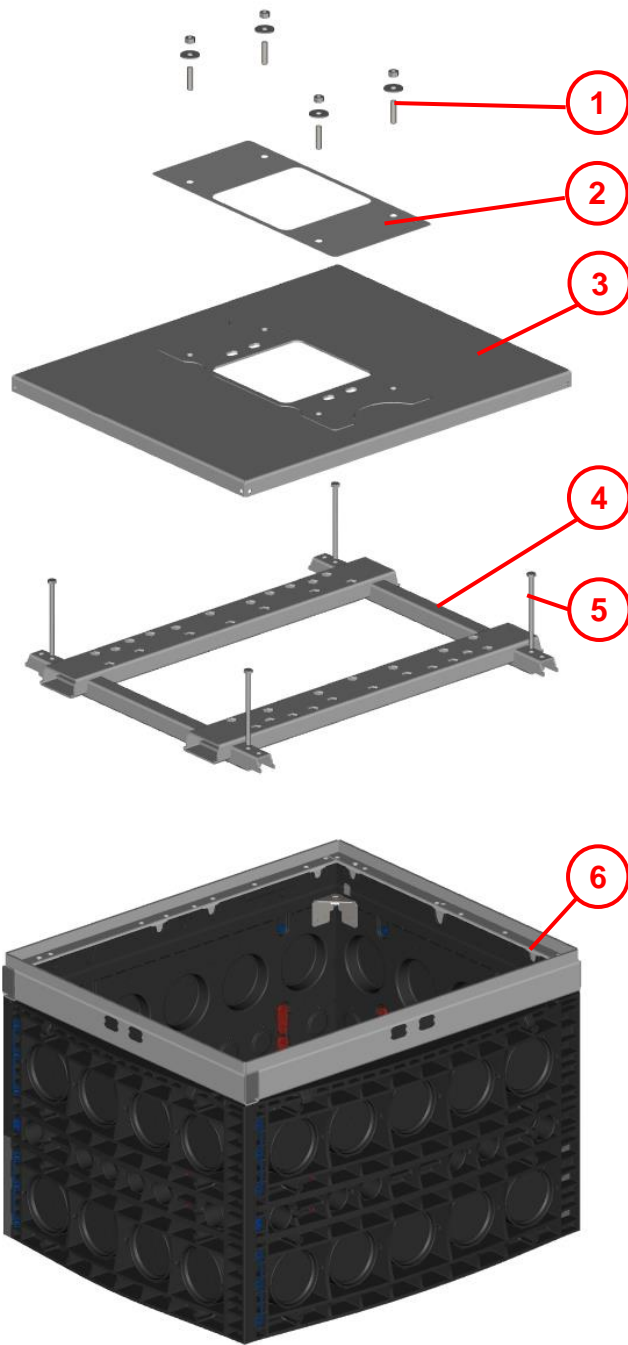
3 Spirit level
(minimum length 1000 mm)

4 OPTIONAL!
Key with lifting hook for **cast-iron cover**.
Available to order from Langmatz.

Fig. 3

5 Package includes

(Example shows product CD 650 x 800 mm / H 650 mm)



Item 1		Fastenings, depending on the model
Item 2	1x	Spacer plate
Item 3	1x	Base plate
Item 4	1x	Profile frame
Item 5	4x 4x	M10 x 60 hex screws and washers
Item 6	1x	Polycarbonate foundation
	4x	<u>Not shown:</u> Set screw

Fig. 4

6 Foundation pit base

6.1 General

The foundation must be installed by a specialist company.

Assess the ground conditions before preparing a load-bearing foundation pit base.

- For polycarbonate foundations with an overall height of less than 680 mm, the highest groundwater level must be at least 1,200 mm below ground level.
- The foundation 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.

6.2 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.

The upper edge of the polycarbonate foundation (upper edge of the steel frame) must lie completely flush with the surrounding terrain without shoulder.

6.3 Spatial clearances

When excavating the foundation pits, ensure that spatial clearances from surrounding units (buildings / parking meters / traffic lights etc.) are adhered to:

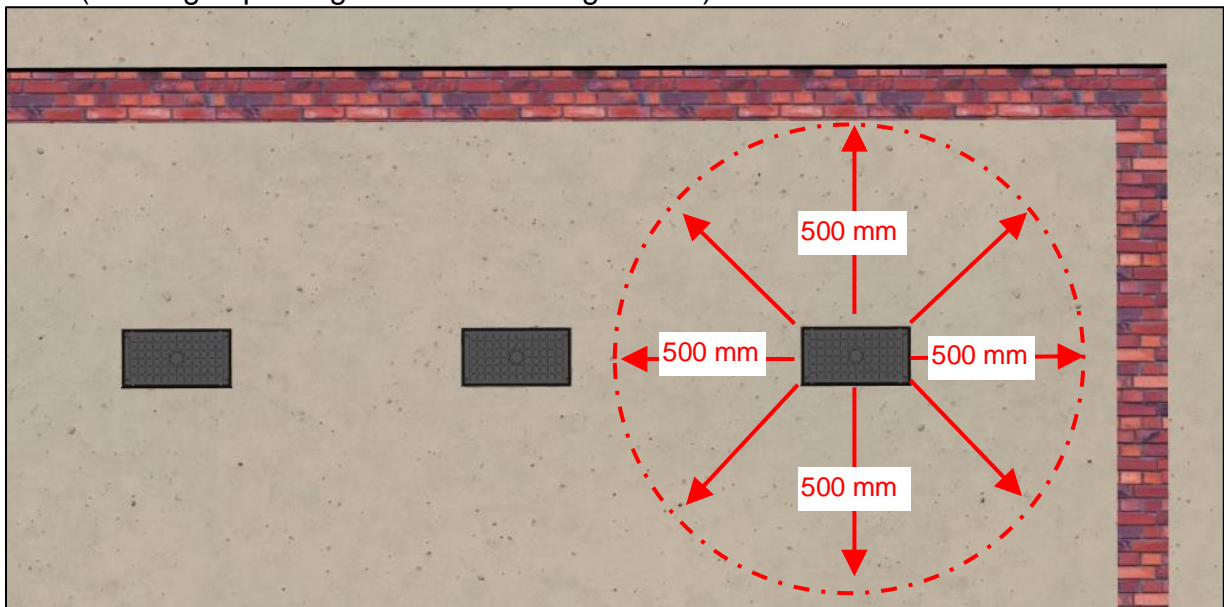


Fig. 5

6.4 Installation situations

Note: It is imperative that **Installation situation B** is observed for the installation of a cast-iron cover (for the subsequent erection of a charging station)!

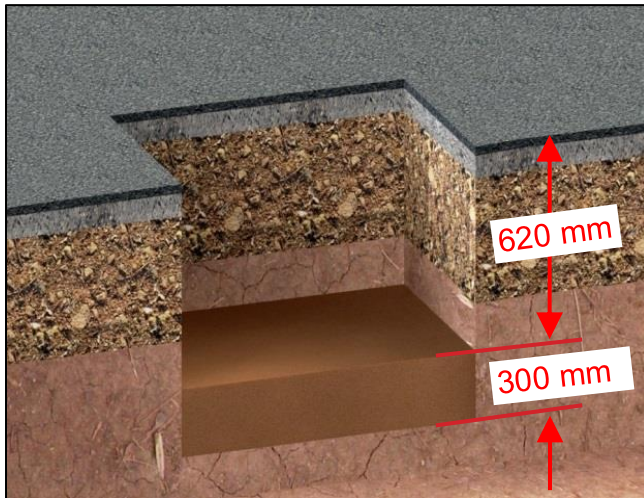


Fig. 6

Situation “A”

For pedestrian areas:

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

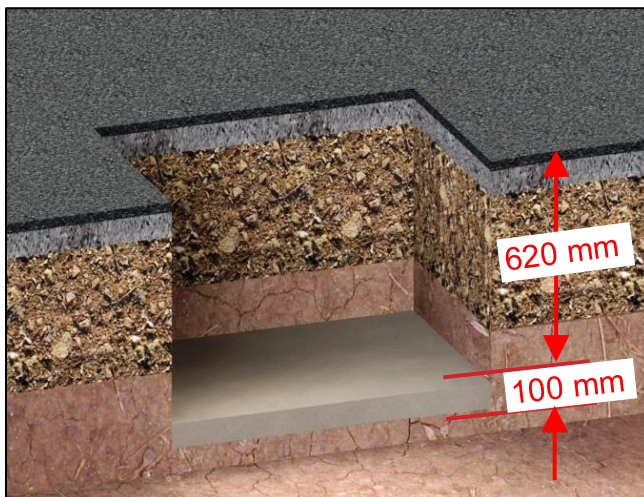


Fig. 7

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 of at least 100 mm thick (tamped concrete, strength class $\geq C8/10$).

7 Installation – Polycarbonate foundation with base plate/adaptor plate

7.1 Constructing the base

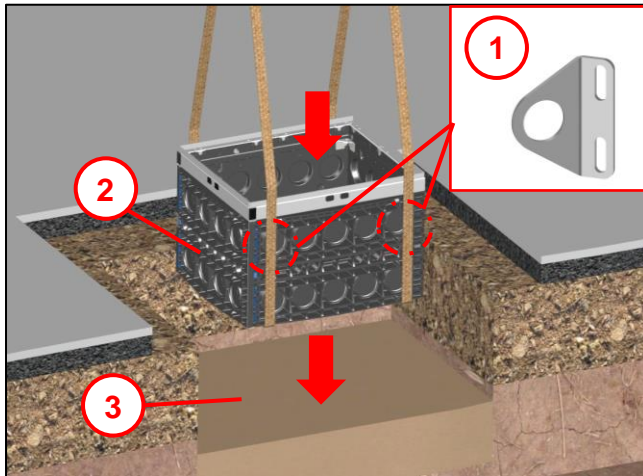


Fig. 8

- Place the complete polycarbonate foundation (2) on the foundation pit base (3).



Warning!

- Use slings when inserting the foundation!
- Optionally with previously fitted transport hooks (1) (see section 0 Accessories).
- Fit the transport hooks to the existing domes using the enclosed screws.
- Risk of injury due to the polycarbonate foundation tipping and falling!

7.2 Removing the predetermined breaking points for cable ducts

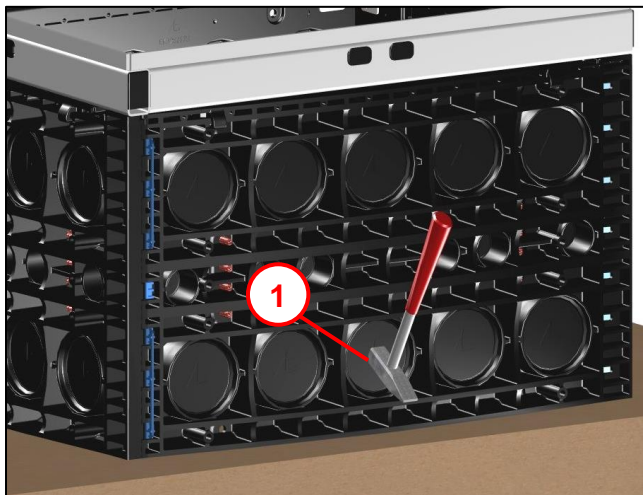


Fig. 9

- Establish the required number and position of cable ducts.
- Knock out the relevant predetermined breaking points (1) with a hammer.
- Remove any burrs with a suitable tool.

Note: When using more than one polycarbonate foundation in a row, also knock out the predetermined breaking points on the opposite side so that conduits can be routed through all polycarbonate foundations. This permits subsequent cabling without opening the base plate/adaptor plate.

7.3 Fitting the stepped grommet

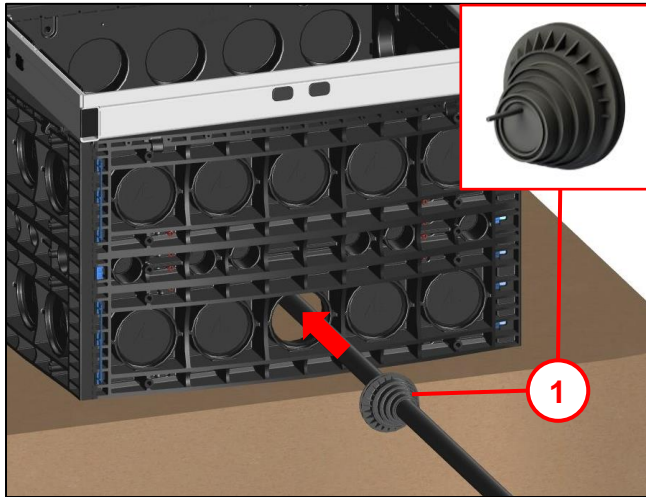


Fig. 10

To prevent the polycarbonate foundation from silting up, we recommend using a stepped grommet **(1)** when laying pipes. (2x enclosed).

- Using a suitable tool, open up the required pipe diameter at the predetermined breaking point on the stepped grommet.
- Insert the stepped grommet into the opening as shown.

7.4 Installing the earth bus / strain relief rail

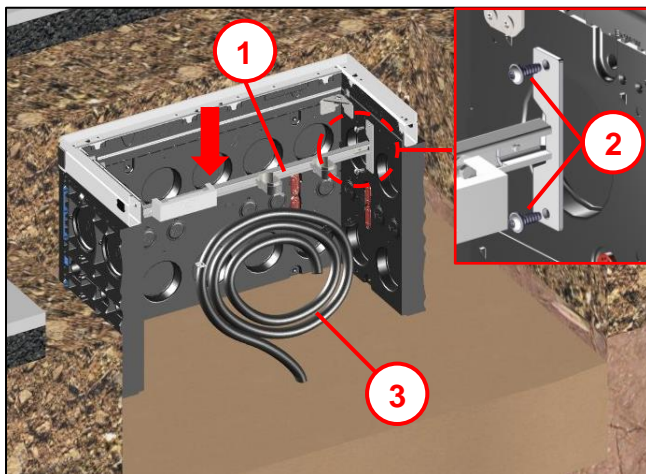


Fig. 11

An earth bus / strain relief rail **(1)** can optionally be fitted (not included in delivery. See section 10 Accessories).



Warning!

A strain relief rail must be fitted if the intended column does not have strain relief!

- Insert the earth bus / strain relief rail **(1)** and fit it to the polycarbonate foundation outside the predetermined breaking points.
- Pre-drill the screw points with a $\varnothing 6$ mm drill.
- Screw on the strain relief rail **(1)** with 4x EJOT PT K8x22 screws **(2)**.
- Place the cable **(3)** in the polycarbonate foundation until it is installed.



Danger!

The entire system must be earthed properly!

Note!

Equipotential bonding rails enable flat and round earth wires to be used!

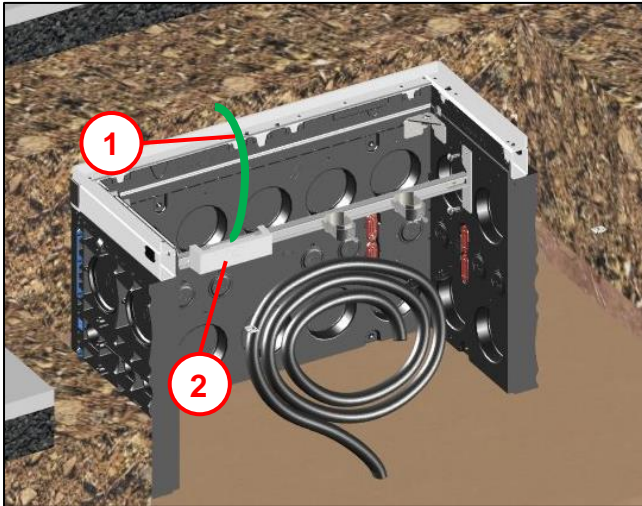


Fig. 12

- Connect the earthing cable (1) to the equipotential bonding rail (2).
- Route the earthing cable, which has been prepared for subsequent connection, upwards and connect it to the entire system.



Danger!

- The professional earthing of the equipotential bonding rail must be checked using appropriate measuring equipment and documented.
- Make sure that the earthing cable routed upwards is not damaged.

7.5 Backfilling the foundation pit

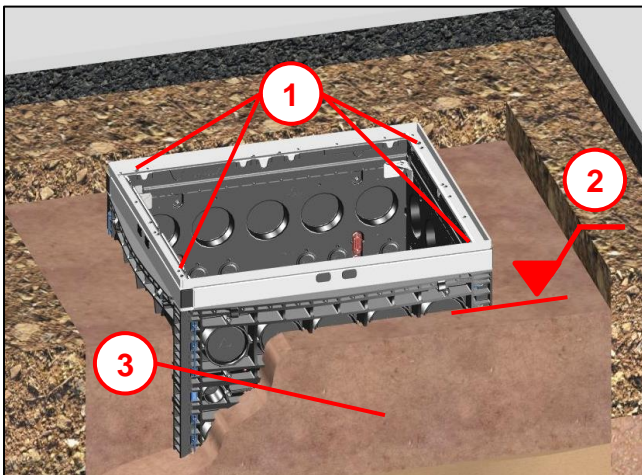


Fig. 13

- Backfill and compact the foundation pit in layers using material suitable for compacting (3) in accordance with ZTV E-StB 09 up to the lower edge of the top layer (2)



Warning!

- Protect the 4x openings for height adjustment / threaded spindles (1),
- and all other openings in the steel frame, against contamination when backfilling!

7.6 Height adjustment

7.6.1 Adjusting the height at the steel frame

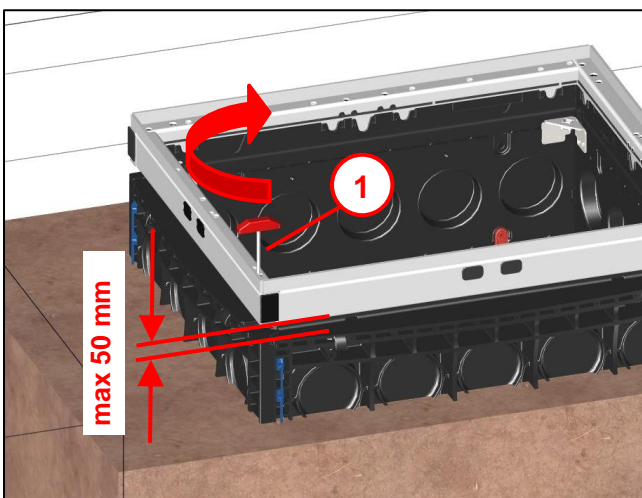


Fig. 14

- Turn the AF5 Allen key (1) clockwise at all four height adjustment points to lift the steel frame and adjust it to the intended height.

Note!

- Adjustment range from 20 mm to max. 50 mm.
- Take the height adjustment screws (M10x80 set screws) from the accessories kit. See also section 7.6.3.

7.6.2 Horizontally levelling the polycarbonate foundation

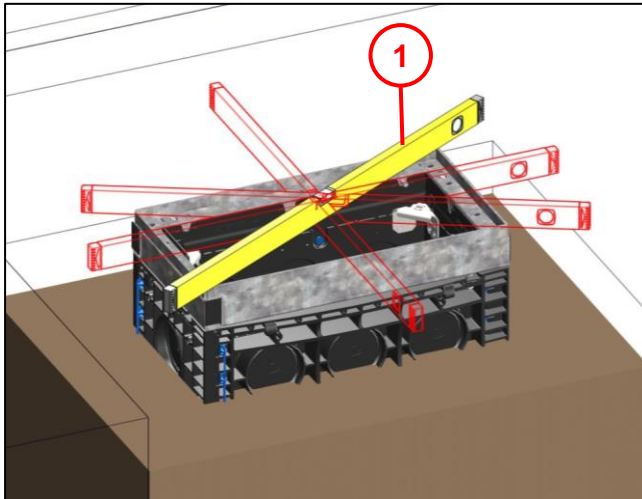


Fig. 15



Warning!

The polycarbonate foundation must be precisely horizontal!

- Incorrect alignment of the charging station.
 - Tipping over / incorrect operation / injury to passers-by.
- Use a spirit level (1000 mm in length) **(1)** to precisely level the foundation horizontally in all directions (7.6.1)
 - Only continue, as described in section 7.6.2, once it has been levelled horizontally.

7.6.3 Filling the foundation pit and free space

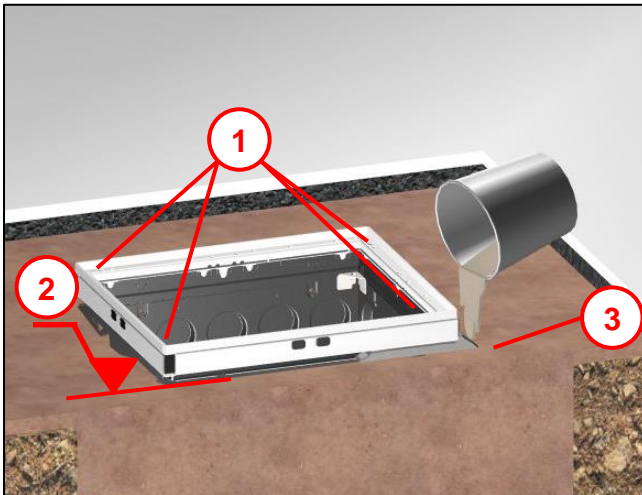


Fig. 16

- Backfill and compact the foundation pit up to the upper edge of the polycarbonate frame **(2)**.
- Backfill the resulting free space between the steel frame and polycarbonate frame **(3)**.
- Backfill according to DIN 18555.
- Compressive strength >35 N/mm² after 28 days.
- Construct the top layer up to the steel frame as required (concrete, paving etc.).



Warning!

- Protect the 4x openings for height adjustment / threaded spindles **(1)**,
- and all other openings in the steel frame, against contamination when backfilling!

7.7 Installing the base plate and adapter plate

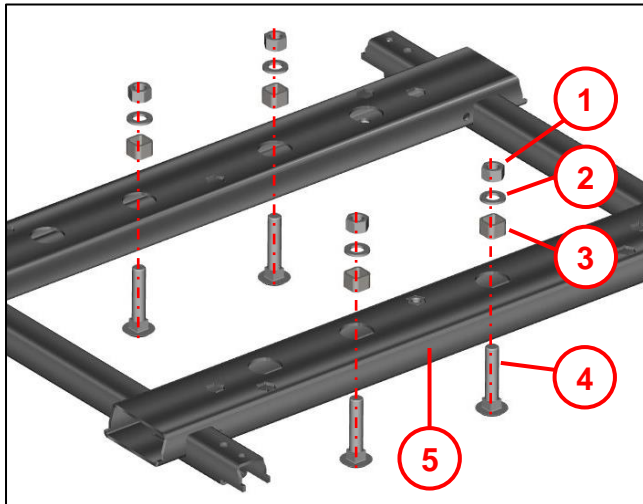


Fig. 17

Note: Refer to Fig. 17 in case of M16 bolt connections, otherwise continue to Fig. 18.

- Insert 4x M16x80 round-head bolts (4) from below into the profile frame (5).
- Fasten from above using 4x 18 mm sections of pipe (3), 4x washers (2) and 4x M16 hex nuts (1).



Warning! Do not use a damping pad!

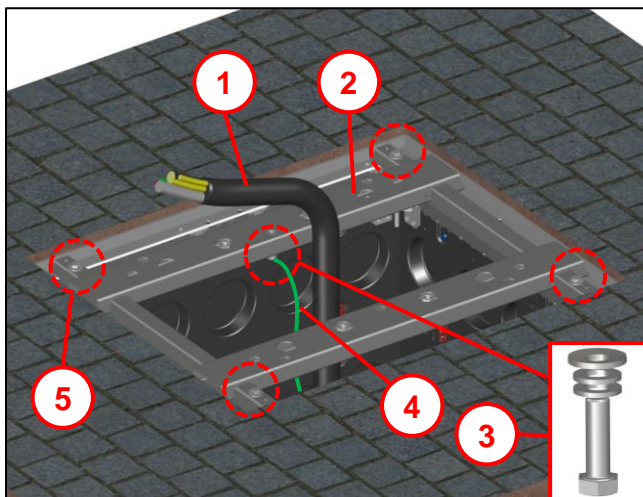


Fig. 18

- Place the profile frame (2) on the steel frame (**without** damping pad).
Note: Apply anti-seize paste to all hex screws before screwing them in!
- Use 4x M10x160 hex screws and 4x washers (5) to screw in place (torque 36 Nm).
- Route the cable (1) out through the profile frame
- Screw the earthing point (3) to the earthing cable (4).
- Connect the earthing cable conductively to the earth terminal.



Warning! Only use the Langmatz anti-seize paste provided!

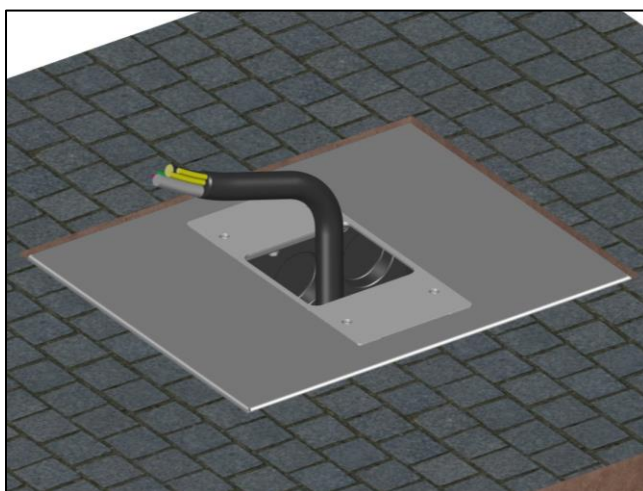


Fig. 19

- Place the base plate (3) on the profile frame.
- Place the spacer plate (2) on the base plate, and fasten in place with 4x set screws, washers and 8x nuts (1).

Fasten the earthing cable to the earthing point and integrate it into the equipotential bonding system or the entire system.

The professional earthing of the entire system must be checked using appropriate measuring equipment and documented.

8 Installing the charging station (not included in delivery)

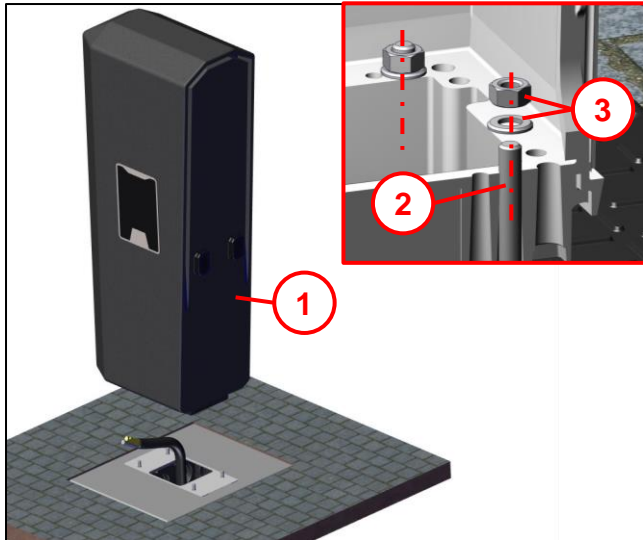


Fig. 20

Note!

The surface-mounted installation (1) is not included with delivery. Please refer to the respective manufacturer's set-up/installation instructions!

- Position the required surface-mounted installation (1) on the set screws (2).



Warning! Only use the Langmatz anti-seize paste provided!



Danger!

- Tipping over of the surface-mounted installation!
- Secure the surface-mounted installation during assembly!
- Pay attention to the column manufacturer's recommended torque!

- Secure the surface-mounted installation by the use of washers and nuts (3).



Danger!
Only permit qualified personnel to carry out electrical work!

9 Maintenance

Measures	Intervals	Remark
Carry out a visual inspection for corrosion	Between the columns	Visual check, initiate replacement as necessary

10 Accessories

Article	Article number	
Strain relief rail with earthing option size L (equipotential bonding rail with two BK42 clamps).	700887630	
Strain relief rail with earthing option size XL (equipotential bonding rail with two BK42 clamps).	700887680	
Stepped grommet Ø110 mm	062680008	
Spacer plate 650 x 800	Depending on the type of column	
Base plate 650 x 800		
Profile frame 650 x 800		
Cast-iron cover as per DIN EN 124 D400 for CD 650 x 800 Note! D400 is only fulfilled if completely screwed down	700887620	
Transport hook set	700887611	

11 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.

12 Quality management

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

13 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.

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