Langmatz

Installation Instructions

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, EN 61851-22, EN 61851-23).
- 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 operator is responsible for installation, operation and maintenance of 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 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

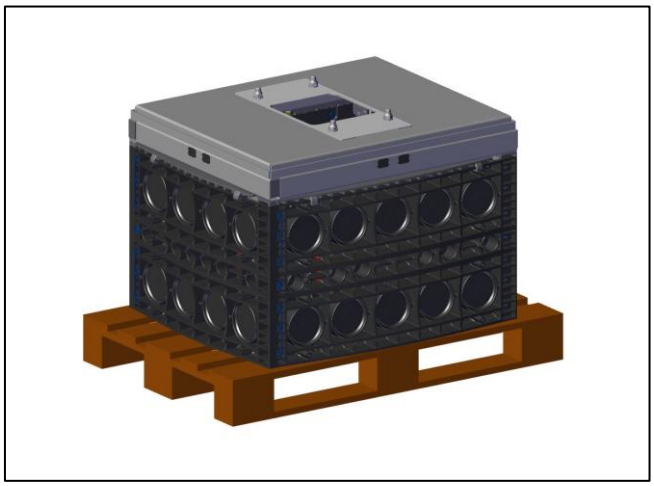


Fig. 1

Check the delivery for completeness and transport damage before unloading.

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



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

3.2 Dimensions

CD 650 x 800 mm

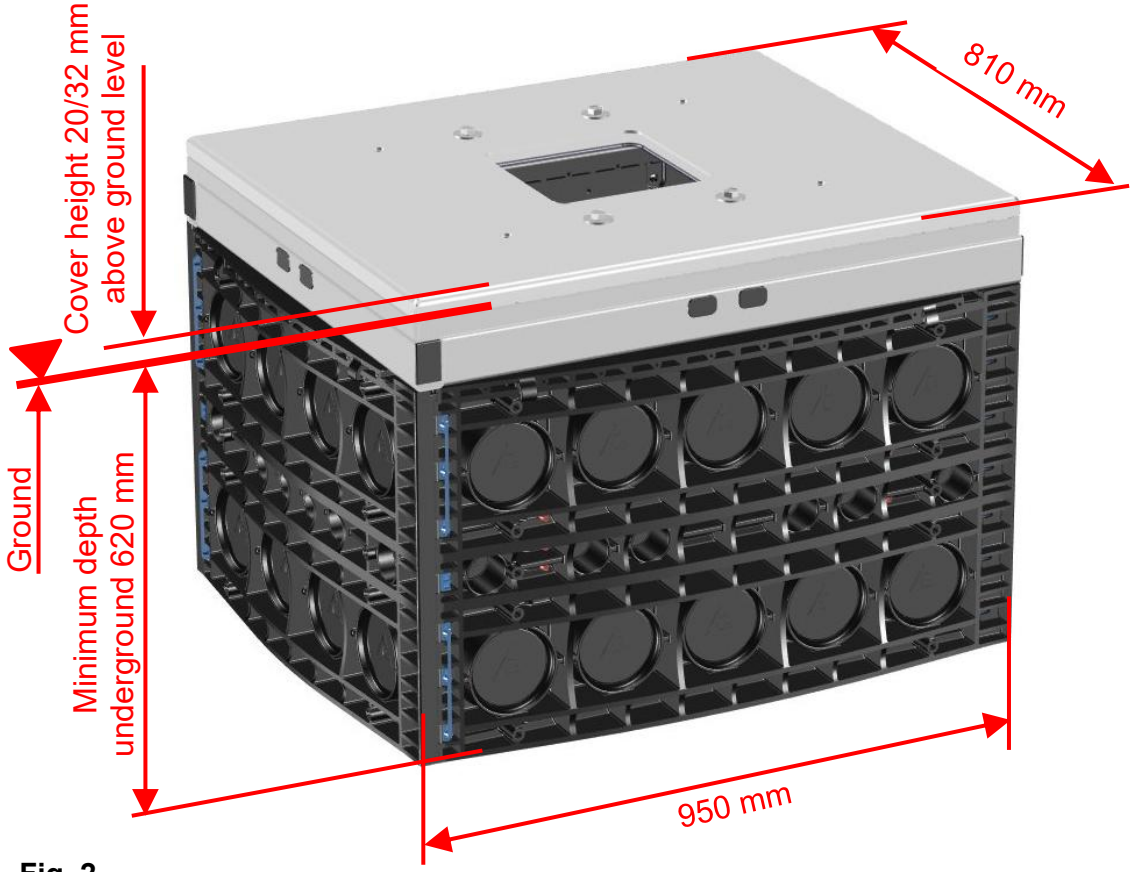


Fig. 2

CD 800 x 800 mm

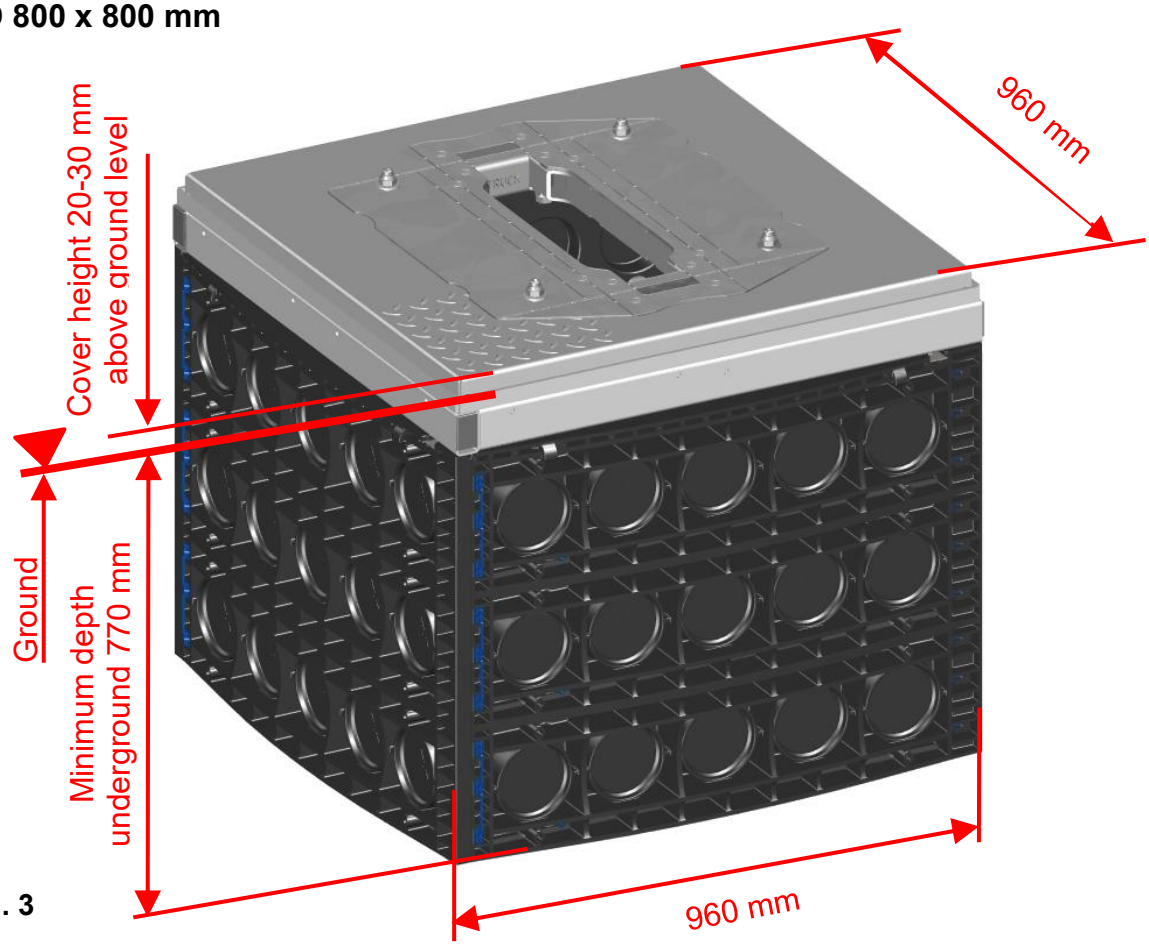


Fig. 3

CD 1165 x 1165 mm

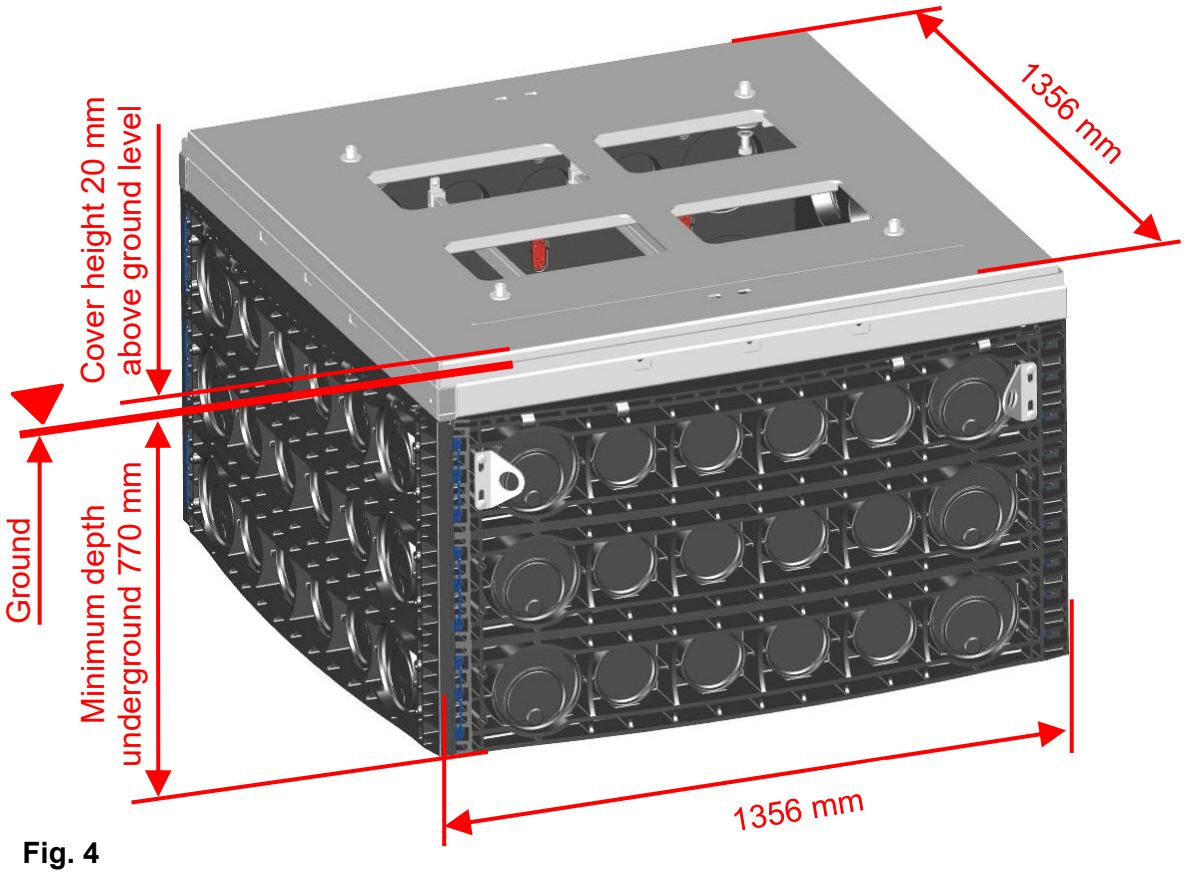


Fig. 4

CD 1165 x 1400 mm

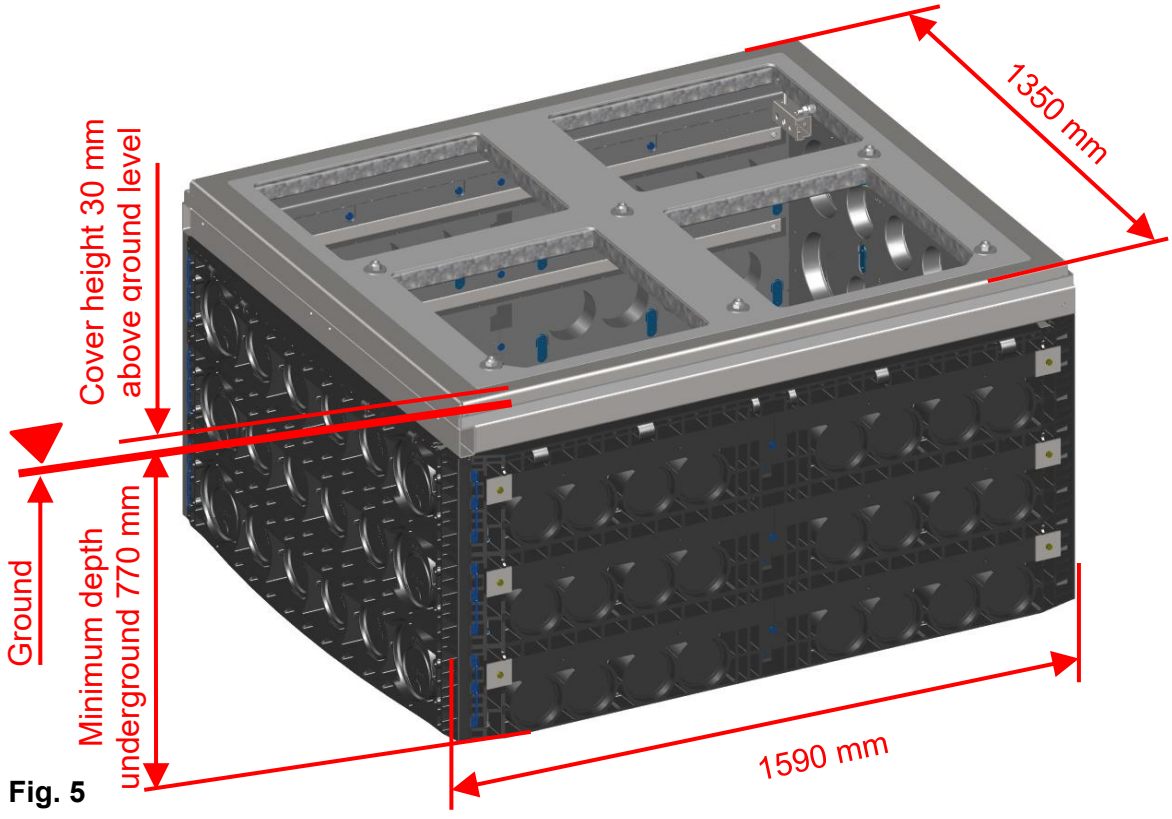


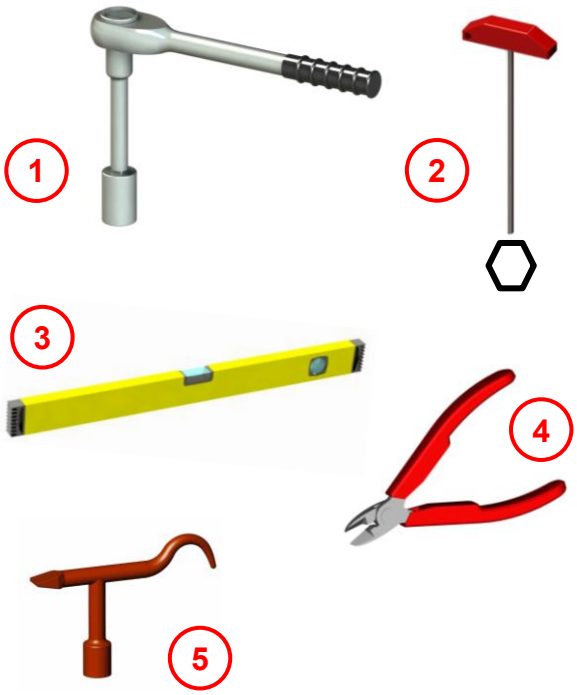
Fig. 5

3.3 Technical data

Version:	650x800 mm	800x800 mm	1165x1165 mm	1165x1400 mm
Total weight:	110 kg	160 kg	230 kg	295 kg
Frame element material:	polycarbonate (PC)			
Metal parts material:	galvanised steel			
Screw connection material:	stainless steel			
Max. weight of the installation	1800 kg	1800 kg	1800 kg	2000 kg
Max. charging station dimensions	H= 2500 mm L= 875 mm W= 725 mm	H= 2350 mm L= 875 mm W= 875 mm	H = 2000 mm L = 1230 mm W = 1230 mm	H= 2200 mm L= 1567 mm W= 1244 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) Cutter

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

Fig. 6

5 Scope of delivery

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

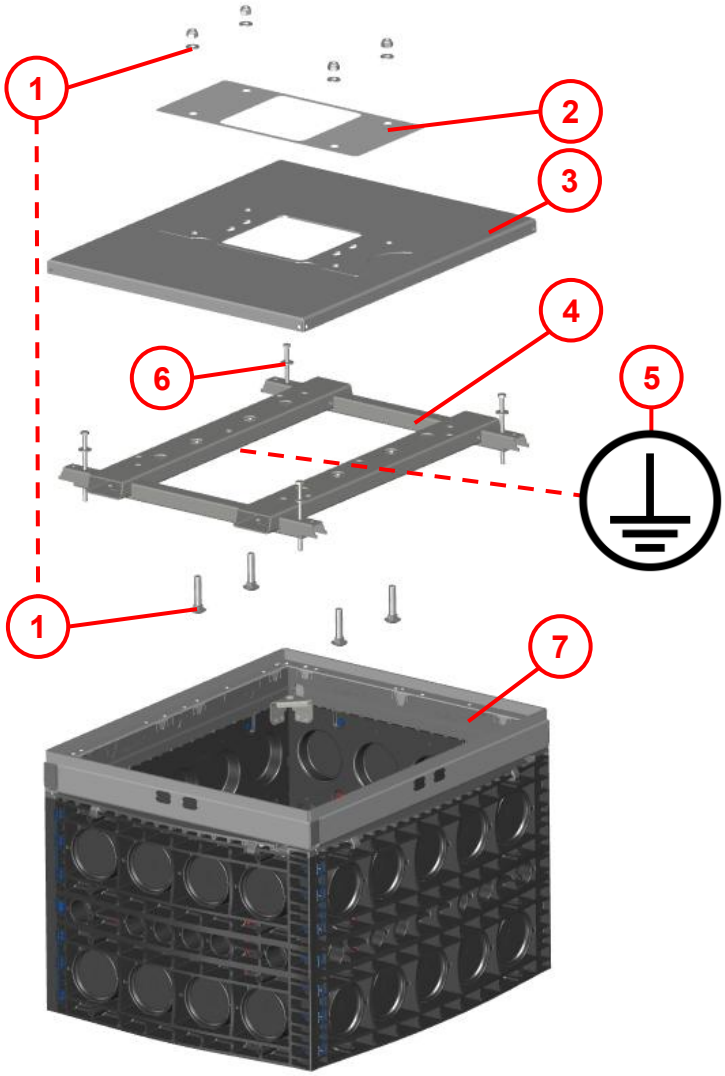


Fig. 7

Item 1		Fastenings, depending on the model
Item 2	1x	Spacer plate
Item 3	1x	Base plate
Item 4	1x	Profile frame
Item 5	1x	Earthing point
Item 6	4x	M10x160 hex screws and
	4x	washers
Item 7	1x	Polycarbonate foundation
		Not shown:
	4x	M10x80 set screw for height adjustment

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:

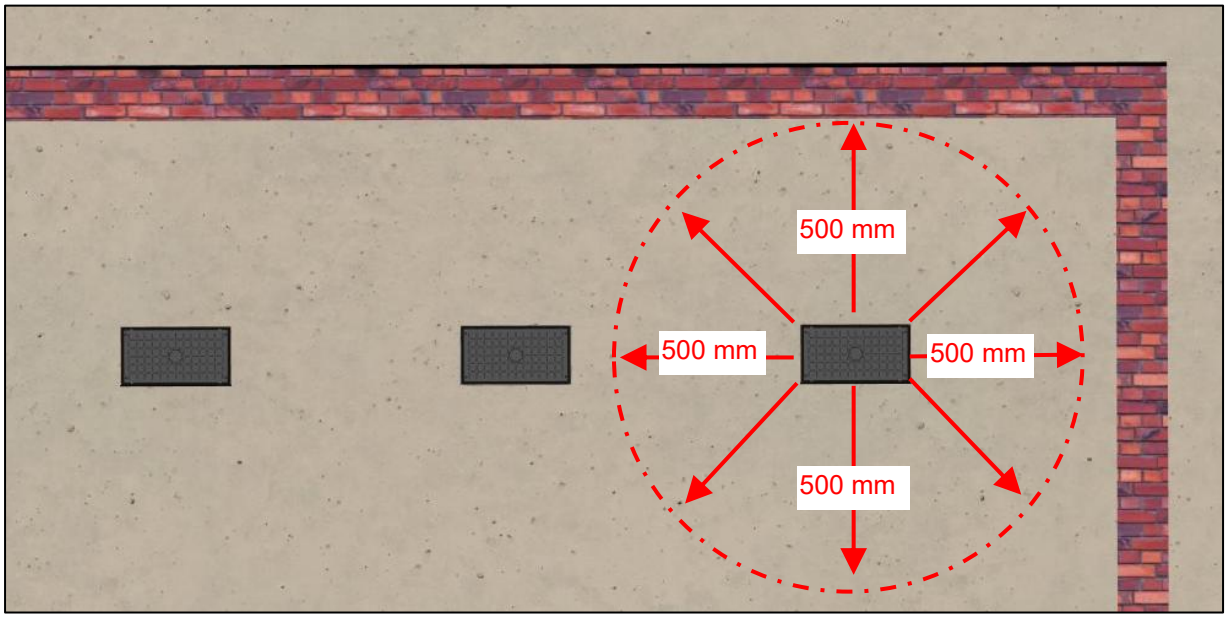


Fig. 8

6.4 Installation situations

Warning:

- Do not install the polycarbonate foundation in road carriageways!
- When installing a charging station, provide protective elements, such as protective bars/bollards/kerbs.

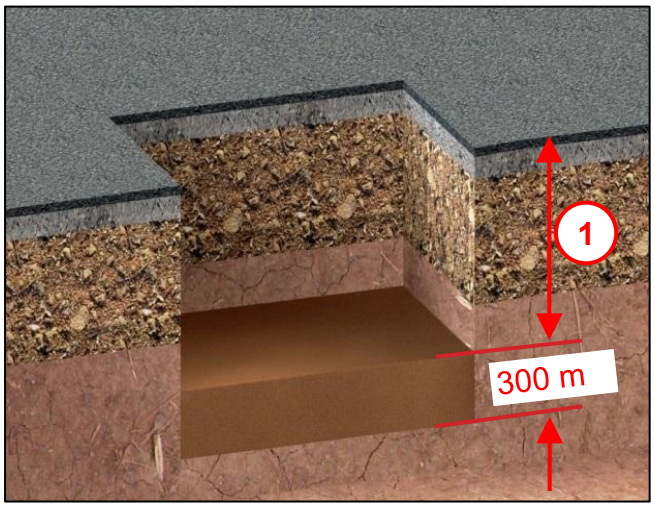


Fig. 9

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).
- Layer and compact the underfill / bottom layer to DPr ≥ 98%.

(1) See section 3.2 “Minimum depth underground”

7 Installation – Polycarbonate foundation with base plate / adapter plate

7.1 Constructing the base

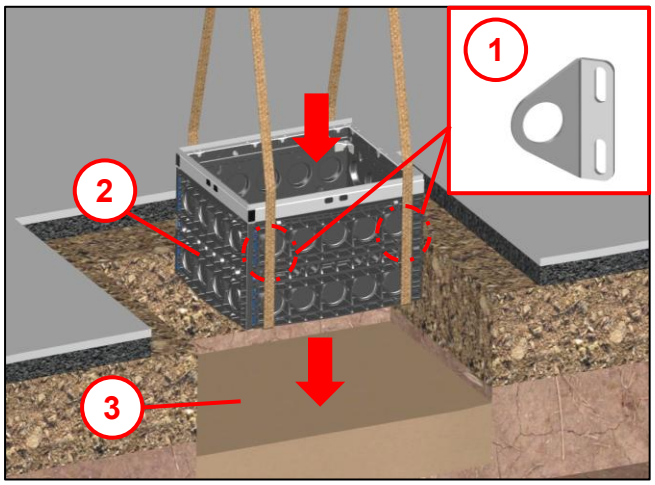


Fig. 10

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

Warning!

- Use slings to insert the foundation!
- Optionally with previously fitted transport hooks **(1)** (see Section 10) or four eyebolts (see **Fehler! Verweisquelle konnte nicht gefunden werden.**Fig. 11).
- Fit the transport hooks to the existing domes using the enclosed screws.
- Risk of injury due to the polycarbonate foundation tipping and falling!

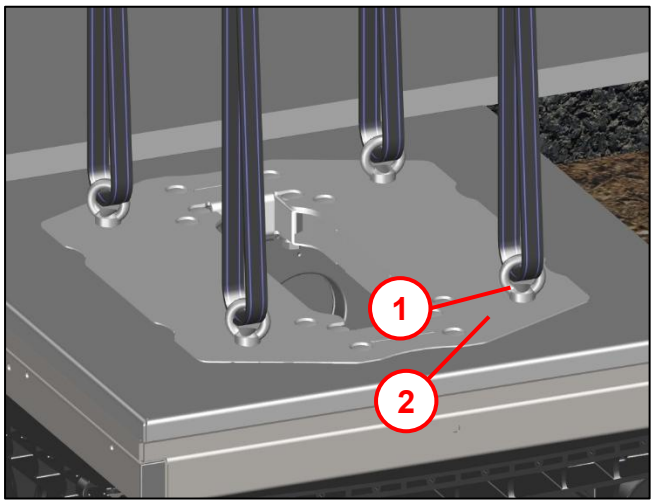


Fig. 11

Inserting using eyebolts:

- Fasten four eyebolts **(1)** (depending on version: M10, M12, M16 or M20) in the mounting holes in the adapter plate **(2)**.

Note!
All parts removed to fit the eyebolts (set screws,
washers, nuts, spacer plate) are needed again later.

7.2 Removing the predetermined breaking points for cable ducts

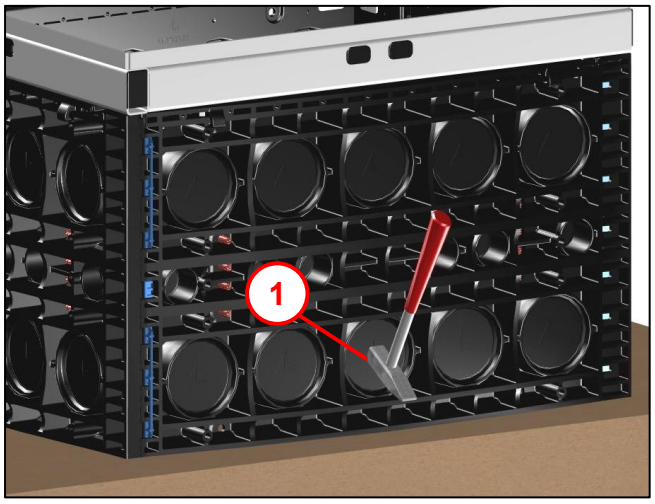


Fig. 12

- Determine the required number of cable ducts and their position.
- Knock out the relevant predetermined breaking points **(1)** with a hammer.
- Use a suitable tool to remove any swarf or burrs produced.

7.3 Fitting the protective pipe seal

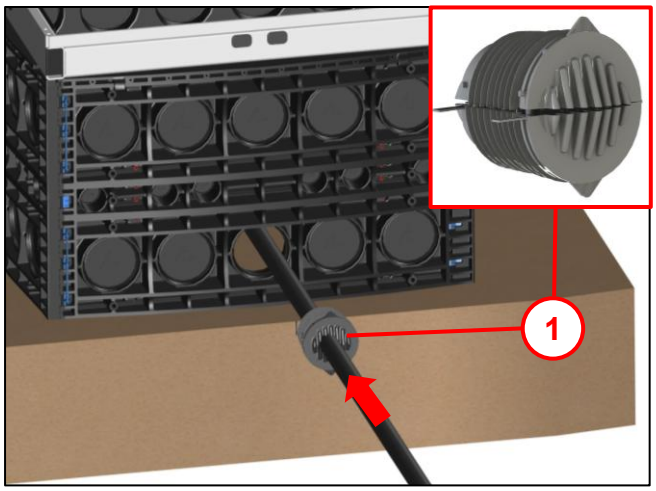


Fig. 13

We recommend using a protective pipe seal **(1)** when laying cables to prevent the polycarbonate foundation from silting up. (2x enclosed).

- Open the protective pipe seal using the two closing lugs.
- Position the protective pipe seal with its inner foam around the cable.
- Snap it shut until the pins are enclosed in the groove.
- Close the closing lugs.
- Insert the protective pipe seal into the opening as shown.

7.4 Fitting the earth bus / strain relief rail

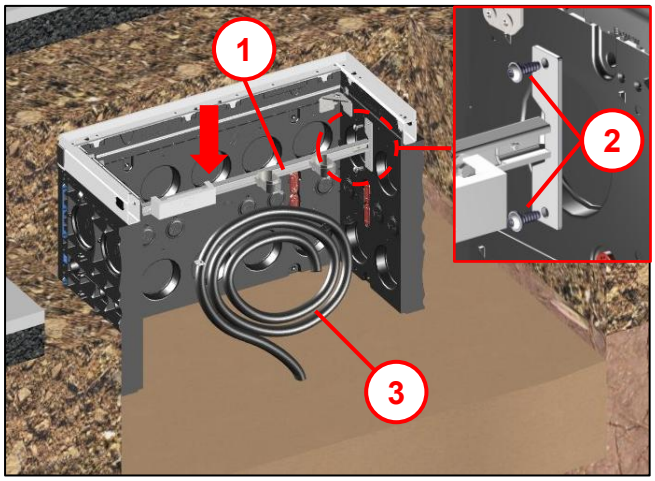


Fig. 14

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 Ø6 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!

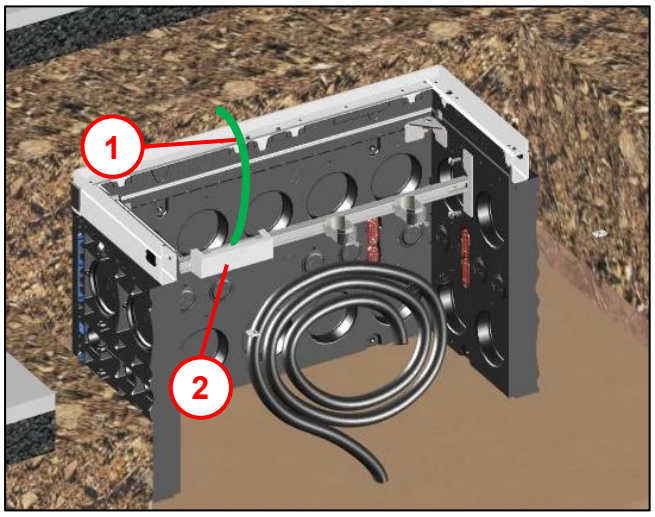


Fig. 15

- 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!
- Use appropriate measuring equipment to check and document the professional earthing of the equipotential bonding rail.
- Make sure that the earthing cable routed upwards is not damaged.

7.5 Backfilling the foundation pit

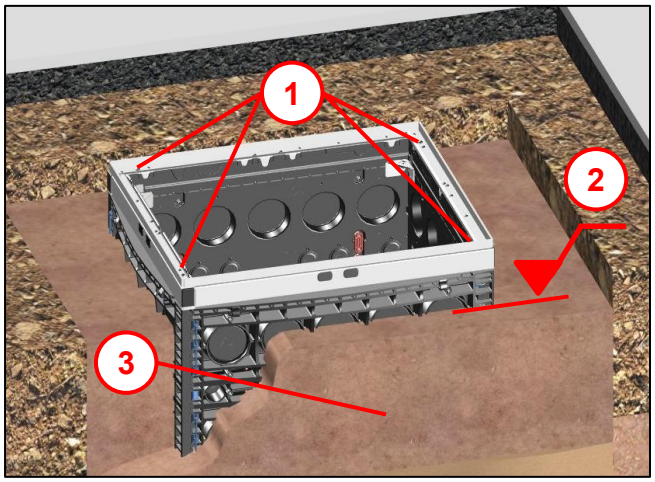


Fig. 16

- 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 (optional)

7.6.1 Adjusting the height at the steel frame

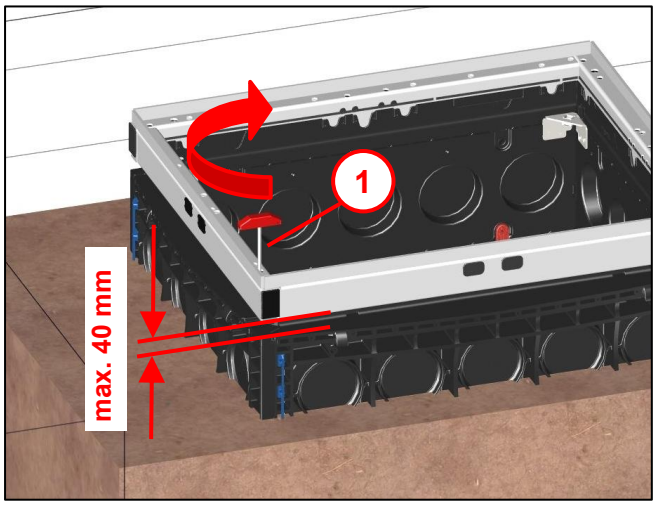


Fig. 17

- 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 of 20 mm to max. 40 mm.
- You may need to 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

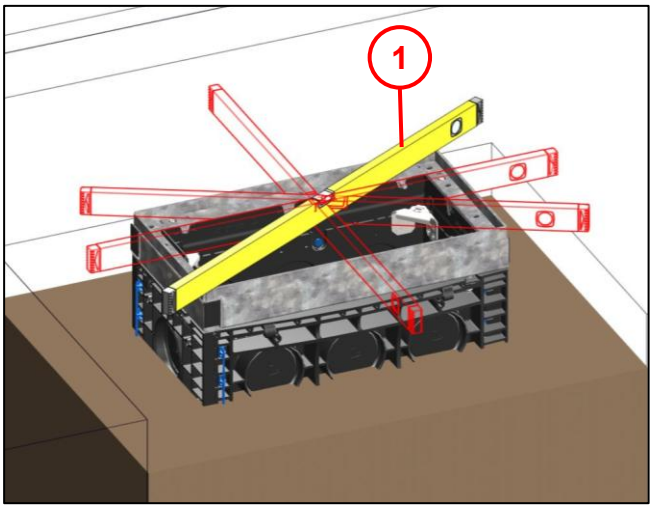


Fig. 18

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

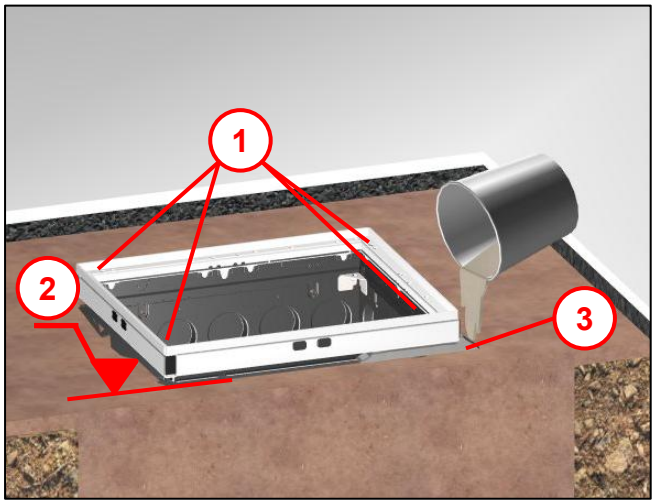


Fig. 19

- 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 Fitting the profile frame

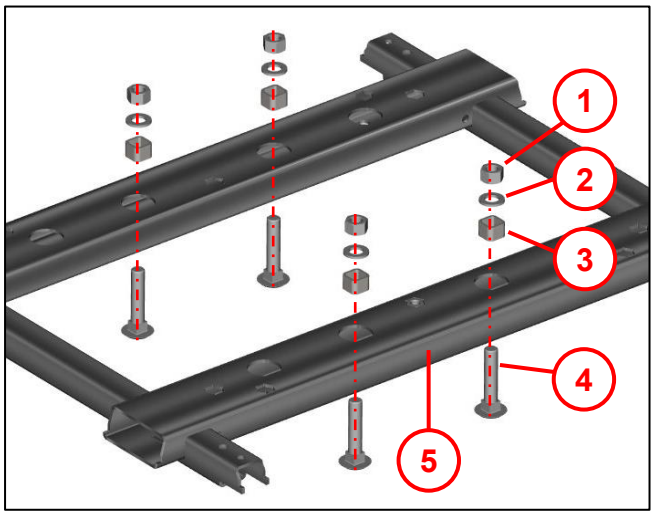


Fig. 20

Note:

- Note Fig. 20 when using round-head bolts **(4)** with size M16 screw connections, otherwise continue with Fig. 21.

- 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)**.

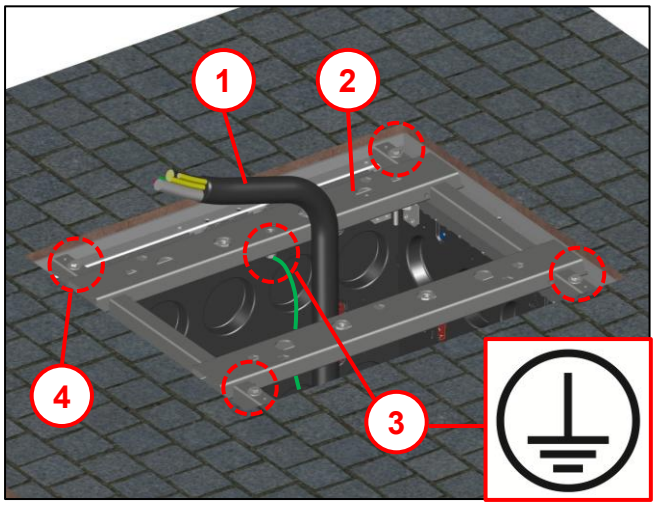


Fig. 21

- Place the profile frame **(2)** on the steel frame (**without** damping pad).
- Use 4x M10x160 hex screws and 4x washers **(4)** to screw in place (torque 36 Nm).
  Note! Apply anti-seize paste to all hex screws before screwing them in!
- Route the cable **(1)** out through the profile frame.
- Incorporate the earth cable **(3)** of the foundation frame into your equipotential bonding system.

Warning!

The entire system must be earthed properly!

7.8 Installing the base plate and spacer plate

Note!

In principle, the column pattern is already fixed except for:

- Alpitronic® columns (system CD 800x800 mm) continue with section 7.8.1.
- XCharge® columns (system CD 800x800 mm) continue with section 7.8.2.

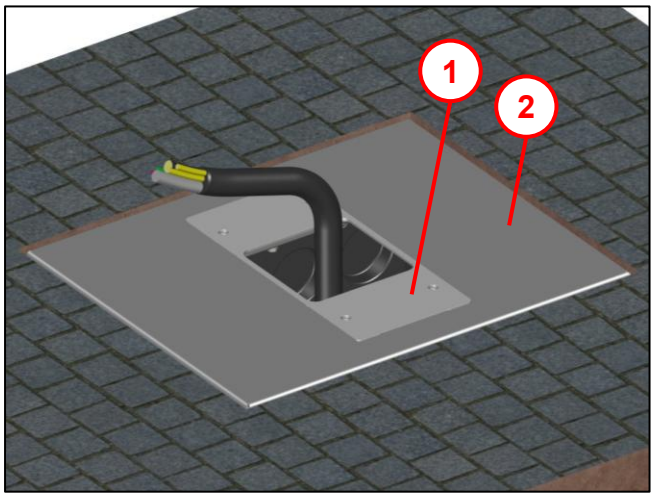


Fig. 22

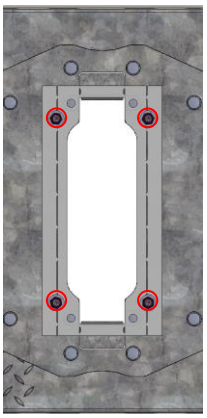
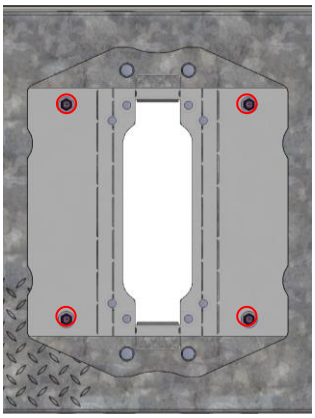
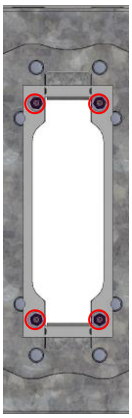
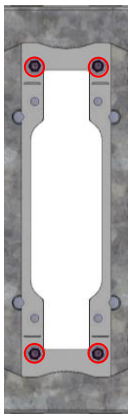
- Place the base plate **(2)** on the profile frame.
- Place the spacer plate **(1)** on the base plate, and fasten in place with 4x set screws.

You can skip the following two sections (7.8.1 and 7.8.2) for **non**-Alpitronic® (CD 800x800 mm) and **non**-XCharge® (CD 800x800 mm) columns.

7.8.1 Alpitronic®

Note: This section only applies to Alpitronic® columns with clear dimensions of 800x800:
- Alpitronic® HYC200
- Alpitronic® HYC400
- Alpitronic® HYC1000 EV Dispenser
- Alpitronic® HYC1000 MCS Dispenser

Note!
- Depending on the mode, the set screws need to be positioned in accordance with the table below.
- All further points are carried out at the resulting position.

HYC200	HYC400	HYC1000 EV	HYC1000 MCS
			
Fig. 23	**Fig. 24**	**Fig. 25**	**Fig. 26**

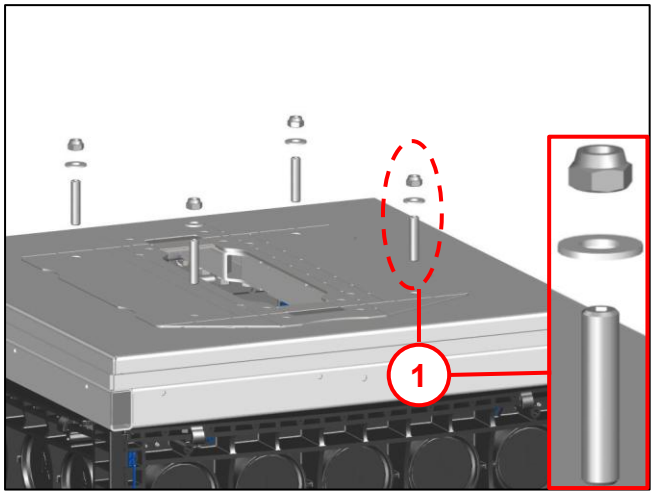


Fig. 27

- Remove 4x set screws, 4 washers and 4x nuts **(1)**.

  Note: Alpitronic® HYC400 is pre-assembled as standard, and only the washers and nuts need to be removed.

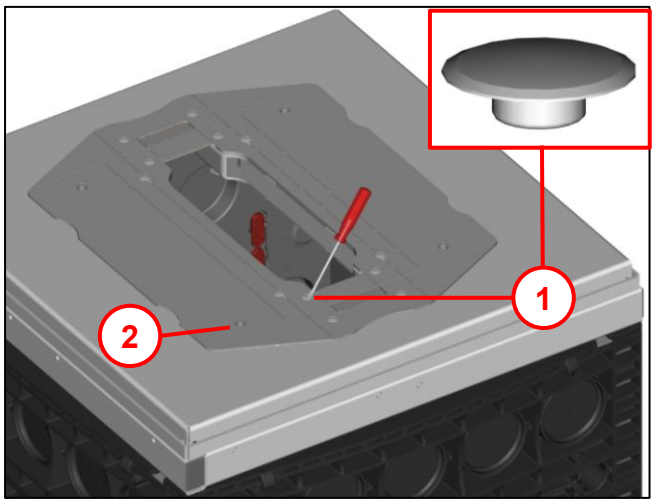


Fig. 28

- Select the required type of charging station, see Fig. 23 - Fig. 26.
- Use a screwdriver to remove the dummy plugs **(1)** from the openings required for this type of column.

Note!

- Use any hole plugs removed for the openings for version HYC400 **(2)**.

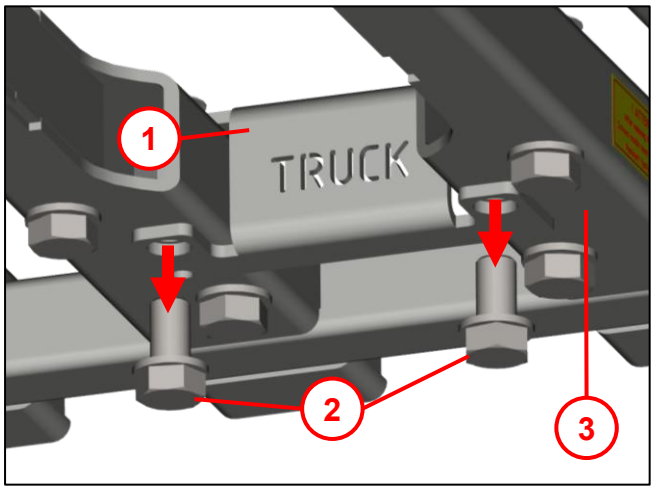


Fig. 29

Note!

Refer to Fig. 29 and Fig. 30 only for the model Alpitronic® HYC1000 Dispenser MCS:

- Remove the base plate and spacer plate of the foundation.
- Remove 2x M16 screws **(2)** with washers to remove the truck plate **(1)**.
- Once the truck plate has been removed, re-attach the 2x M16 screws to the profile frame **(3)** (60 Nm).

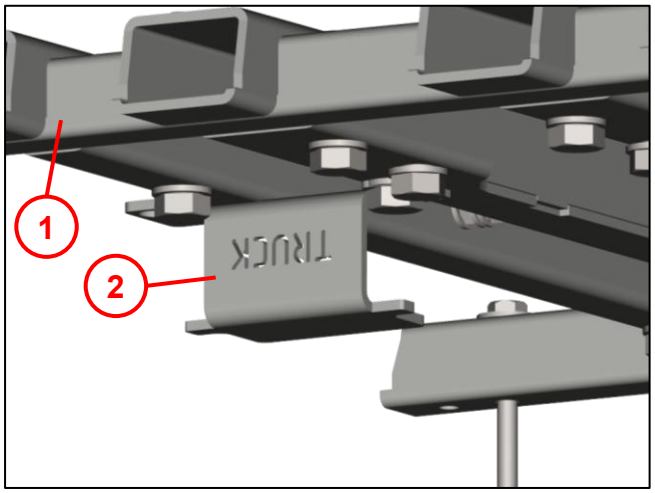


Fig. 30

- Rotate the truck plate **(2)** 180° and attach it to one of the other screws in the profile frame **(1)**.
- Replace the base plate and spacer plate on the foundation.

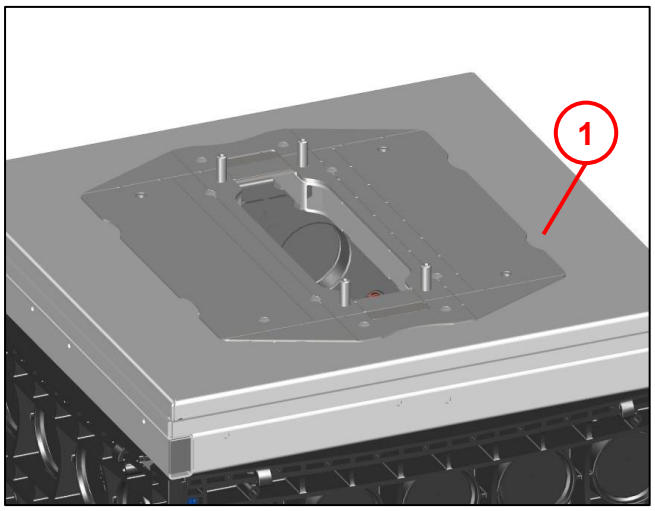


Fig. 31

- Insert 4x set screws **(4)** at the required position.

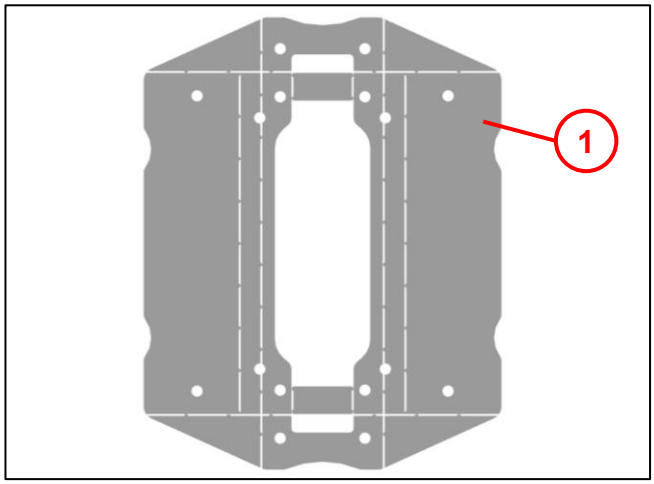


Fig. 32

Use a cutter to cut the spacer plate **(1)** to size, see Fig. 23- Fig. 26 for versions.

7.8.2 XCharge®

Note: This section only applies to XCharge® columns with clear dimensions of 800x800:
- XCharge® C6
- XCharge® C7

7.8.2.1 XCharge® C7

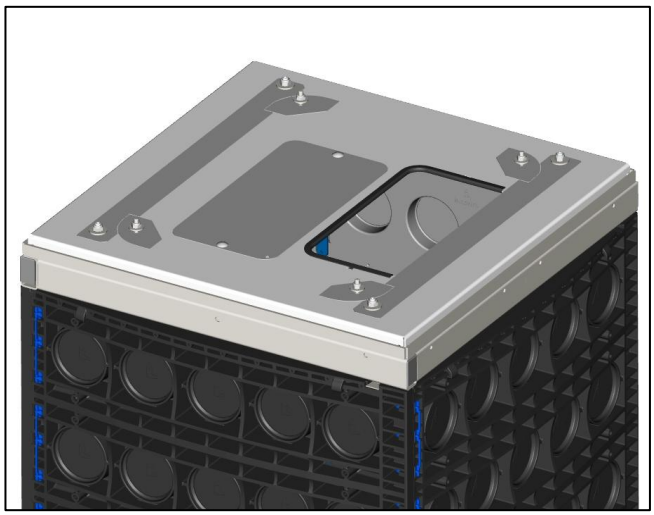


Fig. 33

Delivered state

Continue to section 8.

7.8.2.2 XCharge® C6

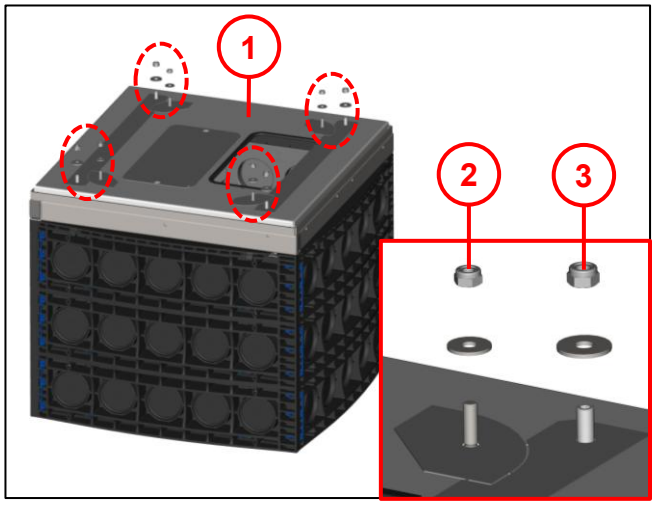


Fig. 34

- Remove 4x M12 nuts **(3)** with washers and 4x M10 nuts **(2)** with washers.
- Remove the base plate **(1)**.

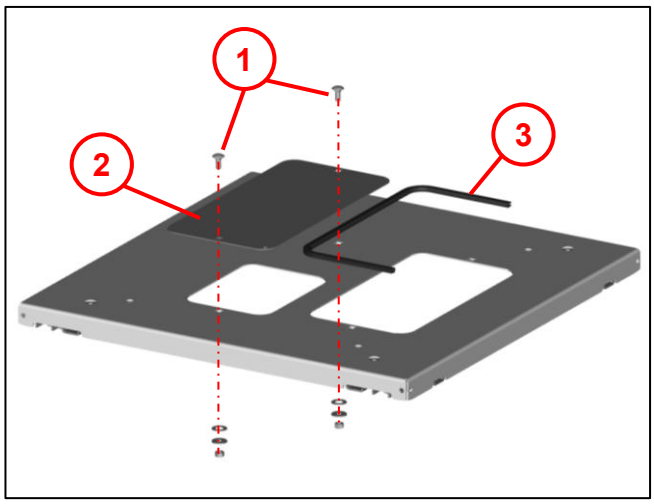


Fig. 35

- Remove 2x M10x25 round-head bolts **(1)** with spring washer, washer, and hex nut, and then remove the cable outlet cover **(2)**.
- Remove the edge protection **(3)**.

Note!
All components will be required once again in the next step.

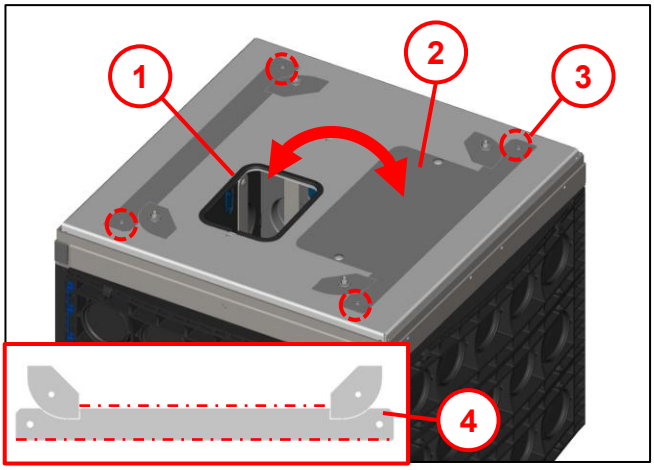


Fig. 36

- Swap the positions of the cable outlet cover **(2)** and edge protection **(1)** and refit using the same fastenings as in Fig. 35.
- Remove 4x M12 set screws **(3)** and close with dummy plugs (see accessories kit).

Note!
Once the charging station has been installed (section 8), tear off any projecting spacer plates **(4)** with version C6.

8 Installing the charging station (not included with delivery)

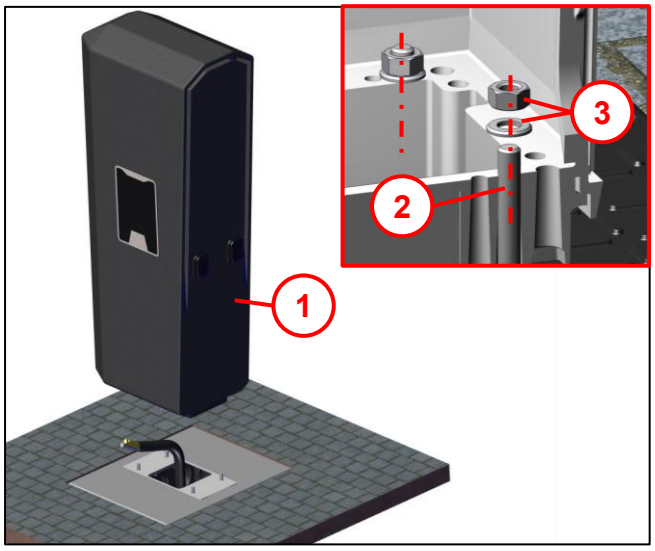


Fig. 37

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!

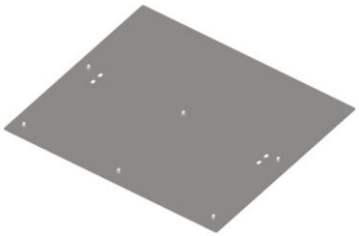
- Secure the surface-mounted installation by the use of washers and nuts **(3)**.

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

9 Maintenance

Measures	Intervals	Remark
Carry out a visual inspection for corrosion	In station's maintenance interval	Visual check, initiate replacement as necessary
Check the earthing point	In station's maintenance interval	Continuity test with protective conductor test

10 Accessories

<table>
<tr><th>Article</th><th colspan="2">Article number</th><th></th></tr>
<tr><td rowspan="4">Strain relief rail with earthing option (equipotential bonding rail with two BK42 clamps).</td><td>650x800 mm</td><td rowspan="2">700887630</td><td rowspan="4"></td></tr>
<tr><td>800x800 mm</td></tr>
<tr><td>1165x1165 mm</td><td>700887680</td></tr>
<tr><td>1165x1400 mm</td><td>On request</td></tr>
<tr><td>Protective pipe seal Ø 110 mm</td><td colspan="2">081863110</td><td></td></tr>
<tr><td>Transport hook set</td><td colspan="2">700887611</td><td></td></tr>
<tr><td>Blank cover set</td><td colspan="2">On request</td><td></td></tr>
</table>

11 Material defects

Langmatz assumes liability for material defects in the product as per Section 434 BGB (German Civil Code) for 24 months, starting from the date of 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 properties. In this context, the operator of the Langmatz GmbH products is expressly obliged to decide, based on their 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.

14 Contact

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