INSTRUCTIONS FOR USE

FALL PROTECTION FOR TRENCH SHORING

terra infrastructure

safety: efficient and sustainable

Address:	terra infrastructure GmbH Hollestraße 7A 45127 Essen, Germany
Phone:	+49 2433 453-0
Eail:	trenchshoring@terra-infrastructure.com
Homepage:	https://www.terra-infrastructure.com

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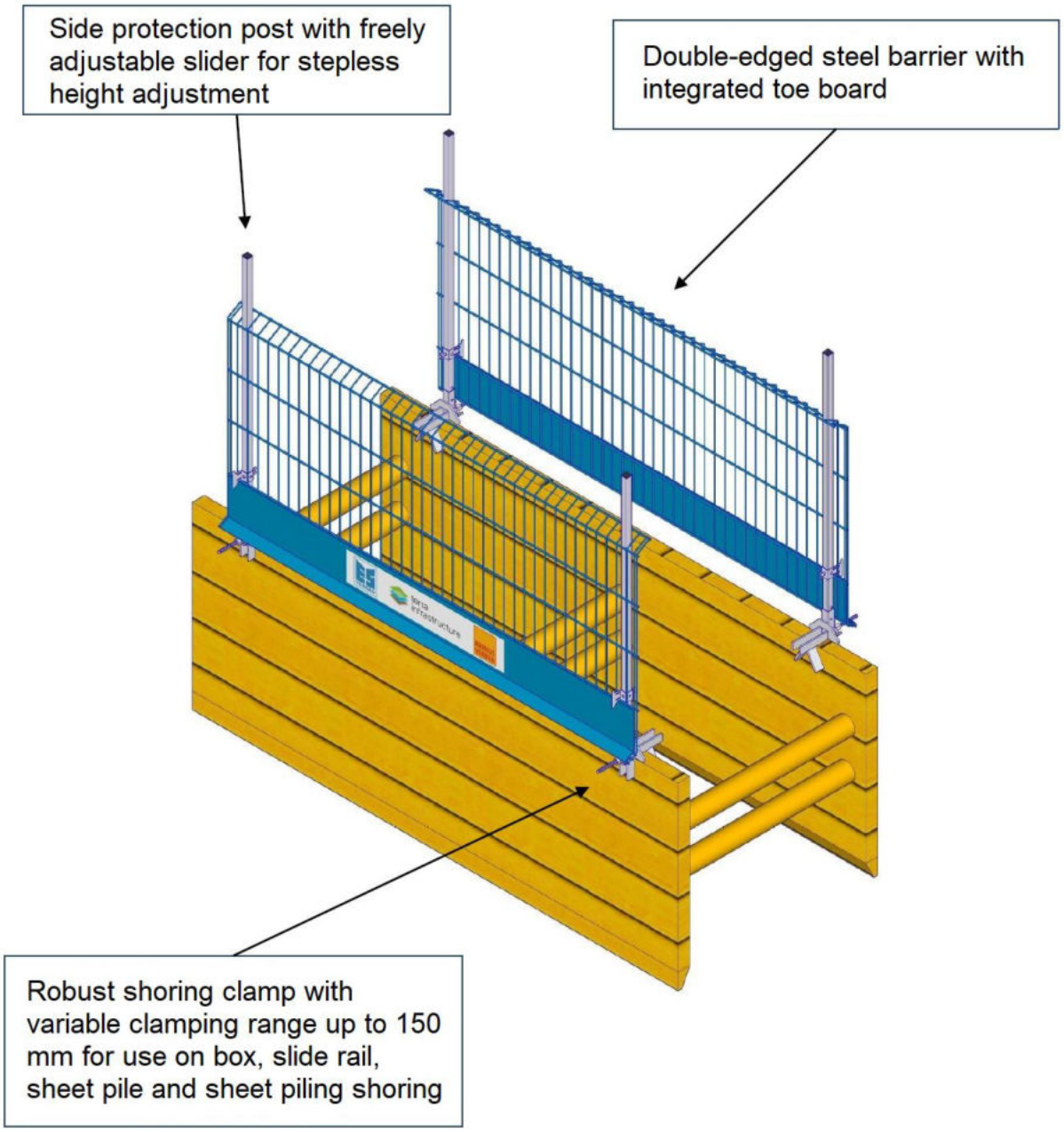
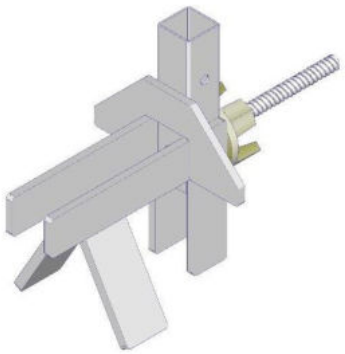
1. SYSTEM OVERVIEW FALL PROTECTION



2. REQUIRED COMPONENTS

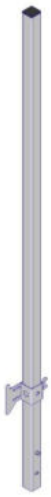
Clamp 150 (art. no. GV000213)

- Clamping range up to 150 mm
- Can be used for box, slide rail and sheet pile shoring
- Three-part system, can be assembled as a unit
- Integrated post holder



Post 1500 incl. slider (art. no. post: GV000214) (art. no. slider: GV000215)

- 1500 mm
- Freely adjustable slider enables stepless height adjustment
- The Easy Snap inserted at the lower end of the Post automatically snaps into the post holder of the clamp 150



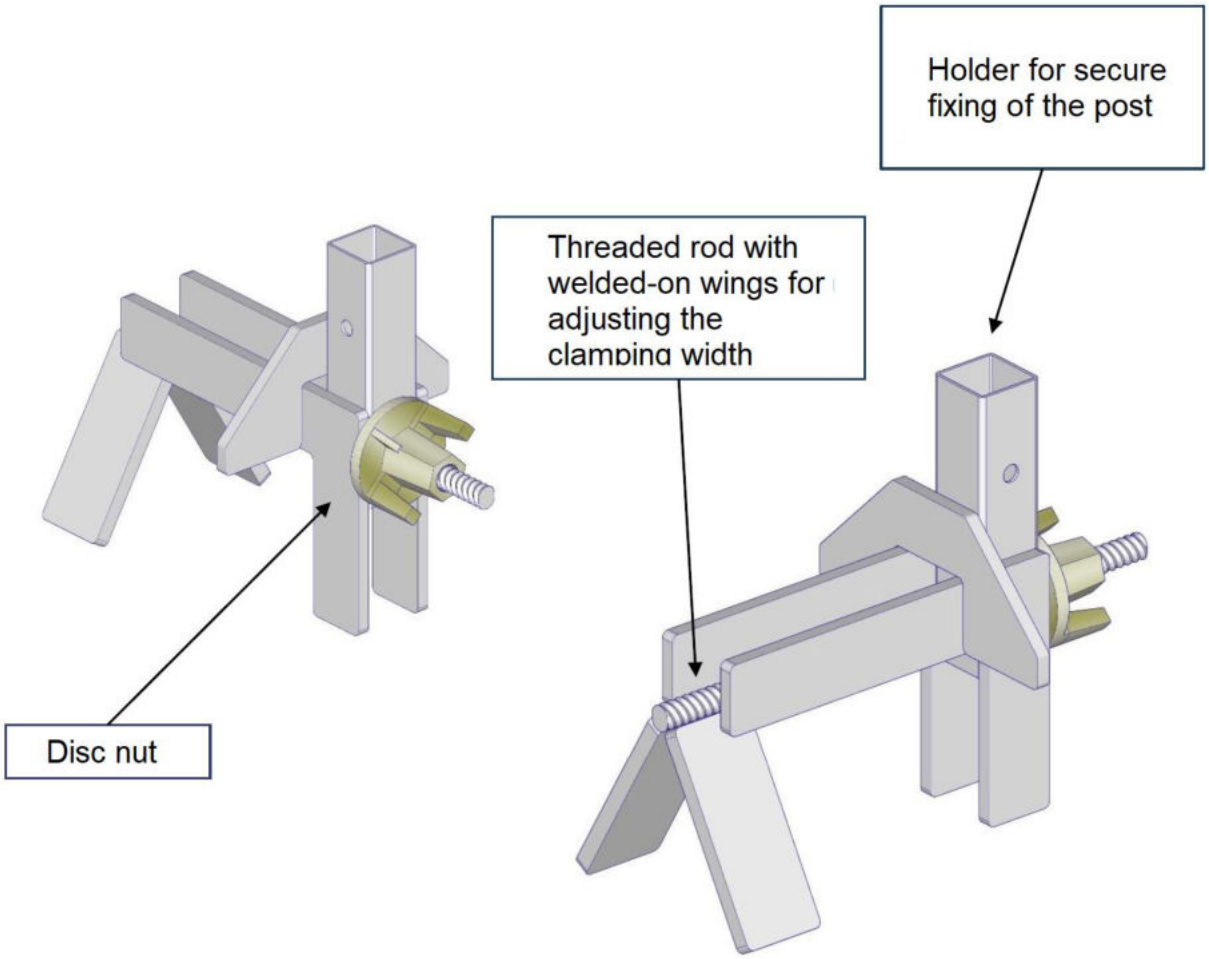
Steel barrier 2600x1180 (art. no. GV000216)

- Edged at the top and bottom
- Easy storage and transport thanks to slim design
- Replaces three-part wooden side protection
- Railing, knee rail and toe board in one
- Galvanised and powder-coated

Clamp 150

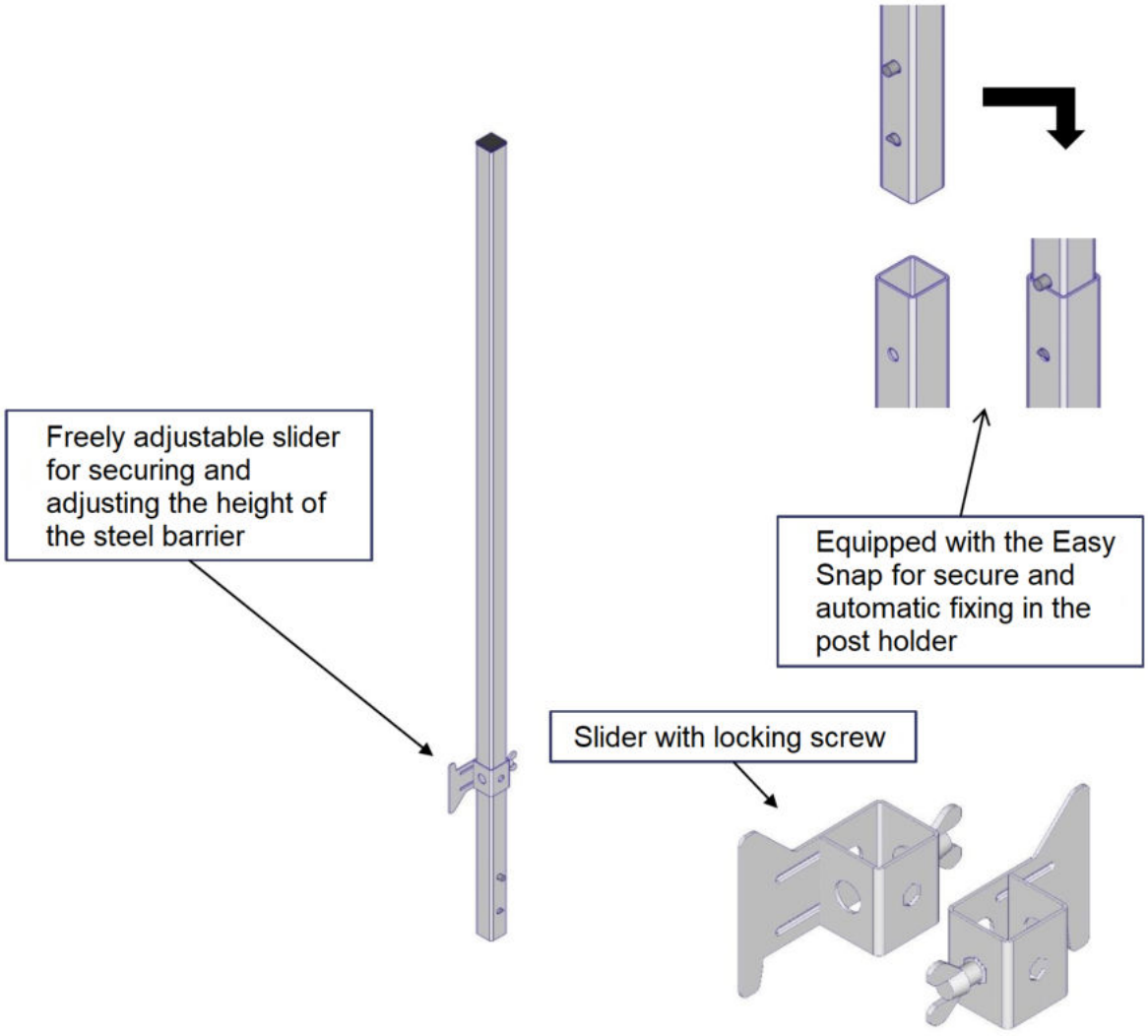
Fastening device. Assembly torque min. 60 Nm

- Dimensions: 330 x 249 x 180 mm
- Weight: 4.8 kg
- Material: Steel/galvanised
- Standard: EN 13374, Class A



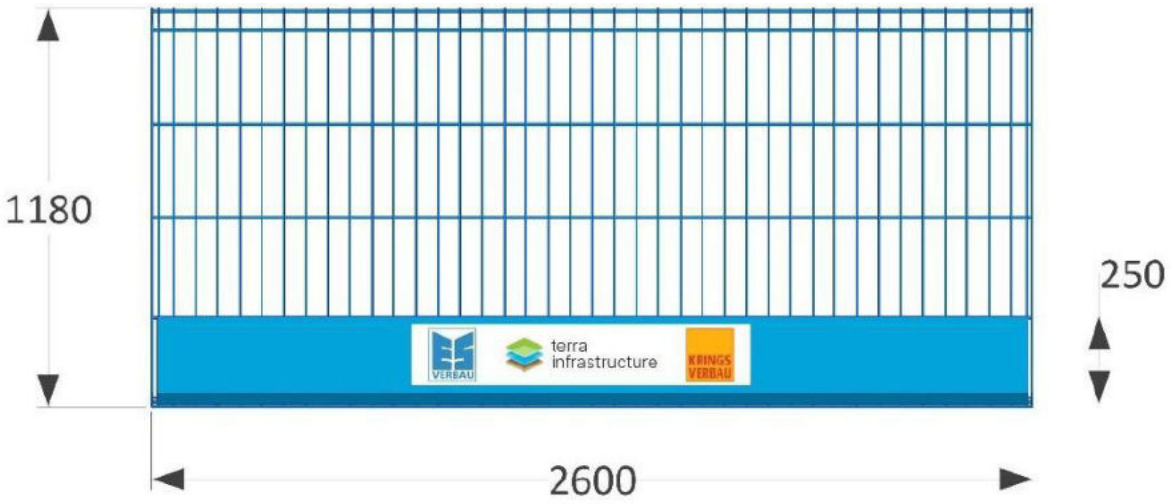
Post 1500

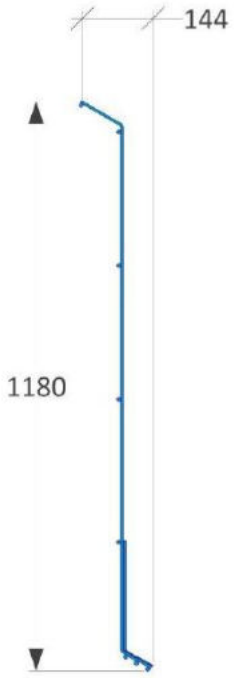
- Dimensions: 1500 x 35 x 35 mm
- Weight: 3.5 kg
- Material: Steel/hot-dip galvanised
- Standard: EN 13374, Class A



Steel barrier 2600 x 1180

- Dimensions: 2600 x 1180 mm
- Weight: 19 kg
- Material: Steel/galvanised + powder-coated
- Standard: EN 13374, Class A

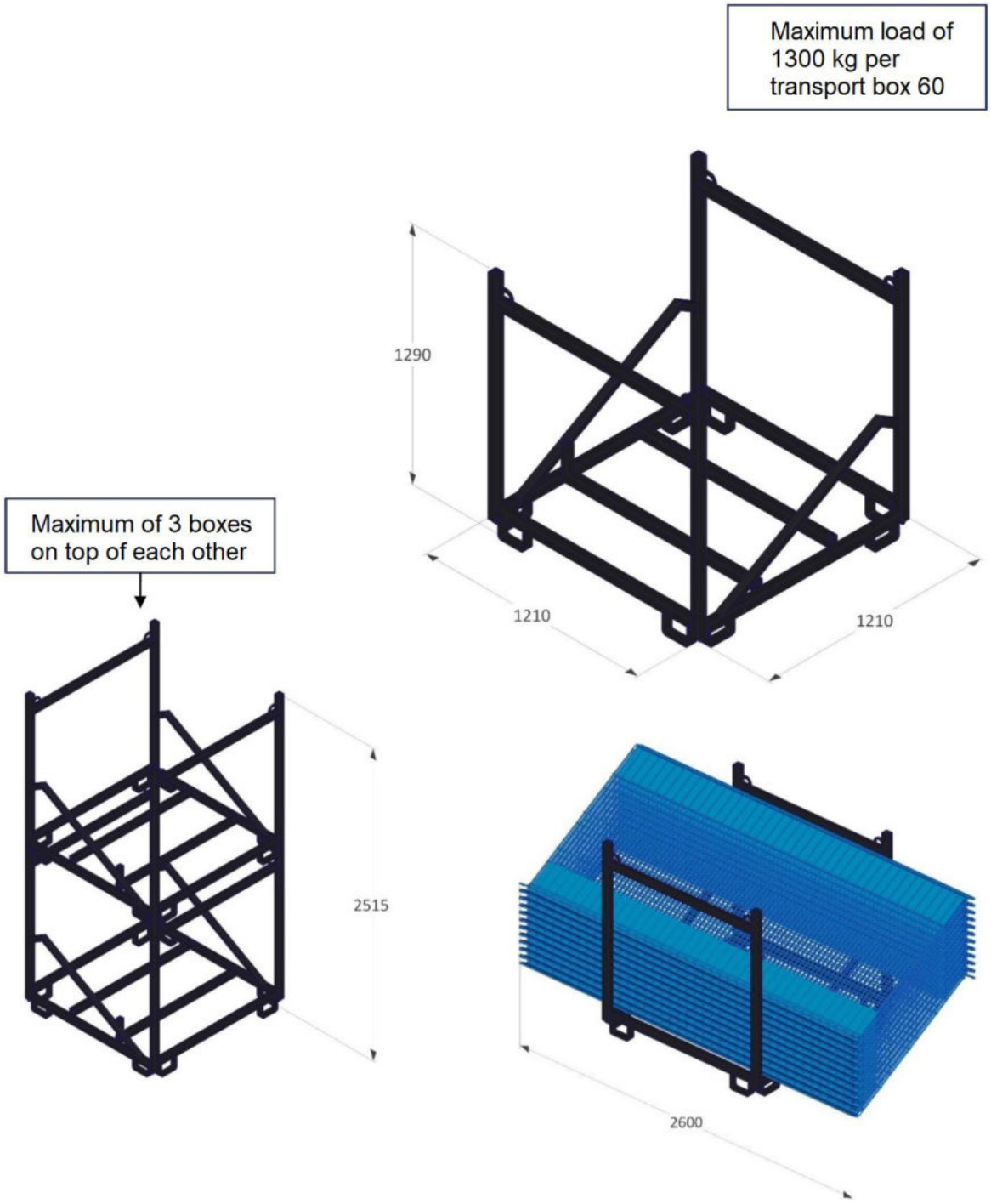




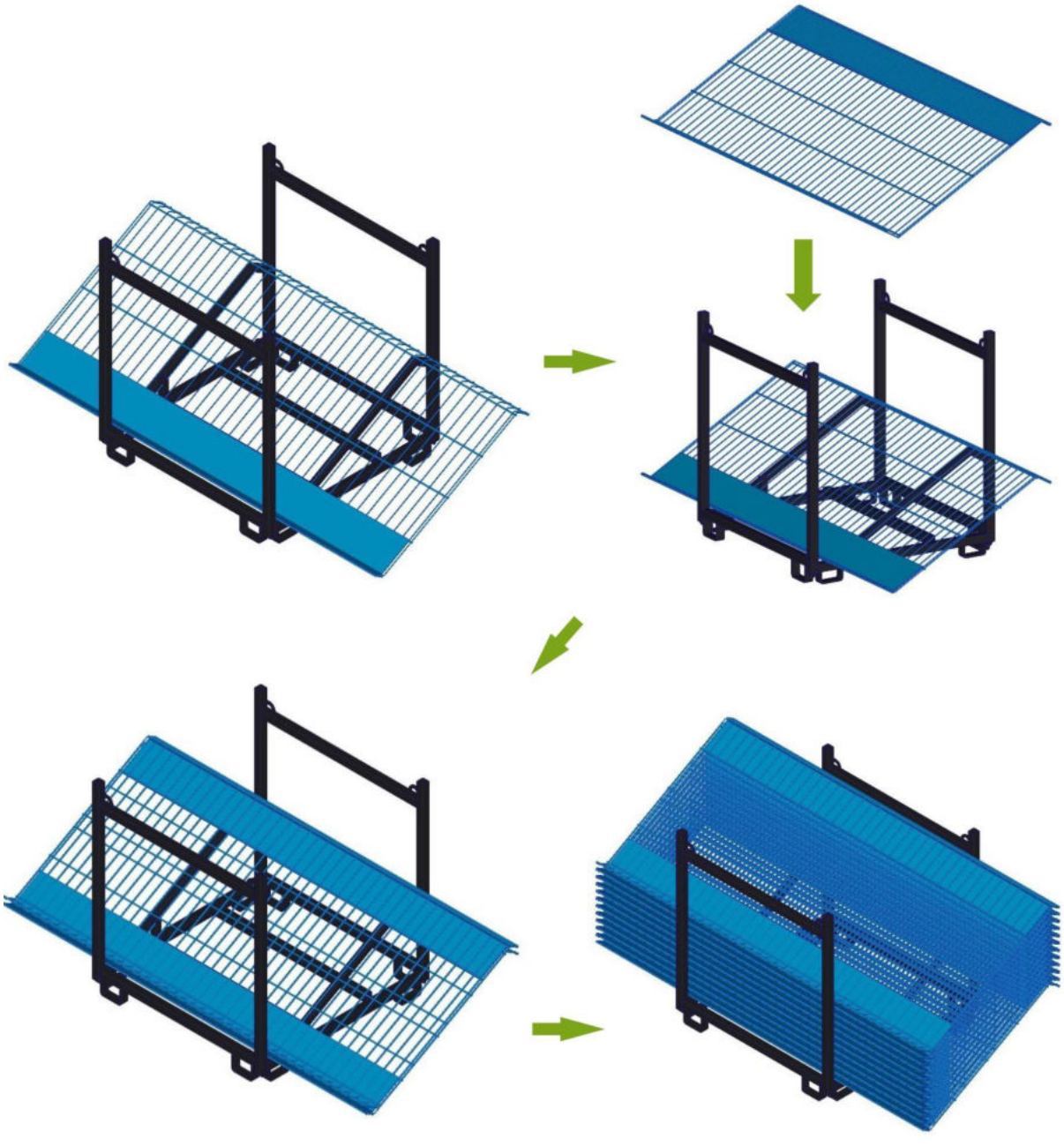
Maximum overlap of the barriers:	100 mm
Maximum overlap:	600 mm
Maximum post spacing:	2400 mm

Transport box 60

- Dimensions: 1210 x 1210 x 1290 mm
- Weight: 98 kg
- Material: Steel/hot-dip galvanised

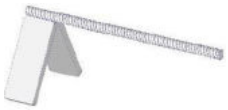
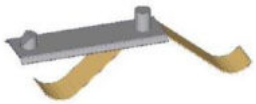
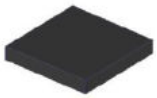
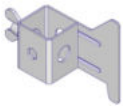


3. STACKING THE BARRIERS IN THE TRANSPORT BOX 60



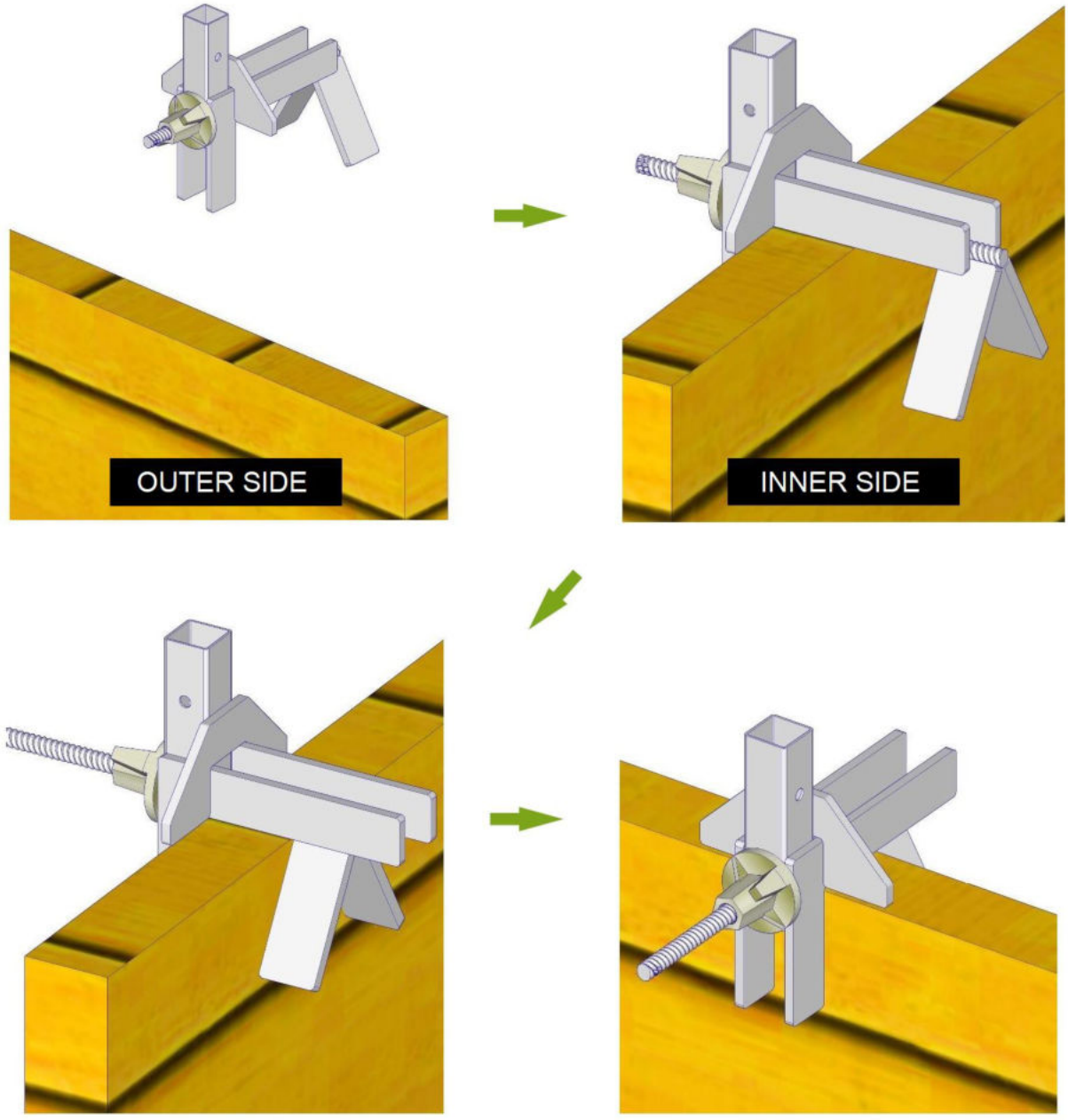
Maximum 60 steel barriers
per transport box 60

4. SPARE PARTS

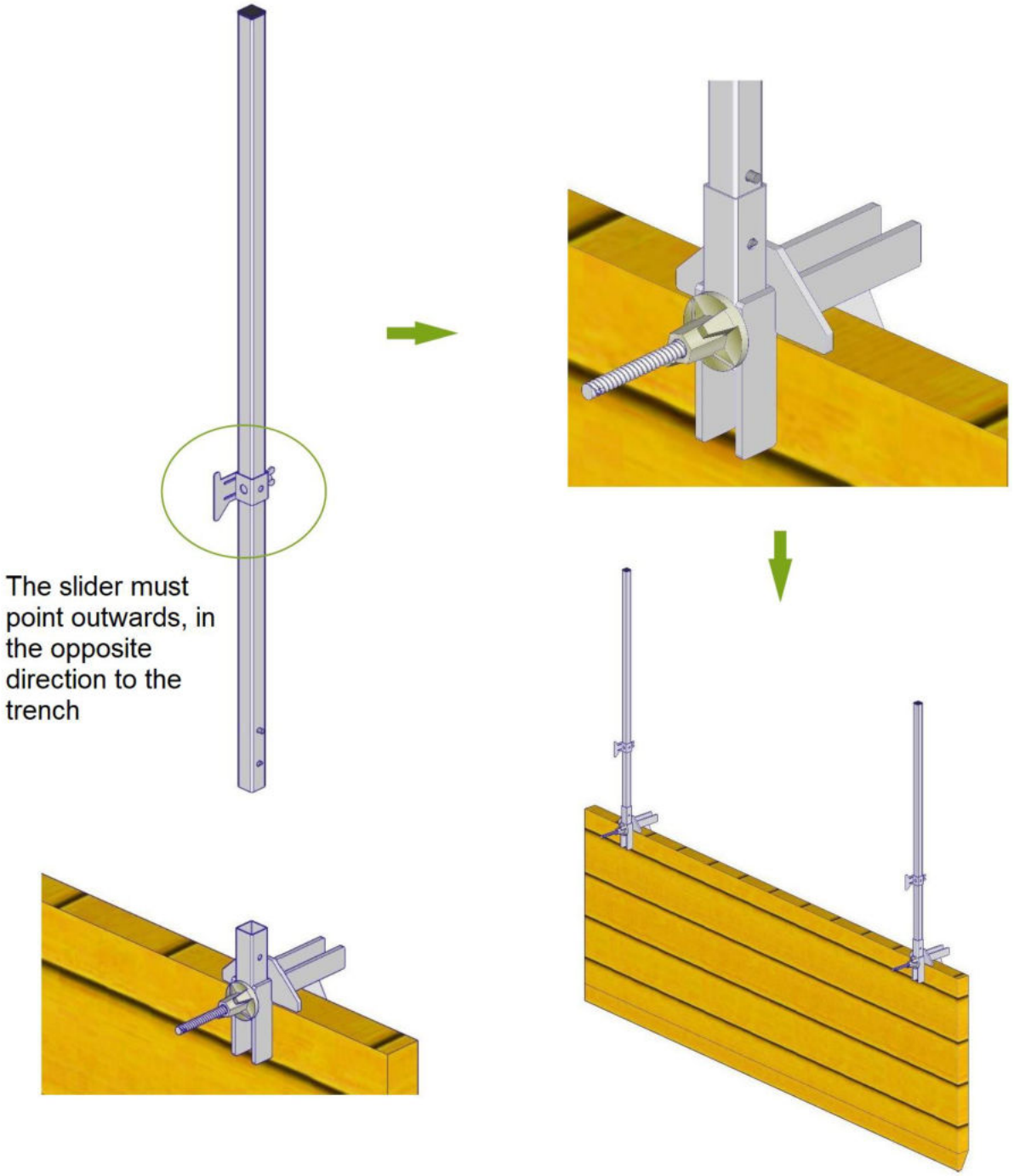
Position	Art.-No.	Description	Weight [kg]	Drawing
1	GV000573	Clamp 150 SBG	2.7	
2	GV000574	Anchor 150 SBG	1.5	
3	GV000575	Disc nut 361 DW15	0.45	
4	GV000576	VT Easy Snap S	0.05	
5	GV000577	Lamellar plug 35x35 mm black	0.007	
6	GV000215	Slider	0.2	
7	GV000578	M8 wing screw	0.05	
8	GV000216	Steel barrier 2600 x 1180	19,0	
9	GV000213	Clamp 150	4,8	
10	GV000214	Post 1500	3,5	
11	GV000217	Transport box 60	98,0	
12	GV000558	Transport box 25	60,0	

5. ASSEMBLY INSTRUCTIONS

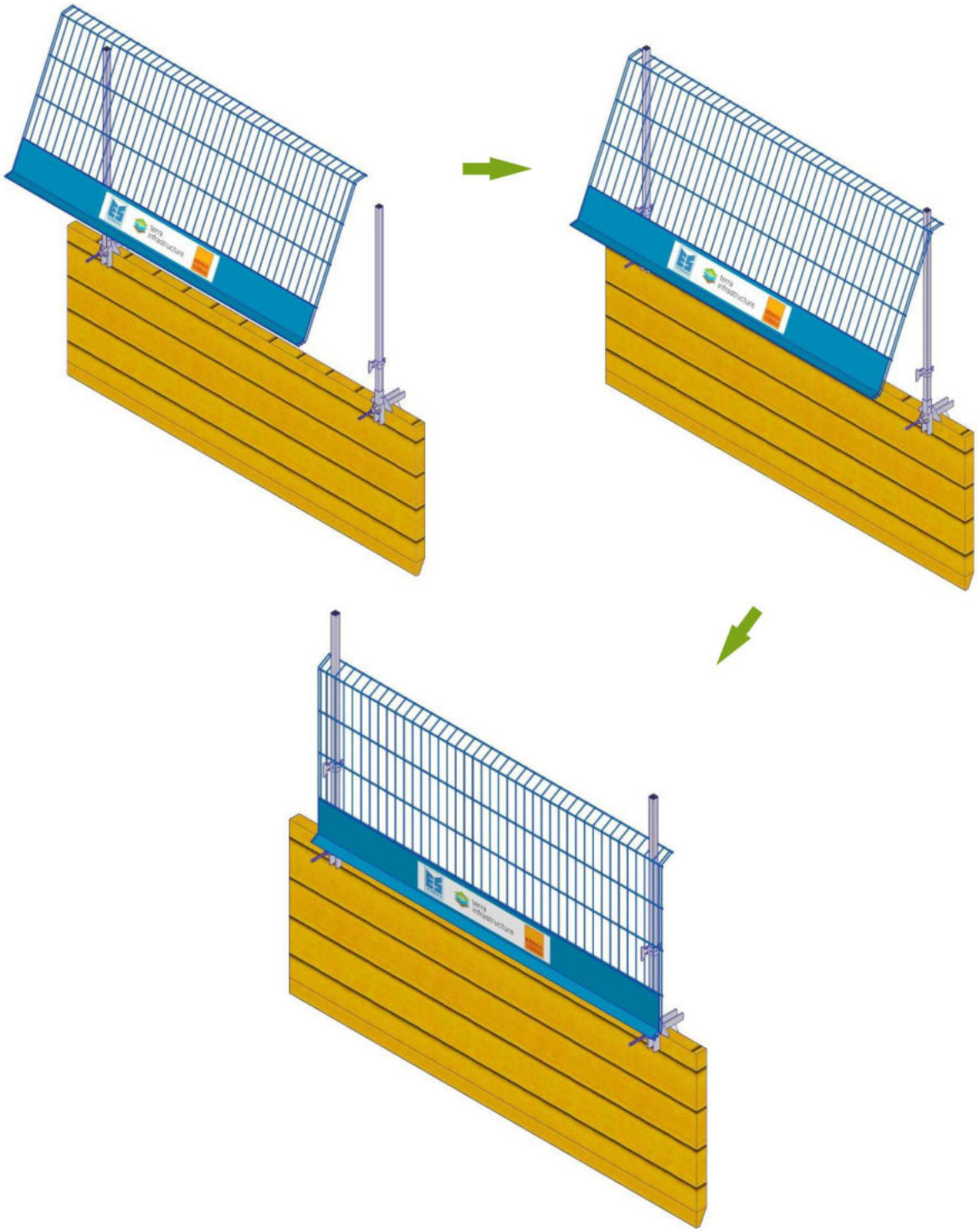
1. Position the clamp and fix the disc nut with a hammer.



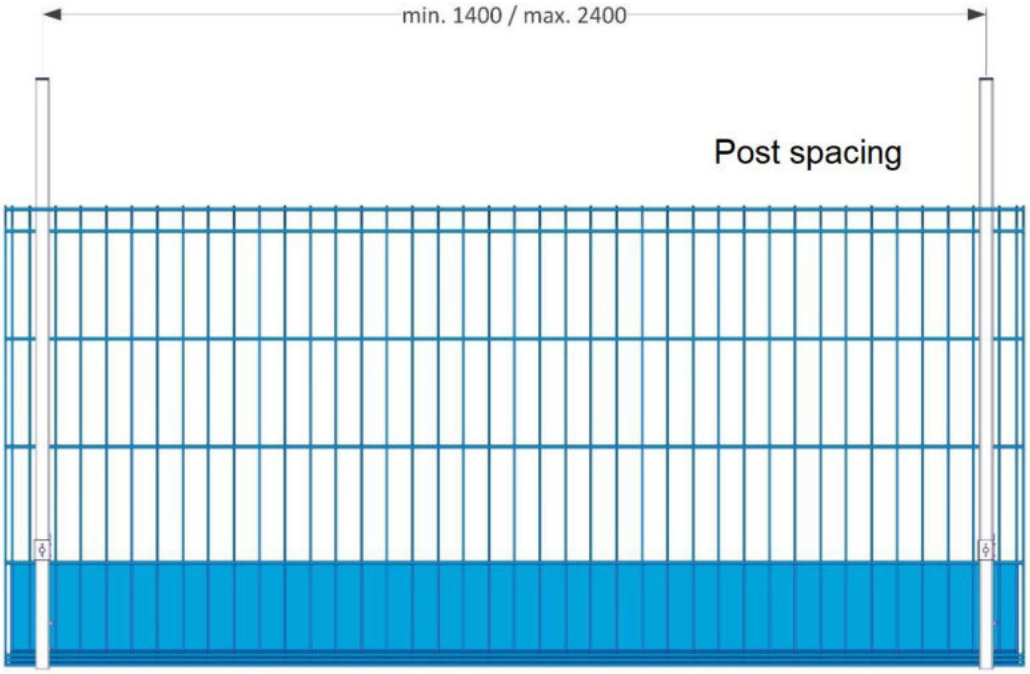
2. Insertion of the post, self-locking thanks to Easy Snap.

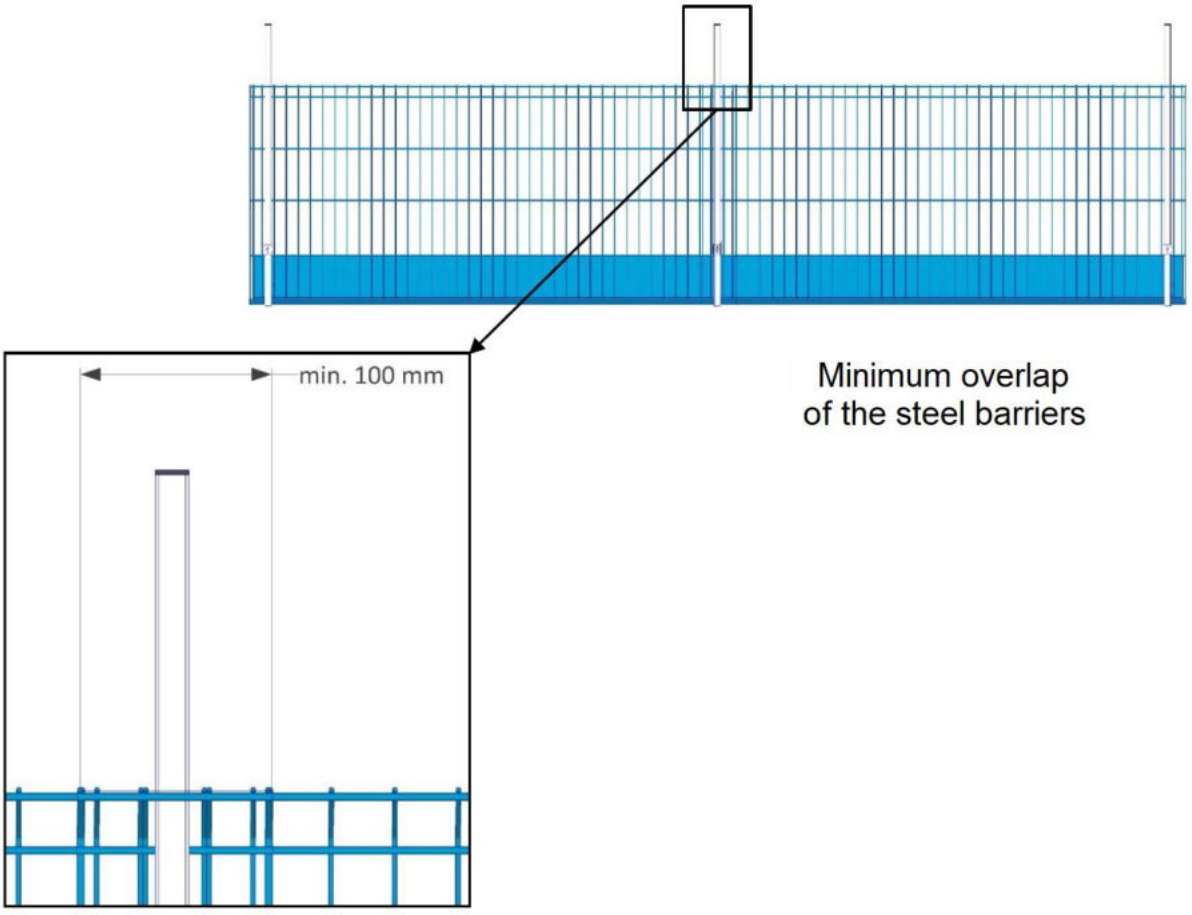


3. Attach the side protection steel barrier.

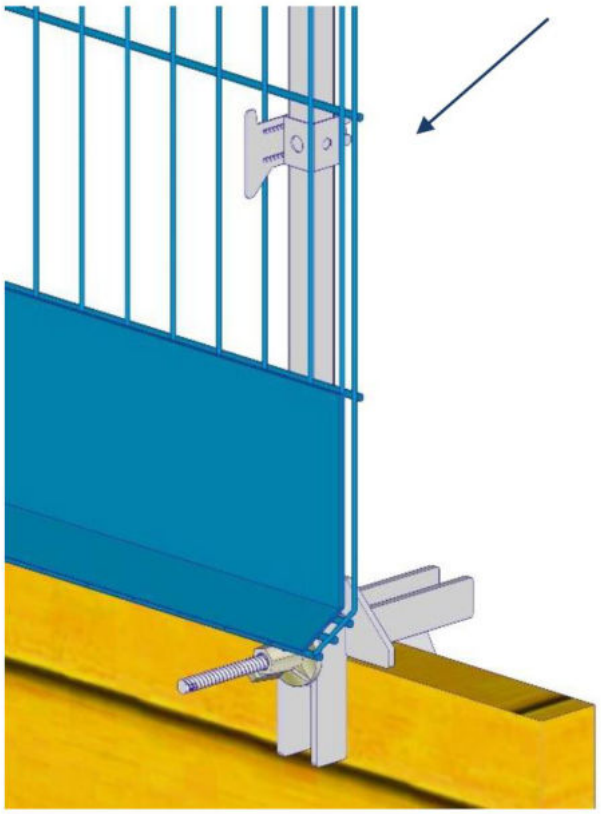


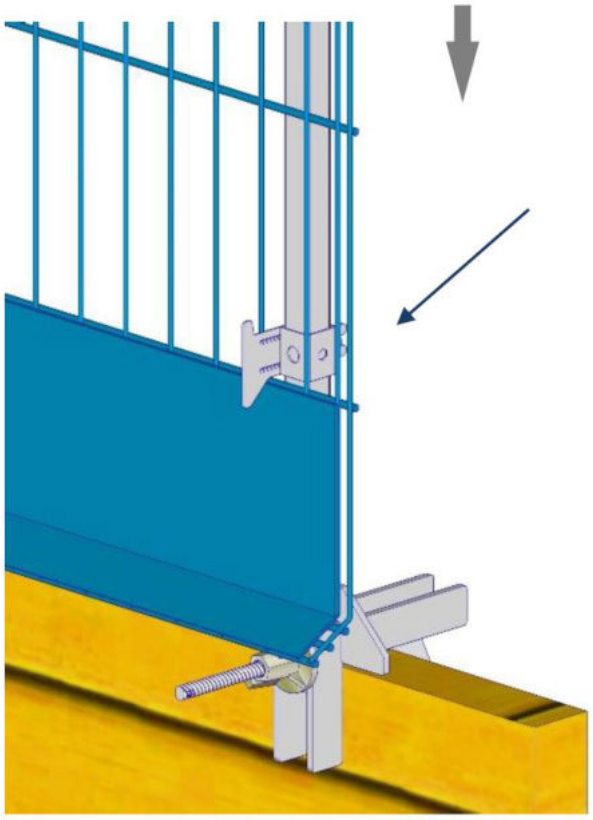
4. Post spacing and minimum overlap.



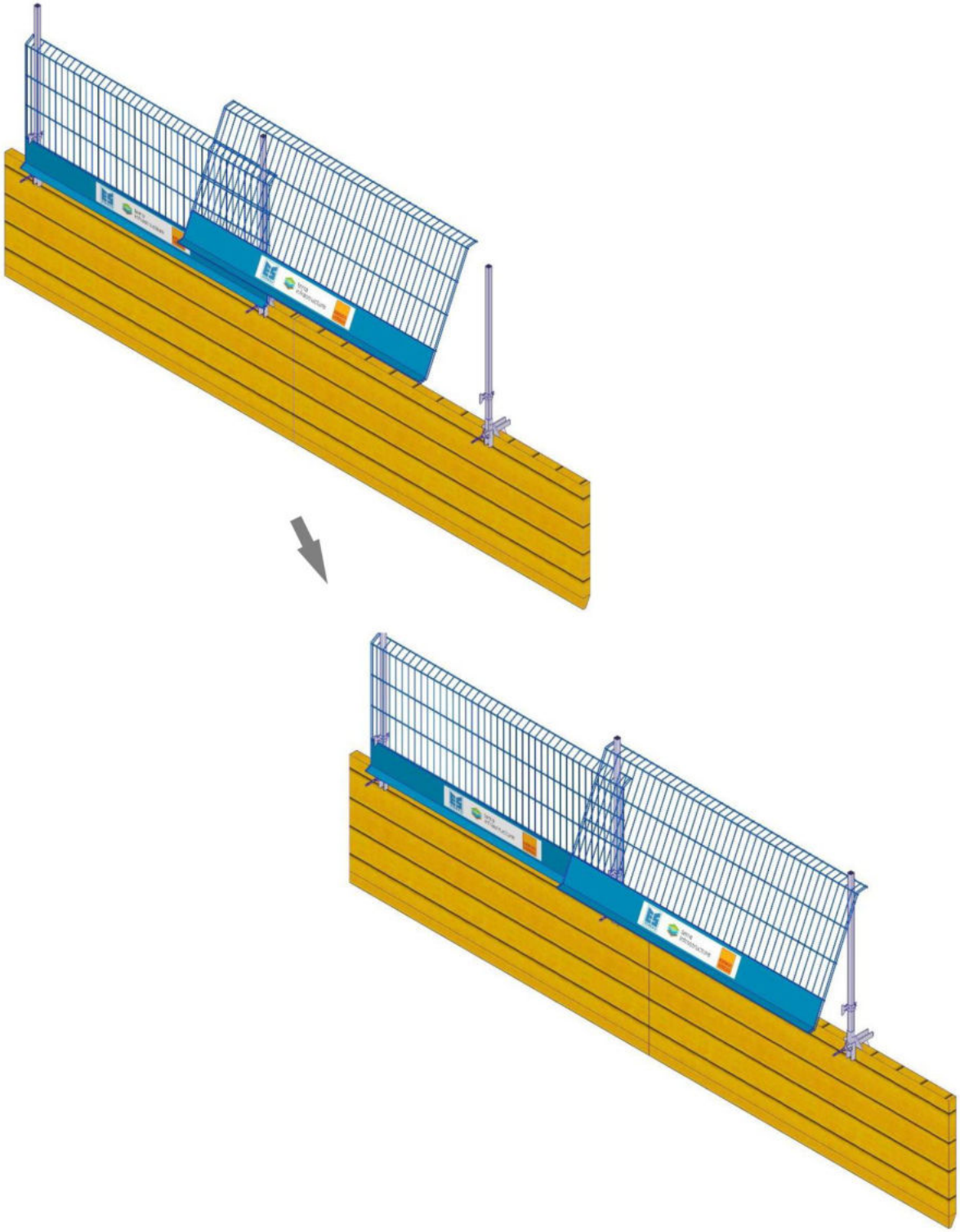


5. Fix the barrier by loosening the wing screw of the slider, pulling down the slider and retightening the wing screw.



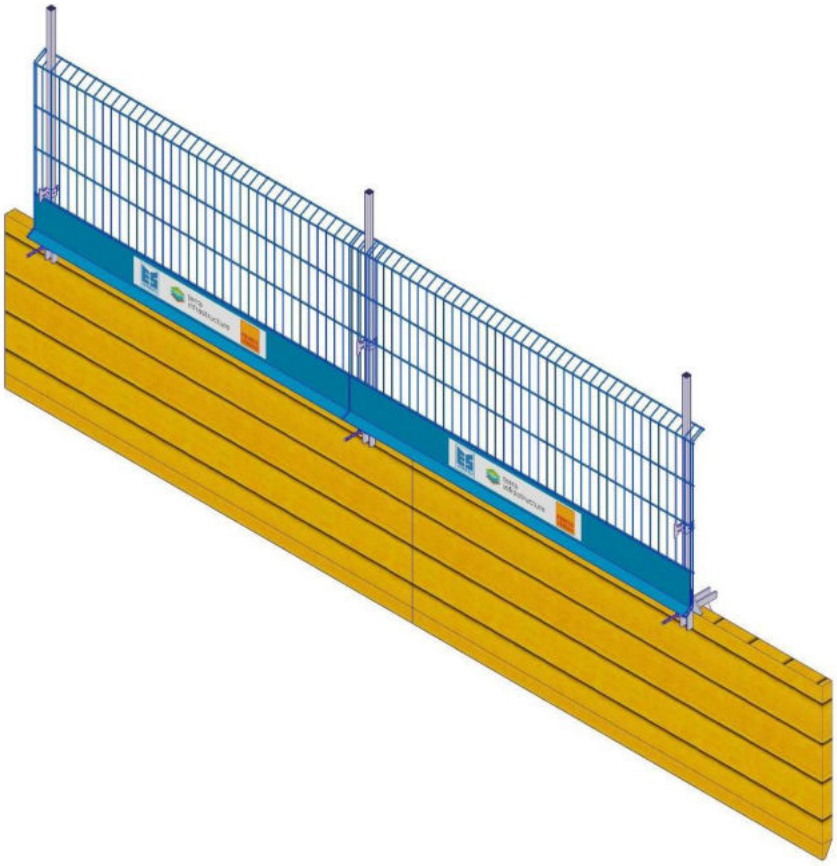


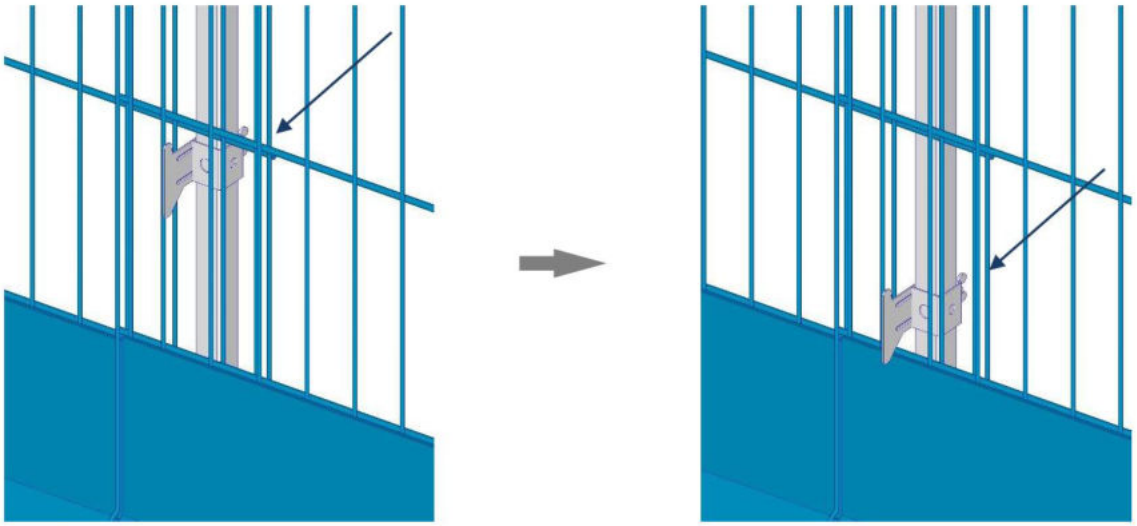
6. Attaching further steel barriers.



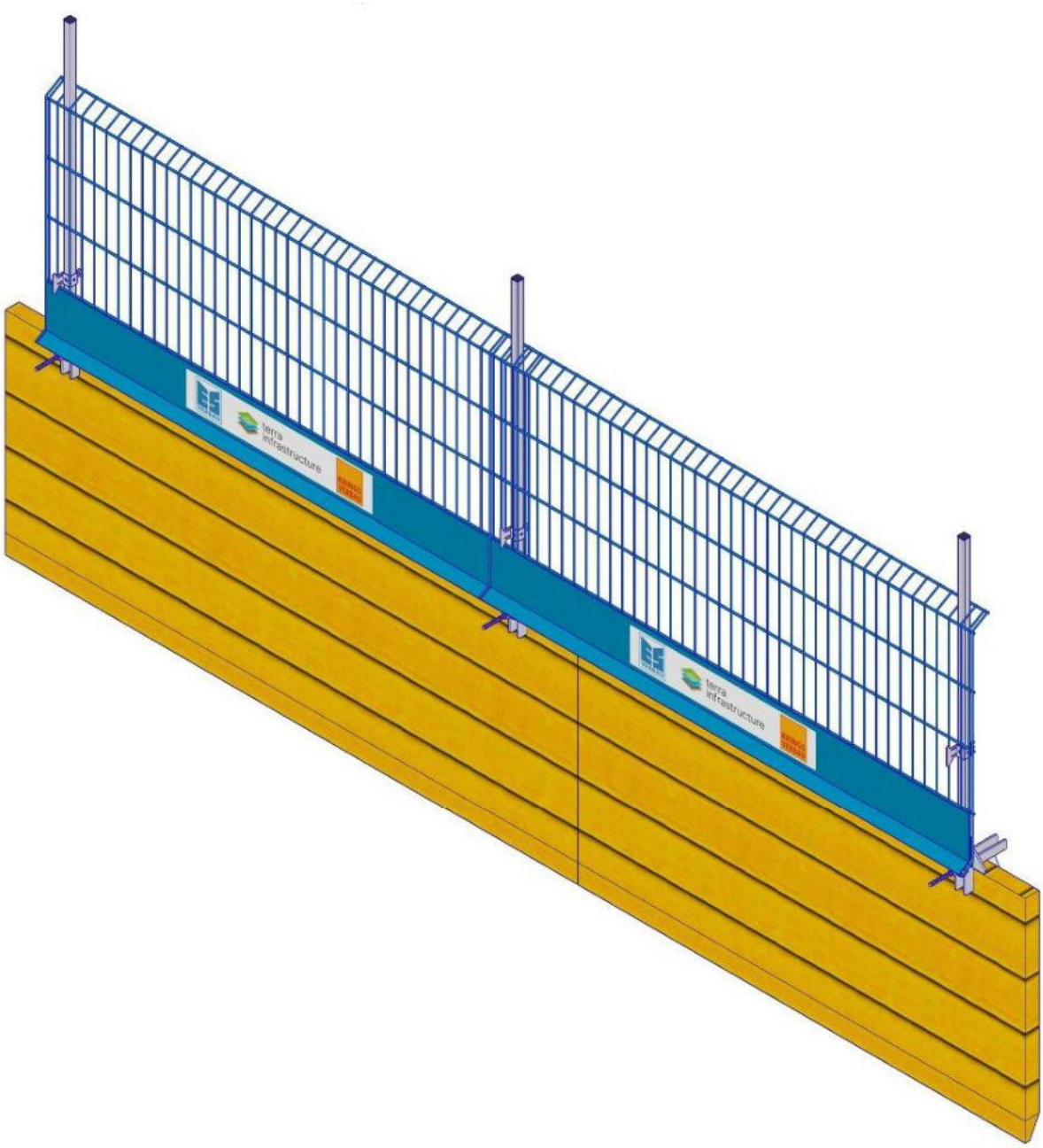
7. Attaching further steel barriers.

   Even with overlapping steel barriers, the wing screw of the slider is loosened, the slider is pulled down and the wing screw is tightened again. In this case, the slider fixes two barriers.





6. ASSEMBLY CHECKLIST

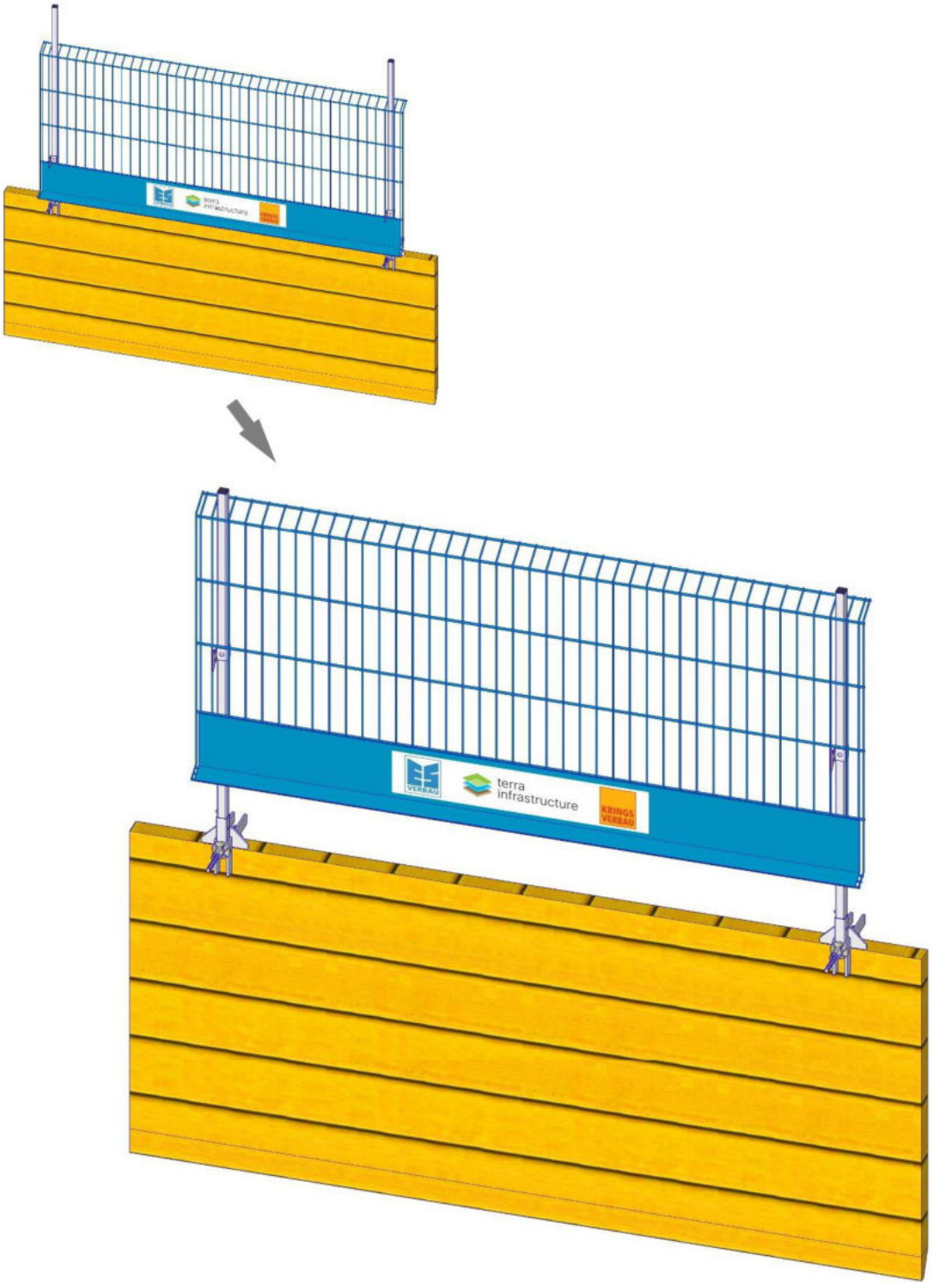


- Clamp 150
    - Does the clamp rest on the shoring plate or the sheet piling?
    - Ist he disc nut fastend up to the bounce?
- Post 1500 incl. slider
    - Is the Easy Snap engaged in the post holder of the clamp?
    - Does the slider secure the barrier and is the wing nut of the slider tightened?
- Steel barrier 2600 x 1180
    - Is the steel barrier hanging over the post with the upper folded edge?
    - Is the steel barrier correctly fixed ?

7. LIFTING THE STEEL BARRIERS

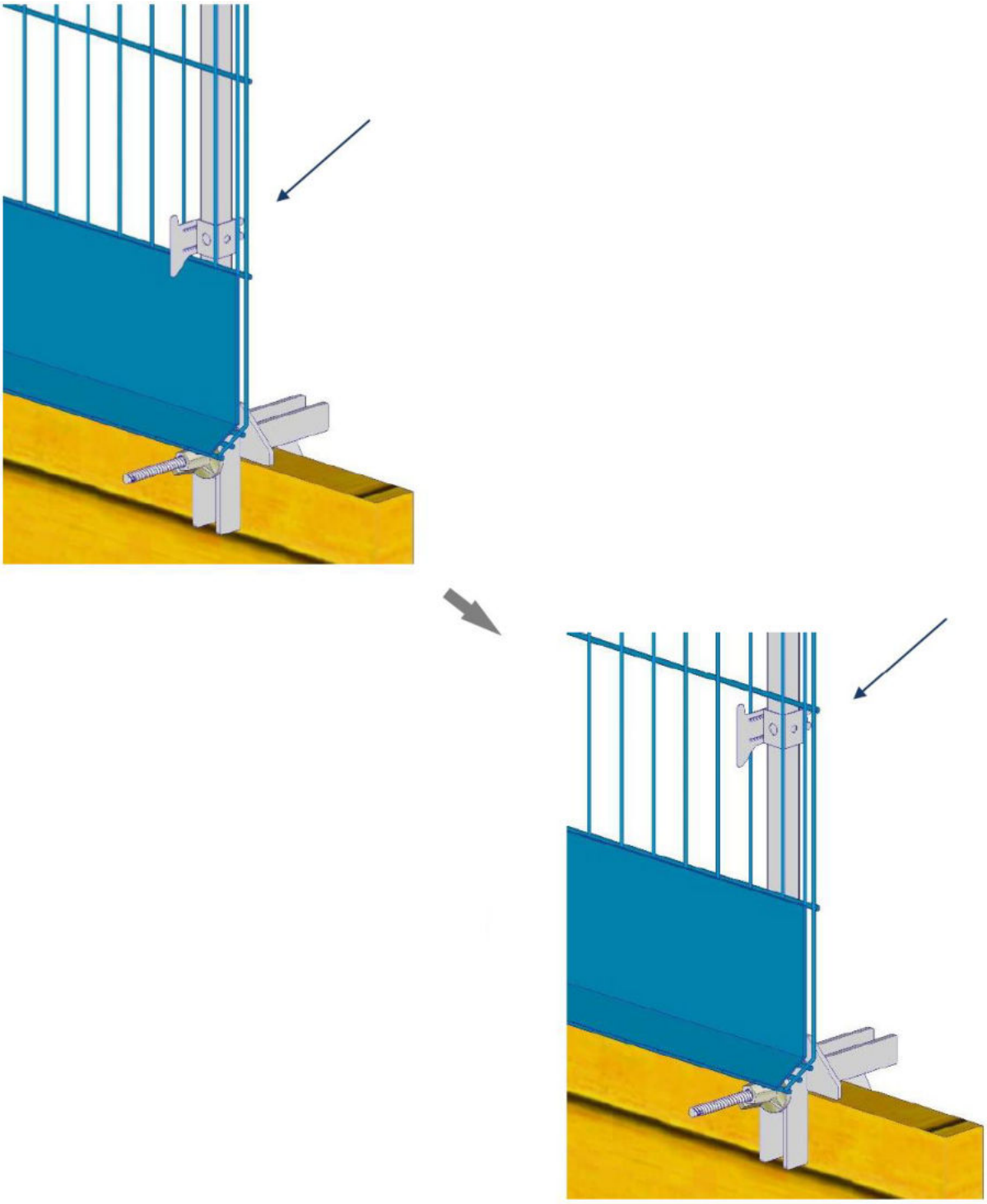
To lift the barriers, e.g. to allow tools to pass through temporarily, the wing screw of the slider is loosened so that the barriers can be brought into the desired position. Once the barrier is at the desired height, the wing screw of the slider is tightened again.

The barriers must be fitted so that the posts are at least 10 mm higher than the barriers.

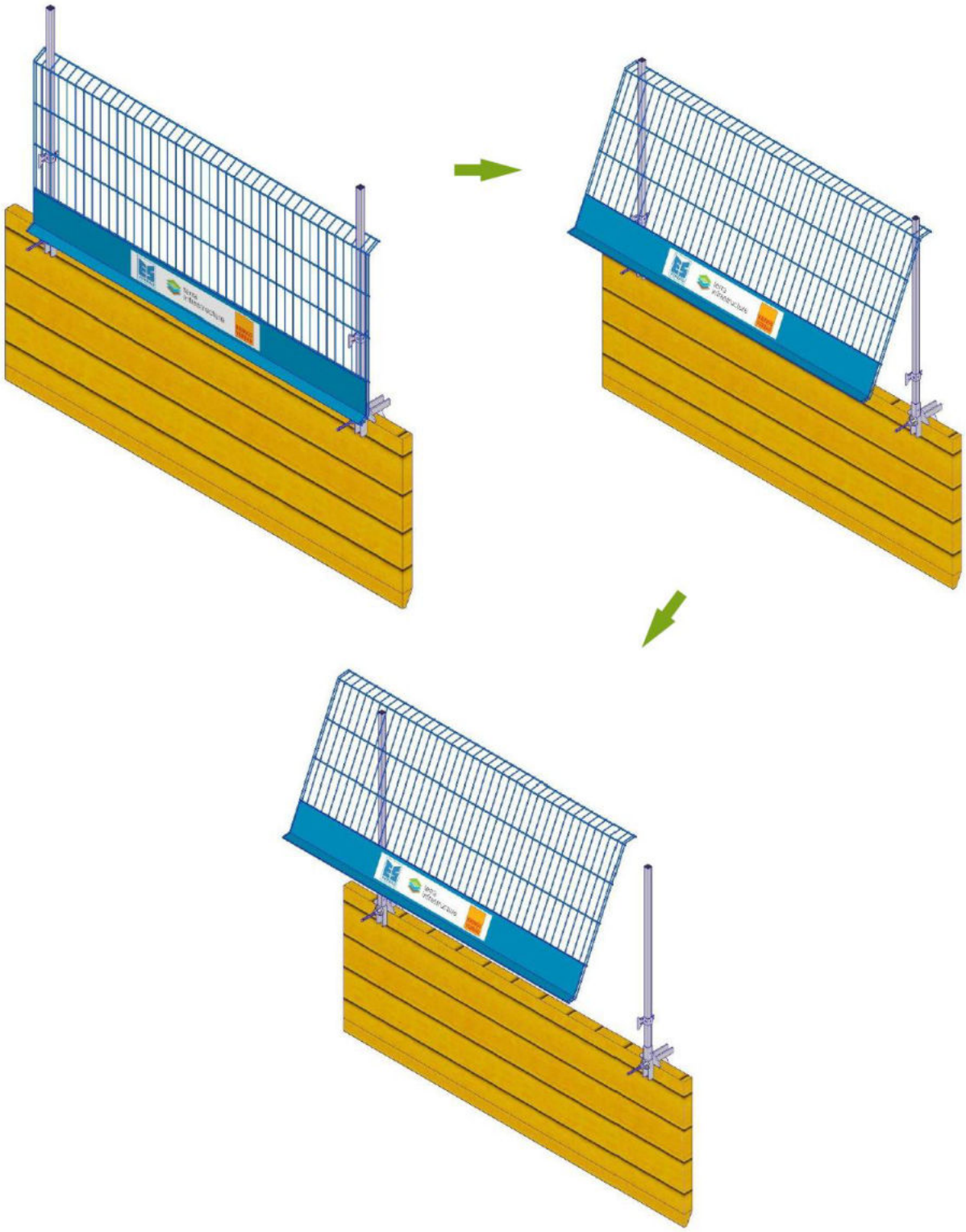


8. DISASSEMBLY

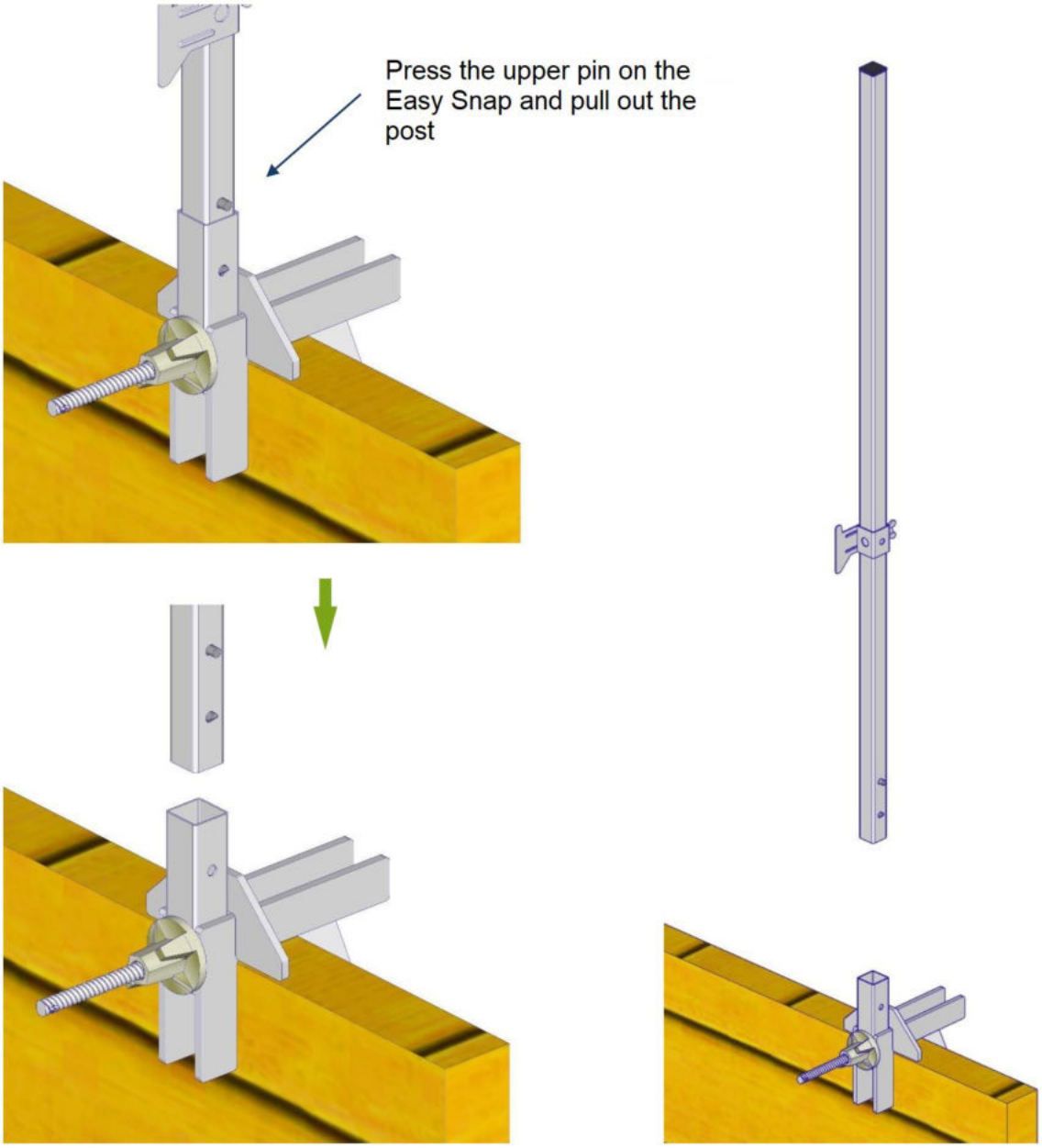
1. Pulling up the slider



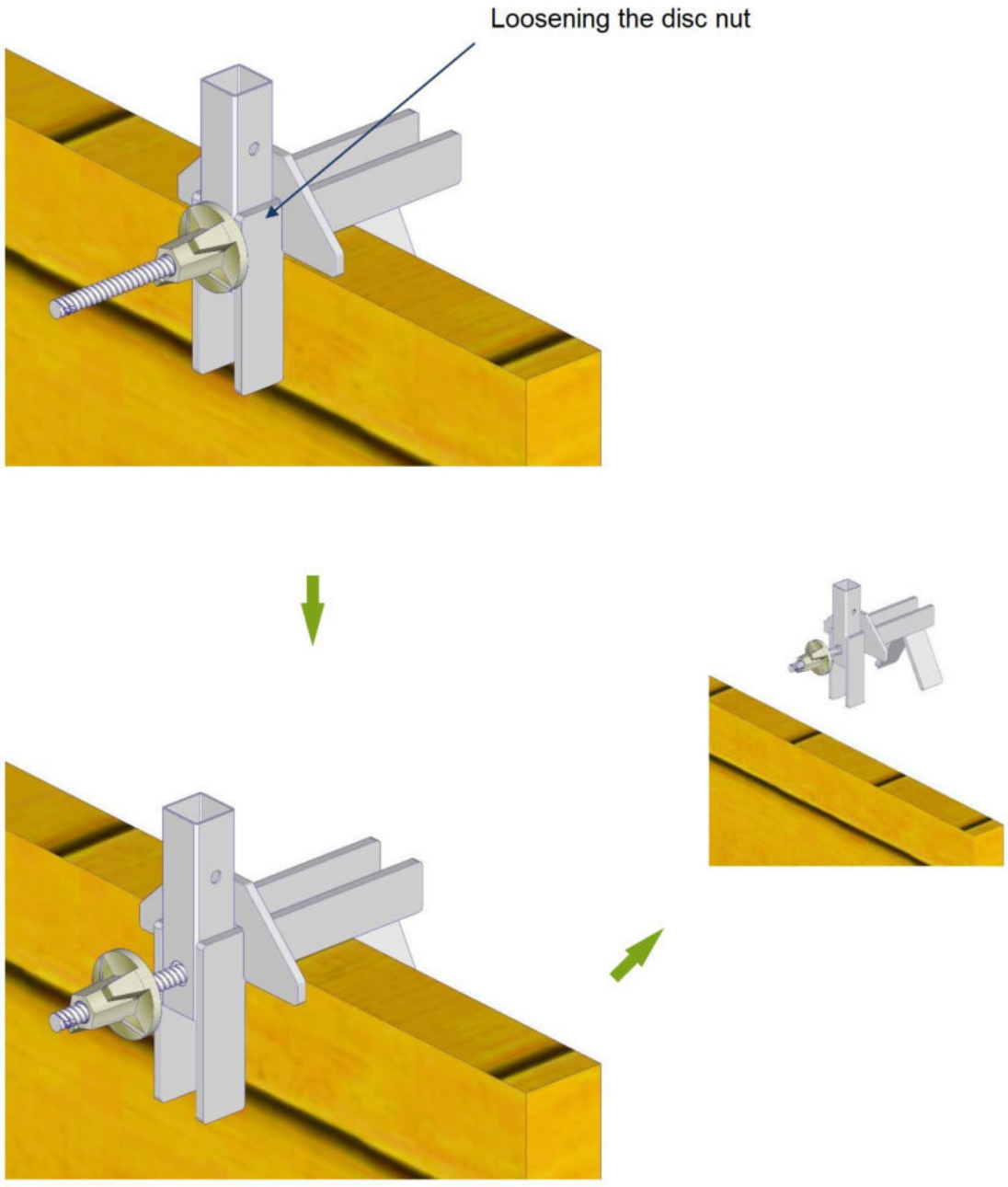
2. Unhooking the barrier



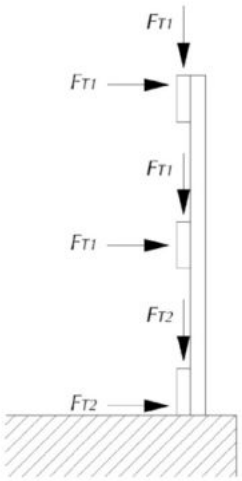
3. Disassembly of the post



4. Disassembly the clamp



9. RESISTANCE VALUES



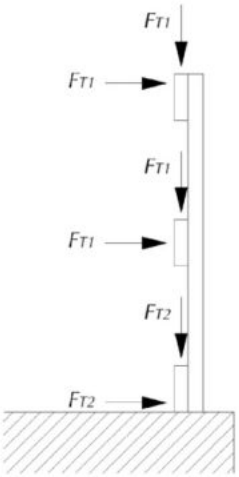
For posts and guardrails: F_{T1} = 300 N.

For toe boards: F_{T2} = 200 N.

Row no.	Section	Load	Description	Single load [N]	Distributed load q_i [N/m²]	γ_i	Requirement
1	6.3.2	Limit state of serviceability Toe board	F_{T2}	200	-	1,0	Elastic deflection of the system Max. 55 mm
		Limit state of serviceability Railing post	F_{T1}	300			
2	6.3.3	Limit state of load-bearing capacity Toe board	F_{II2}	200	-	1,5	$E_d \leq R_d$
		Limit state of load-bearing capacity All other parts	F_{II1}	300			
3	6.3.4	Limit state of load-bearing capacity Max. wind load	Q_{Mw}	-	600	1,5	$E_d \leq R_d$
4	6.3.5	Limit state of load-bearing capacity Load combination toe board	$Q_{ww} + F_{II2}$	200	200	1,5	$E_d \leq R_d$
		Limit state of load-bearing capacity Load combination all other parts	$Q_{ww} + F_{II1}$	300			
5	6.3.6	Limit state of load-bearing capacity Parallel	F_{II3}	200	-	1,5	$E_d \leq R_d$
6	6.3.7	Limit state of load-bearing capacity with exceptional loads	F_E	1250	-	1,0	$E_d \leq R_d$ Max. 300 mm deflection under load

NOTE: Rows 2 to 5 describe basic loads
E_d: Design value of the loads | R_d: Design value of the resistance
No liability is assumed for the translation of this table. The original table can be found on the next page

Resistance values (german origional version)



Für Pfosten und Geländerholme ist F_{T1} = 300 N.

Für Bordbretter ist F_{T2} = 200 N.

Zeile Nr.	Abschnitt	Last	Bezeichnung	Einzellast N	Verteilte Last q_i N/m²	γ_F	Anforderung
1	6.3.2	Grenzzustand der Gebrauchstauglichkeit Bordbrett	F_{T2}	200	—	1,0	elastische Durchbiegung des Systems max. 55 mm
		Grenzzustand der Gebrauchstauglichkeit Geländerholme	F_{T1}	300			
2	6.3.3	Grenzzustand der Tragfähigkeit Bordbrett	F_{H2}	200	—	1,5	$E_d \leq R_d$
		Grenzzustand der Tragfähigkeit Alle übrigen Teile	F_{H1}	300			
3	6.3.4	Grenzzustand der Tragfähigkeit Maximale Windlast	Q_{MW}	—	600	1,5	$E_d \leq R_d$
4	6.3.5	Grenzzustand der Tragfähigkeit Lastkombination Bordbrett	$Q_{WW} + F_{H2}$	200	200	1,5	$E_d \leq R_d$
		Grenzzustand der Tragfähigkeit Lastkombination Alle anderen Teile	$Q_{WW} + F_{H1}$	300			
5	6.3.6	Grenzzustand der Tragfähigkeit Parallel	F_{H3}	200	—	1,5	$E_d \leq R_d$
6	6.3.7	Grenzzustand der Tragfähigkeit mit außergewöhnlichen Lasten	F_D	1 250	—	1,0	$E_d \leq R_d$ max. 300 mm Durchbiegung bei Belastung
ANMERKUNG Zeilen 2 bis 5 beschreiben grundlegende Lasten.							

10. GENERAL SAFETY INSTRUCTIONS

It is essential to ensure safety when installing side protection components. The maximum load on individual components must always be kept in mind.

If a piece shows significant damage that impairs the structural stability, it must be removed from service immediately.

Special attention must also be paid to self-protection before any use. Legal regulations and specifications of the BG Bau must be observed.

It is strongly recommended to wear suitable gloves, safety shoes and a helmet during the entire installation process in order to effectively prevent the risk of accidents. PPE systems and height safety devices are recommended for installation above ground level. Here too, the applicable regulations must be observed.

The products and work equipment etc. must be checked before each use. Damaged, deformed or otherwise impaired components must never be used, as this could impair safety.

terra infrastructure expressly does not recommend assembling and combining side protection from products from different manufacturers.

If the side protection or individual side protection components have been impaired, a competent and trained person must inspect the system and, if necessary, order its removal or replacement.

If you have any questions or doubts, please contact terra infrastructure.

To ensure safety at the work or assembly site, the following must be observed:

- Safety aspects and systematic side protection should be planned for at an early stage.
- Safe access to the installation site must be guaranteed.
- Only tested products and components should be used and installed.
- Please note that a large number of accidents occur at low heights. Therefore, be careful and cautious even when working at low heights.
- Only use tools and fasteners that are intended and suitable for the work to be carried out.
- To ensure the safety of persons not involved in the installation, the area around and below the installation site must be effectively cordoned off.
- The workplace must be sufficiently tidy.

11. MANUFACTURER'S NOTE

terra infrastructure uses fall protection products from SafetyRespect GmbH (formerly Vivatec Safety GmbH) based in Iserlohn, Germany.

terra infrastructure and SafetyRespect have developed this collective fall protection system for use in box, slide rail, sheet pile and sheet pile wall shoring in close cooperation to make it as easy and economical as possible for users to implement the increased safety requirements in civil engineering.

The products are manufactured at SafetyRespect GmbH's main plant in Iserlohn, Germany. SafetyRespect GmbH is a specialist welding company certified to EN 1090-1 (certificate number: 2324-CPR-0351).

12. CONFORMITY DECLARATION

Konformitätserklärung

SAFETYRESPECT

Hiermit bestätigen wir, die SafetyRespect GmbH, dass die folgenden von uns produzierten und im System zu verwendenden Komponenten:

2012611TR (GV000216)	VT Stahlgitter 2600x1180 (Stahlgitter)
5031500 (GV000214)	VT Pfosten 1500 (Pfosten)
5040034 (GV000213)	VT Klemme 150 (Klemme)

der europäischen Norm **DIN EN 13374 Klasse A** entsprechen.

Voraussetzung für die Normkonformität dieser Seitenschutzkomponenten ist der richtige Aufbau bzw. die korrekte Verwendung sowie die Normkonformität der mit den Komponenten interagierenden Bauteile. Es gilt die Aufbau- und Verwendungsanleitung des Herstellers in ihrer gültigen Form.

Dieses Produkt entspricht den Gesundheits- und Sicherheitsbestimmungen der jeweiligen Normen in der Europäischen Union. Die SafetyRespect GmbH ist ein nach DIN EN 1090-1 zertifizierter Schweißfachbetrieb.
Die Fertigung der Komponenten wird von einem Internationalen Schweißfachingenieur überwacht.

Hersteller: SafetyRespect GmbH
Im Kurzen Busch 11
58640 Iserlohn
Deutschland

SAFETYRESPECT
SafetyRespect GmbH
Im Kurzen Busch 11 • D-58640 Iserlohn
Tel. +49 2371 15541-0 • Fax +49 2371 538938
info@safetyrespect.de • www.safetyrespect.de

Produktkategorie:
Temporärer Seitenschutz

i.V. Jan-Erik Monheimius
Produktmanagement
SafetyRespect GmbH

terra infrastructure

brands of terra infrastructure

Baltic States
terra infrastructure UAB
Liepų str. 83
93269 Klaipėda
Lithuania
P: +370 46 355-401
info@terra-infrastructure.lt
www.terra-infrastructure.com/lt

Eastern Europe
terra infrastructure GmbH
Hollestr. 7a
DE-45127 Essen
Germany
P: +49 201 565 783 20
easterneurope@terra-infrastructure.com
www.terra-infrastructure.com/eu/en

South West Europe
terra infrastructure GmbH
Hauptstrasse 35a
77866 Rheinau-Freistett
Germany
P: +49 7844 9143 0
export-sweurope@terra-infrastructure.com
www.terra-infrastructure.com/eu/en

Group Headquarter
terra infrastructure GmbH
Hollestr. 7a
DE-45127 Essen
Germany
P: +49 201 565 783 20
info@terra-infrastructure.com
www.terra-infrastructure.com