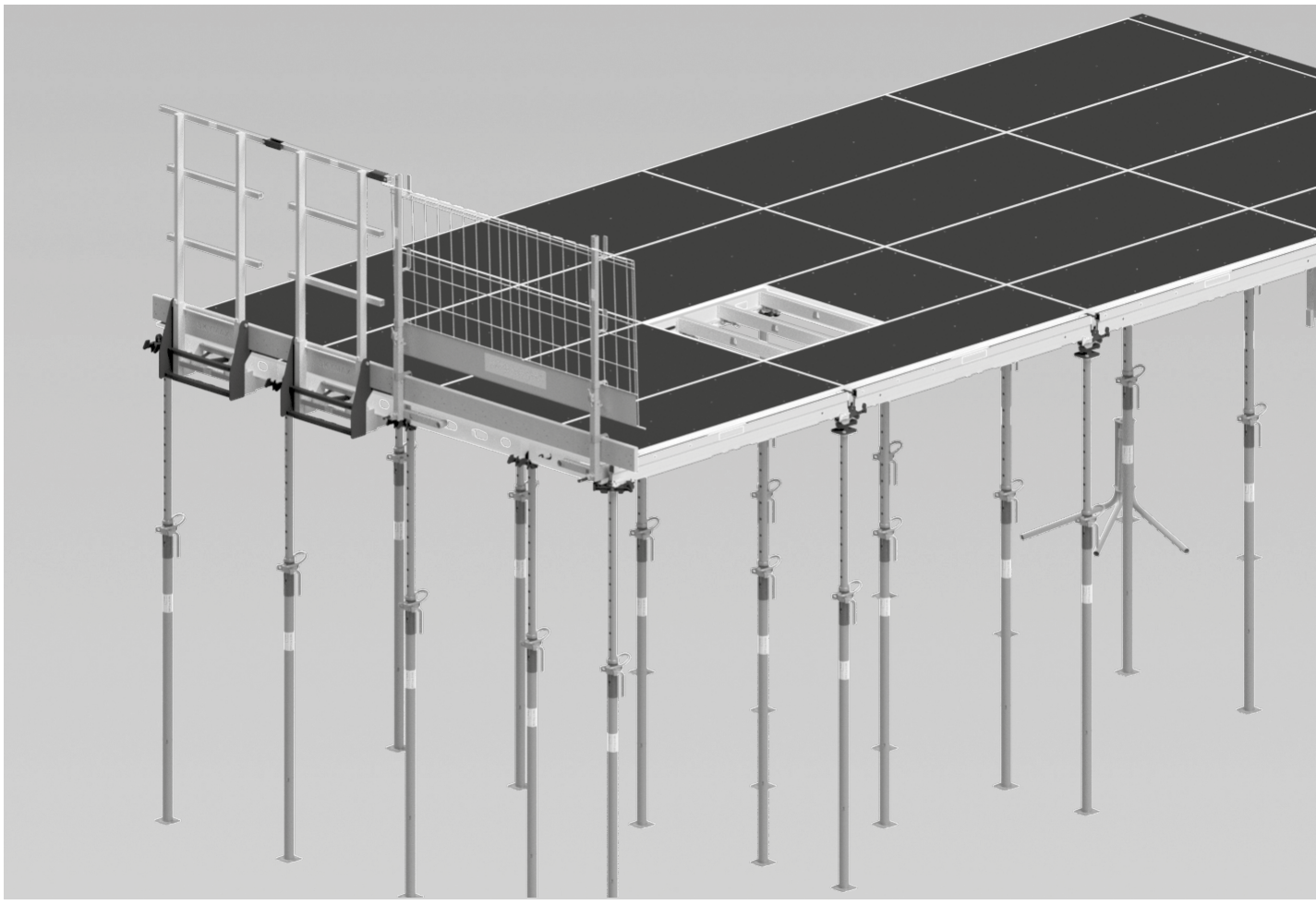
SKYMAX

Large Panel Slab Formwork

Instructions for Assembly and Use – Standard Configuration – Version 2.2



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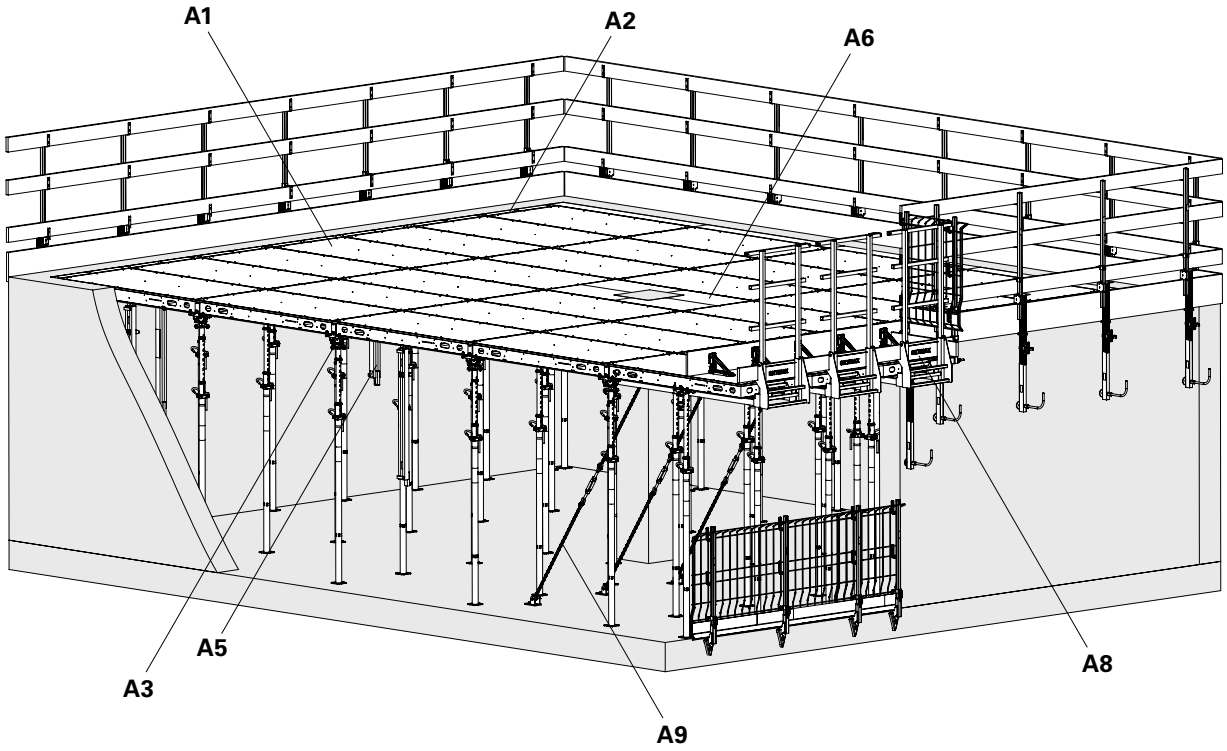
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Product Catalogue

SKYMAX Panel Slab Formwork 166

Main components



A1 Panels
A2 Starter beam
A3 Prop heads
A4 Shuttering aid (not shown)
A5 Wall holder
A6 Column frames
A7 Guardrail post holder (not shown)
A8 Guardrail unit
A9 Bracing

Key

Pictogram | Definition


Danger/Warning/Caution


Note


To be complied with


Load-bearing point


Visual inspection


Tip


Incorrect use


Safety helmet


Safety shoes


Safety gloves


Safety goggles


Personal protective equipment to prevent falling from a height (PPE)

Arrows

→ Arrow representing an action

⇨ Arrow representing a reaction of an action*

→ Arrow representing forces

* If not identical to the action arrow.

Safety instruction categories
The safety instructions alert site personnel to the risks involved and provide information on how to avoid these risks. Safety instructions can be found at the beginning of the section or before instructions for action and are highlighted as follows:


Danger
This sign indicates an extremely hazardous situation that could result in death or serious, irreversible injury if the safety instructions are not followed.


Warning
This sign indicates a hazardous situation that could result in death or serious irreversible injury if the safety instructions are not followed.


Caution
This sign indicates a hazardous situation that could result in minor or moderate injury if the safety instructions are not followed.


Information
This sign indicates situations in which failure to observe the information can result in material damage.

Structure of the safety instructions


Signal word
Type and source of hazard!
Consequences of non-compliance.
⇒ Preventative measures.

Dimensions
Dimensions are usually given in cm. Other measurement units, e.g. m, are shown in the illustrations.

Conventions
- Instructions are numbered with: 1. ....., 2. ....., 3. .....
- The result of an instruction is shown by: →
- Position numbers are clearly provided for the individual components and are given in the drawing, e.g. **1**, in the text in brackets, for example (**1**).
- Multiple position numbers, i.e. alternative components, are represented with a slash: e.g. **1/2**.

Notes on illustrations
The illustration on the front cover of these instructions is understood to be a system representation only. The assembly steps presented in these Instructions for Assembly and Use are shown in the form of examples with only one component size. They are valid for all component sizes contained in the standard configuration.

To facilitate understanding, detailed illustrations are sometimes incomplete. The safety equipment that might not be shown in these detailed illustrations must still be available.

Components are not always named in full so that they are easier to read.

Target groups

Contractors
These Instructions for Assembly and Use are designed for contractors who either
- assemble, modify and dismantle PERI systems, or
- use them, e.g. for concreting, or
- allow them to be used for other operations, e.g. carpentry or electrical work.

Safety and Health Protection Coordinator*
- is appointed by the client,
- must identify potential hazards during the planning phase,
- determines measures that provide protection against risks,
- creates a safety and health protection plan,
- coordinates the protective measures for the contractor and site personnel so that they do not endanger each other,
- monitors compliance with the protective measures.

Competent person
- is appointed by the contractor,
- must be on site for all system operations,
- prepares and updates the plan for assembly, modification and dismantling,
- prepares and updates the plan for use of the system by the user,
- supervises the assembly, modification and dismantling work (supervisor).

Competent persons qualified to carry out inspections
Due to the specialist knowledge gained from professional training, professional experience and recent professional activity, the competent person qualified to carry out inspections has a reliable understanding of safety-related issues and can carry out inspections correctly. Depending on the complexity of the inspection to be undertaken, e.g. scope of testing, type of testing or the use of certain measuring devices, a range of specialist knowledge is necessary.

Qualified personnel
PERI systems may only be assembled, modified or dismantled by personnel who are suitably qualified to do so. Qualified personnel must have completed a course of training** in the work to be performed, covering the following points at least:
- Explanation of the plan for the assembly, modification or dismantling of the system in an understandable form and language.
- Description of the measures for safely assembling, modifying or dismantling the system.
- Naming of the preventive measures to be taken to avoid the risk of persons and objects falling.
- Designation of the safety precautions in the event of changing weather conditions that could adversely affect the safety of the system, as well as the personnel concerned.
- Details regarding permissible loads.
- Description of all other risks and dangers associated with assembly, modification or dismantling operations.



- **Ensure that the respective current version of relevant national guidelines and regulations are complied with!**
- **If no country-specific regulations are available, PERI recommends that you proceed according to German guidelines and regulations.**

* Valid in Germany: Regulations for Occupational Health and Safety on Construction Sites 30 (RAB 30).

** Instructions are given by the contractor themselves or a competent person selected by them.

Intended use

Area of application
PERI products have been designed for exclusive use in the industrial and commercial sectors by suitably trained personnel only.

Product description
PERI SKYMAX is a large panel slab formwork system used for constructing slab thicknesses up to 40 cm; with centre support up to 55 cm.

The slab formwork is assembled and dismantled from the erection surface below. Up to a ceiling height of 3.80 m without a ladder or platform system.

Accessories for infill areas, shuttering around columns and for the slab edges are also available.

Due to partial early striking with a lowering head and backpropping, the panels can be used quickly for the next concreting cycle.

For supporting the SKYMAX Panels, the following PERI Slab Props may be used subject to slab thickness and ceiling height in accordance with the PERI prop load table for the SKYMAX system:
– PEP Ergo,
– PEP Alpha-2
– PEP 20/30,
– MULTIPROP MP

Technical data
System dimensions

With Prop Head SXP S or Prop Head SXP S Poly
- Prop grid 2 x 1 m:
  Slab thickness of max. 40 cm,
- Prop grid 1 x 1 m:
  with centre support:
  Slab thickness of max. 55 cm

With Lowering Head SXP L T2 or Lowering Head SXP LQ
- Prop grid 2 x 1 m:
  Slab thickness max. 40 cm.

Flatness deviation acc. to DIN 18202		
System without centre support	Slab thickness d ≤ 35 cm	Line 7
	Slab thickness 35 cm < d ≤ 40 cm	Line 6
System with centre support	Slab thickness d ≤ 55 cm	Line 7

Cleaning and maintenance instructions

In order to maintain the value and operational readiness of the formwork materials over the long term, clean the panels after each use.

Some repair work may also be inevitable due to the working conditions.



The contractor must ensure that the personal protective equipment required for cleaning, maintenance and repair work such as
- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

The following instructions should help to keep cleaning and maintenance costs as low as possible.

Cleaning tools must be adapted to the respective surfaces of the components so that they are not damaged.

Spray the formwork on both sides with concrete release agent before each use; this makes the formwork easier and faster to clean. Spray the concrete release agent very thinly and evenly! When using polymer prop heads, do not use diesel or paraffin as a concrete release agent.



PERI recommends using the concrete release agent PERI Plasto-Clean for panels with ROBU formlining, otherwise it may not be possible to yield the quality of concrete surface required.

Do not spray Working Platforms and access routes with concrete release agent.
Slip hazard.

Spray the rear side of the formwork with water immediately after concreting; this avoids any time-consuming and costly cleaning operations.
For SKYMAX panels with ROBU formlining, clean the polymer formlining side with water.

When used continuously, spray the formlining elements with concrete release agent immediately after deshuttering; then clean by means of a scraper, brush or rubber lip scraper. Important: do not clean formlining with high-pressure equipment. This could result in the formlining being damaged.

When using high-pressure cleaners, clean polymer prop heads with a maximum water pressure of 200 bar and a maximum temperature of 60 °C!
Do not use a hammer! If required, only use the rubber mallet/soft-head hammer!

Fix recesses and built-in parts with double-head nails; as a result, the nails can easily be removed later, and damage to the formlining is largely avoided.

Close all unused tie holes with plugs; this eliminates any subsequent cleaning or repair work.
Tie holes accidentally blocked with concrete are cleared by means of a steel pin from the formlining side.

When placing bundles of reinforcement bars or other heavy objects on horizontally supported formwork elements, suitable support, e.g. squared timbers, is to be used; this prevents impressions and damage to the formlining to a large extent.

Internal concrete vibrators should be fitted with rubber caps if possible; as a result, any damage to the formlining is reduced if the internal vibrator is accidentally inserted between the reinforcement and formlining.

Never clean powder-coated components, e.g. elements and accessories, with steel brushes or hard metal scrapers; this preserves the powder coating. Use spacers for reinforcements with large or flat supports; this largely avoids indentations in the formlining under load.

Mechanical components, e.g. spindles or gear mechanisms, must be cleaned of dirt or concrete residue before and after use, and then greased with a suitable lubricant.

Provide suitable support for the components during cleaning so that no unintentional change in their position is possible.

Do not clean components suspended on crane lifting gear.

Additional technical documentation

- PERI Structural Design Information
  - SKYMAX Large Panel Slab Formwork
- Instructions for Assembly and Use:
  - SKYMAX Outside Corner
  - SKYMAX Slab Table
  - PEP Ergo, PEP 10, PEP 20, PEP 30 Slab Props
  - MULTIPROP MP 120, 250, 350, 480, 625 Slab Props
  - Push-Pull Props RS and RSS
  - PERI UP Scaffolding Kit components
  - PROKIT EP110 Safety Systems
  - PEP Alpha-2 Slab Props
  - PEP 20/30 Slab Props
- Instructions for Use:
  - Pallet lifting trolley
  - Pallets and stacking devices
  - Stripping Cart ASW 465
  - Aluminium stripping cart
- User information:
  - PERI UP Flex Mobile Working Platform
- Technical Data Sheet for Anchor Bolt SW24 Ø14/20x130 mm

Instructions for Use

Use in a way not intended, deviating from the standard configuration or the intended use according to the Instructions for Assembly and Use, represents a misapplication with a potential safety risk, e.g. risk of falling.

Only PERI original components may be used. The use of other products and spare parts is not allowed.

Changes to PERI components are not permitted.

The system described in these Instructions for Assembly and Use may contain patent-protected components.

Cross-system

General information
The contractor must ensure that the Instructions for Assembly and Use supplied by PERI are available at all times and understood by the site personnel.

These Instructions for Assembly and Use can be used as the basis for creating a risk assessment. The risk assessment is compiled by the contractor. The Instructions for Assembly and Use are not a substitute for a risk assessment!

Observe and comply with the safety instructions and permissible loads.

For the application and inspection of PERI products, the current safety regulations and guidelines valid in the respective countries must be observed.

Materials and working areas are to be inspected on a regular basis, especially before each use and assembly, for:
- damage,
- stability and
- functional integrity.

Damaged components must be exchanged immediately on site and no longer used.

Safety components are to be removed only when they are no longer required.

Components provided by the contractor must comply with the characteristics stipulated in these Instructions for Assembly and Use and all applicable laws and standards. Unless otherwise indicated, the following applies in particular:
- Timber components: strength class C24 for solid wood according to DIN EN 338.
- Scaffolding tubes: Galvanised steel tubes with minimum dimension Ø 48.3 x 3.2 mm according to DIN EN 12811-1:2003 4.2.1.2.
- Scaffolding tube couplings according to DIN EN 74.

Deviations from the standard configuration are only permitted after a further risk assessment has been carried out by the contractor.

Appropriate measures for working and operational safety, as well as stability, are defined on the basis of this risk assessment.
Corresponding proof of stability can be provided by PERI on request, if the risk assessment and resulting measures to be implemented are made available.

Before and after extraordinary events that may have damaging effects on the safety of the system, the contractor must immediately
- produce another risk assessment, the results of which must be used to implement suitable measures to ensure the stability of the system,
- arrange for an extraordinary inspection to be carried out by a competent person qualified to do so. The aim of this inspection is to detect and repair damage in good time in order to ensure safe use of the system.

Exceptional events could be:
- accidents, fire, explosions, collisions,
- long periods of non-use,
- natural events, e.g. heavy rainfall, heavy snowfall, significant icing, storms or earthquakes.

Suitable measures could be:
- clearing snow and ice,
- reducing live loads,
- securing loose materials.

Assembly, modification and dismantling work
Assembly, modification or dismantling of formwork systems may only be carried out by qualified persons under the supervision of a competent person. The qualified personnel must have received appropriate training for the work to be carried out with regard to specific risks and dangers. On the basis of the risk assessment and the Instructions for Assembly and Use, the contractor must create installation instructions to guarantee safe assembly, modification and dismantling of the formwork system.

The contractor must ensure that the personal protective equipment required for the assembly, modification or dismantling of the formwork system, e.g.
- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

If personal protective equipment against falling from a height (PPE) is required or specified in local regulations, the contractor must determine appropriate attachment points on the basis of the risk assessment.

Before use, establish rescue procedures for the event of a fall, taking into account all the emergencies that may occur during work.
Rescue must take place within 20 minutes to prevent suspension trauma.
Ensure that first aid is provided!
The PPE to be used to prevent falling is determined by the contractor.

The contractor must
- provide safe working areas for site personnel, which are to be reached through the provision of safe access ways. cordon off and clearly mark danger zones.
- guarantee stability during all stages of construction, in particular during assembly, modification and dismantling operations.
- ensure and demonstrate that all loads that occur are safely transferred.

Use
Every contractor who uses or allows formwork systems or sections of the formwork to be used, is responsible for ensuring that the equipment is in good condition.

If the formwork system is used successively or at the same time by several contractors, the health and safety coordinator must point out any possible mutual hazards and all work must be then coordinated.

System-specific

Strike components only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for deshuttering to take place.

The load-bearing capacity of the slabs that have been completed must be activated so as to avoid overloading of the slab props during vertical concreting cycles. For this, free deflection capability is required for these components. This can be done by releasing and re-installing all slab props available.

This is also required for formwork systems where the prop head is an integral part of the slab formwork.

Permissible slab thickness:
Max. 40 cm.
With centre support:
Max. 55 cm.

The prevailing prop loads (see tables) must be safely transferred by slab props with a sufficient load-bearing capacity.

When storing heavy items on the formwork, the load-bearing capacity must be taken into consideration.

Cantilevers may only be accessed after bracing has been mounted.

The horizontal fixed position of the slab formwork must be guaranteed during assembly and work operations at all times. During assembly, this is provided through the correct installation of wall holders.

During work operations, this must be guaranteed by peripheral walls and beams cast in advance. This must be inspected by the structural engineer. Otherwise, transfer of the horizontal loads has to be guaranteed by means of other measures provided by the contractor, e.g. bracing. Load assumptions for horizontal loads in accordance with DIN EN 12812.

Do not climb on the formwork system, only use the means of ascent and descent provided.

Anchoring
Anchoring is to take place only if the anchorage has sufficient concrete strength.

Exceptional events
Larger panel units are to be formed with wind speeds of 28 km/h and more. For this, connect panels to each other and secure by means of bracing or ballast.
The value given is valid for rectangular buildings that are closed on all sides, open on all sides or closed on one side. For unfavourable structure geometries or greater wind speeds, additional securing measures are to be implemented including dismantling of the formwork.

Storage and transportation

Store and transport components in such a way that no unintentional change in their position is possible. Detach lifting accessories and slings from the lowered components only if they are in a stable position and no unintentional change is possible.

Do not drop the components.
Also ensure that partial quantities are secure at all times.

Use PERI lifting accessories and slings and only those load-bearing points provided on the component.

During the relocation procedure
- Ensure that components are picked up and set down in such a way that unintentional falling over, falling apart, sliding, falling down or rolling is avoided.
- No one is allowed to remain under the suspended load.

The access areas on the construction site must be free of obstacles and tripping hazards, and must also be slip-resistant.

The substrate must have sufficient load-bearing capacity for transport.

Use original PERI storage and transport systems, e.g. crate pallets, pallets or stacking devices

Component overview

Pos. no.	Component name	Art. no.
1	Panel SXP P 200X100	133382
2	Panel SXP P 200X66.5	133381
3	Panel SXP P 100X100	137260
4	Panel SXP P 100X66.5	116839
5	Column Frame SXP CF T2	136753
6	Lowering Head SXP L T2	136560
7	Prop Head SXP S	133701
8	Prop Head SXP S Poly	133855
9	Starter Beam SXP SB 300	134194
10	Starter Beam SXP SB 100	134203
11	Starter Beam SXP SB 66.5	134202
12	Compensation Beam SXP AB 200 T2	136124
14	Plug Guardrail SXP GU 100	135132
15	Frame SXP GU 100	135069
16	Traverse SXP GU 100	135129
17	Guardrail Post Holder SXP GPR T2	136181
17	Guardrail Post Holder SXP GPL T2	136187
18	Wall Holder SXP W	133934
19	Single-use Pallet SXP TPO 200X100	135466
20	Transport Pallet SXP TP 200X200	135205
21	Shuttering Aid SXP A	134472
22	Tensioning Unit SXP TU 3 100 T2	136765
23	Tensioning Unit SXP TU 3 66.5 T2	136769
24	Tensioning Unit SXP TU 15	135952
27	Shuttering Aid SXP A 530	136590
28	Prop Guide SXP PG	136596
29	Stripping Hammer SXP SH	136713
31	Prop Head SXP S POLY	133855
32	Telescopic Girder SXP TBR 200-300	136132
33	Telescopic Girder SXP TBL 200-300	136133
37	Telescopic Girder SXP TB 66.5-100	142326
38	Panel Clip SXP C	136897
39	Assembly Aid SXP MA	136901
40	Crate Pallet 80 x 120	065068
41	Transport Pallet SXP TPF 200x100	136238
42	Transport Pallet SXP TPF 200x66.5	136332
43	Lowering Head SXP LQ	136869
44	Prop Adapter SXP SA	137543
45	DUO wheel for stacking device	128276
47	Toe board	
48	Formwork Girder GT 24	
49	MULTIPROP MP 250 (e.g.)	
50	Slab Prop PP Ergo B 300	
51	Tripod Ø44 – 64 mm	107152

Pos. no.	Component name	Art. no.
52	Base Plate-3 f. RS 210-1400	126666
53	Anchor Chain 250/3.0kN	065073
54	Turnbuckle M12/3.0kN	065074
55	Formlining 21 mm	
56	Squared timber	
57	Anchor Bolt SW24 Ø14/20x130 mm	124777
58	PEP Frame PRK 200 AL	112718
59	PERI UP UDG-1 Mobile Working Platform 100	001155
60	MP-Bolt with Nut M12x040-8.8	166806
61	Screw ISO4017-M12x30-8.8-ga	102120
62	Hex-Nut ISO4032-M12-8.8-ga	710330
63	Push-Pull Prop RS 450 ga	117468
75	Side Mesh Barrier-2 PMB S 240	033841
76	Post PP	117325
77	Skydeck Tension Sleeve SAO	061310

Pos. no.	Module designation	Art. no.
13	**Guardrail Unit SXP GU 100**	
	Plug Guardrail SXP GU 100 (**14**)	135132
	Frame SXP GU 100 (**15**)	135069
	Traverse SXP GU 100 (**16**)	135129
30	**Double Compensation Beam SXP AB 200 T2**	
	2 x Compensation Beam SXP AB 200 T2 (**12**)	136124
34	**Double Telescopic Girder SXP TBR/TBL 200-300**	
	Telescopic Girder SXP TBR 200-300 (**32**)	136132
	Telescopic Girder SXP TBL 200-300 (**33**)	136133
35	**Transverse Tensioning Unit SXP TUT**	
	Locking Pin D48/D57 (**35.1**)	111053
	Spigot ULT 32 (**35.2**)	100301
	Connector SXP CO (**35.3**)	133358
	Connecting Eyelet SXP EC (**35.4**)	133343
	Anchor Chain 250/3.0kN (**35.5**)	065073
	Base Plate-3 f. RS 210-1400 (**35.6**)	126666
	Turnbuckle M12/3.0kN (**35.7**)	065074
	Anchor Bolt SW24 Ø14/20x130 TG (**35.8**)	124777

A1 Prop heads

- Select PERI Slab Props subject to slab thickness and ceiling height. PEP Ergo, PEP Alpha-2 and PEP 20/30,
  (see Chapter “E3 Prop loads” on page 148 and Chapter “E4 Slab props” on page 155)

Prop Head SXP S

Mount the Prop Head SXP S on the slab prop in such a way that the G-hook can be removed for striking. Use the adjusting nut to ensure that the G-hook has a lowering range of at least 2.5 cm.

The hook blocks (**7.3**) of the prop heads point in the shuttering direction. (Fig. A1.03)

The Prop Heads SXP S fit onto slab props with end plates 120 x 120 mm, a thickness of 6 – 8 mm and a bore diameter of 40 mm in the prop end plate, e.g. PEP Slab Props.

No prop heads may be mounted on end plates with an opening of ≥ 50 mm. If the slab prop has two openings of different sizes in the end plates, the prop may be used if the side with the opening < 50 mm is used for prop head installation. The larger opening in the end plate on the contact area is irrelevant.
Such as the Slab Prop PEP Alpha-2.

7 Prop Head SXP S
7.1 Locking slide
7.2 Sleeve
7.3 Hook block

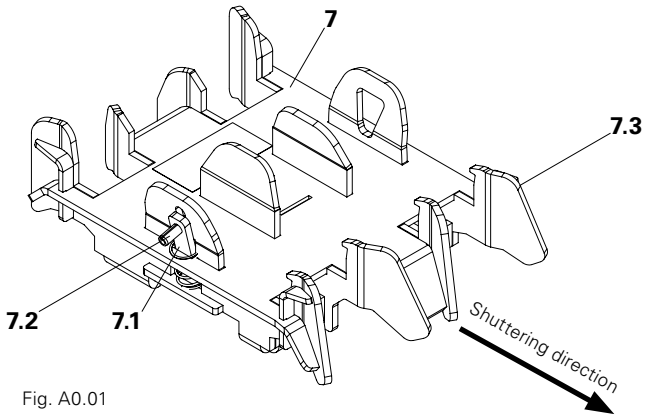


Fig. A0.01

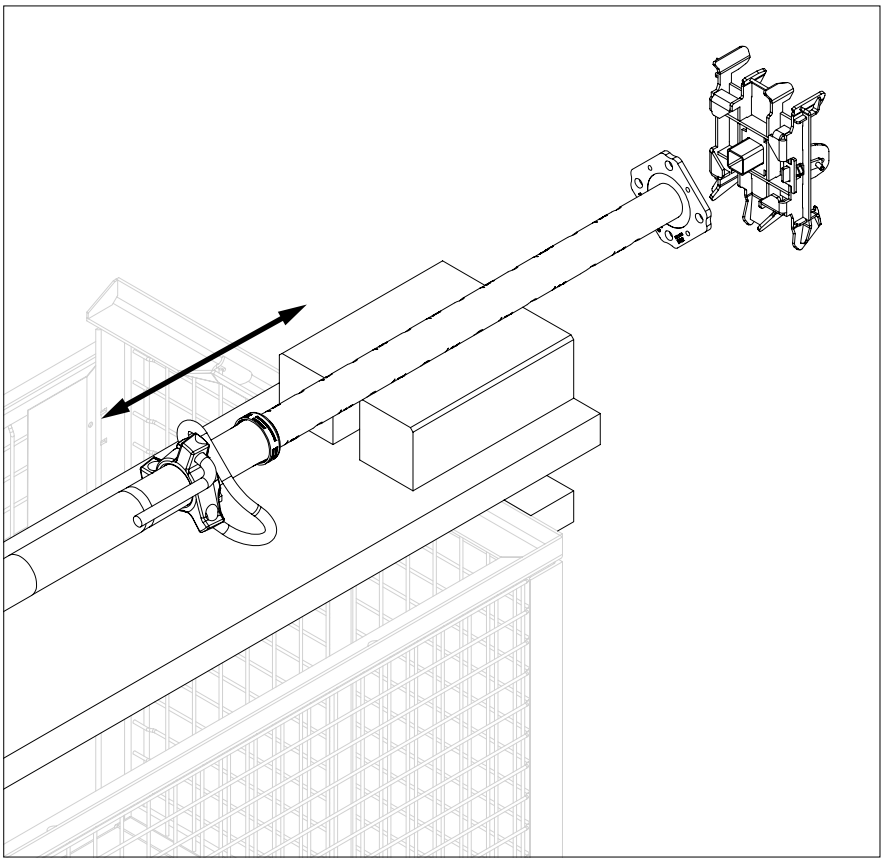


Fig. A0.02

Caution

Movable component that can crush fingers or hands when the prop head is mounted or removed.
This can lead to minor reversible injuries.
⇒ Wear protective gloves!

Assembly

1. Adjust the extension of the slab prop to a clearance less 18 cm. (Fig. A1.07)
2. Turn the prop head (**7**) by approx. 45° in the direction of the slab prop and place it on the end plate. (Fig. A1.07b + A1.07c)
3. Turn the prop head in a clockwise direction. by approx. 45°. (from the point of view of the prop head)
   → The locking slide (**7.1**) drops down and prevents the prop head from turning back. (Fig. A1.07c)
4. Check that the prop head is fitted securely.

→ The prop head is installed.

Has the locking slide dropped down? If not, push the locking slide downwards by hand.

Dismantling

1. Pull the locking slide (**7.1**) upwards on the sleeve (**7.2**). (Fig. A1.07d)
2. Turn the prop head by approx. 45° in an anticlockwise direction (from the point of view of the prop head) and remove it from the end plate. (Fig. A1.07e)

→ Prop head is now dismantled.

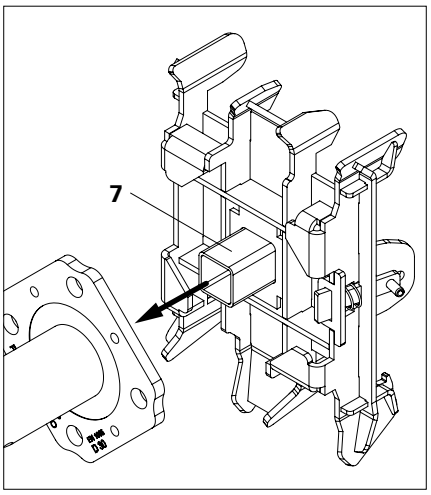


Fig. A1.02a

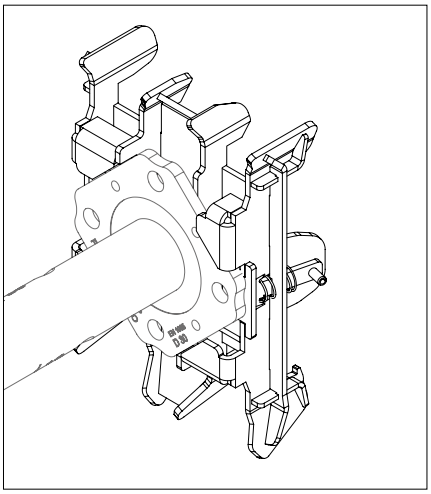


Fig. A1.02b

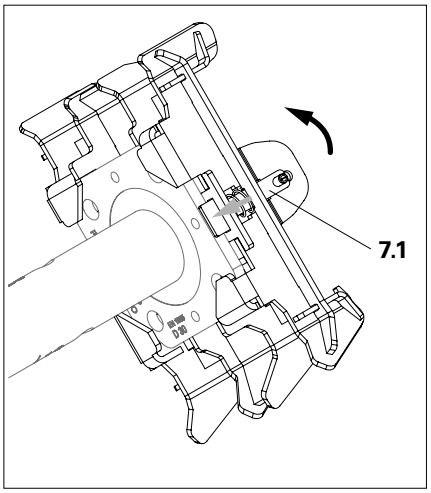


Fig. A1.02c

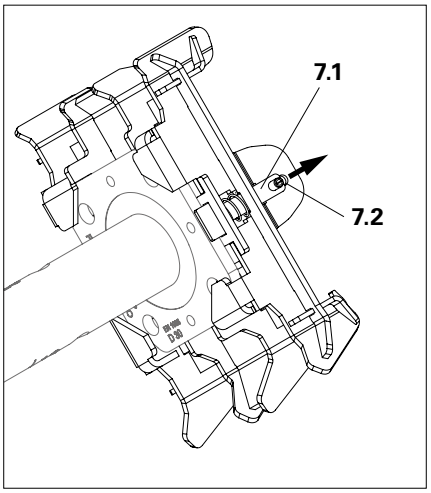


Fig. A1.02d

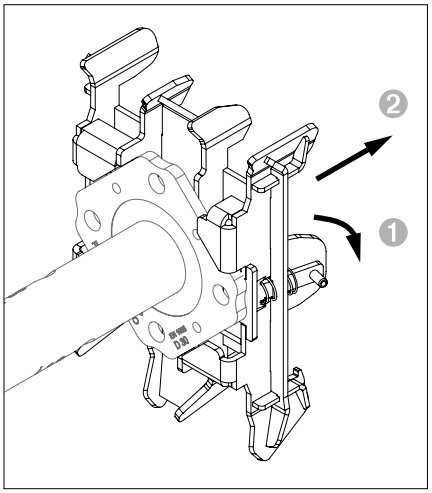


Fig. A1.02e

Prop Head SXP S POLY

Caution
Movable component that can crush fingers or hands when the prop head is mounted or removed.
This can lead to minor reversible injuries.
⇒ Wear protective gloves!

The Prop Head SXP S POLY (**31**) is suitable for props with end plates 120 x 120 mm and a thickness of 6 - 8 mm.

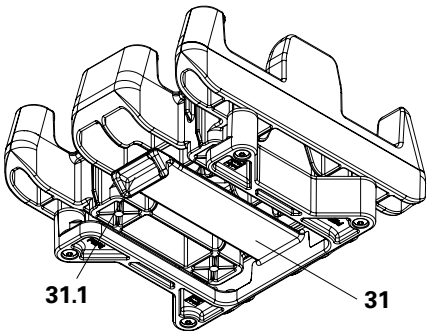


Fig. A1.01

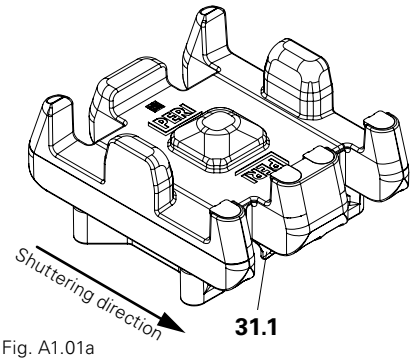


Fig. A1.01a

Assembly
1. Adjust the extension of the slab prop to a clearance less 20 cm.
2. Push the Prop Head SXP S POLY with the locking clip (**31.1**) first onto the end plate of the prop until the locking clip (**31.1**) engages at the edge of the end plate. (Fig. A1.09 + Fig. A1.09a)

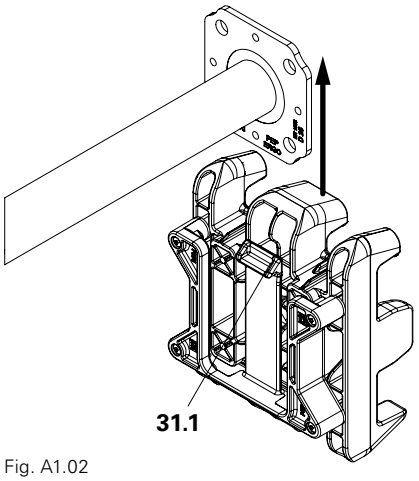


Fig. A1.02

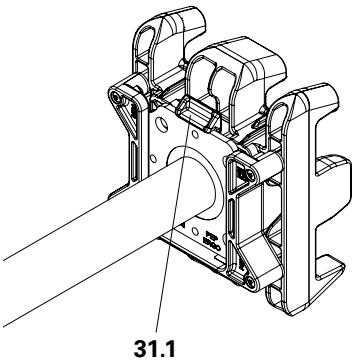


Fig. A1.02a

Is the locking clip properly engaged?

- Tension forces can only be transferred via the Prop Head SXP S POLY to a limited extent!
- When using the Prop Head SXP S POLY with Bracing SXP TU 3 T2 at the open edge of building:
  For transfer of horizontal loads only permissible up to max. 40 cm slab thickness and installation in shuttering direction!
- The horizontal loads on the Prop Head SXP S POLY in connection with the Tensioning Unit SXP TU 15 may only be accumulated via pressure between the panels!

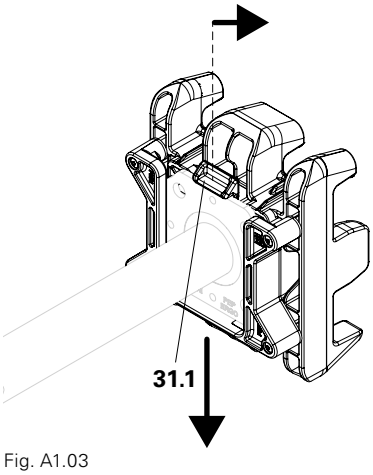


Fig. A1.03

Dismantling
Lift the locking clip and pull the Prop Head SXP S POLY down from the end plate
(Fig. A1.10)

Lowering Head SXP L T2

SKYMAX Panels can be lowered individually or in pairs using the Lowering Head SXP L T2 (**6**).
The hook blocks (**6.8**) of the lowering heads point in the shuttering direction. (Fig. A1.01)

The lowering heads SXP L T2 fit onto slab props with end plates 120 x 120 mm and a thickness of 6 – 8 mm, e.g. PEP Slab Props.

Are the hook blocks (**6.8**) in flawless condition and undamaged?

6 Lowering Head SXP L T2
6.1 Lowering head fixed part (painted in red)
6.2 Connection plate
6.3 Lowering head wedge
6.4 Lowering head attached part (painted in yellow)
6.5 Latch
6.6 Bolt M12x30-8.8
6.7 Nut M12-8
6.8 Hook block

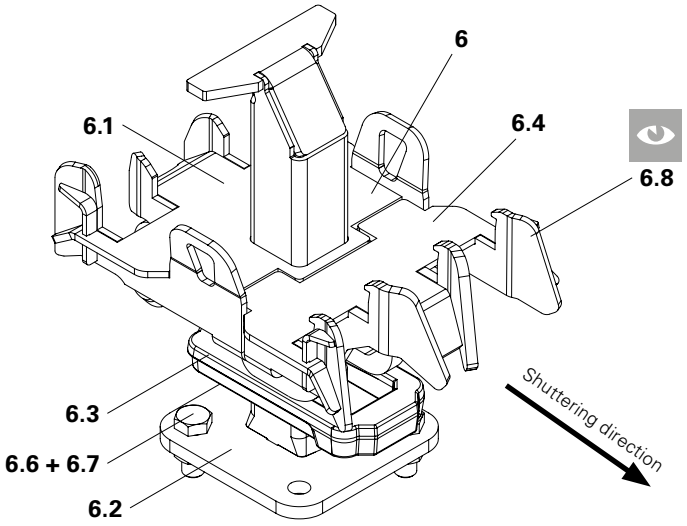


Fig. A1.04

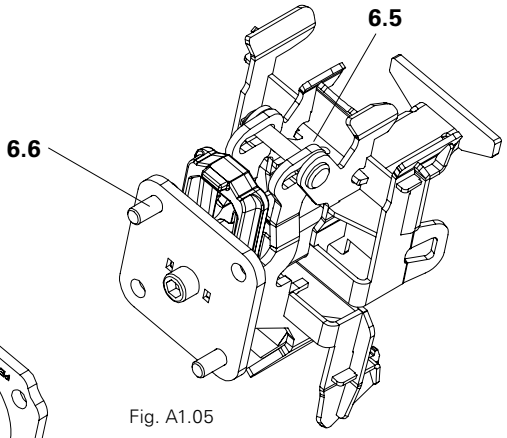


Fig. A1.05

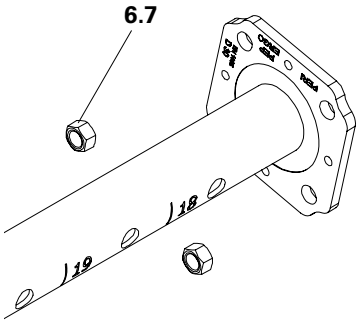


Fig. A1.05a

The lowering head is usually screwed diagonally with two screws to the PEP Ergo, PEP Alpha-2 and PEP 20/30 Slab Props.
Exception: See Section E3 Prop loads, required number of bolts in the Lowering Head SXP L T2 and Lowering Head SXP LQ systems.

Assembly

1. Adjust the extension of the slab prop to a clearance less 28 cm.
2. Screw the lowering head onto the end plate of the slab prop using 2 M12x30-8.8 (**6.6**) screws and nuts (**6.7**). (Fig. A1.02a)
3. Raise the latch (**6.5**) (Fig. A1.02b)
4. Raise the attached part of the lowering head (**6.4**) (Fig. A1.02c)
5. Raise the lowering head wedge (**6.3**), insert it into the groove and hammer in tightly. (Fig. A1.02d + A1.02e)

→ Lowering head is mounted and prepared.

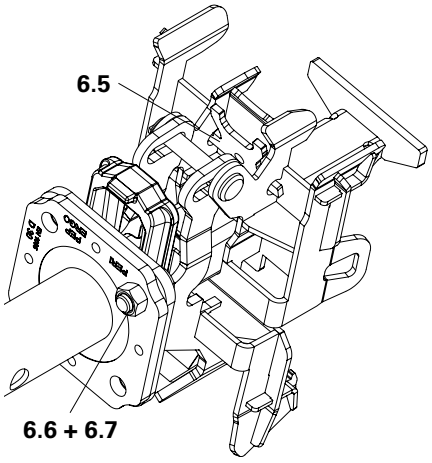


Fig. A1.05b

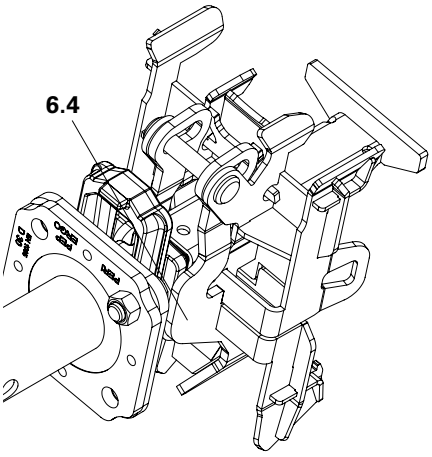


Fig. A1.05c

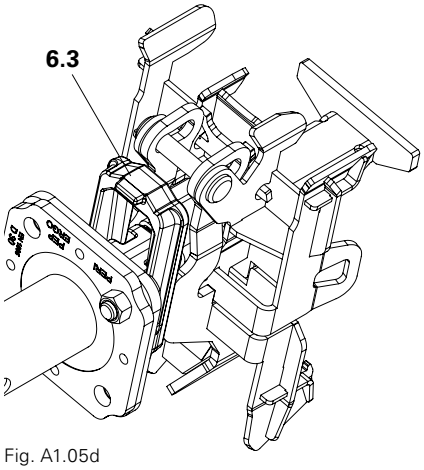


Fig. A1.05d

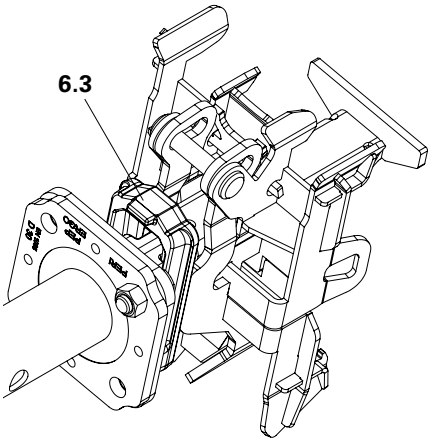


Fig. A1.05e

Lowering Head SXP LQ

The Lowering Head SXP LQ (**43**) can be quickly attached to a slab prop.

The only difference between the Lowering Head SXP LQ (**43**) and the Lowering Head SXP L T2 is the assembly process. The preparation process is the same.
SKYMAX Panels can be lowered individually or in pairs using the Lowering Head SXP LQ (**43**).
The hook blocks (**43.7**) of the lowering heads point in the shuttering direction (**D**).(Fig. A1.03).

Lowering Heads SXP LQ fit PEP Ergo, PEP Alpha-2 or PEP 20/30 slab props with end plates measuring 120 x 120 mm and a thickness of 6 – 8 mm.

Are the hook blocks (**43.7**) in flawless condition and undamaged?

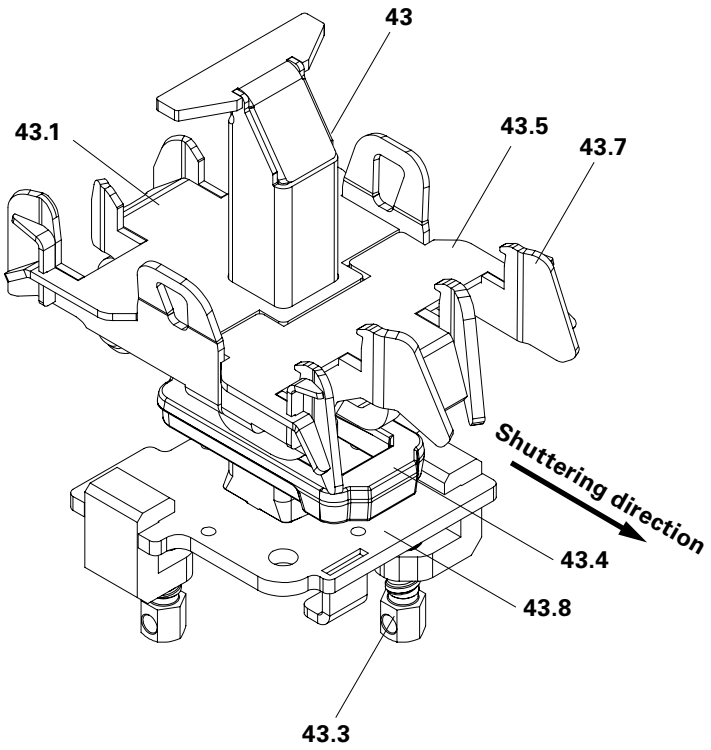


Fig. A1.06

Components

43 Lowering Head SXP LQ
43.1 Lowering head fixed part (painted in red)
43.3 Threaded Bolts DW15
43.4 Lowering head wedge
43.5 Lowering head attached part (painted in yellow)
43.6 Centring ring
43.7 Hook blocks
43.8 Connection plate

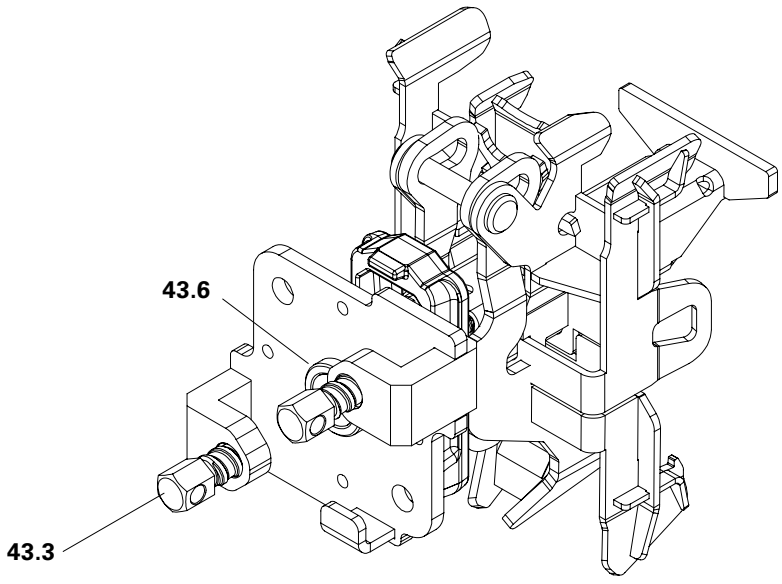


Fig. A1.07

Assembly

The DW15 threaded bolts may only be tightened with the mandrel side of a scaffold ratchet or pointed hammer.

1. Adjust the extension of the slab prop to a clearance less 28 cm.
2. Open the DW15 threaded bolts (**43.3**). (Fig. A1.08a)
3. Place the Lowering Head SXP LQ (**43**) on the prop. Lift the centring ring by way of the support plate and place it in the support borehole. (Fig. A1.08b)
4. Tighten both DW15 threaded bolts (**43.3**) to 15 to 25 Nm. (Fig. A1.08c)

→ The lowering head is in place.

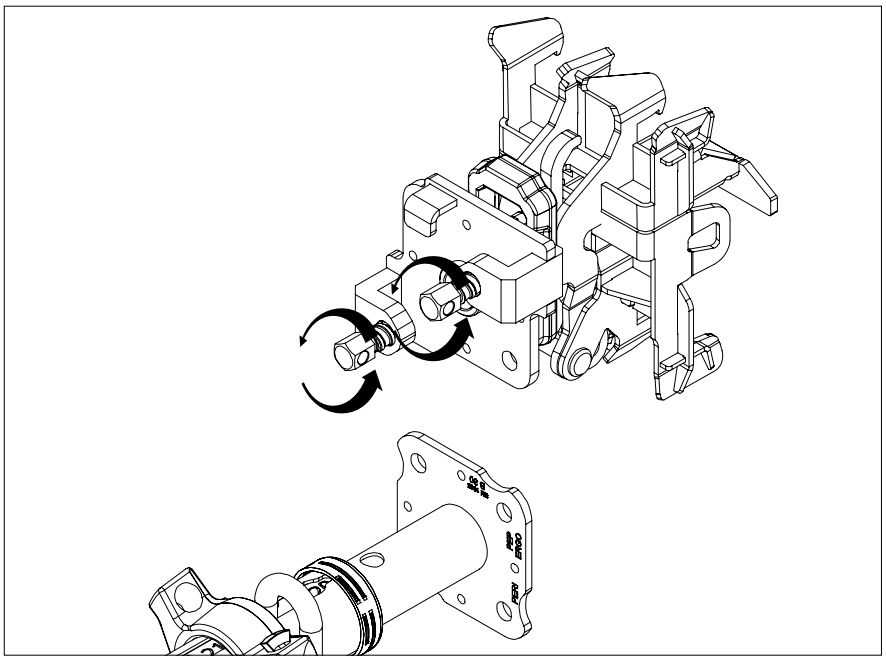


Fig. A1.08a

The preparation process for the Lowering Head SXP LQ is carried out in the same way as for the Lowering Head SXP L T2 (see Section A1, "Prop heads", Lowering Head SXP L T2).

Dismantling

1. Loosen the DW15 threaded bolts (**43.3**).
2. If necessary, remove additional M12x30 screws (**57**).
3. Lift the Lowering Head SXP LQ slightly (**43**) and remove it from the prop. (Fig. A1.05a)

→ The Lowering Head SXP LQ (**43**) has been removed.

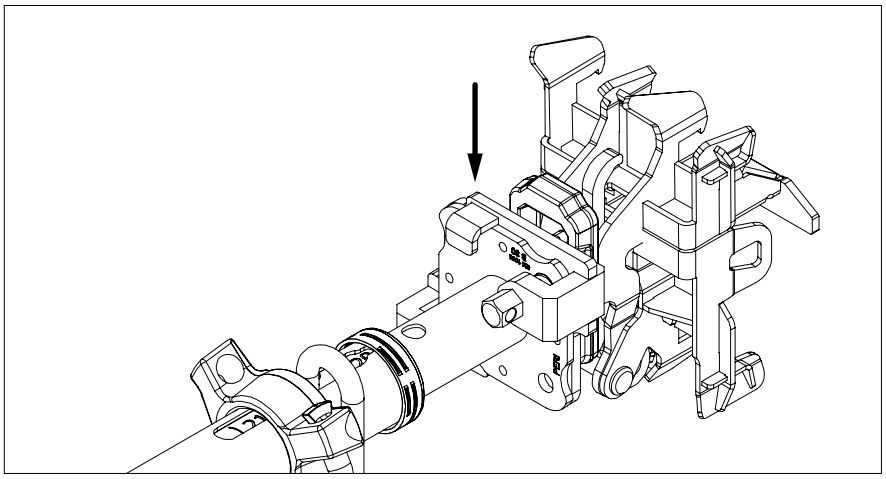


Fig. A1.08b

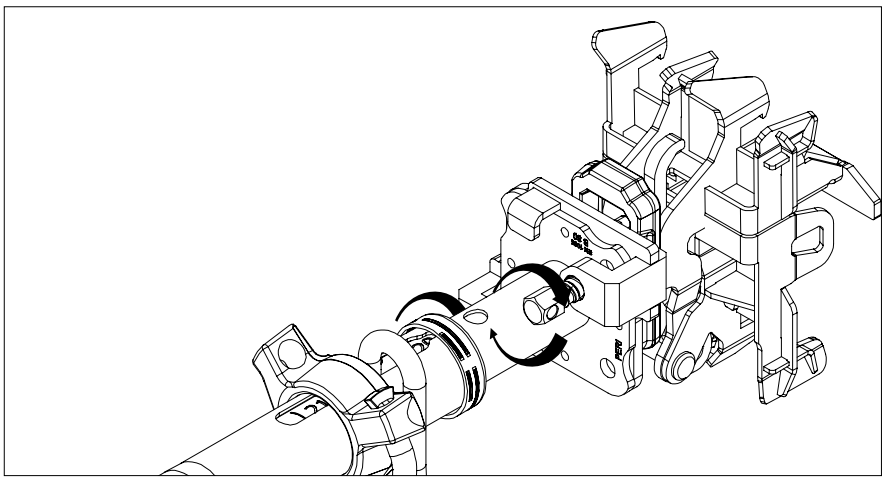


Fig. A1.08c

In addition
When using slab props with
- an end plate of t = 6 mm and
- slab thickness > 33 cm and
- load from use of 3 kN tensioning unit:

1. Screw the prop head with 2 bolts M12x30-8.8 (**61**) and nuts M15-8 (**62**) through the remaining holes in the support plate. Hand-tighten the bolts. (Fig. A1.09)

Additional components

61 Screw M12x30-8.8
62 Nut M12-8

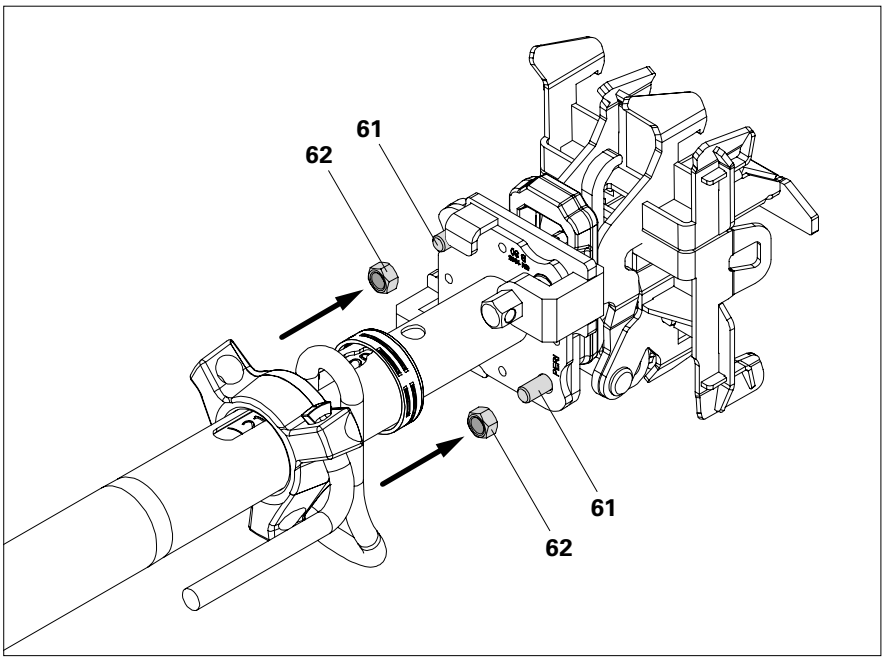


Fig. A1.09

Use with MULTI-PROP MP Props

Components

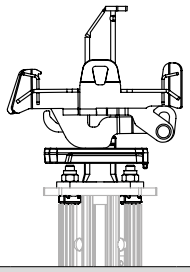
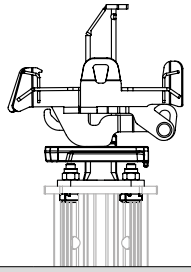
6 Lowering Head SXP L T2
7 Prop Head SXP S
8 Prop Head SXP S Poly
44 Prop Adapter SXP SA
49 MULTIPROP MP 250 (e.g.)
60 MP-Bolt with Nut M12x040-8.8

- The prop loads can be compared with the values from the MULTIPROP Instructions for Assembly and Use.
- For geometric reasons, MULTIPROP MP Props may only be used in the SKYMAX System in the field.
  → They cannot be used directly on walls! Use PEP Ergo, PEP Alpha-2 or PEP 20/30 on walls.
- Extension length limited to $L_{extension} \leq 5.00$ m.

1. Application scenario:
Screwing the MULTIPROP MP Props (**49**) directly onto the Lowering Head SXP L T2 (**6**).

Assembly

Fit the nuts (**60**) with the hexagonal part (**60.1**) resting on the plate of the lowering head, round nut side (**60.2**) facing the screw protrusion
1. Adjust the extension of the slab prop to a clearance less 28 cm.
2. Fit the Lowering Head SXP L T2 (**6**) directly onto the MULTIPROP Prop (**49**) using 4 x MP bolts M12x40 8.8 and nuts (**60**).
   Tightening torque: hand-tight.
   (Fig. A1.10)

	Lowering head screwed directly onto the MULTIPROP							
Lowering Head SXP L T2								
Alignment	**Inner tube top**				**Upper Outer Tube**			
Prop length	250	350	480	625	250	350	480	625
Permissible slab thickness	30 cm		X*		30 cm			

* Application excluded,
adjusting nut cannot be adjusted from the erection surface

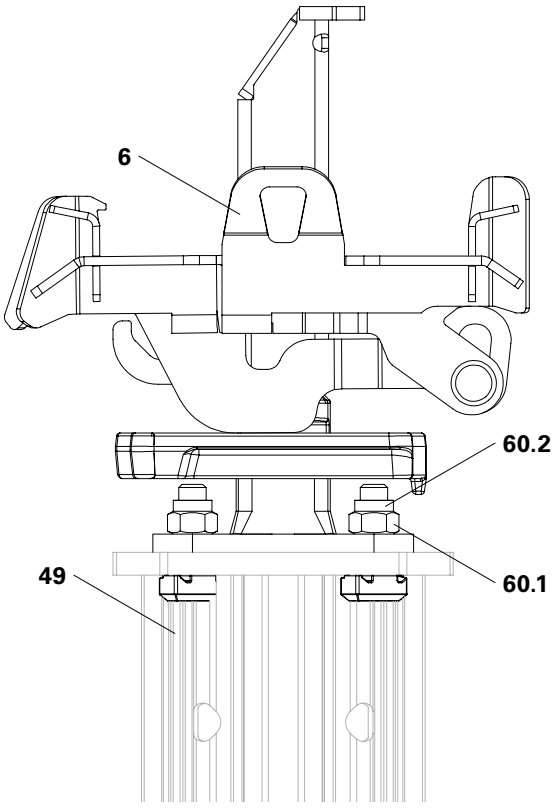


Fig. A1.10

2. Application scenario:
The Prop Adapter SXP SA (**44**) serves as a fastener between the MULTIPROP MP Prop (**49**) and the Prop Head SXP S (**7**) or the Prop Head SXP S POLY (**8**).

The adapter **cannot** be used with the Lowering Head SXP LQ!

Assembly
The Prop Heads SXP S and SXP S POLY are mounted on the prop adapter in the same way as on a PEP Slab Prop, for example. See the Instructions for Assembly and Use for the SKYMAX Large Panel Slab Formwork.

Fit the nuts (**60**) with the round nut side (**60.2**) resting on the prop adapter, hexagonal part (**80.1**) facing the screw protrusion. (Fig. A1.12)

Prop Head SXP S
1. Adjust the extension of the slab prop (**49**) to the clear room height less 25 cm.
2. Fit the Prop Adapter SXP SA (**44**) onto the MULTIPROP MP Prop (**49**) using 4 x MP bolts M12x40 8.8 and nuts (**60**).
   Tightening torque: hand-tight.
3. Turn the Prop Head SXP S (**7**) by approx. 45° in the direction of the slab prop and place it on the end plate.
4. Turn the prop head in a clockwise direction. by approx. 45°.
   → The locking slide drops down and prevents the prop head from turning back.

Prop Head SXP S POLY
1. Adjust the extension of the slab prop (**49**) to the clear room height less 28 cm.
2. Fit the Prop Adapter SXP SA (**44**) onto the MULTIPROP MP Prop (**49**) using 4 x MP bolts M12x40 8.8 and nuts (**60**).
   Tightening torque: hand-tight
3. Push the Prop Head SXP S POLY (**8**) with the locking clip first onto the end plate of the prop until the locking clip engages at the edge of the end plate.

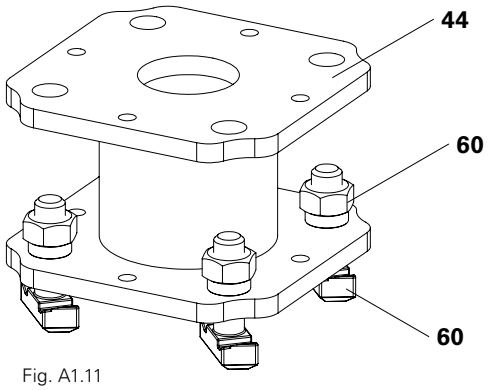
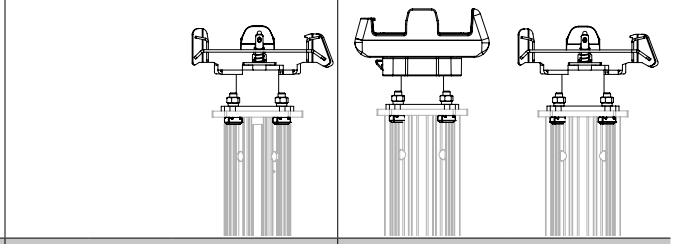


Fig. A1.11

Prop Heads SPX S / SPX S Poly with prop adapter on MULTIPROP MP



Alignment	Inner tube top				Upper Outer Tube			
Prop length	250	350	480	625	250	350	480	625
perm. panel slab thickness **without** centre support	40 cm		X*		40 cm			
perm. panel slab thickness **with** centre support	55 cm		X*		55 cm			

* Application excluded,
adjusting nut cannot be adjusted from the erection surface

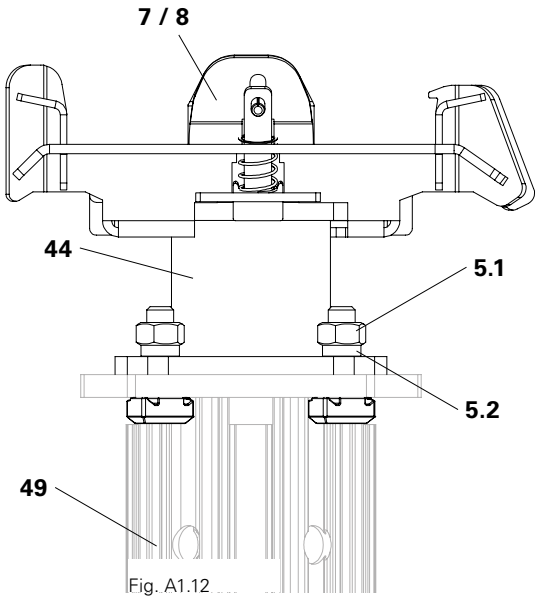


Fig. A1.12

Panel SXP P

Panel SXP P 200x100 (**1**)
Panel SXP P 200x66.5 (**2**)
Panel SXP P 100x100 (**3**)
The panels consist of powder-coated aluminium profiles and a multi-bonded, phenolic resin-coated, multi-layer plywood sheet as formlining.

1 Panel SXP P 200x100
1.1 Formlining
1.2 Recessed grips
1.3 Shuttering aid holder
1.4 Centring hole for guardrail beam
1.5 Connection for Bracing SXP TU 3 T2
1.6 Prop head support system distance
1.7 Recessed prop head support
1.8 Edge profile
1.9 Transverse profile
1.10 RFID transponder

3 Panel SXP P 200x66.5
2.1 Formlining
2.2 Recessed grips
2.3 Shuttering aid holder
2.5 Connection for Tensioning Unit Bracing SXP TU 3 66.5 T2
2.6 Prop head support system distance
2.7 Recessed prop head support
2.8 Edge profile
2.9 Transverse profile
2.10 RFID transponder

3 Panel SXP P 100x100
3.1 Formlining
3.2 Recessed grips
3.3 Shuttering aid holder
3.5 Connection for Tensioning Unit Bracing SXP TU 3 66.5 T2
3.6 Prop head support system distance
3.7 Recessed prop head support
3.8 Edge profile
3.9 Transverse profile
3.10 RFID transponder

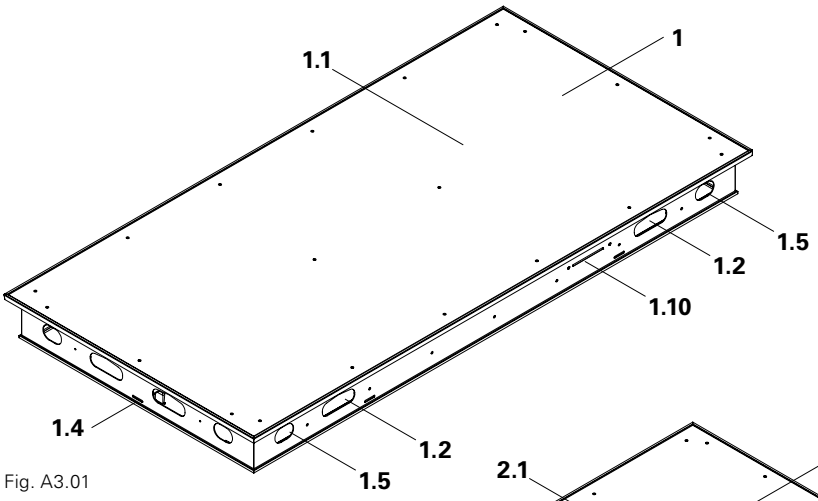


Fig. A3.01

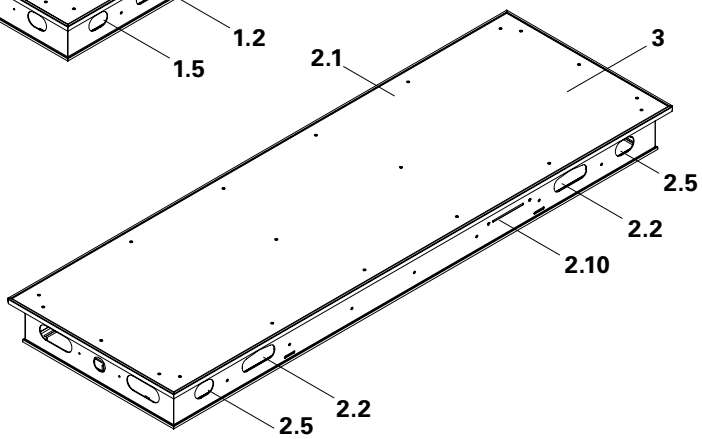


Fig. A3.02

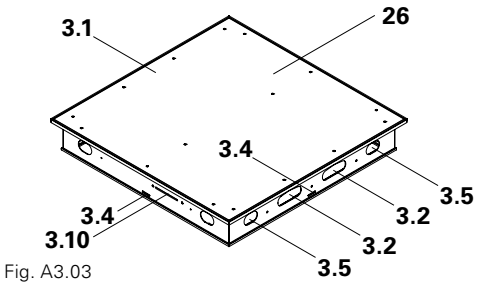


Fig. A3.03

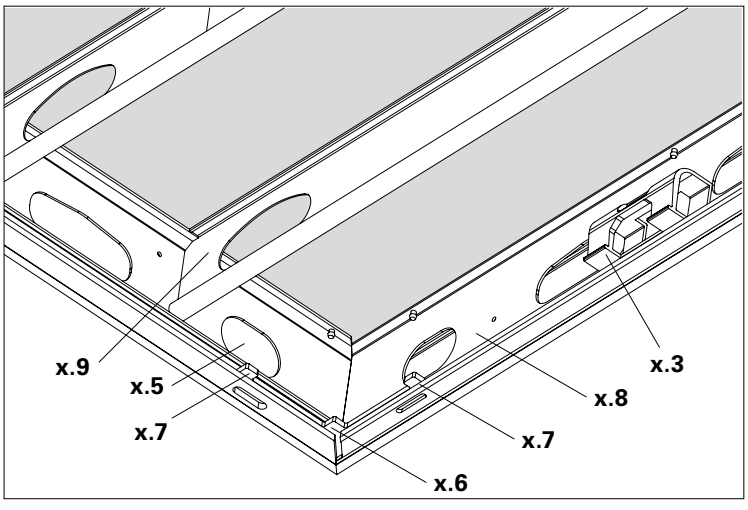


Fig. A3.04

Panel SXP P 100x66.5 (4)

- The max. permissible slab thickness is 55 cm.
- Each panel must be supported at all 4 corners to carry the load.

Use:
Only use Panel SXP P 100x66.5 as
- Inside corner filler, see figure,
- Filler element

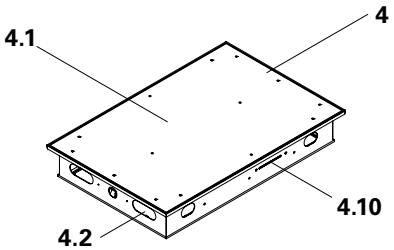


Fig. A3.05

Fixing
- Bracing
- Guardrail post holders
- Pivotable guardrails

is not permitted.

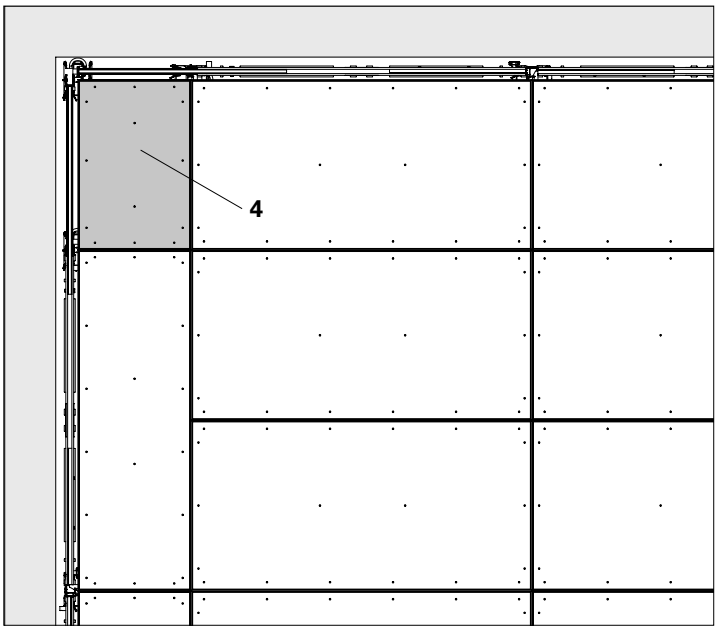


Fig. A3.06

4 Panel SXP P 100x100
4.1 Formlining
4.2 Recessed grips
4.3 Shuttering profile
4.6 Prop head support system distance
4.7 Recessed prop head support
4.8 Edge profile
4.9 Transverse profile
4.10 RFID transponder

Starter Beam SXP SB

Starter beams simplify the shuttering and striking procedure, thus improving system safety.
Only use starter beams for slab props with lowering heads. (Fig. A3.02)

The external prop supports are designed for laterally recessed prop head supports and supports at system distance.
The central prop supports are mounted in the shuttering direction and are clearly visible.
The stopend profile compensates for height differences in the walls and prevents the starter beam from sitting on the structure. (Fig. A3.01a)
Following assembly, the SKYMAX sticker must be legible from the front. (Fig. A3.04)

Starter beams are available in three lengths:
Starter Beam SXP SB 300 (**9**)
Starter Beam SXP SB 100 (**10**)
Starter Beam SXP SB 66.5 (**11**)

9 Starter beam
9.1 Formlining
9.2 Stopend profile
9.3 External mount
– at system distance
9.4 – recessed
9.5 Spacer between starter beam and construction

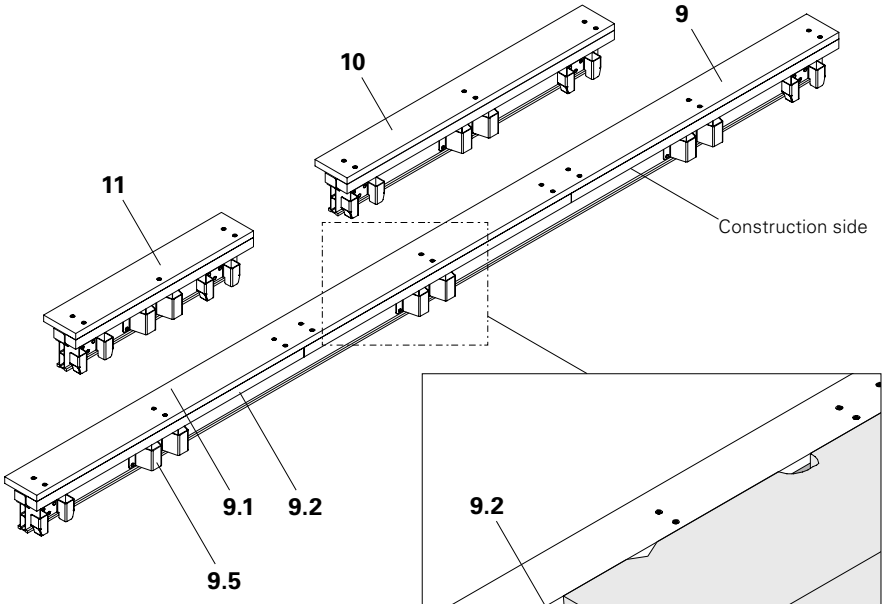


Fig. A4.01

Fig. A4.01a

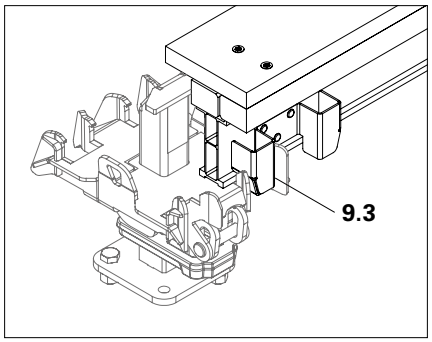


Fig. A4.02

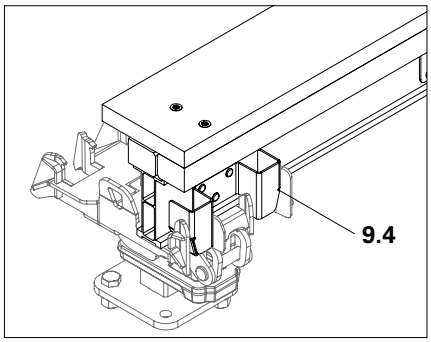


Fig. A4.03

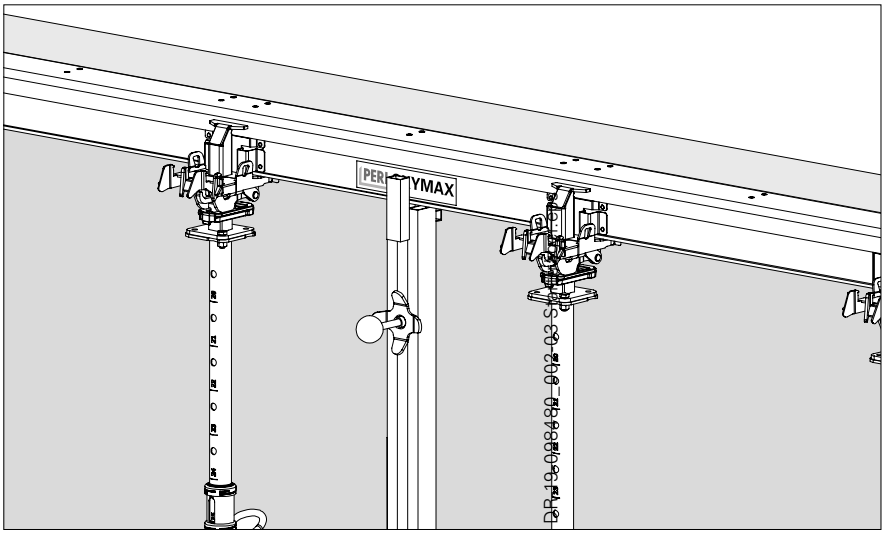


Fig. A4.04

Wall Holder SXP W

The Wall Holder SXP W (**18**) is used to hold the slab formwork in a horizontal position during assembly.
It can be mounted in both horizontal and transverse directions.

The wall holder is used to support panels (**18.1**) or starter beams (**18.2**). Fit the labelled side of the wall holder facing upwards.
(Fig. A4.01 +Fig. A4.01a)

- Never install, apply weight to or walk on slab formwork without a wall holder. Slab formwork can tilt sideways.
- Secure the formwork surface with wall holders on a continuing basis.
- Wall holders are not suitable for transferring concreting loads.
- It may be necessary to install additional bracing to transfer concreting loads. Take into account the project-specific planning.

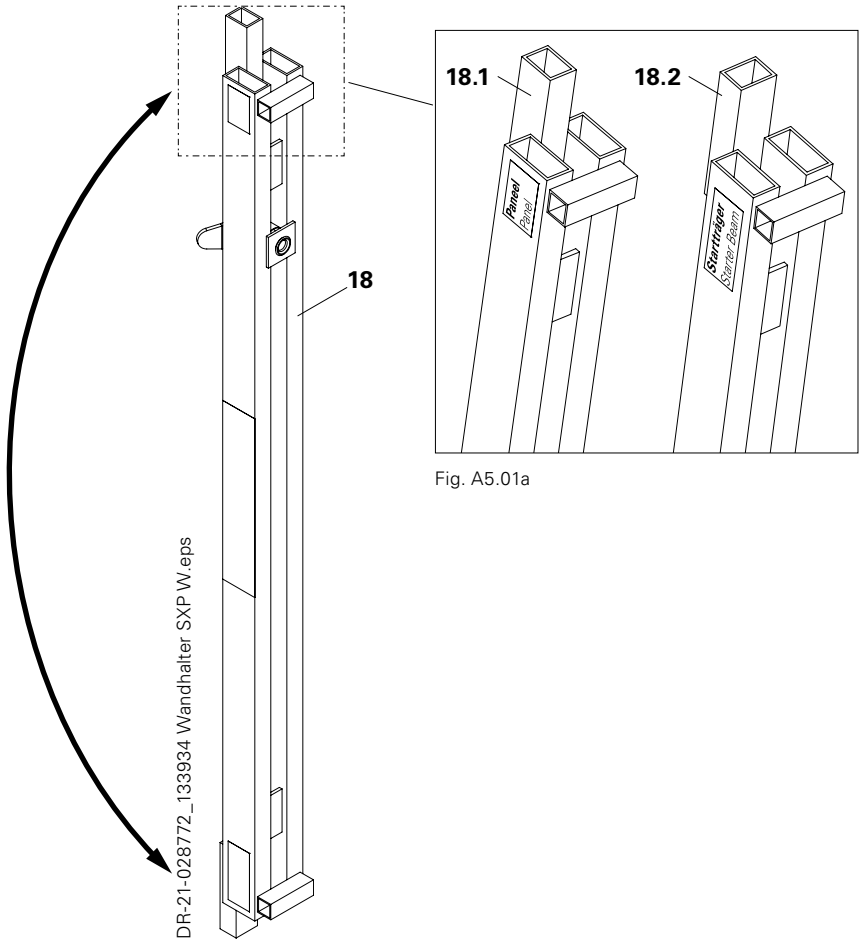


Fig. A5.01a

Fig. A5.01

Assembly
For the assembly, select a tie hole that allows the adjustment of the wall holder (**18**) to the required height.

1. Push the tie rod with the wingnut counterplate through the available tie hole on the opposite side of the wall.
   ! Ensure that the external nut is not loosened.
2. Unscrew the wall holder (**18**) from the tie rod by turning the wing nut (**18.3**) a few times.
3. Turn the wall holder with the required side facing upwards (starter beam or panel side, (Fig. A4.01a)) and tighten the wing nut.
4. Cover projecting tie rod with protective caps (**18.4**).
5. It may be necessary to adjust the wall holder vertically in order to attach a starter beam or panel.

(Fig. A5.02)

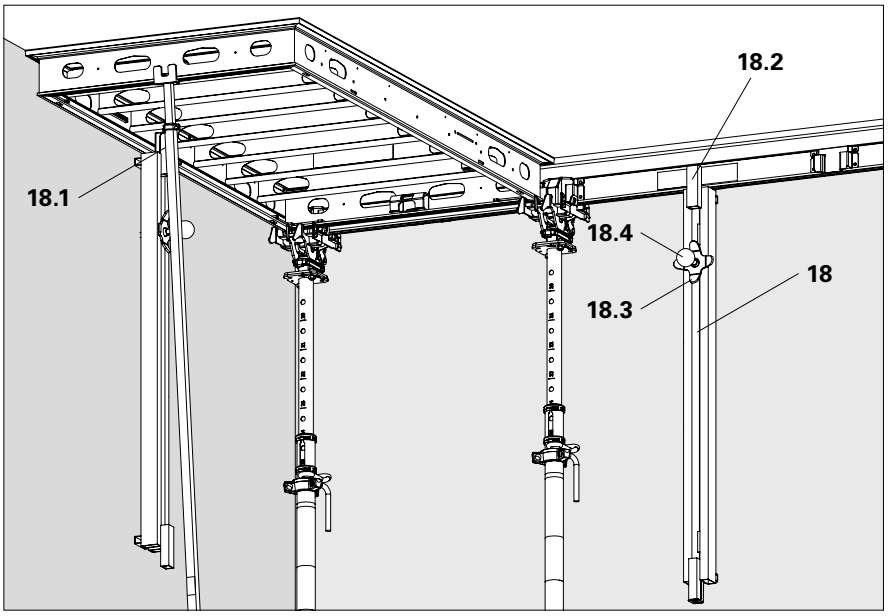


Fig. A5.02

A5 Wall holder

Number of wall holders

System configuration with starter beams
Secure each starter beam centrally with a wall holder (**18a**).
In the longitudinal direction, secure every 2nd panel (**1a**) with a wall holder (**18b**). Start with the first panel row. (Fig. A4.03)

System configuration without starter beams
Secure every 3rd panel (**1b**) in the transverse direction with a wall holder (**18c**). Start with the first panel row.
In the longitudinal direction, secure every 2nd panel (**1a**) with a wall holder (**18b**). Start with the first panel row. (Fig. A4.04)

Secure each starter beam
SXP SB 300, (**9**)
SXP SB 100, (**10**)
SXP SB 66.5 (**11**)
with a Wall Holder SXP W. Mount the wall holder centrally on the starter beam.

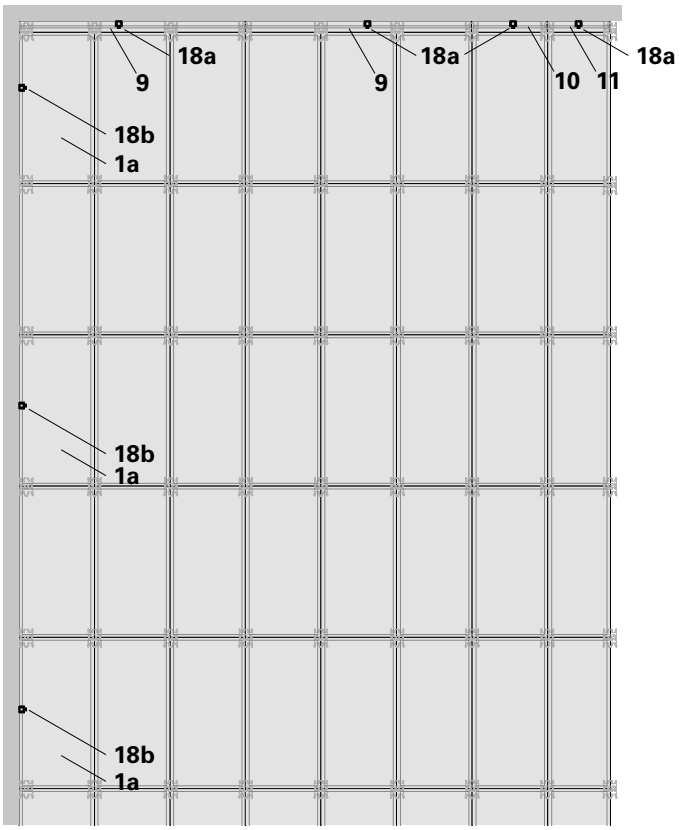


Fig. A5.03

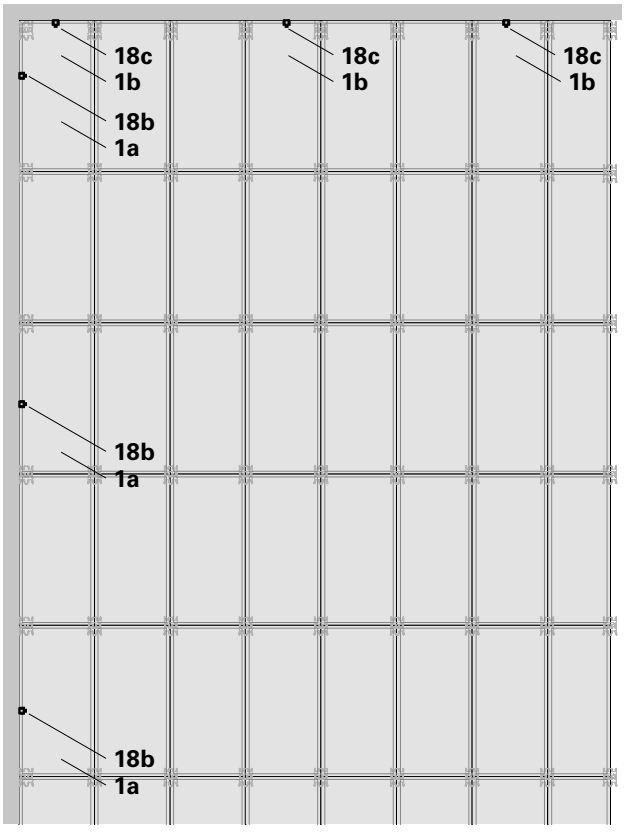


Fig. A5.04

Column Frame SXP CF T2

Infill areas around building columns are formed with the Column Frame SXP CF T2 (**5**). (Fig. A5.02)

The Column Frame SXP CF T2 consists of a frame (**5.1**) and 3 cross struts that can be moved freely in a grid. (**5.2**).
The cross struts are secured in position by means of locking pins (**5.3**).
The locking positions (**5.4**) are each 8.5 cm apart.

Due to the bevelled profile (**5.5**) of the column frame (Fig. A5.02a), this can be pivoted downwards when deshuttering.

A Column Frame SXP CF T2 can be used as a half panel, e.g. for compensations.

Assembly
1. Pull the locking pin (**5.3**) and install the cross strut (**5.2**) in the required position. (max. distance 30 cm, corresponds to 3 locking positions)
2. Release the locking pin and allow it to engage in the relevant hole in the frame profile (**5.1**).

(Fig. A5.01a)

Required on site:
Formwork panel 21 mm.

Cover the column frame with a formwork panel.
Separate the formwork panel at the joint of the column frame, do not leave a lot of striking clearance.

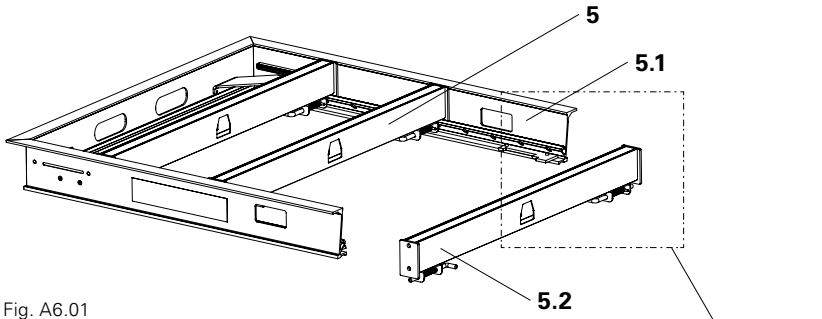


Fig. A6.01

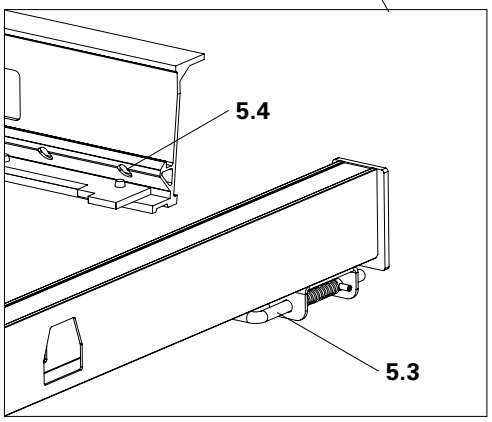


Fig. A6.01a

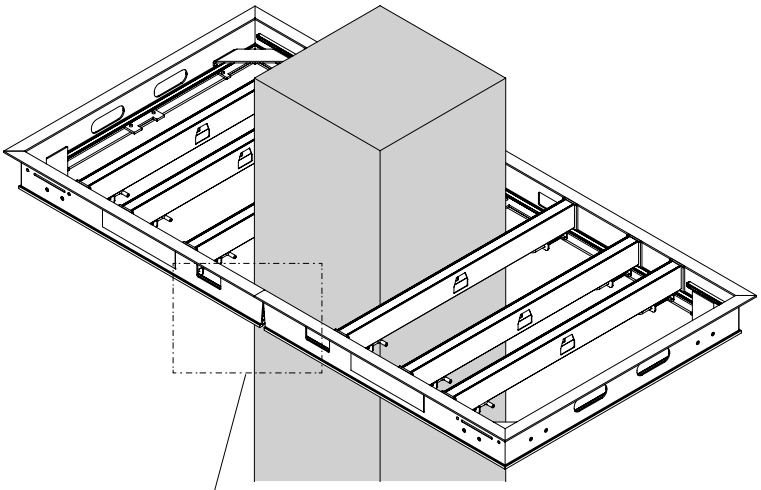


Fig. A6.02

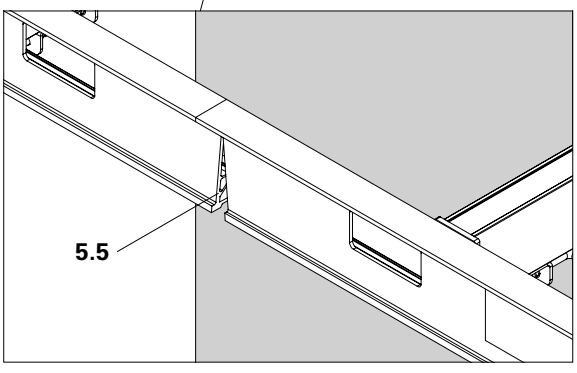


Fig. A6.02a

Guardrail Unit SXP GU 100

The Guardrail Unit SXP GU 100 consists of 3 components:
- Plug Guardrail SXP GU 100 (**14**)
- Frame SXP GU 100 (**15**)
- Traverse SXP GU 100 (**16**)

(Fig. A6.01)

Traverse

Assembly

1. Move the clamping lever (**16.1**) into the horizontal position.
2. From the inside of the panel, use the centring lug (**16.2**) to slide the Traverse SXP GU 100 into the slot on the penultimate panel.
3. Turn the clamping lever in a clockwise direction through 90° until there is noticeable resistance. The Traverse SXP GU 100 must be sitting up against the panel without any play. (Fig. A6.01a + Fig. A6.01b)

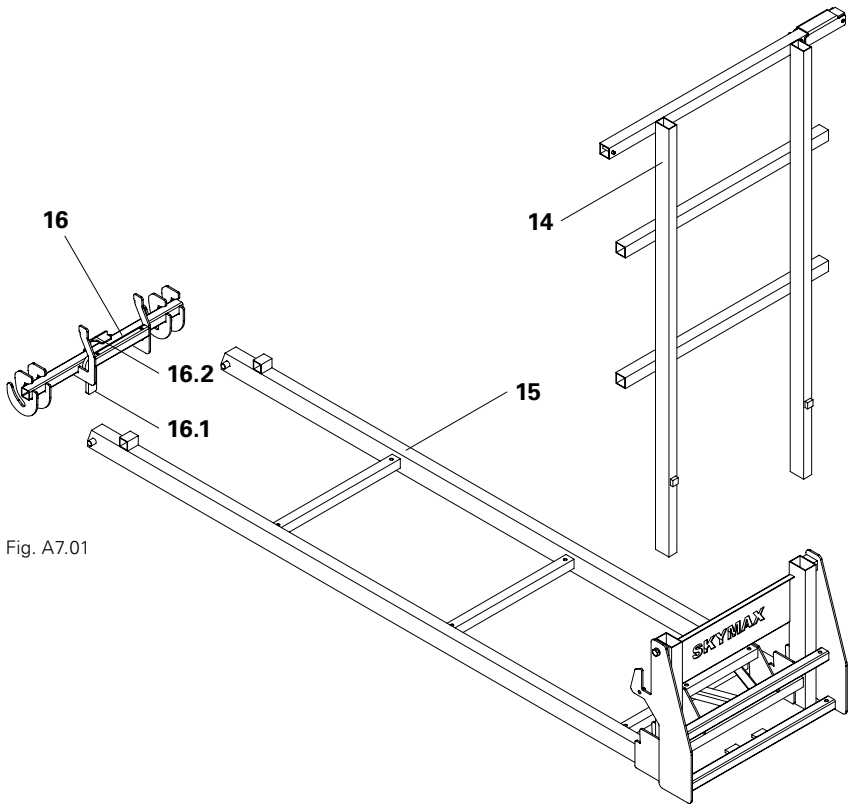


Fig. A7.01

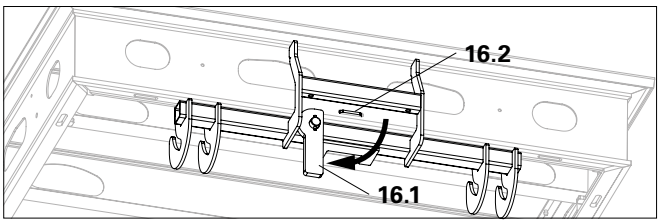


Fig. A7.01a

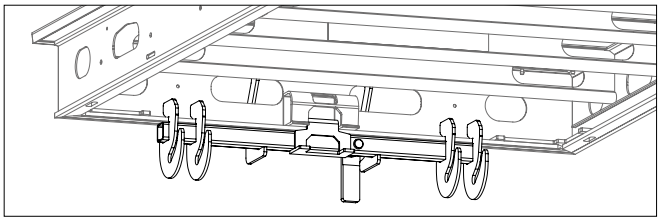


Fig. A7.01b

A7 Guardrail unit

Frame and plug guardrail

Assembly

1. Attach the Frame SXP GU 100 (**15**) to the pre-assembled traverse. (Fig. A6.02 + Fig. A6.02a)
2. Insert Plug Guardrail SXP GU 100 (**14**) into Frame SXP GU 100. (Fig. A6.03)

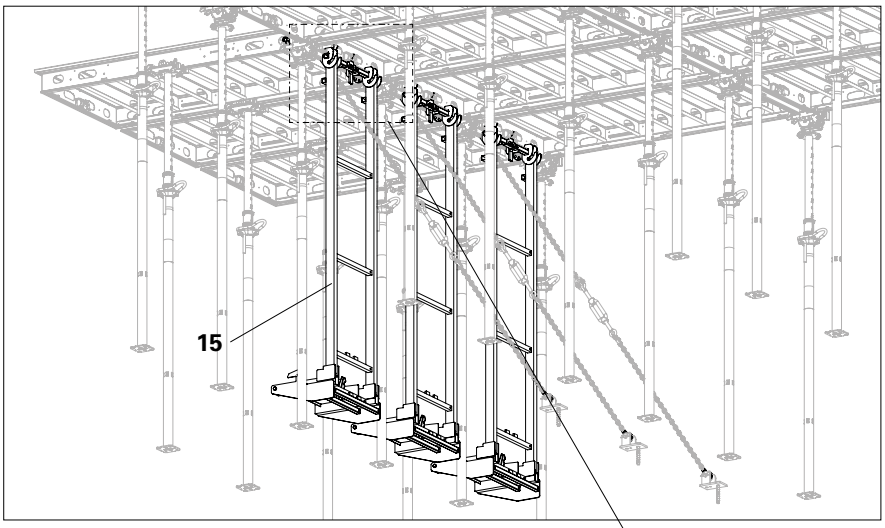


Fig. A7.02

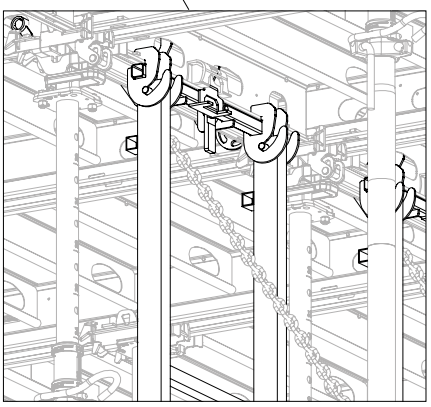


Fig. A7.02a

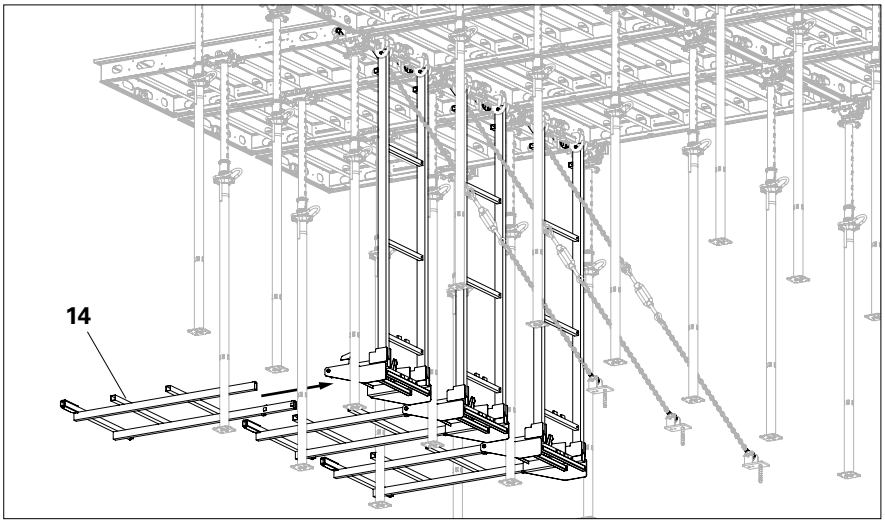


Fig. A7.03

A7 Guardrail unit

Swivelling up the guardrail unit

1. Take hold of the guardrail unit (**13**) by the centring lugs (**15.1**) on the yellow cross strut using the shuttering aid (**21**). (Fig. A6.04a)
2. Push the frame up until the safety device (**15.5**) has engaged securely in the grip holes on the panel. (Fig. A6.04b + Fig. A6.04c)

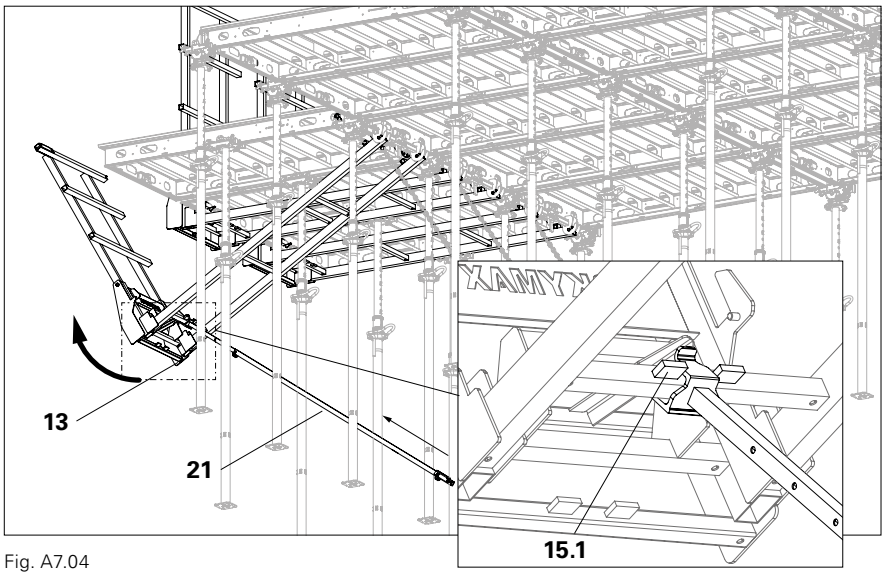


Fig. A7.04

Fig. A7.04a

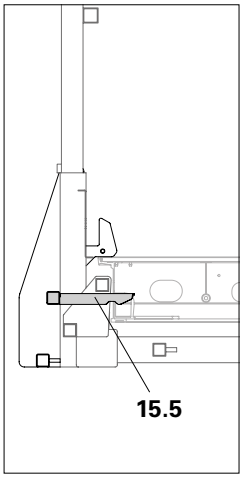


Fig. A7.04b

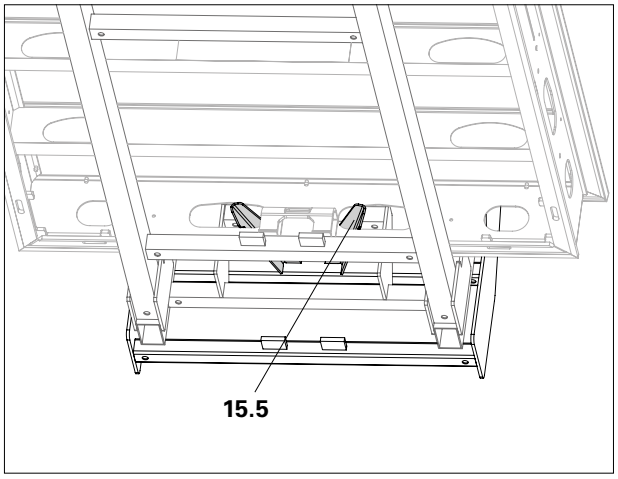


Fig. A7.04c

Guardrail Post Holder SXP GPR T2/GPL T2

Carry out installation with guardrail post holders (**17**), guardrail posts and guardrail boards or PROKIT barriers on the short panel side.

Mounting on the panel is carried out while the panel is lying flat.

Assembly

1. Unscrew the cam nut (**17.1**) on the adjustable leg of the guardrail post holder as far as it will go, thereby extending the hook (**17.2**).
2. Place the adjustable leg (**17.5**) at right angles to the panel frame (**1.8**) so that the hook (**17.2**) engages in the grip hole. (Fig. A7.02a)
3. Tighten the cam nut (**17.1**) with a spanner (SW27) and insert the tube (**17.3**) into the grip hole on the short side of the panel. (Fig. A7.02b)

Does the hook (**17.2**) engage behind the panel profile and is the guardrail post holder firmly seated? (Fig. A7.02c)

Not suitable for guardrails on the long sides of panels.

Guardrail Post Holder SXP GPR T2

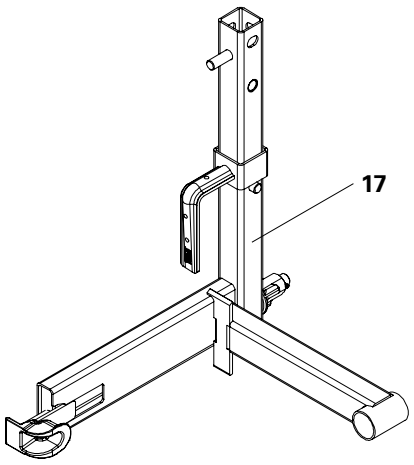


Fig. A8.01

Guardrail Post Holder SXP GPL T2

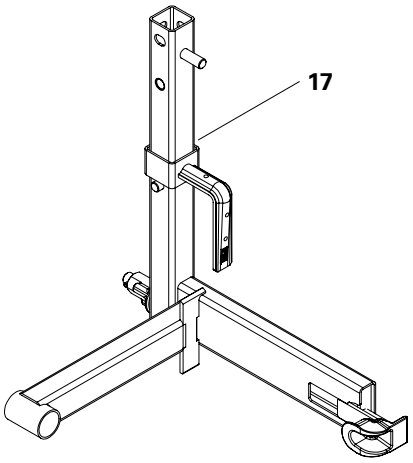


Fig. A8.01a

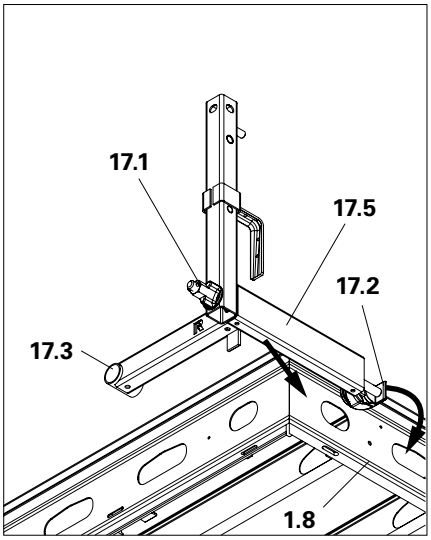


Fig. A8.02a

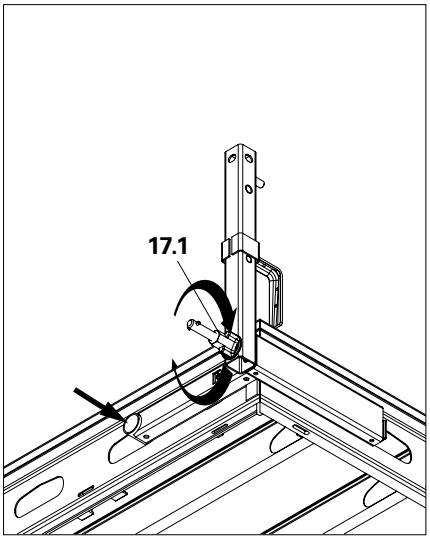


Fig. A8.02b

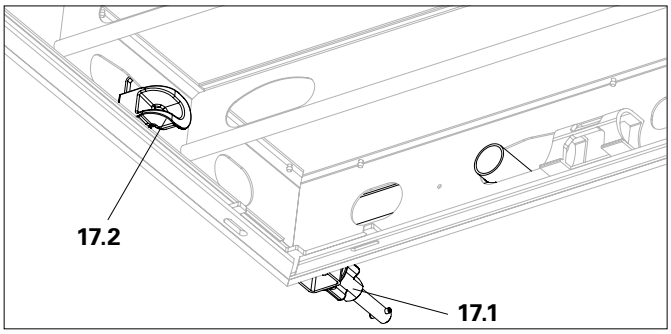


Fig. A8.02c

A9 Tensioning unit

Tensioning Unit SXP TU 3 100 T2 SXP TU 3 66.5 T2

The Tensioning Unit SXP TU 3 100 T2 (**22**) and SXP TU 3 66.5 T2 (**23**) in conjunction with base plate and Anchor Chain 250/3.0kN are used for

- bearing forces that act horizontally
- bearing the tilting moment of panels at the free edge of the building.

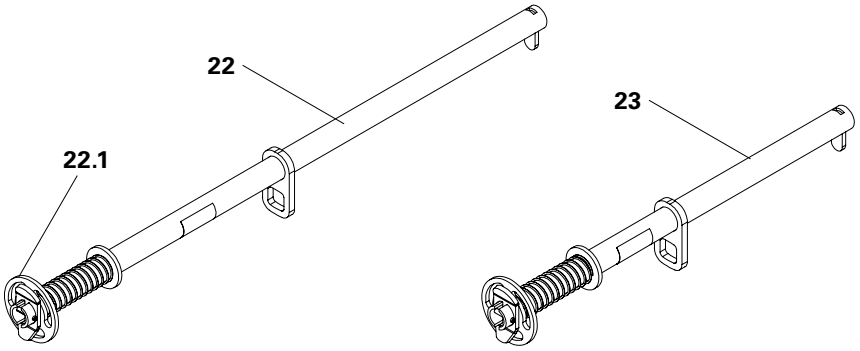


Fig. A9.01

The bracing increases the prop loads. See the Section "Use of Bracing SXP TU 3 in the Lowering Head SXP L T2 system".

Assembly

1. With the underside of the panel facing the scaffolder, set the panel down vertically on its short side and secure it so it does not fall over. (Fig. A9.02a)
2. Pick up the bracing with the end plate (**22.1**) on the left side.
3. Feed the left end of the Bracing SXP TU 3 100 T2 (**22**) through the upper left connection opening (**1.5a**). (Fig. A9.02a + A9.02b)
4. Feed the right end through the opposing slot (**1.5b**). To do so, turn the bracing slightly and raise it on the right-hand side. (Fig. A9.02c)
5. Turn the Bracing SXP TU 3 100 T2 (**22**) so that the tongues on the outside of the panel are clamped firmly in the slots (**1.5a + 1.5b**). (Fig. A9.02d)
6. Attach the Anchor Chain 250/3.0kN to the eyelet of the Bracing SXP TU 3 T2. (not shown)

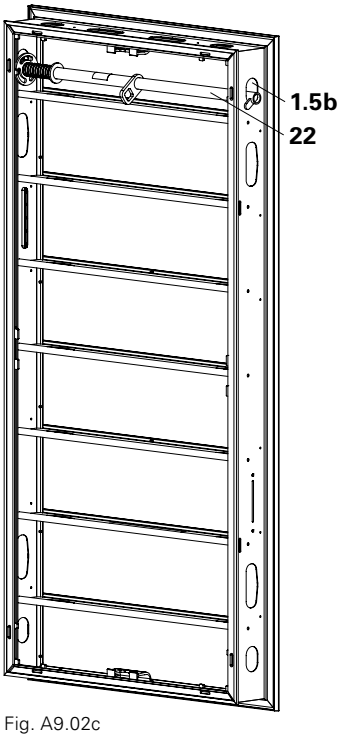


Fig. A9.02c

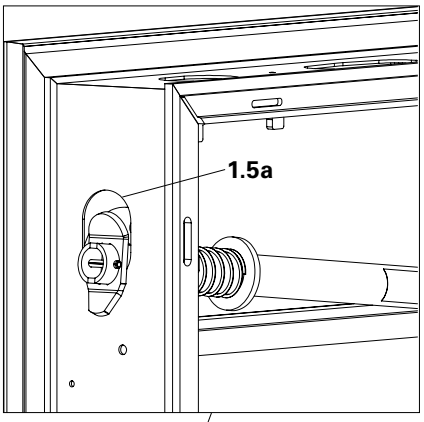


Fig. A9.02b

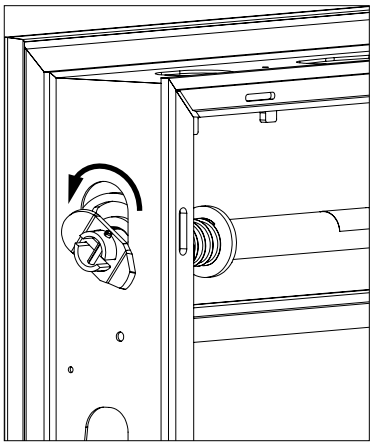


Fig. A9.02d

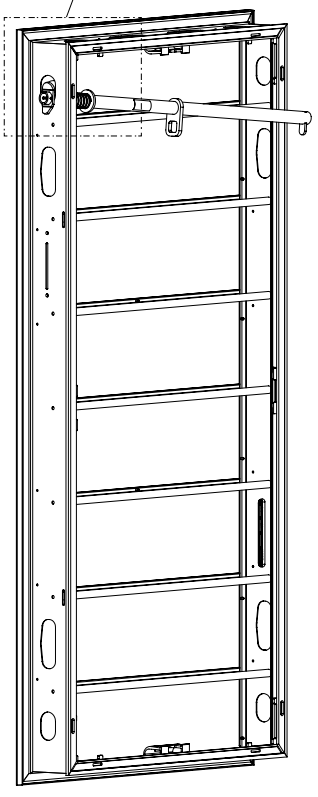


Fig. A9.02a

A9 Tensioning unit

Dismantling

1. Turn the Bracing SXP TU 3 100 T2 (**22**) so that the tongues are no longer perpendicular to the slots (**1.5a + 1.5b**).
2. Press and lift the bracing slightly to the left and feed the metal pin on the right back through the slot.

Tensioning Unit SXP TU 15

15 kN tensioning unit in conjunction with push-pull prop, base plate and additional slab prop:

- for bearing forces that act horizontally ("accumulation" of horizontal loads)
- for bearing the tilting moment of panels at the free edge of building.

Influence range
In addition to the panel connected directly, the tensioning unit is used to hold one panel on the right and one on the left.
Influence range of 0.5 + 1 + 0.5 panels. (Fig. A8.04)

Pre-assembly
Fit the Tensioning Unit SXP TU 15 (**24**) onto the slab prop. (Slide over bracket to the square plate.)

This is secured automatically by the spring latch.
Permissible tension force of push-pull prop: 15 kN. (Fig. A8.03

- Always use the tensioning unit with the slab prop positioned underneath.
- Only apply tension forces to the tensioning unit; compressive forces cannot be transferred via the articulated brace connector (**24.2**).
- Fit the push-pull props in the centre of the bolt. (a = a).
- Position the brace connector in the centre of the traverse. (b = b). (Fig. A8.03b)

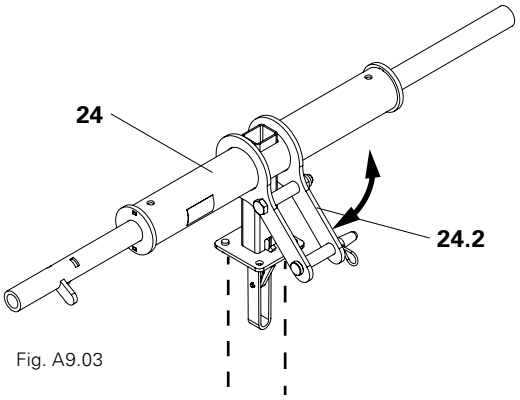
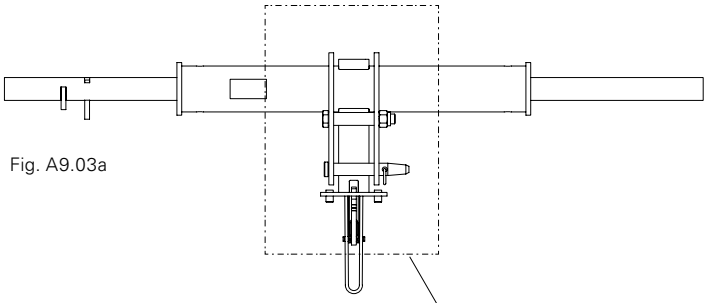


Fig. A9.03


Fig. A9.03a

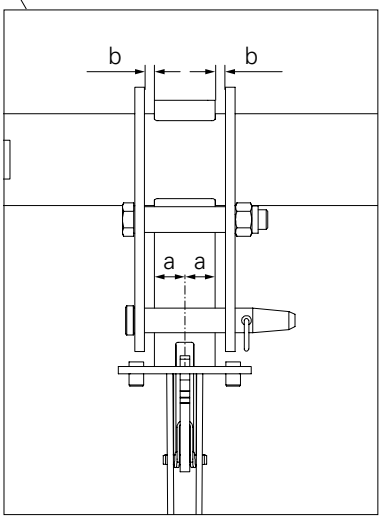


Fig. A9.03b

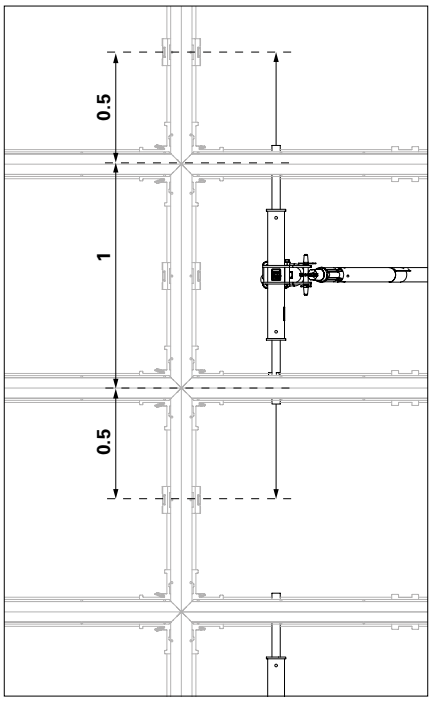


Fig. A9.04

A9 Tensioning unit

Assembly

1. Push the side without lugs through the right-hand grip holes.
2. Fit the side with lugs (**24.1**) into the left-hand grip holes. To do this, swivel the tensioning unit and slab prop through 45° so that the first lug can be inserted through the grip hole.
3. Swing the tensioning unit and the slab prop back and set the slab prop down.
4. Fit the push-pull prop (**63**) using bolts and cotter pins (a climbing aid may be required).
   Use a push-pull prop with a permissible tension force of at least: 15 kN.

– Fit the push-pull prop at an angle of at 45°- 60° to the aluminium panel.
– Fit the tensioning unit in the grip hole of the panel so that the round tube (**24.2**) rests against the edge of the grip hole at the bottom. “Air” is required at the top. (Fig. A9.08)

Traverse support required by means of a slab prop.
Vertical load on slab prop:
– Push-pull prop at 45°: V = 10.6 kN
– Push-pull prop at 60°: V = 13.0 kN

For clear heights above 3.8 m, fit the tensioning unit separately.
Use a suitable climbing aid.

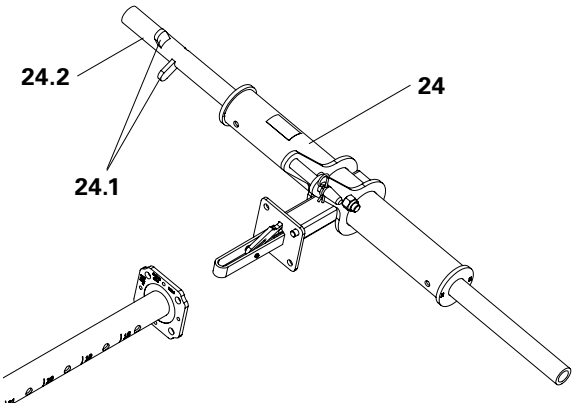


Fig. A9.05

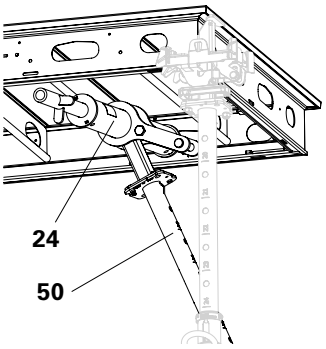


Fig. A9.06

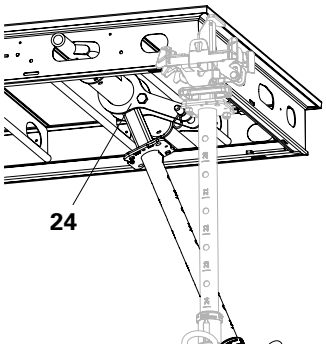


Fig. A9.07

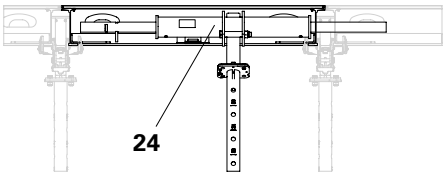


Fig. A9.08

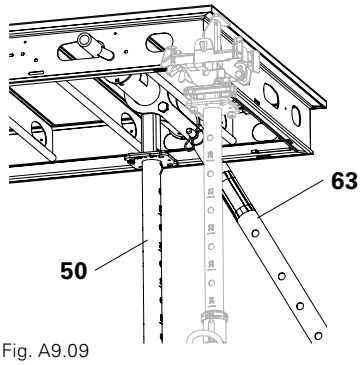


Fig. A9.09

Transverse Tensioning Unit SXP TUT

The Transverse Tensioning Unit SXP TUT (**35**) is used to tension panels in the transverse direction.

The tensioning unit consists of the components described below (Fig. A9.01 + Fig. A9.01a), as well as an additional essential slab prop.

Components

35 Transverse Tensioning Unit SXP TUT
35.1 Locking Pin D48/D57
35.2 Spigot ULT 32
35.3 Connector SXP CO
35.4 Connecting Eyelet SXP EC
35.5 Anchor Chain 250/3.0 kN
35.6 Base Plate-3 f. RS 210-1400
35.7 Turnbuckle M12/3.0kN
35.8 Anchor Bolt SW24 Ø14/20x130 TG

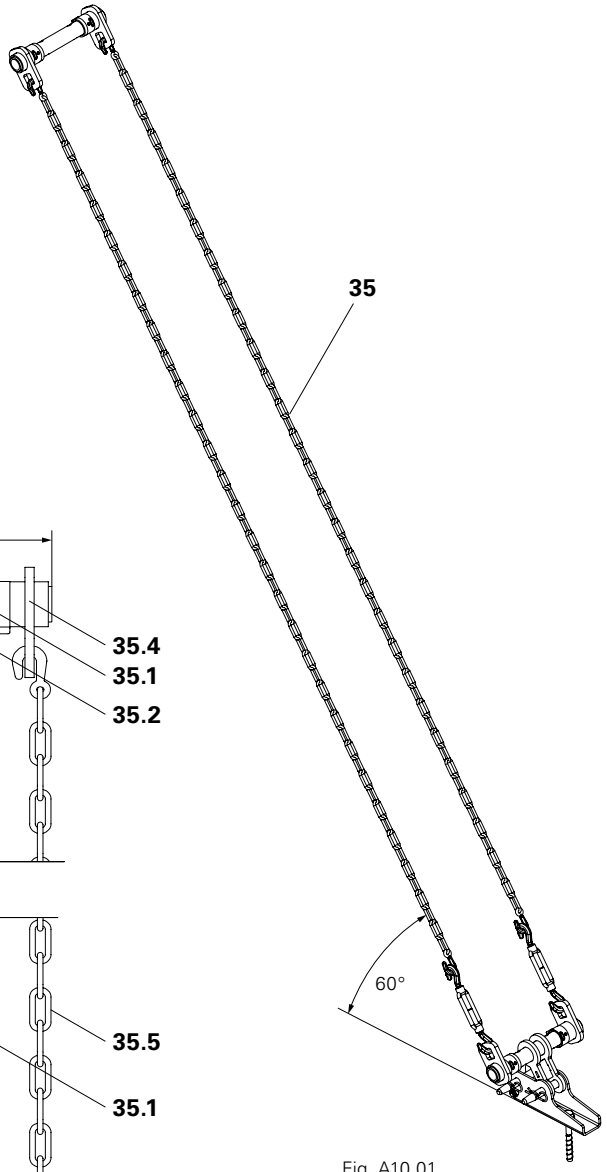


Fig. A10.01

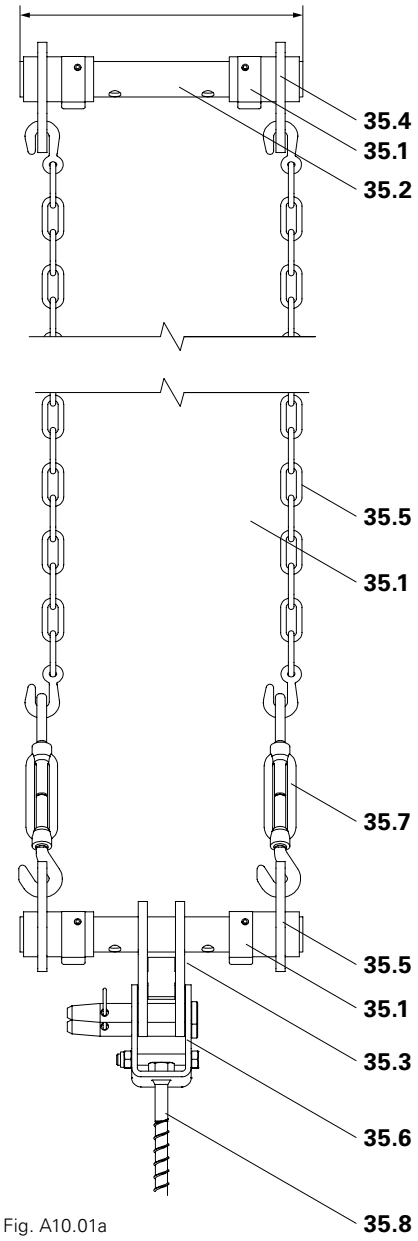


Fig. A10.01a

A10 Tensioning unit

Set up the system and the tensioning unit symmetrically and simultaneously.

Assembly

1. Push Spigots ULT 32 (**35.2**) through the slots of two panels and fit a Connection Eyelet SXP EC (**35.4**) onto both front sides. Secure both with one locking pin each (**35.1**). (Fig. A9.02)
2. Hook the Anchor Chains 250/3.0 kN (**35.5**) into the eyelets.
3. Insert the Connector SXP CO (**35.3**) into the base plate that is still loose (**35.6**).
4. Fit Spigot ULT 32 (**35.2**) into Connector SXP CO (**35.3**). Attach a Connecting Eyelet SXP EC (**35.4**) to both sides of the connector and secure with Locking Pin D48/D57 (**35.1**). (Fig. A9.03)
5. Hook in the Anchor Chains 250/3.0 kN (**35.5**), set the bracing angle (60°) using the chain length.
6. Screw the base plate (**35.6**) to the floor with the anchor bolt (**35.8**).
7. Place the slab prop underneath and adjust it to fit snugly.
8. Pretension with the Turnbuckle M12/3.0kN (**35.7**). (Fig. A9.04)

Dismantling

Disassembly is carried out in reverse order. Start by releasing the tension on the anchor chains.

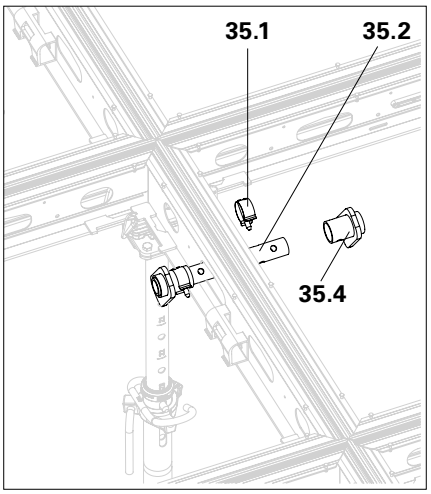


Fig. A10.02

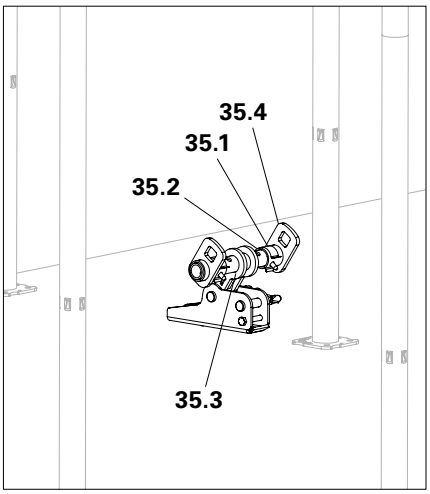


Fig. A10.03

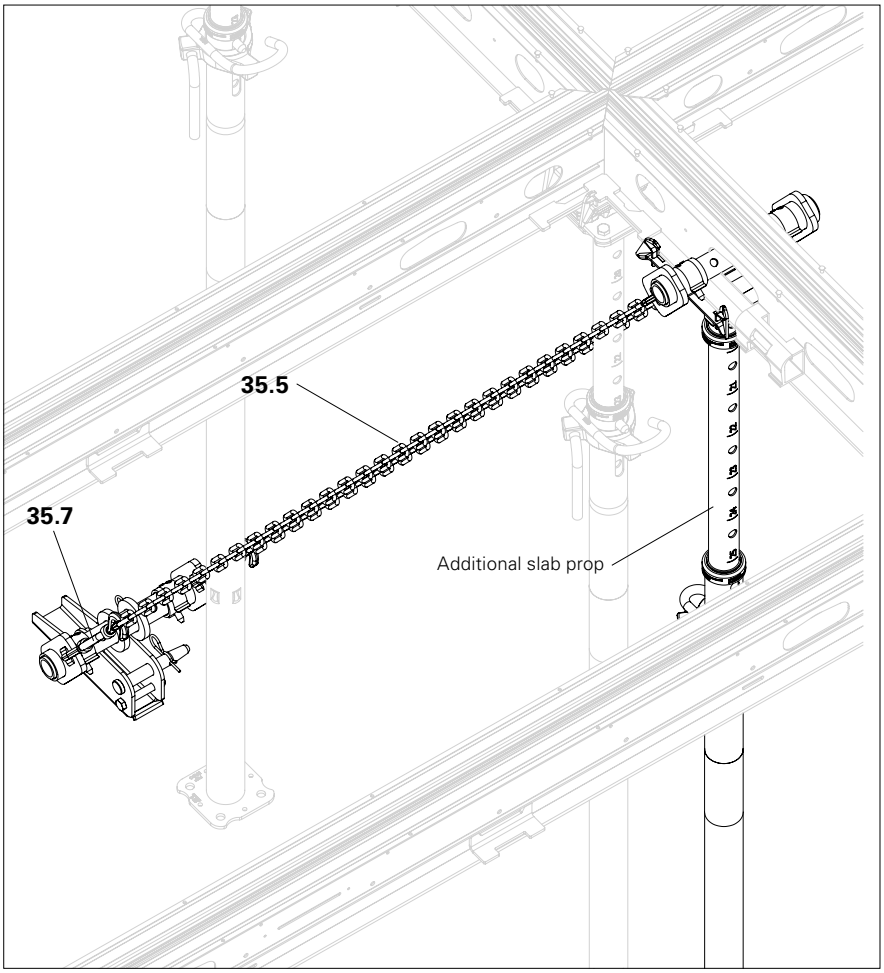


Fig. A10.04

A11 Compensation beam

Compensation Beam SXP AB 200 T2

The compensation beam is used for forming residual gaps, see Section "Residual gap" on page 68. It can be used in combination with a prop head and lowering head.

The formwork panel is mounted on the integrated nailing strip.

Double compensation beam

The double compensation beam consists of two Compensation Beams SXP AB 200 T2 (**12**).

Components

12 Compensation Beam SXP AB 200 T2
30 Double Compensation Beam SXP AB 200 T2

Assembly

1. Place two compensation beams (**12**) on the working area and remove the linch pins (**12.1**). (Fig. A10.02)
2. Insert round tubes (**12.2**) into square tubes (**12.3**).
3. Insert the linch pins (**12.1**) and close them. (Fig. A10.03a)
4. Check that the components are securely fitted.

→ The double compensation beam (**30**) is prepared.

Slab thickness > 40 cm

5. Also support at the centre prop support (**12.4**) with a suitable slab prop.

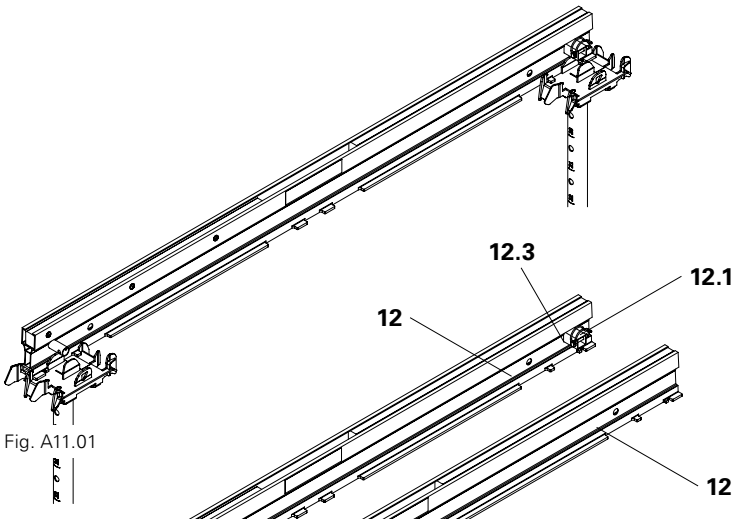


Fig. A11.01

Fig. A11.02

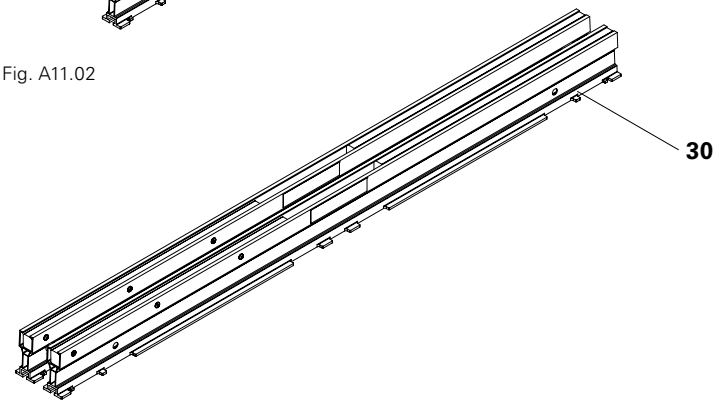


Fig. A11.03

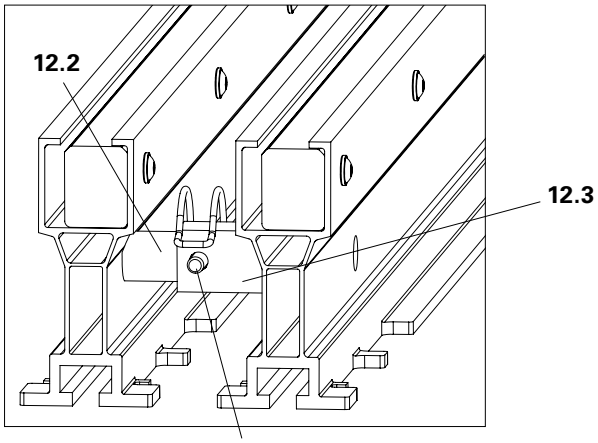


Fig. A11.03a

Telescopic Girder SXP TBR 200-300

Telescopic Girder SXP TBL 200-300

The telescopic girders are used to form residual gaps, especially inside corners, see Section “Corner areas” on page 70ff.
They can be used in combination with a prop head and lowering head.

The formwork panel is mounted on the integrated nailing strip and the telescopic aluminium profile.
The length is adjustable from 2.05 m to 2.94 m.

Set the required length and secure with bolt and cotter pin.

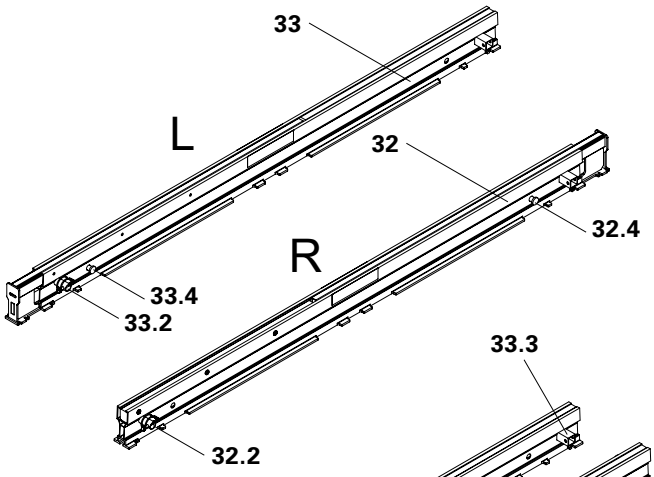


Fig. A12.01

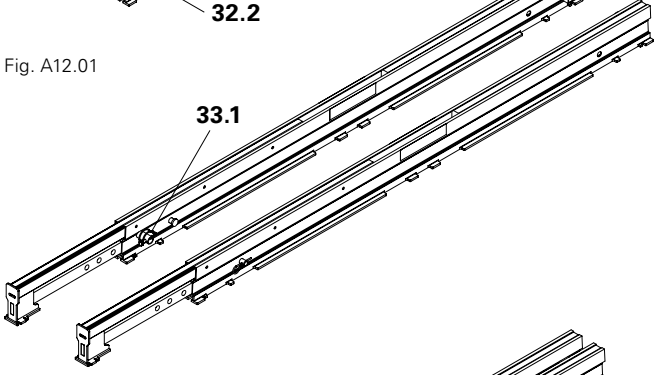


Fig. A12.02

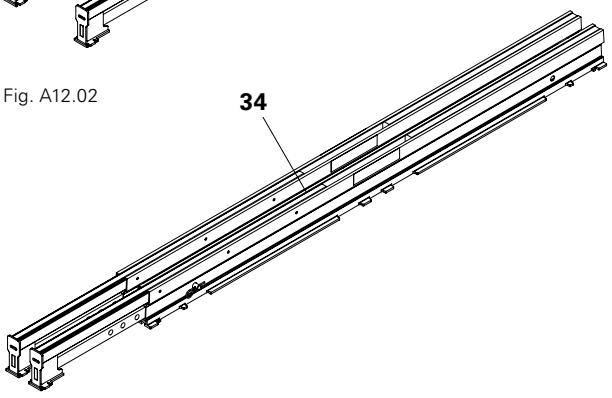


Fig. A12.03

Double telescopic girders

The double telescopic girders (**34**) comprise a Telescopic Girder SXP TBR 200-300 (**32**) and a Telescopic Girder SXP TBL 200-300 (**33**).

Components

32	Double Telescopic Girder SXP TBR 200-300
33	Double Telescopic Girder SXP TBL 200-300

Assembly

1. Secure the extension in the desired position with a bolt and cotter pin.
2. Place two compensation beams (**32 + 33**) on the working area and remove the linch pins (**32.1**).
3. Insert round tubes (**32.2**) into square tubes (**32.3**).
4. Insert the linch pins (**32.1**) and close them. (Fig. A11.04)
5. Check that the components are securely fitted.

→ The double compensation beam (**34**) is prepared.

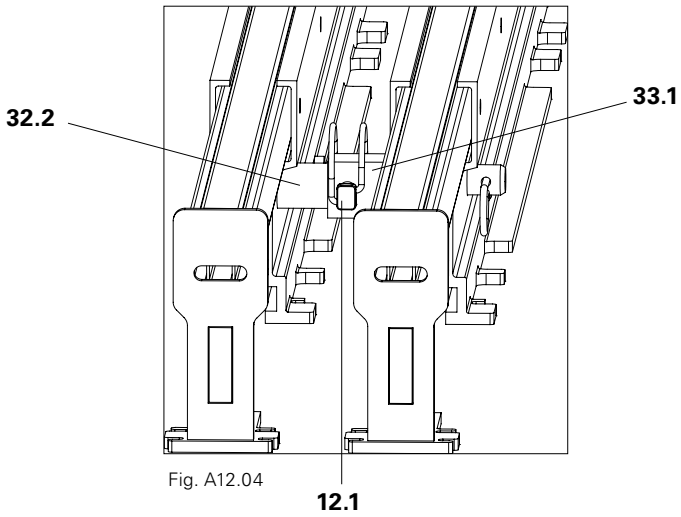


Fig. A12.04

Telescopic Girder SXP TB 66.5-100

for filler areas with a width of 0.665 m – 1.00 m

- Shuttering of residual gaps, especially for inside corners, on columns and for residual gaps that cannot be compensated with the basic length of 2.00 m of the Compensation Beam SXP AB 200 T2.
- Can be used in combination with Prop Head SXP S, Prop Head SXP S POLY and Lowering Head SXP L T1/T2.
- The formwork panel is placed on the telescopic girder or, if required, screwed into the telescopic aluminium profile.
- The length is adjustable in 6 cm increments from 0.605 m to 0.94 m. The distance from the first to the second setting is 3.5 cm (not 6 cm).
-

Assembly

1. Set the required length and secure with bolt and cotter pin
2. Telescopic Girder SXP TB 66.5-100 retracted with 2 slab props, otherwise support with 3 slab props.
   – Two at each end of the main beam,
   – one at the end of the extended beam.
   (Fig. A11.06)
3. Support the formwork panel on the wall side with suitable means, e.g. Telescopic Girder SXP or Formwork Girder GT 24 (**48**).

Install the compensation beam with a clearance of ≤ 30 cm.

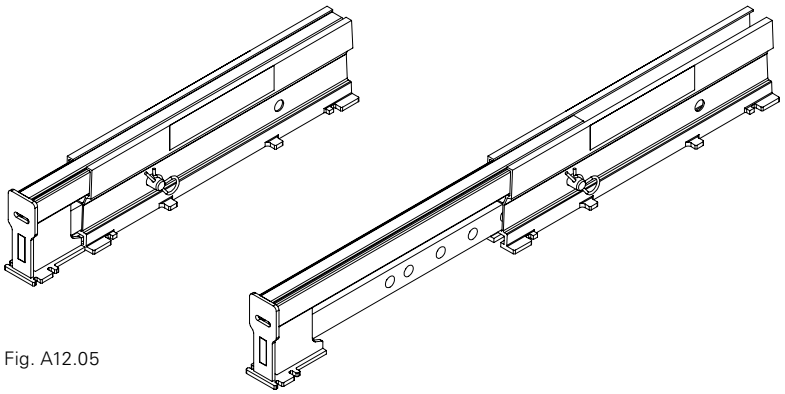


Fig. A12.05

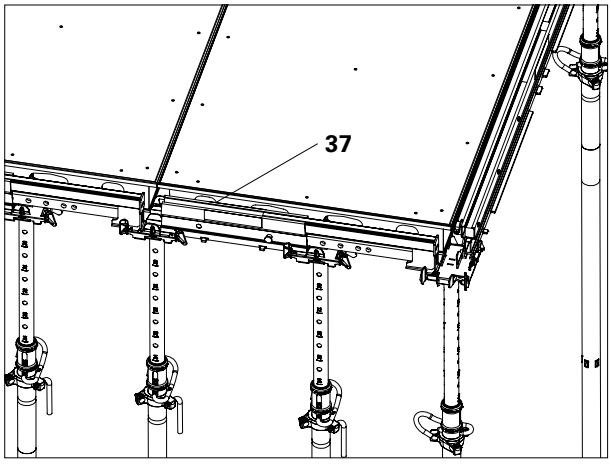


Fig. A12.06

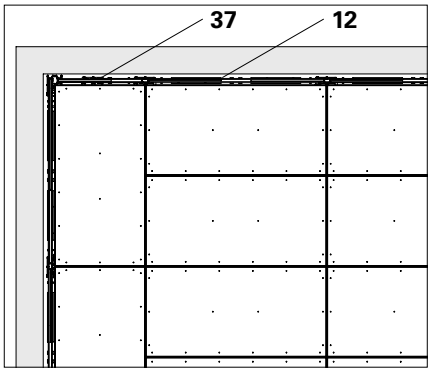


Fig. A12.07

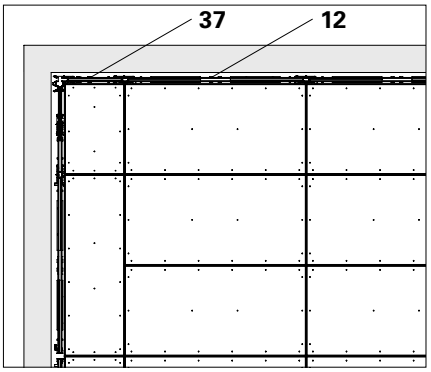


Fig. A12.08

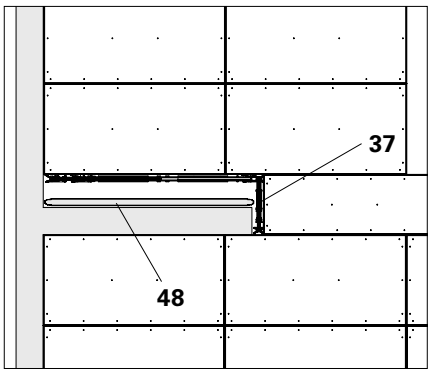


Fig. A12.09

Panel Clip SXP C
Assembly Aid SXP MA

The Panel Clip SXP C (**38**) is used to connect two panels. It pulls the panels together.
The Panel Clip SXP C (**38**) is used before the Tensioning Unit SXP TU 15 is installed in order to secure the cantilevered panel (see Section B7, “Cantilevers, guardrails”). (Fig. A12.01)

Assembly

1. Fit the Assembly Aid SXP MA (**39**) onto the Shuttering Aid SXP A (**21**) and pin it with the cotter pin (**21.3**). (Fig. A12.02 + Fig. A12.02a)
2. Position the Panel Clip SXP C (**38**) and insert it into the Assembly Aid SXP MA (**39**). (Fig. A12.03 - Fig. A12.03b)
3. Position the panel clip and the assembly aid between two panels and turn the shuttering aid counterclockwise around its own axis.

→ Panels are joined together.

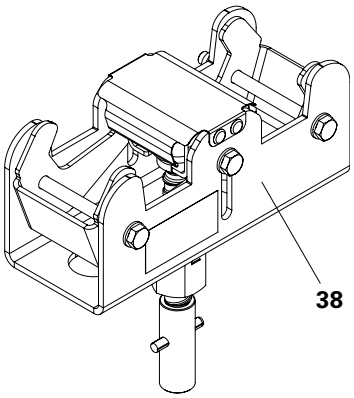


Fig. A13.01

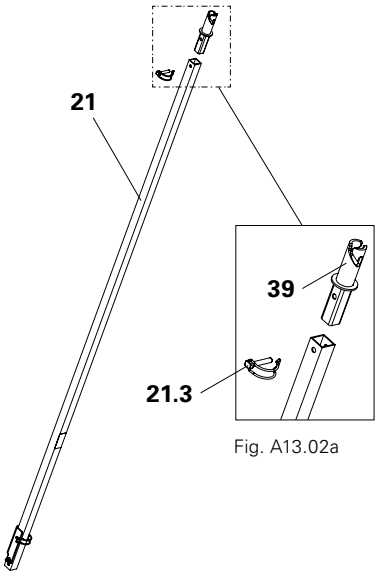


Fig. A13.02a

Fig. A13.02

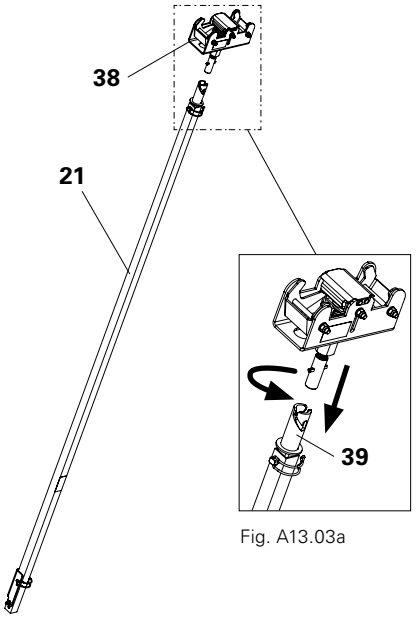


Fig. A13.03a

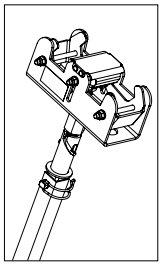


Fig. A13.03b

Fig. A13.03

Shuttering Aid SXP A

The Shuttering Aid SXP A is used to assemble and dismantle the Panels SXP P and other components.
Use the shuttering aid with the tab (**21.1**) facing upwards. (Fig. A13.01a)
The length is adjustable in 10 cm increments from 2.10 m to 3.80 m.

Use the shuttering aid to release the panels from the concrete. To do so, open the hinged step (**21.2**) that is mounted underneath and use your foot to apply additional separation force. (Fig. A13.02a + Fig. A13.02b)

- The shuttering aid must always be secured by site personnel when supporting panels, compensations or similar.
- Length adjustments are to be carried out only in an unloaded state.
- Always insert the linch pin through both holes of the inner and outer tubes.
- Do not insert at the end of the inner tube.
- Close the linch pin.
- Check that the inner tube is secure.
- Check that the linch pin is complete and functioning correctly before using it.

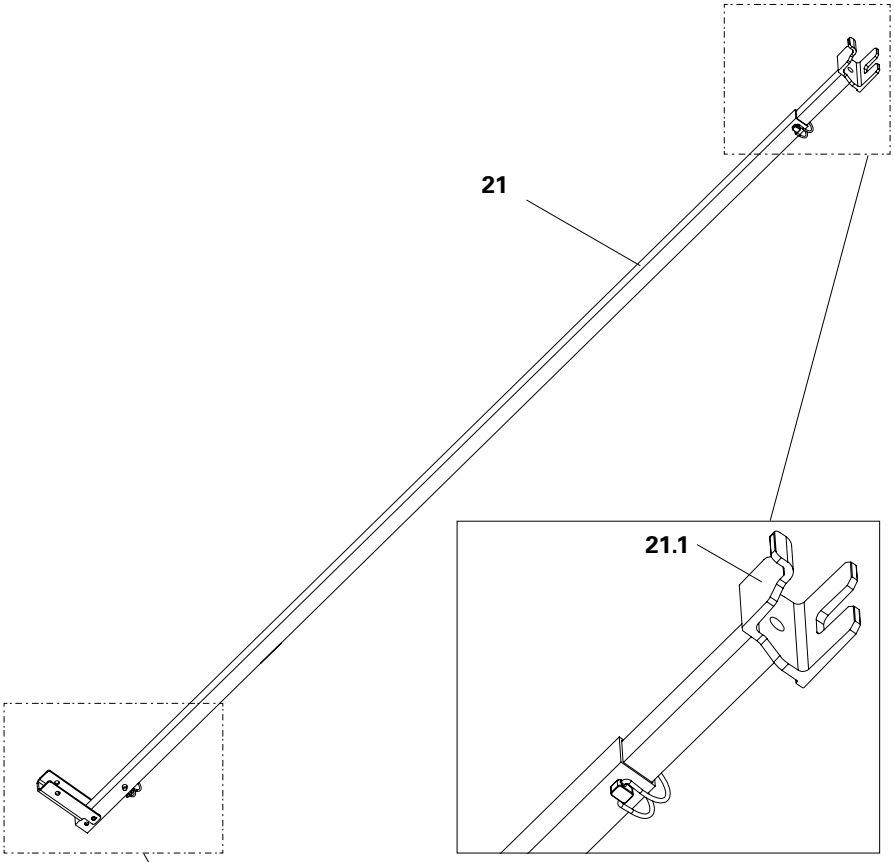


Fig. A14.01

Fig. A14.01a

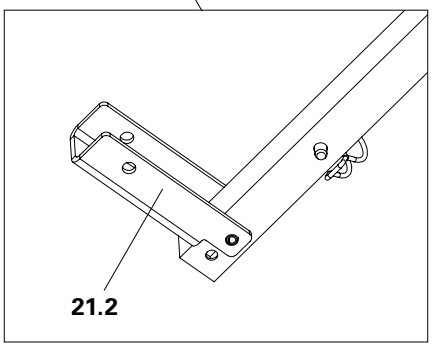


Fig. A14.02a

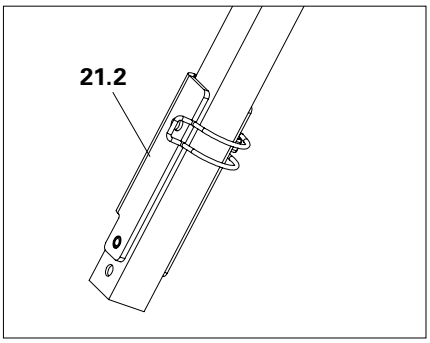


Fig. A14.02b

Shuttering Aid SXP A 530

The Shuttering Aid SXP A 530 (**27**) (Fig. A13.03) has the same function as the Shuttering Aid SXP A (**21**). It is designed for formwork heights over 3.80 m and has a modified tab. (**27.1**) (Fig. A13.03a)
The length is adjustable in 10 cm increments up to a total length of 3.00 m to 5.20 m.

Use the shuttering aid to release the panels from the concrete. To do so, open the hinged step (**27.2**) that is mounted underneath and use your foot to apply additional separation force. (Fig. A13.04a + Fig. A13.04b)

- The shuttering aid must always be secured by site personnel when supporting panels, compensations or similar.
- Length adjustments are to be carried out only in an unloaded state.
- Always insert the linch pin through both holes of the inner and outer tubes.
- Do not insert at the end of the inner tube.
- Close the linch pin.
- Check that the inner tube is secure.
- Check that the linch pin is complete and functioning correctly before using it.

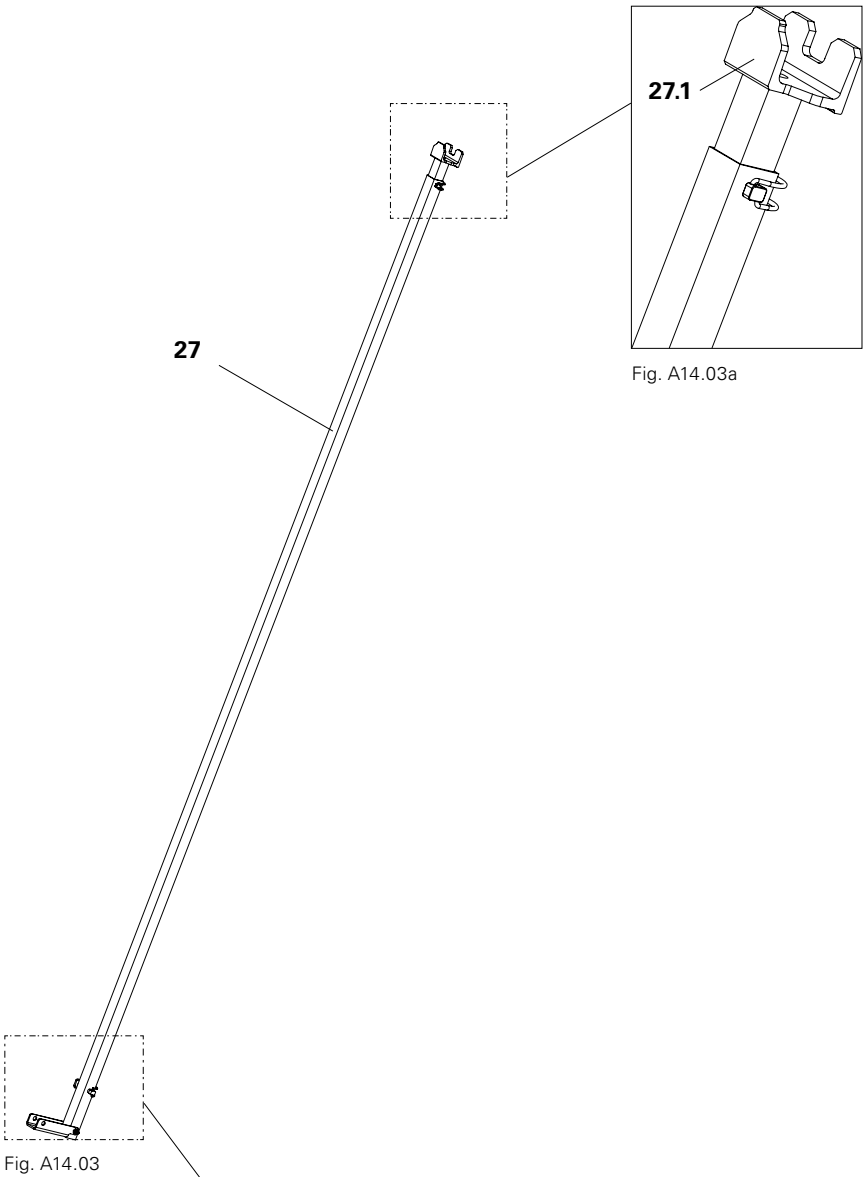


Fig. A14.03a

Fig. A14.03

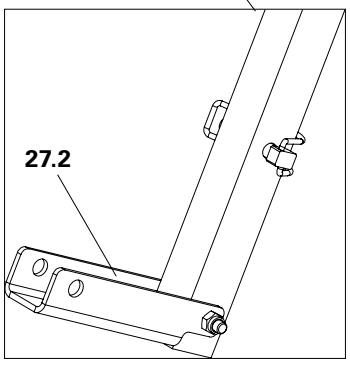


Fig. A14.04a

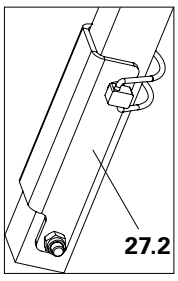


Fig. A14.04b

Prop Guide SXP PG

The Prop Guide SXP PG (**28**) is used to guide large and heavy props. (Fig. A13.05 + Fig. A13.05a)

It can be used with slab props with a prop tube diameter of at least 83 mm, e.g. PEP ERGO D-500.

Adjust the Prop Guide SXP PG (**28**) to a suitable length. Hold the prop guide (**28.1**) at an angle and insert the prop. Swing the prop guide (**28.1**) past the prop. Now the prop can be guided to a suitable position. (Fig. A13.06)

The length is adjustable in 10 cm increments from 2.90 m to 4.40 m

- If the prop tube diameter is smaller, the guide may slip over the end plate of the prop.
- Use with SKYMAX is only permitted in conjunction with Prop Head SXP and Lowering Head SXP L T2 and SXP LQ!

- Attention: This is not permitted for use with Prop Head SXP S POLY. The lock can come loose!

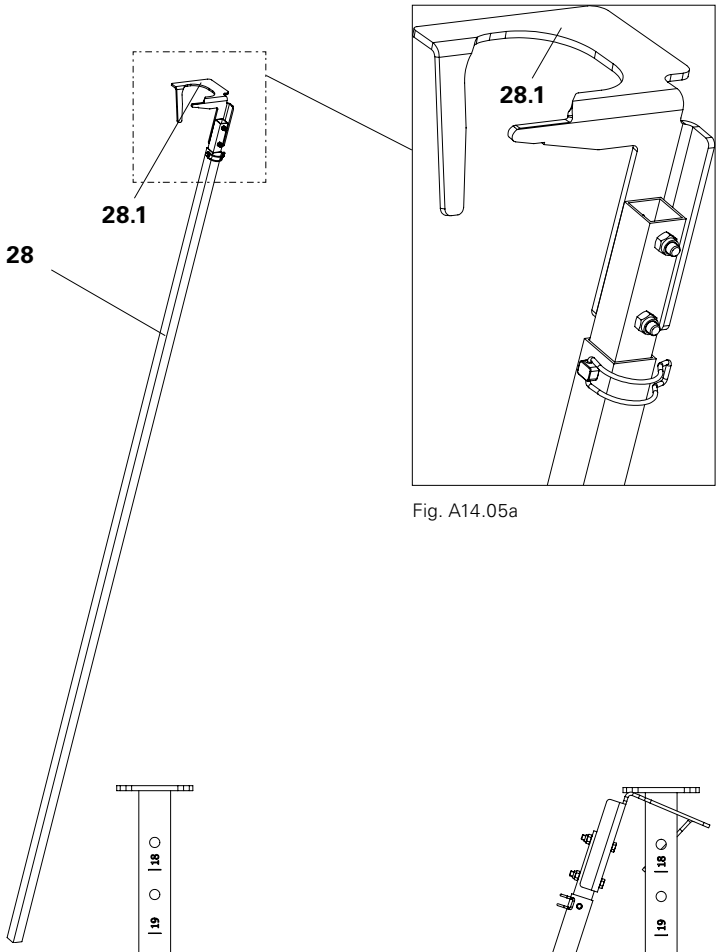


Fig. A14.05

Fig. A14.05a

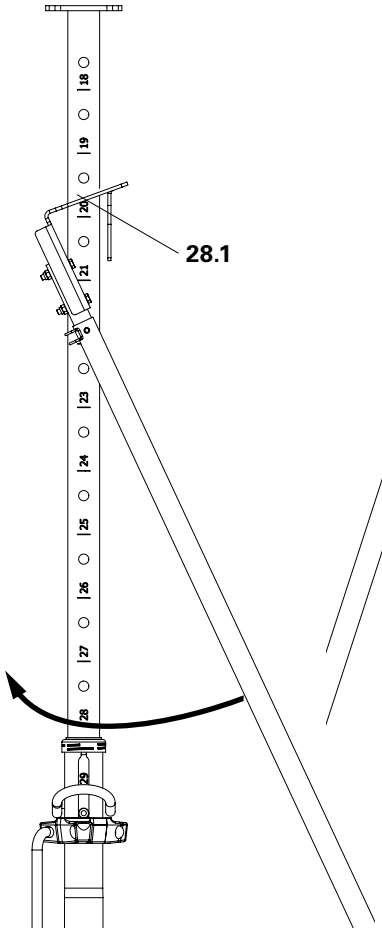


Fig. A14.06

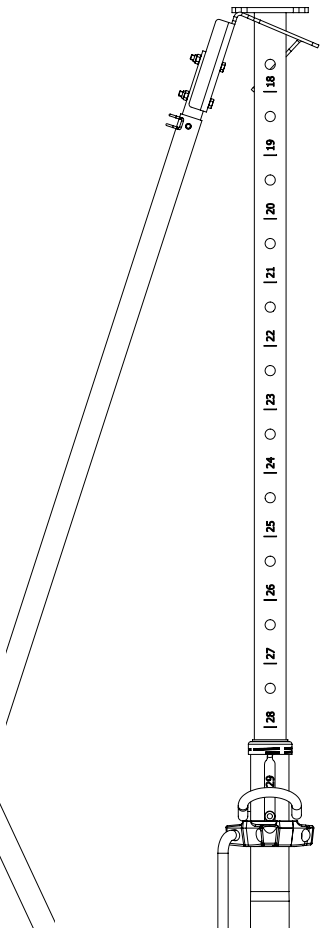


Fig. A14.06a

Stripping Hammer SXP SH

The Stripping Hammer SXP SH (**29**) can be used to loosen the wedge of a lowering head from a safe contact area. (Fig. A13.07 + Fig. A13.07a)

Roughly set the length with the setting grid, preferably slightly below the wedge. Make fine adjustments to the length with the Betomax rod (**29.1**). (Fig. A13.07c)
Place the stripping hammer on the ground and ensure a firm footing. Carry out the swivelling movement and release process and strike the wedge several times with a hammer. (Fig. A13.08)

The length can be adjusted in 10 cm increments from 2 m to 3.70 m and up to 5.2 m using the threaded rod (**29.1**). Fine adjustments are made using the built-in Betomax rod. (Fig. A13.07c)

Before each use, check that the hammer fin is securely fitted to the post (cracks in the sleeve, loose screws). The stripping hammer may only be used when in good working order.

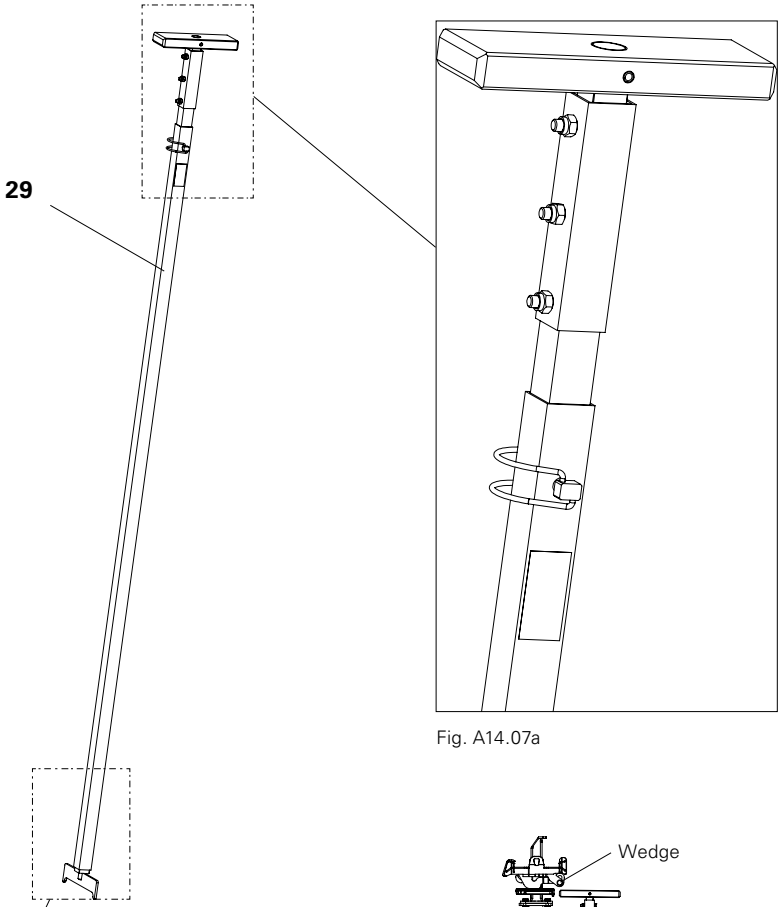


Fig. A14.07

Fig. A14.07a

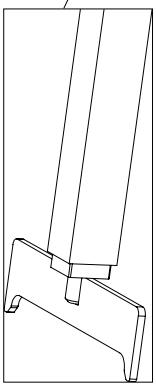


Fig. A14.07b

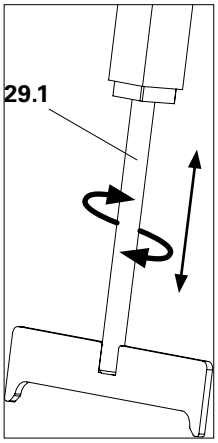


Fig. A14.07c

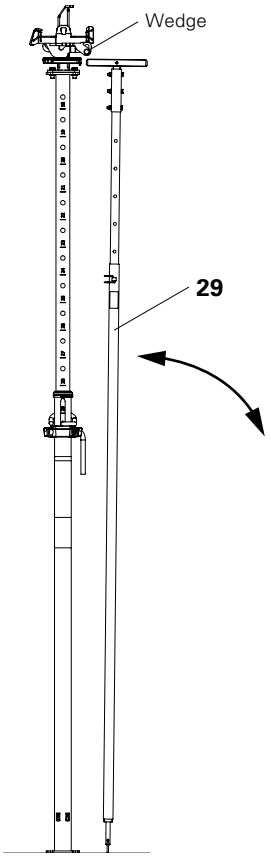


Fig. A14.08

Warning

- During assembly, components could fall out, strike personnel and seriously injure them as a result of carelessness or maloperation!
  ⇒ Do not remain in the danger zone for no good reason.
  ⇒ Wear a safety helmet.
  ⇒ Wear safety shoes.
  ⇒ Wear safety gloves.
- When wind speeds reach 28 km/h and more, panels can lift off and the slab formwork can collapse!
  Falling components can strike personnel and seriously injure them.
  ⇒ Apply ballast to the slab formwork.
  ⇒ Form larger panel units.
  ⇒ Brace panel units.

- When working on areas at great heights, choose a safe working area, e.g. mobile scaffolds.
- If shuttering must be carried out from above, this is only permitted when using PPE.

Plan slab formwork carefully. When planning the layout, take building columns, projections and recesses and other filler areas into account.
Adapt the slab formwork to obstructions by deliberately using
SXP P 200x66.5 and SXP P 100x100 and SXP P 100x66.5 panels.

Allow for a striking clearance of 2.5 cm at the props.

If possible, start at a corner of the room with an angle of 90°.
Insert the long side of the panel in the direction of the longer wall.

Position the slab props in such a way that it is possible to handle the G hooks and keep them secured.

The prop head used on the slab prop is geared towards the system used, in the example here, with Lowering Head SXP L T2.

Explanation of terminology

System distance
System distance refers to the position of the panel on the prop head in the standard case. If panels are attached at system distance, the prop spacing is 2 x 1 m. The prop stands under four panels.

Recessed props
Props that stand entirely underneath the panel at a corner of the panel, e.g. in a corner of the building.
The prop only stands under one panel.

Props that sit laterally at the panel edge (short or long side) and underneath the panel, e.g. along a building wall. The prop only sits under two panels.

Fitting the starter beam

Use as many SXP SB 300 starter beams on the existing wall as possible. Close the filler area with the shorter starter beams SXP SB 100 and SXP SB 66.5.

Preparation

1. Mount the wall holder (**18**) on the wall with starter beam side (**18.2**).

Mounting the first starter beam

1. Erect two slab props (**50a + 50b**) with Lowering Head SXP L T2 (**6a + 6b**) and secure with tripods (**51**). Hook blocks (**6.1**) must point in the main shuttering direction.
   – First prop in the corner of the room must be moved close to both walls.
   – Set up the second prop at the shorter wall with a spacing of 2.90 m to the first prop. (Fig. B2.01a)

Are the wedges knocked into the groove on lowering heads?

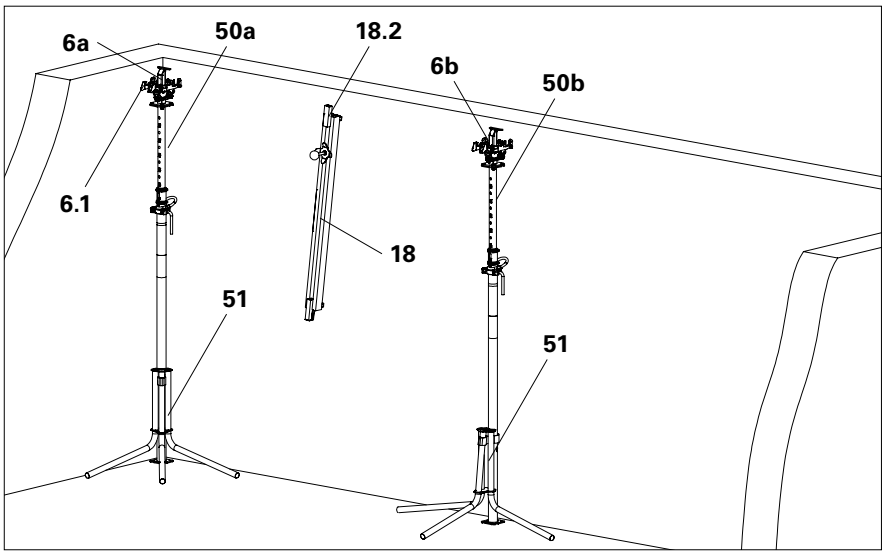


Fig. B2.01

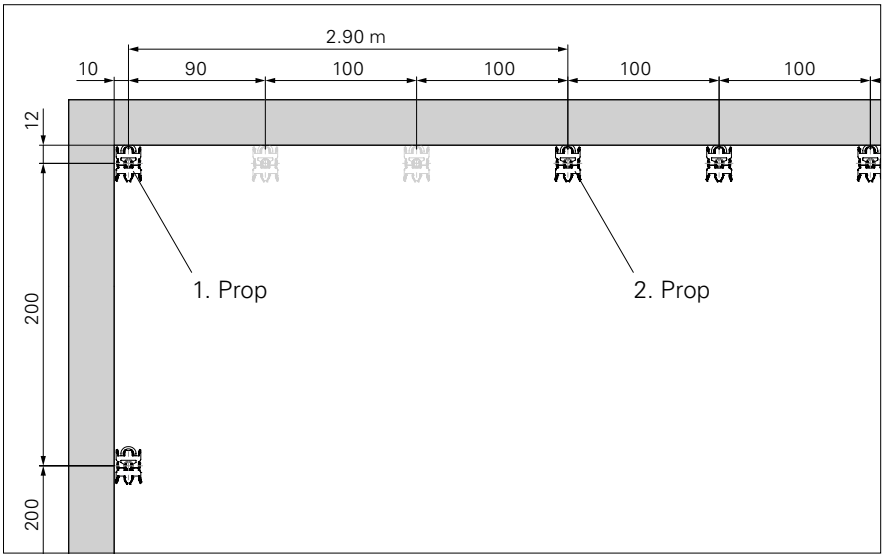


Fig. B2.01a

2. Attach starter beam SXP SB 300 (**9**) at the corner prop (**50a**) to the first lowering head (**6a**) in a recessed position. (Fig. B2.02a)
3. Attach the other side of the starter beam to the second lowering head (**6b**) at system distance using the shuttering aid. (Fig. B2.02 + B2.02b)
4. Secure the starter beam with the pre-assembled wall holder (starter beam finger pointing upwards) to prevent it from falling over.
5. Adjust the starter beam to the specified ceiling height using a device such as a height laser.
6. Tighten the wall holder (**18**).
   ➔ The starter beam must not rest on the wall holder and must remain vertically shiftable.
7. Install two further slab props (**50c + 50d**) at the central prop supports of the starter beam.
8. Screw the slab props (**50c + 50d**) upwards until they make contact with the starter beam, do not raise the starter beam. (Fig. B2.03)

→ The first starter beam is installed.

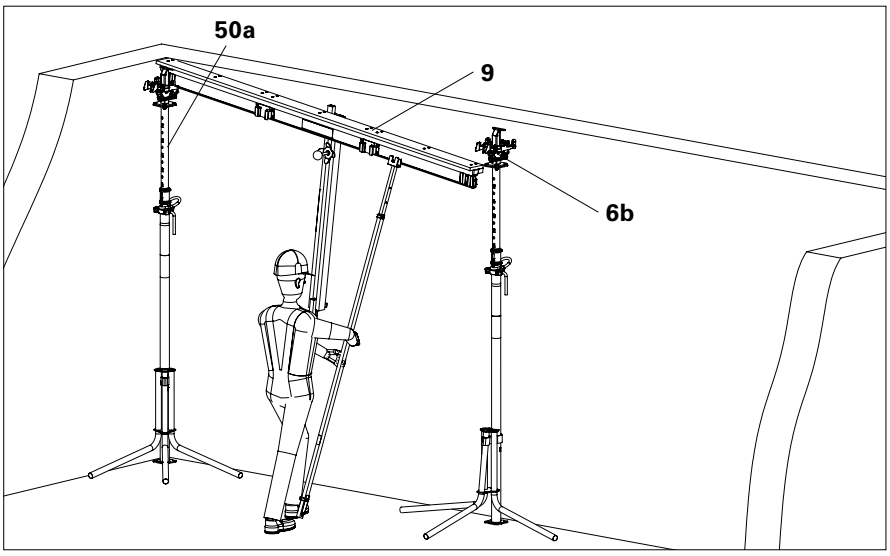


Fig. B2.02

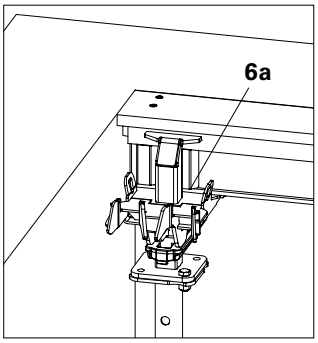


Fig. B2.02a

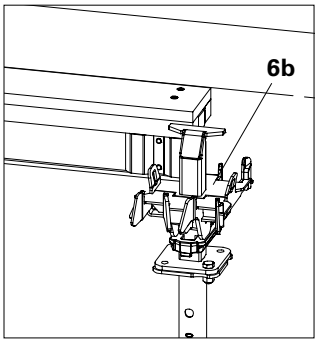


Fig. B2.02b

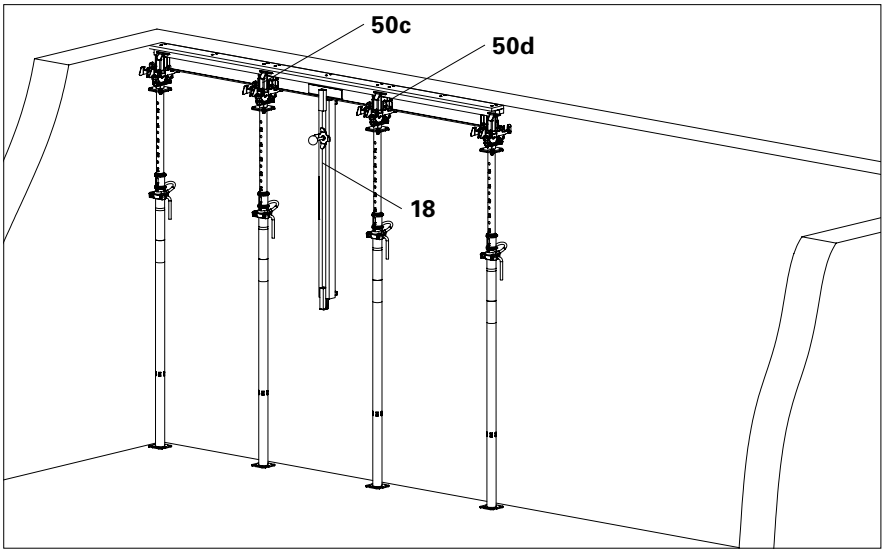


Fig. B2.03

Mounting additional starter beams

1. Erect an additional slab prop (**50e**) with Lowering Head SXP L (**6c**) at a distance of 3.00 m and secure with a PEP Ergo tripod (**51**).
2. Attach the second Starter Beam SXP SB 300 (**9**) to the slab prop (**50b**) at system distance. (Fig. B2.04)
3. Attach the other side of the starter beam to the lowering head of slab prop (**50e**) at system distance using the shuttering aid.
4. Secure the starter beam with the pre-assembled wall holder to prevent it from falling over.
5. Level the second starter beam (**9**) like the first one and install two additional slab props in the same way.
6. Mount additional starter beams in the same way.

→ Starter beams are mounted. (Fig. B2.05)

The position of the final slab prop is determined by the width of the filler area.
See Section "B5 Filler areas" on page 63

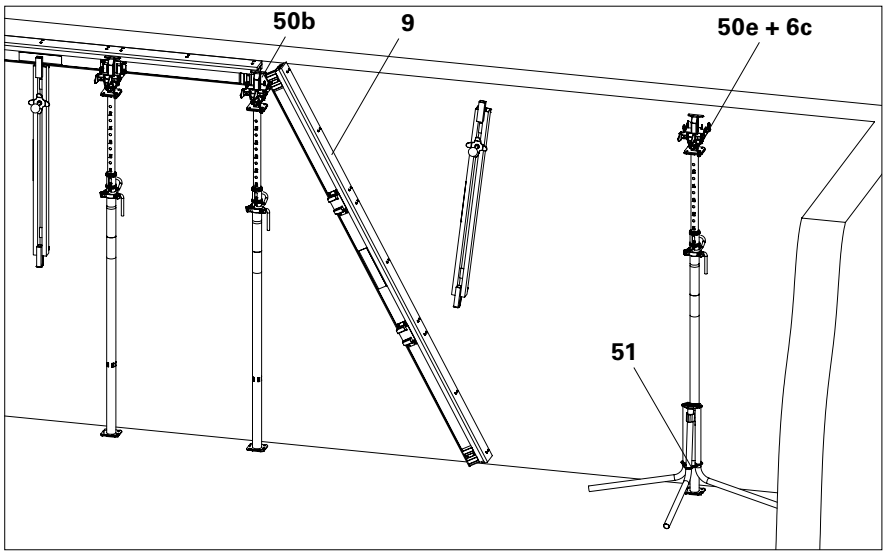


Fig. B2.04

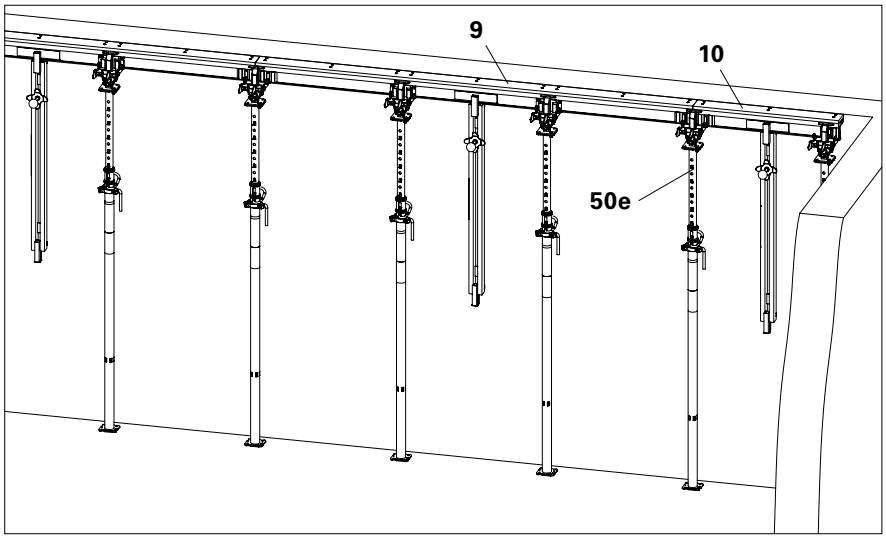


Fig. B2.05

Depending on the way the work is organised, the entire panel row can be attached first and then pushed upwards and propped.
Alternatively, each panel can be pushed upwards and propped as soon as it is attached, as described above.

Panels

Adjust the length of the shuttering aid so it equates roughly to the clearance height.
At least 2 shuttering aids will be required.

Assembly

1. Attach the first Panel SXP P 200x100 (**1**) on the wall side to the recessed Lowering Head SXP L T2 (**6a**) and on the other side (**6b**) at system distance. Use the system distance prop head support (**1.6**) in the panel. (Fig. B3.01 + Fig. B3.02)
2. Grip the panel in the middle of the edge profile using the Shuttering Aid SXP A (**21**) and push it upwards (Fig. B3.03)

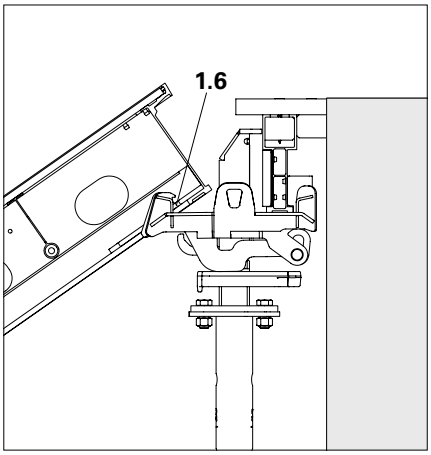


Fig. B3.01

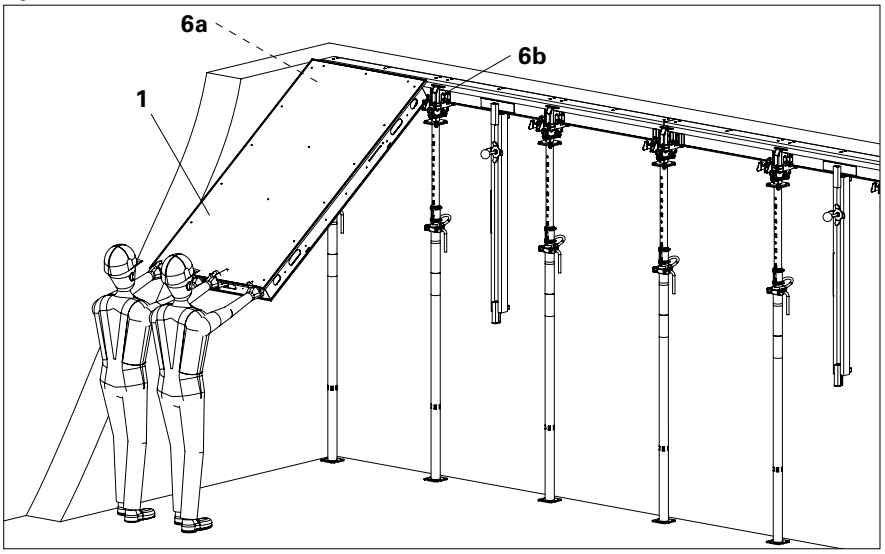


Fig. B3.02

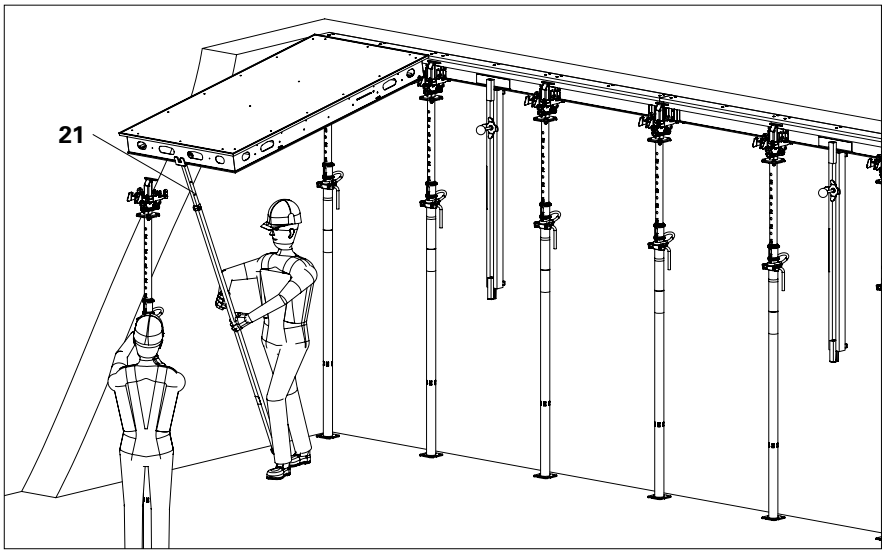


Fig. B3.03

3. Set the shuttering aid down on the floor and secure it. Move the shuttering aid into a vertical position until you feel resistance.
4. Place the slab prop (**50**) with Lowering Head SXP L T2 (**6**) at the wall side and recessed at the panel edge in an inclined position from the inside, and align outward. (Fig. B3.04a)
5. Leave the shuttering aid in position until the second panel has been swivelled up and is positioned on 4 props.
6. Secure panel finger (**18.1**) pointing upwards to prevent the panel at the side wall with Wall Holder SXP W (**18**) from falling over. (Fig. B3.04)
7. Attach a second panel (**1**), push the panel upwards with the shuttering aid (**21**) and position the panel on the shuttering aid. (Fig. B3.05)

- When pushing the panel upwards, ensure that the panel that has already been pushed up is not raised due to a collision, causing it to fall down. (Fig. B3.05)
- Make sure that the propped panels are at the same height. It is easier to install slab props if this is the case.

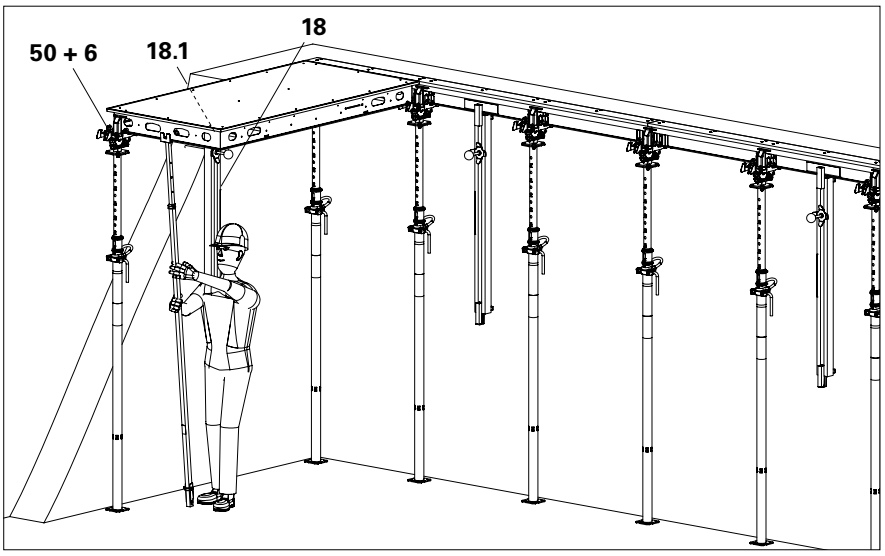


Fig. B3.04

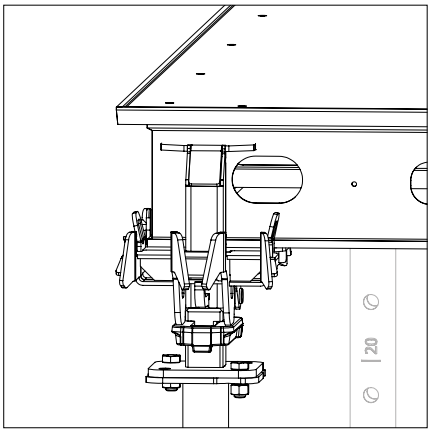


Fig. B3.04a

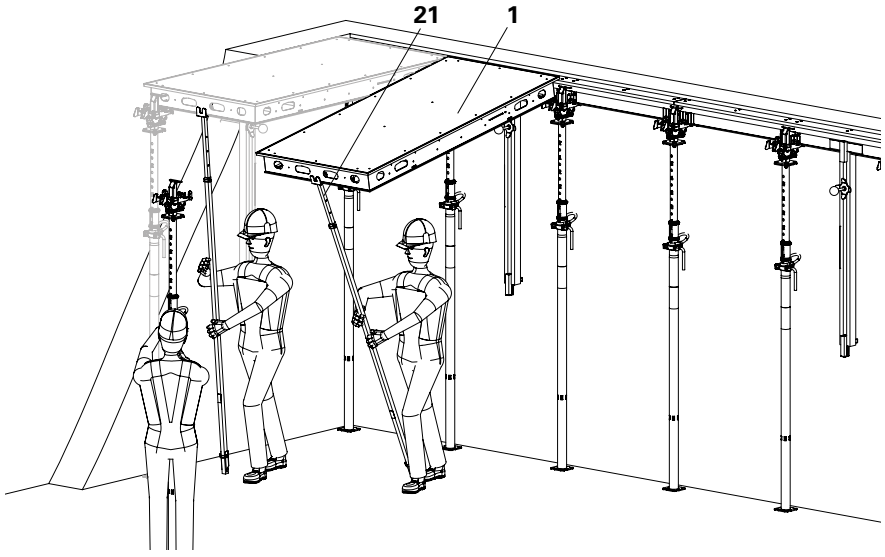


Fig. B3.05

8. Place the second slab prop (**50**) over both panel edges at system distance in an inclined position from the inside, and align outward. (Fig. B3.06a)
9. Remove the shuttering aid from the first panel.

→ The installation process for the first panel is complete. (Fig. B3.06)

First panel row

1. Using the shuttering aid (**21**) that is now available, swivel up the next panel (**1**), position it on the shuttering aid and secure it. (Fig. B3.07)
2. Place another slab prop (**50**) over both panel edges in an inclined position from the inside, and align outward.
   The shuttering aid can be removed from the preceding panel in order to install the next panel.

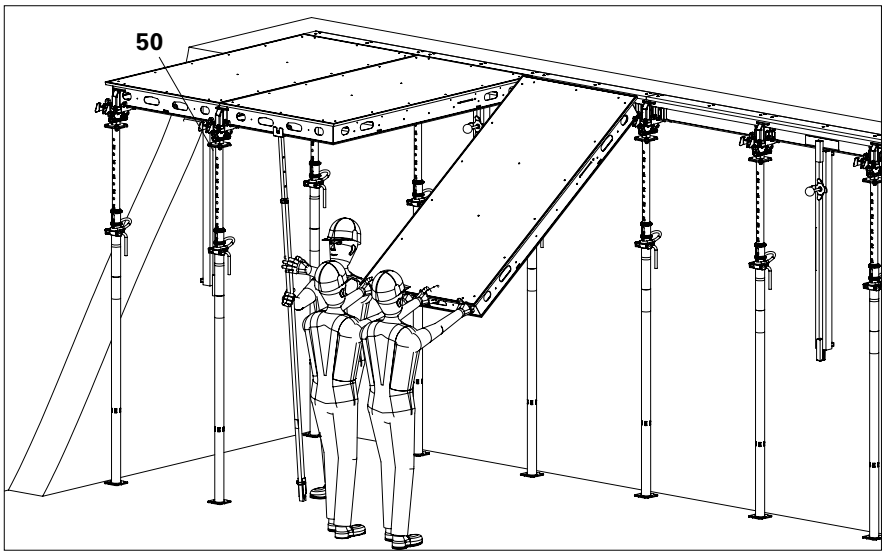


Fig. B3.06

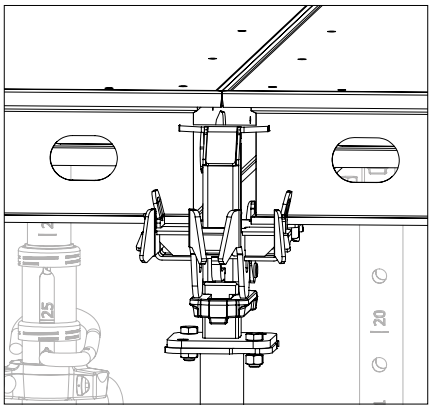


Fig. B3.06a

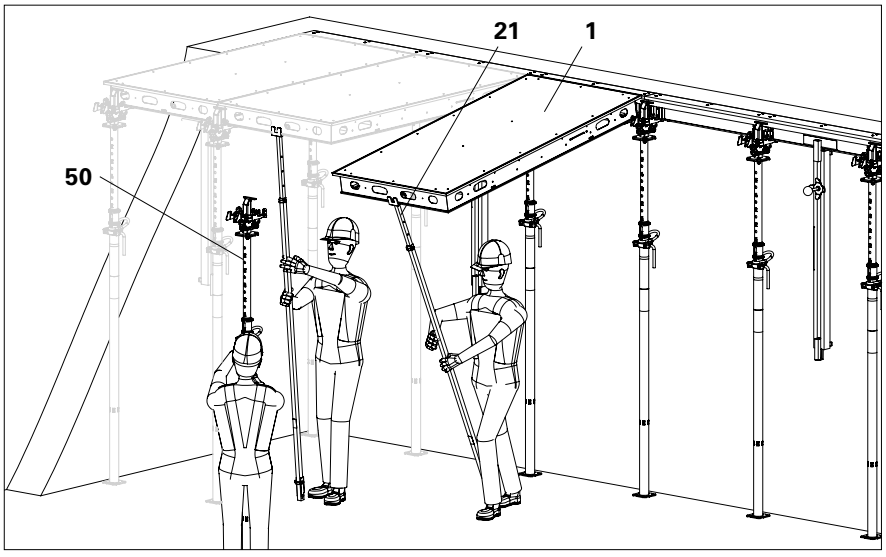


Fig. B3.07

3. Push up and position the other SXP P Panels in the same way. (Fig. B3.08)
4. Adjust the panel row to the required height. If necessary, adjust the wall holders and tighten them securely. The wall holders must not apply pressure to the panels. It must be possible to make vertical adjustments at all times.

- Select panels for the filler area by referring to Section "B5 Filler areas" on page 63 and attach them in the same way.
- The position of the final slab prop is determined by the size of the transverse infill, see Section "Residual gap" on page 68

Other panel rows

- Due to the recurring assembly sequence, always proceed in the same way. (Fig. B3.09)
- Secure every second panel row with Wall Holder SXP W!
- The position of the final row of slab props is determined by the dimensions of the longitudinal infill, see Section "Residual gap" on page 68

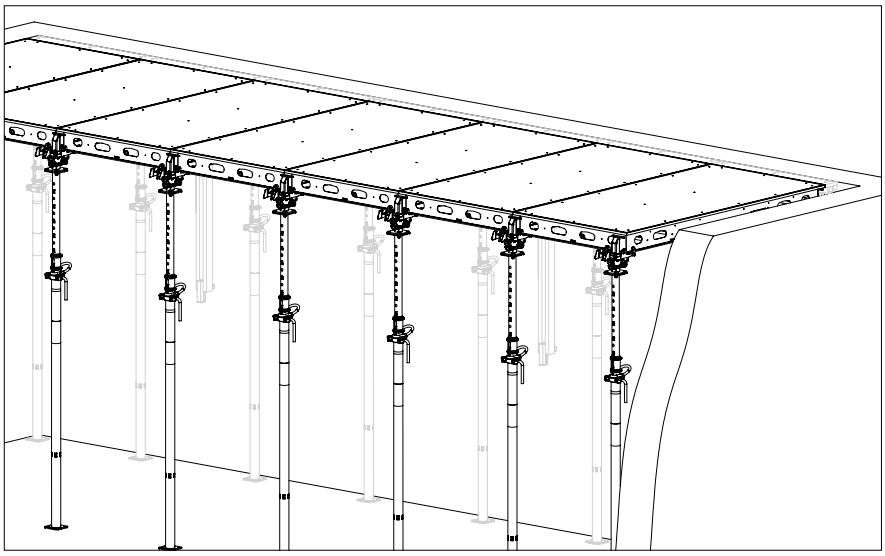


Fig. B3.08

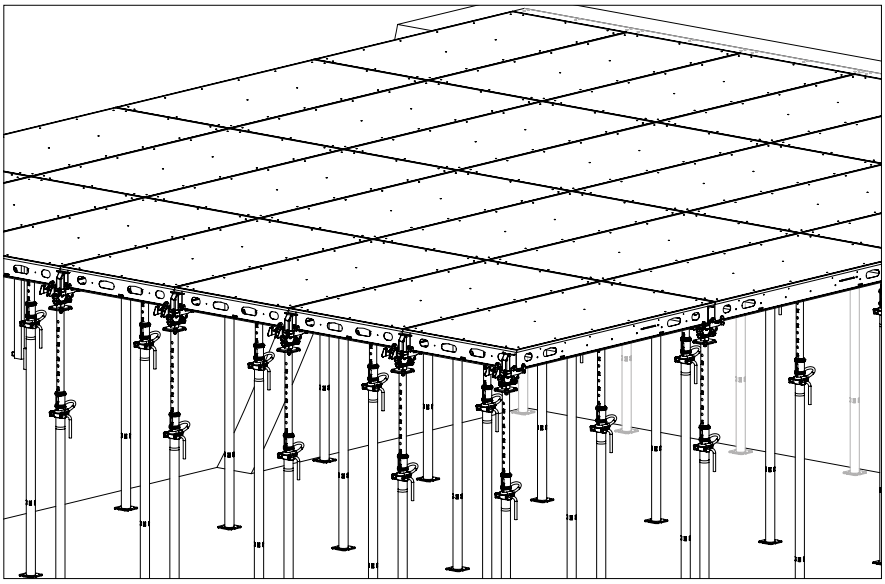


Fig. B3.09

Arrangement of Lowering Heads SXP L T2

Lowering Head SXP L T2(**6**) can be used at short and long panel edges:

- Recessed at the starter beam. (**6a**)
- At system distance at the starter beam (**6b**)
- Recessed at the panel edge, e.g. for panel connections along the walls (**6c**).
- Across 4 panel corners, as a standard connection of panels (**6d**).
- At a change of direction (**6e**)

The Prop Head SXP S (**7f**) shall suffice as a final row of props or in the filler area. (Fig. B3.10)

Always use the Prop Head SXP S or SXP S Poly for slab thicknesses of 40 cm or more.

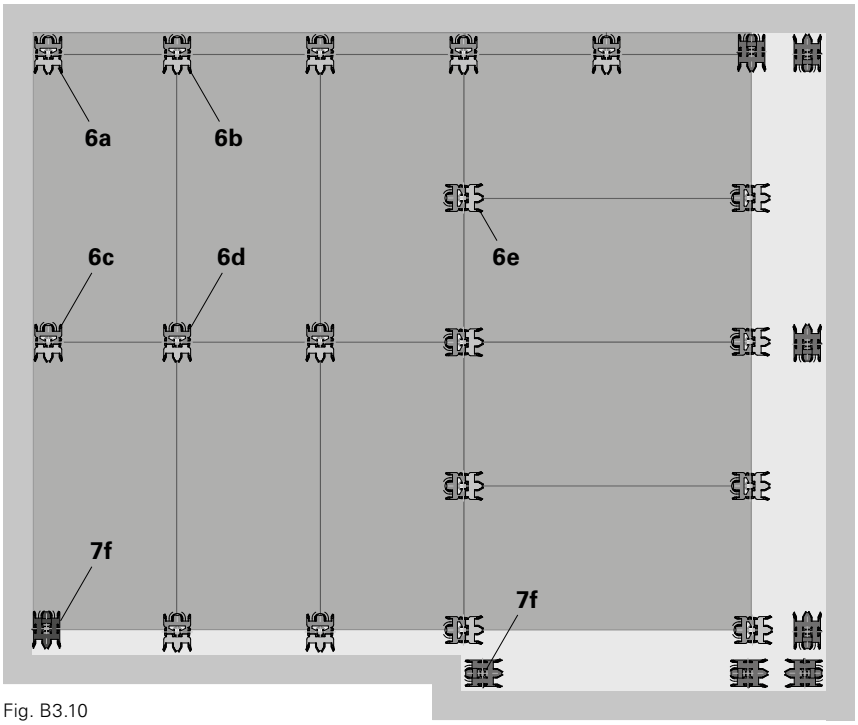


Fig. B3.10

Arrangement of Prop Heads SXP S

The Prop Head SXP S (**7**) can be used in different ways on the Panel SXP P:

- Recessed at the panel edge, e.g. for panel connections along the walls (**7a**).
- Across 4 panel corners, as a standard connection of panels (**7b**).
- Across 2 panels for centre support on panel edges (**7c**) when the slab thickness is > 40 cm.
- As a final row of props (**7d**).
- As props in the filler area (**7e**)
- At a change of direction (**7f**)

(Fig. B3.11)

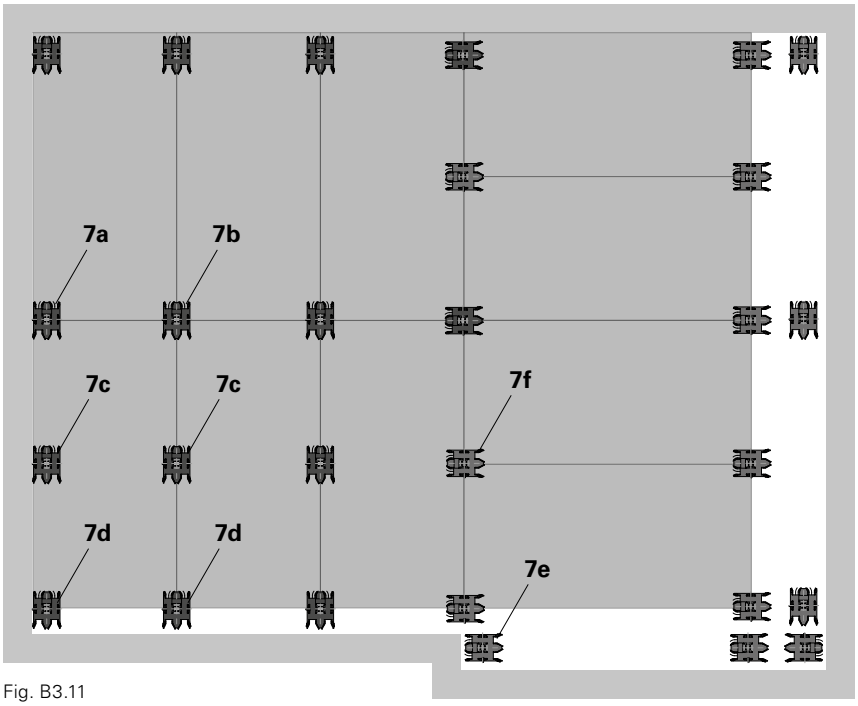


Fig. B3.11

B4 Change of direction

Assembly

1. Shutter all of the panels (**1a**) in the main bay direction (**A**).
2. At the transition to the change of direction (**C**), support the adjacent panels (**1b + 1c**) with shuttering aids.
3. Lower slab prop (**50a**) and install in the new shuttering direction.
4. Turn all other slab props at the change of direction in the same way.
5. At the transition to the change of direction, install additional slab props (**50b**) in the shuttering direction **B** at the centre of the panels. (Fig. B4.01 + Fig. B4.01a + Fig. B4.01b)

→ The change of direction is prepared.

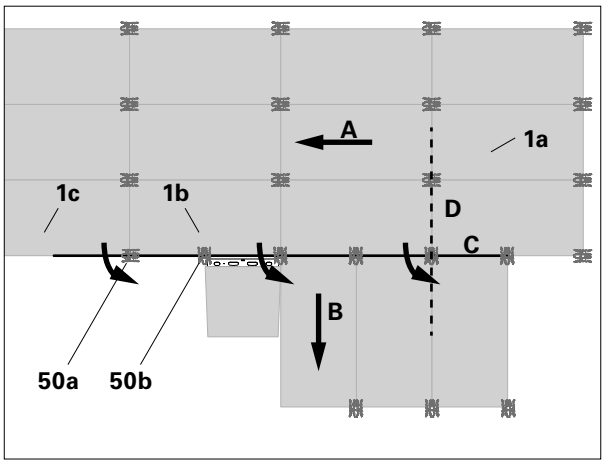


Fig. B4.01

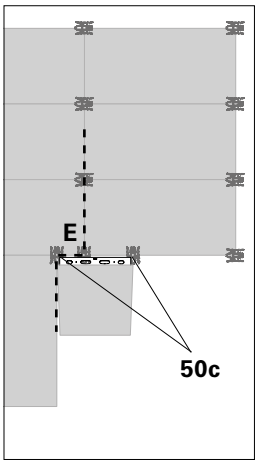


Fig. B4.01c

Continue to use the panel grid (**D**) whenever possible when there is a change of direction. (Fig. B4.01)
Avoid panel offset (**E**). (Fig. B4.01c)
Otherwise, secure slab props (**50c**) that are not held in the corners of a panel with tripods.

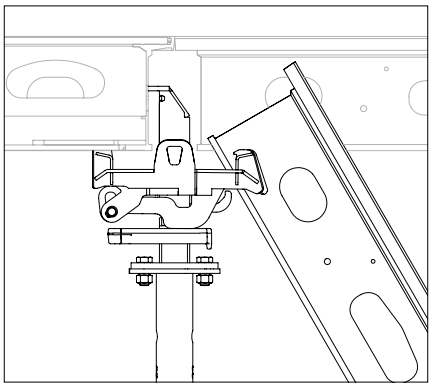


Fig. B4.01a

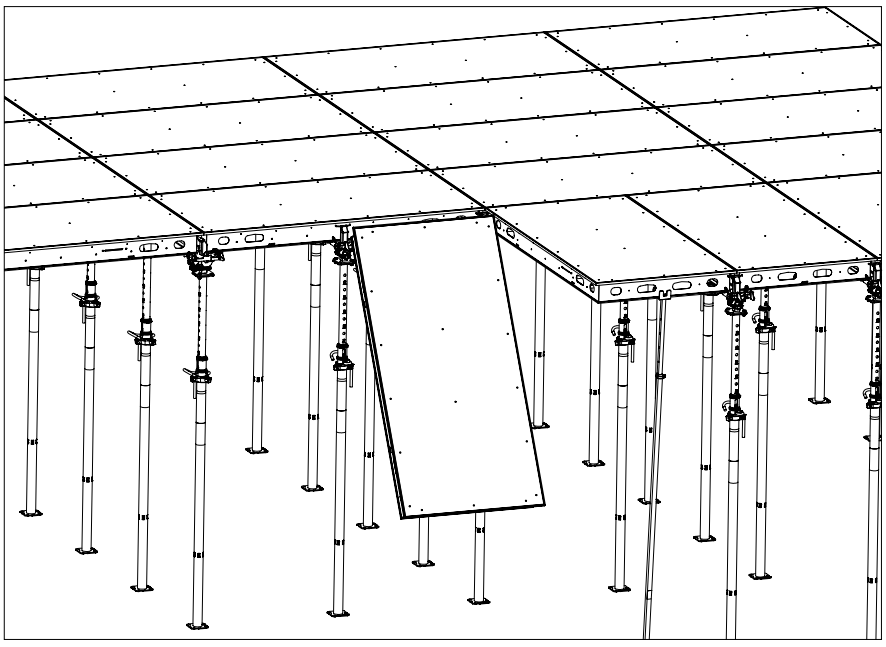


Fig. B4.01b

General information

Warning

Personnel could fall down if edges or openings in the slab formwork are not secured! A fall can result in serious injury or even death.
Never walk on slab formwork before
⇒ ensuring it is in a horizontal position,
⇒ mounting the guardrails,
⇒ form-fit bracing the cantilevers.
⇒ Every panel must be supported by at least four slab props.

Close off filler areas to the greatest extent possible with smaller panels (**2**). Close the remaining area with compensation beams (**12**) or double compensation beams (**30**) and formlining.

Use a 21-mm-thick formwork panel made of phenolic resin-coated birch plywood in the remaining areas.

- The filler area can be installed in the edge areas (along the wall) or in the internal area. Compensation beam with clearance ≤ 30 cm.
- Compensation beams (**30a**) can also be mounted on panel lateral sides in the panel props or in separate props. (Fig. B5.01a)

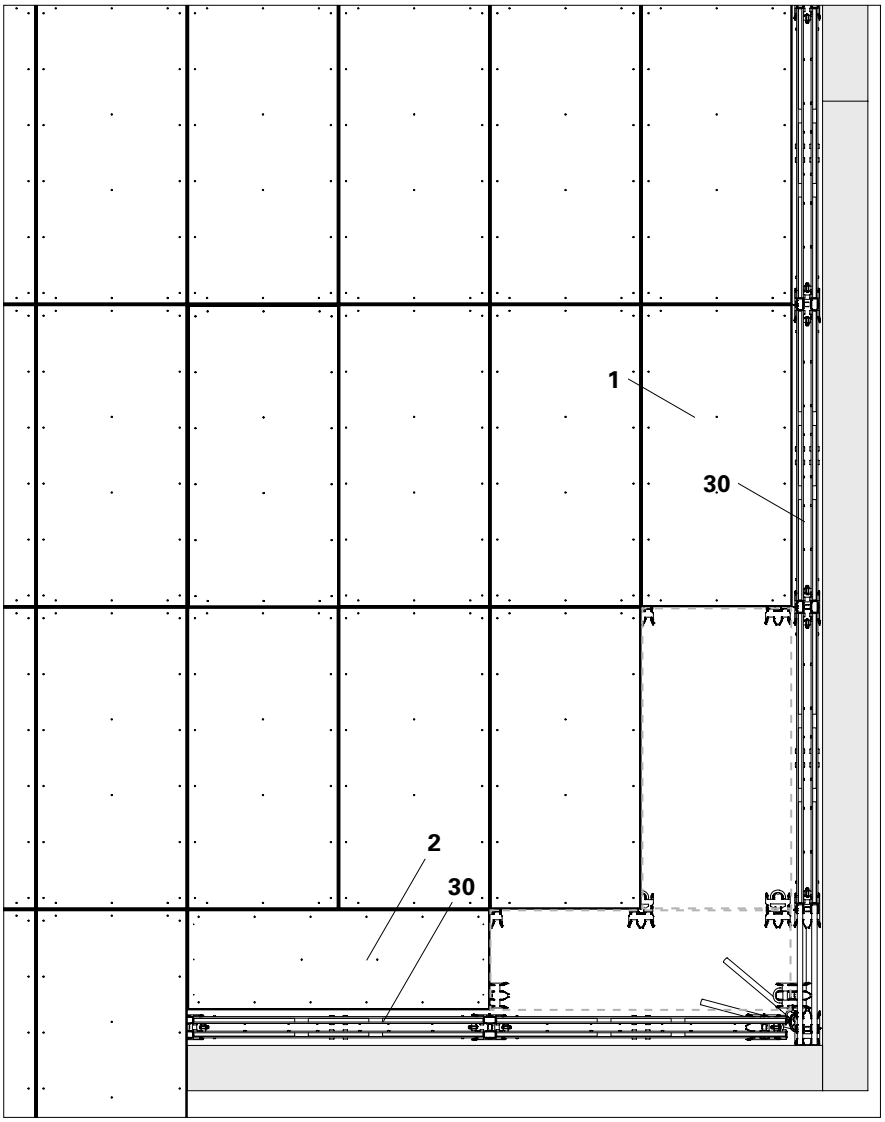


Fig. B5.01

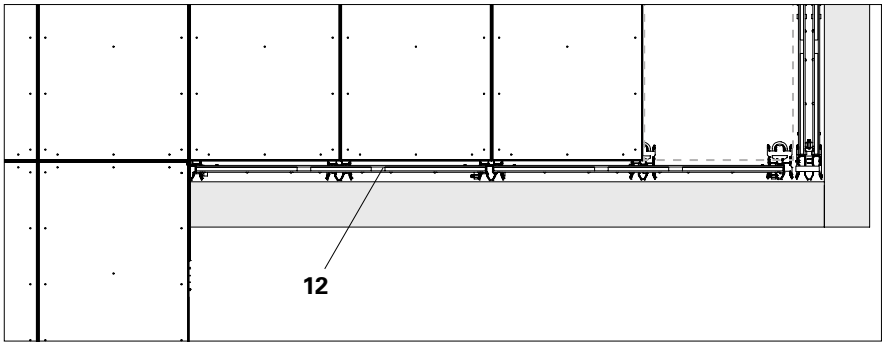


Fig. B5.01a

Transverse infill

The filler area (**A**) is made up of the decimal value of the clear width of the construction plus 1 m.

Examples

- Clear width 9.75 m,
  Control range (**R**) 8.00 m,
  Filler area (**A**) 1.75 m,
  see Fig. B5.07i.
- Clear width 9.05 m,
  Control range 8.00 m,
  Filler area 1.05 m,
  see Fig. B5.07c.
- Clear width 8.95 m,
  Control range 7.00 m,
  Filler area 1.95 m,
  see Fig. B5.07k.

Complete designs for all filler areas are depicted in the section.

If the room width amounts to a number of full metres, check whether the full width of the room can be shuttered with panels SXP P.

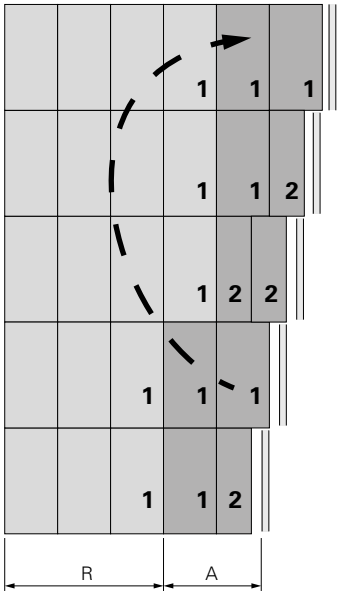


Fig. B5.02

Components

1	Panel SXP P 200X100
2	Panel SXP P 200X66.5

Longitudinal infill

From the clear length of the room, take an even number of metres (8, 10, 12 etc.) as the control range (**R**). The filler area (**A**) must be at least 0.75 m, otherwise add another 2 m as compensation.

Examples

- Clear length 13.75 m,
  Control range 12.00 m,
  Filler area 1.75 m,
  Clear length 13.05 m,
  Control range 12.00 m,
  Filler area 1.05 m,
  see Fig. B5.07c.
- Clear length 12.55 m,
  Control range 10.00 m,
  Filler area 2.55 m.
  see Fig. B5.07h.

Complete designs for all filler areas are depicted in the section.

The table with the required parts and the reference to the appropriate illustration can be found in Tab. B5.01 and Tab. B5.02.

If the room length amounts to a number of full metres, check whether the full length of the room can be shuttered with panels SXP P.

Components

1 Panel SXP P 200X100
2 Panel SXP P 200X66.5

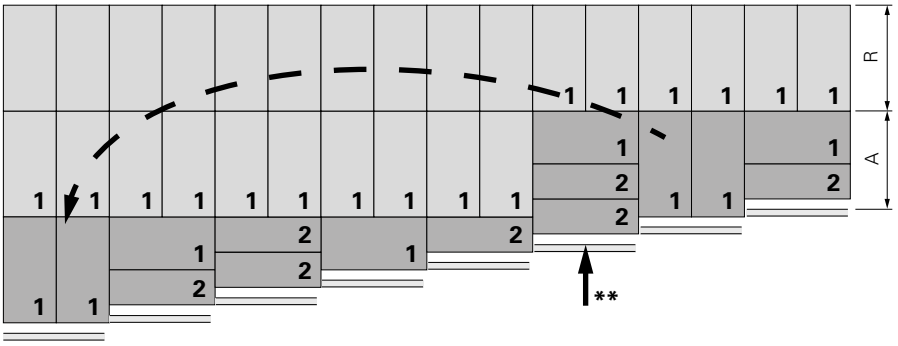


Fig. B5.03

** See the separate table section for special longitudinal infill case.

Component overview

Filler area [cm]	Panel SXP P 200x100	Panel SXP P 200x66.5	Remaining residual gap [cm]	Compensation beam	Double compensation beam	Figure
77 – 86	0	1	10 – 19*	1	0	
86 – 100			19 – 33	0	1	
100 – 110			33 – 43	1	1	
110 – 119	1	0	10 – 19*	1	0	
119 – 133			19 – 33	0	1	
133 – 143			33 – 43	1	1	
143 – 152	0	2	10 – 19*	1	0	B5.04a
152 – 166			19 – 33	0	1	B5.04b
166 – 177			33 – 43	1	1	B5.04c
177 – 186	1	1	10 – 19*	1	0	
186 – 200			19 – 33	0	1	
200 – 210			33 – 43	1	1	

Tab. B5.01

**** Special longitudinal infill case**

243 – 252	1	2	10 – 19*	1	0	B5.04a
252 – 266			19 – 33	0	1	B5.04b
266 – 276			33 – 43	1	1	B5.04c

Tab. B5.02

* Filler areas larger than 15 cm must have additional support.
In cases of longitudinal infill and transverse infill, always install the panels with the long side facing the residual gap.

Filler panels

Always install filler panels with the wide side facing the filler area. This results in a change of direction in a longitudinal infill case.

If necessary, move the point of support in order to push up the longitudinal infill panels.

The minimum residual gap must be 10 cm so that compensation beams with formwork panels can be mounted. If this gap requirement is not adhered to, a filler panel will need to be installed beforehand.
This results in a maximum residual gap of 43 cm for compensation beams with formwork panels.

Filler designs

Components

1 Panel SXP P 200X100
3 Panel SXP P 200X66.5
12 Compensation Beam SXP AB 200 T2
30 Double Compensation Beam SXP AB 200 T2

143 – 152 cm

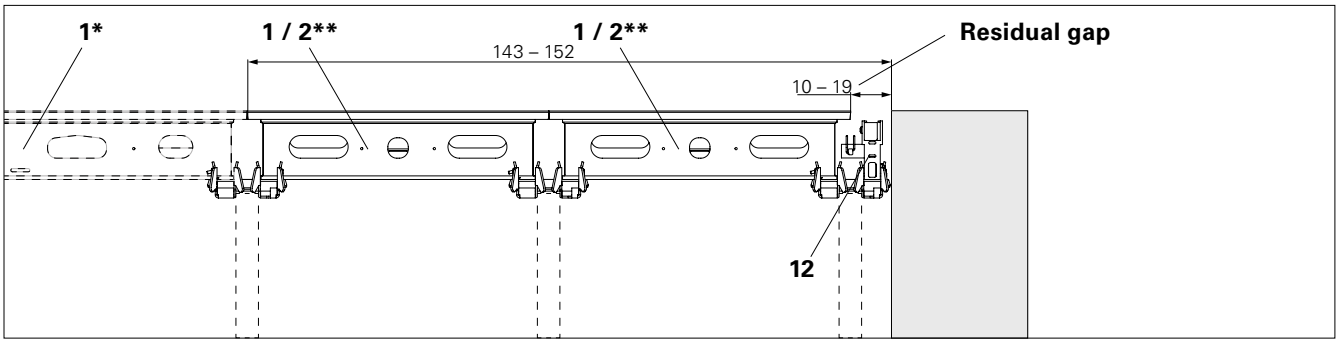


Fig. B5.04a

152 – 166 cm

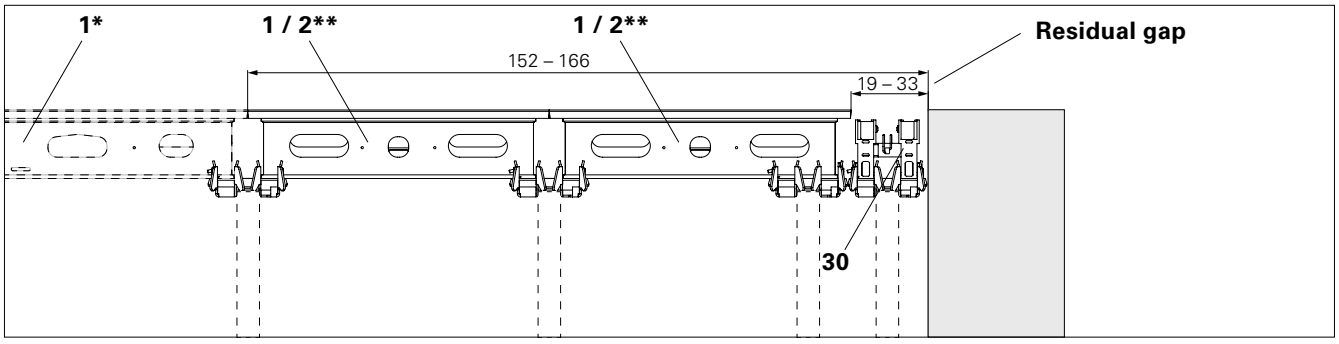


Fig. B5.04b

166 – 177 cm

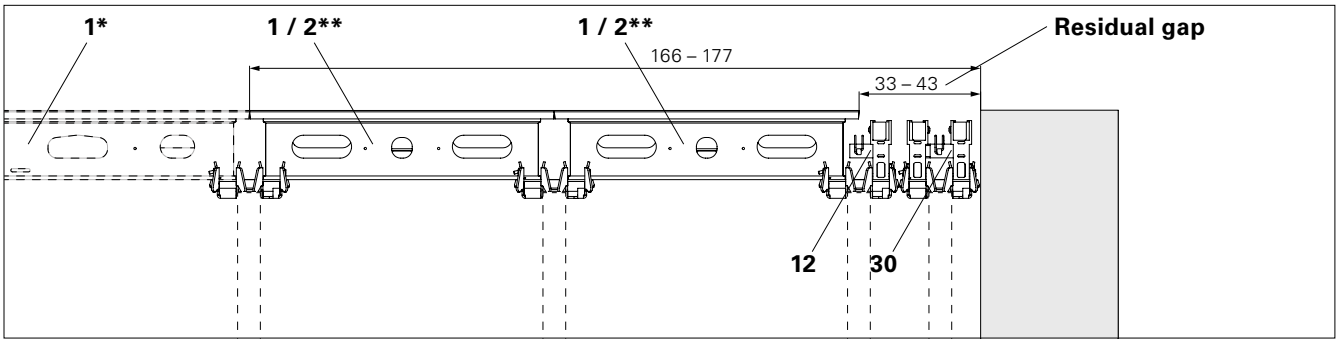


Fig. B5.04c

* Additional panel for special longitudinal infill case
** Filler panels as per Table B6.01 + B6.02

Residual gap

One of the following setups is used with compensation beams depending on the residual gap.

Alternatively, residual gaps can be closed with crossheads and Formwork Girder GT 24 or Girder VT 20.

Cut the formwork panel to system length (typically 2 m) and knock it into the centre of the prop head. The formlining must not protrude.

Residual gap 10 – 19 cm

1. Place the final slab prop with prop head (**7**) or lowering head (**6**) under the panels (**1 / 2**) at system distance.
2. Place the compensation beam (**12**) in the prop head.
3. Cut the formwork panel to the right width.
4. Screw the formwork panel firmly onto the compensation beam using at least 4 screws placed no more than 50 cm apart.
   For remaining areas of 15 cm or more, use 5 screws placed no more than 40 cm apart and provide additional support for the cantilevered section.

(Fig. B5.05)

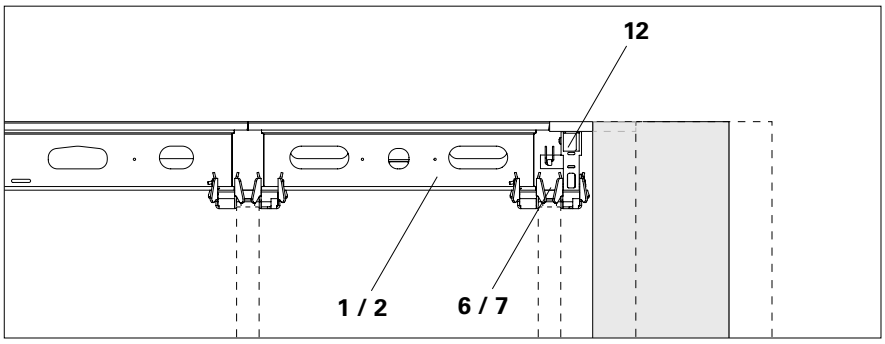


Fig. B5.05

Residual gap 19 – 33 cm

1. Place the final slab prop with prop head (**7**) or lowering head (**6**) under the panels (**1 / 2**) in a recessed manner.
2. Erect an additional pair of props with prop heads in the centre of the filler area and secure with tripods.
3. Place the double compensation beams (**30**) in the prop heads.
4. Cut the formwork panel to the right width.
5. Screw the formwork panel firmly onto both compensation beams using at least 4 screws, each placed no more than 50 cm apart.

(Fig. B5.06)

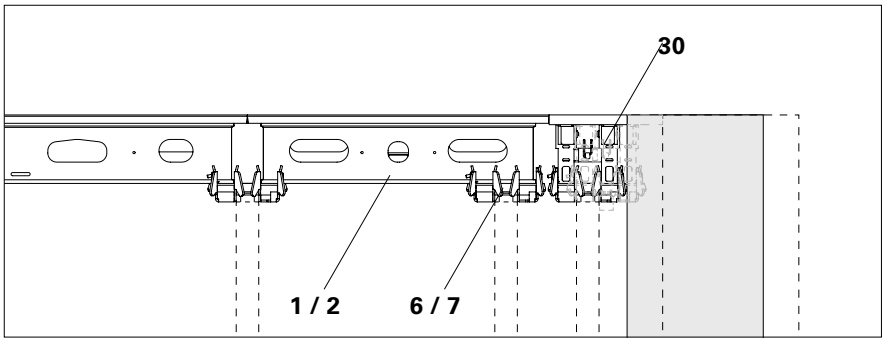


Fig. B5.06

Residual gap 33 – 43 cm

1. Place the final slab prop with prop head (**7**) or lowering head (**6**) under the panels (**1 / 3**) at system distance.
2. Place the compensation beam (**12**) in the prop head.
3. Erect an additional pair of props with prop heads in the filler area directly alongside the wall and secure with tripods.
4. Place double compensation beams (**30**) in the prop heads.
5. Cut the formwork panel to the right width.
6. Screw the formwork panel firmly onto both external compensation beams using at least 4 screws, each placed no more than 50 cm apart.

(Fig. B5.07)

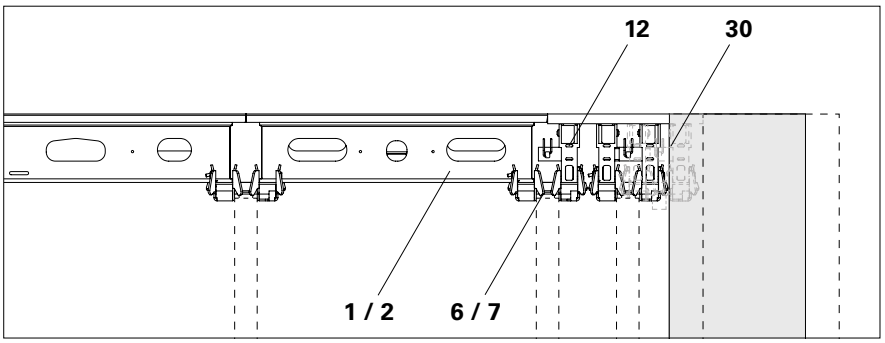


Fig. B5.07

Corner areas

Warning

Personnel could fall down if edges or openings in the slab formwork are not secured! A fall can result in serious injury or even death.
Never walk on slab formwork before
⇒ ensuring it is in a horizontal position,
⇒ mounting the guardrails,
⇒ form-fit bracing the cantilevers.
⇒ Every panel must be supported by at least four slab props.

In terms of assembly and dismantling sequences, corner areas are allocated to longitudinal infill areas.

Inside corners can be closed more effectively in the system using Panel SXP P 100x100 or 100x66.5.
The filler areas can be closed by using the telescopic girder on the right or left .

Always support telescopic girders with 3 slab props. Two at each end of the main beam, one at the end of the extended beam.
Telescopic girder with clearance ≤ 30 cm.

Components

3 Panel SXP P 100x100
12 Compensation Beam SXP AB 200 T2
32 Telescopic Girder SXP TBR/TBL 200-300
33 Double Telescopic Girder SXP TBR/TBL 200-300

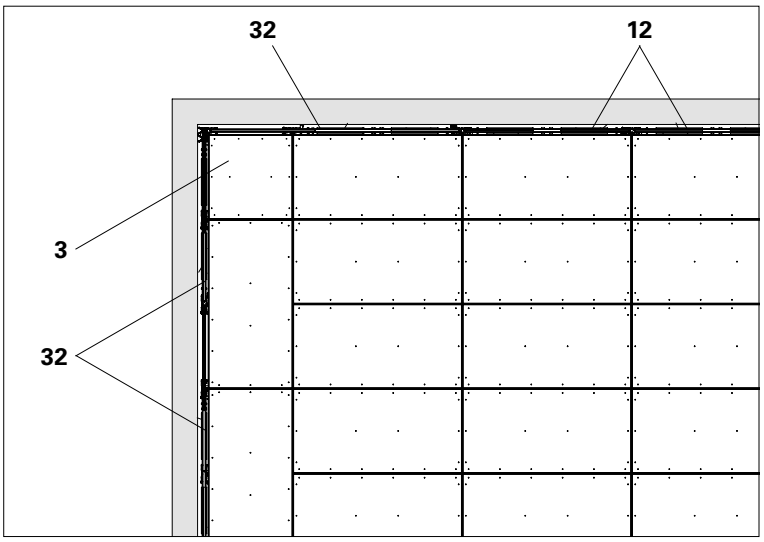


Fig. B5.08

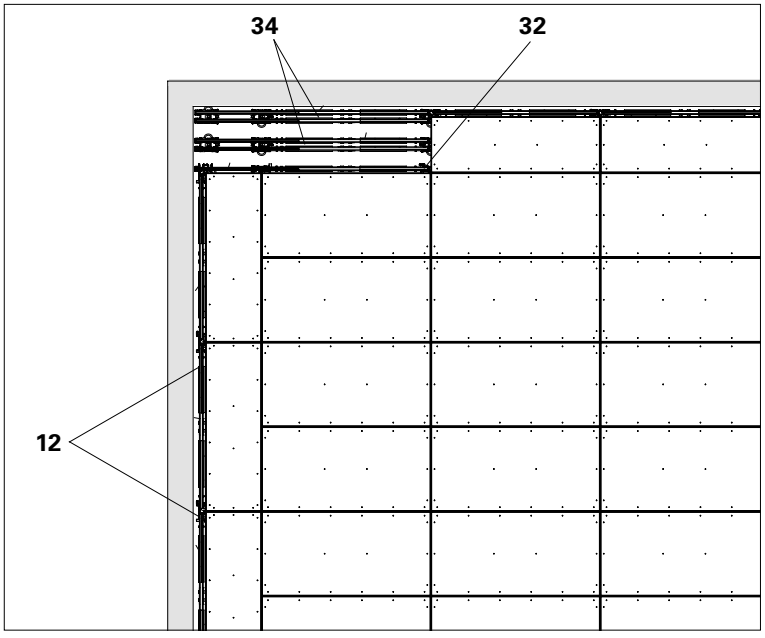


Fig. B5.09

Assembly with squared timber

1. Erect slab props with Prop Head SXP S or SXP S Poly (**7**) in the corner area and secure with tripods (**51**).
2. Insert squared timbers (**56**) measuring 37 x 120 mm into the prop heads.
3. Provide intermediate support to the square timbers according to the span. Secure the slab props with tripods. (Fig. B5.10 + Fig. B5.10a)
4. Mount safety equipment on the slab formwork.
5. Cut the formwork panel to size and screw it into place firmly from the upper side of the formwork.

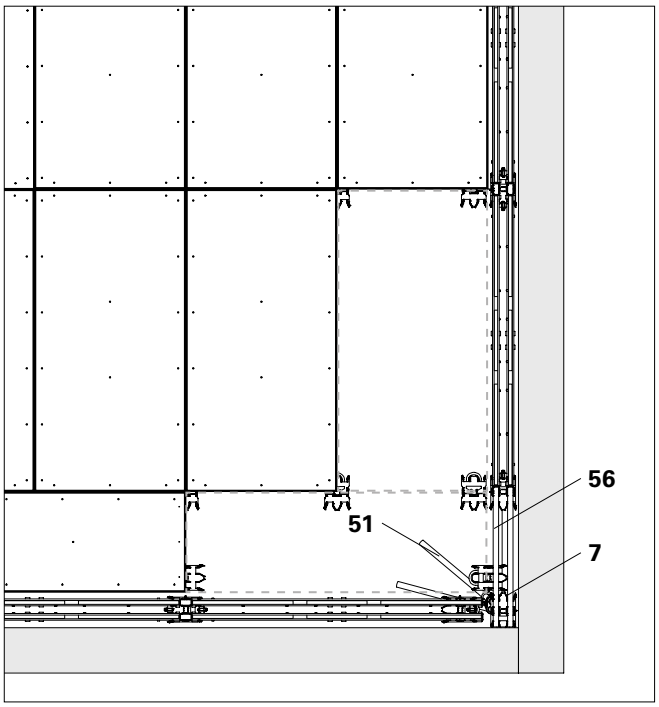


Fig. B5.10

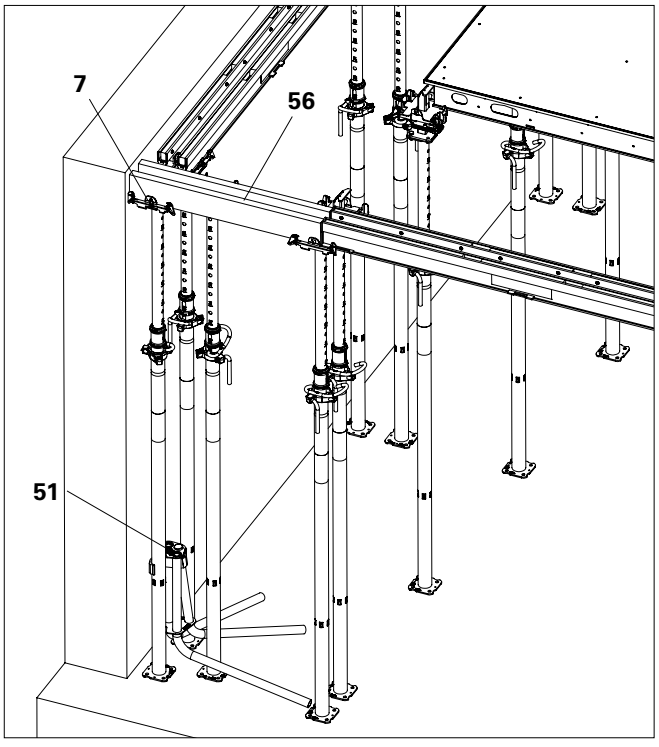


Fig. B5.10a

Shuttering procedure

1. Measure the extension length L. Prop heads (**A**) and (**B**) are recessed. (Fig. B5.11)
2. Adjust Telescopic Girder SXP TBR/TBL 200-300 (**32**) to the measured extension length L and pin with bolt (**32.4**). (Fig. B5.12 + Fig. B5.12a)
3. Hook the Telescopic Girder SXP TBR/TBL 200-300 (**32**) into the prop head, swing it up using the Shuttering Aid SXP A (**21**) and set it down. (Fig. B5.13)
4. Disengage prop heads (**A**) and (**B**) and place Telescopic Girder SXP TBR/TBL 200-300 (**32**) on them. (Fig. B5.14)

Alternatively:
Move the prop head (**B**) into the standard position. Swing the telescopic girder sideways past the prop head and set it down on the prop head. Then move the prop head (**A**) into the standard position.

The solution shown is an example.
The situation shown can also be solved with panels.

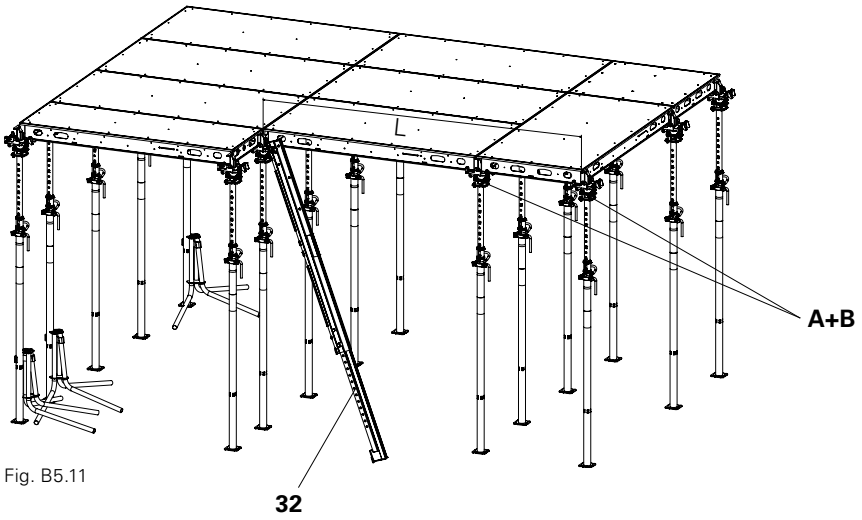


Fig. B5.11

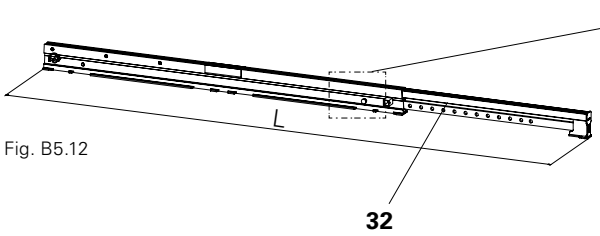


Fig. B5.12

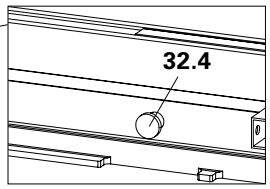


Fig. B5.12a

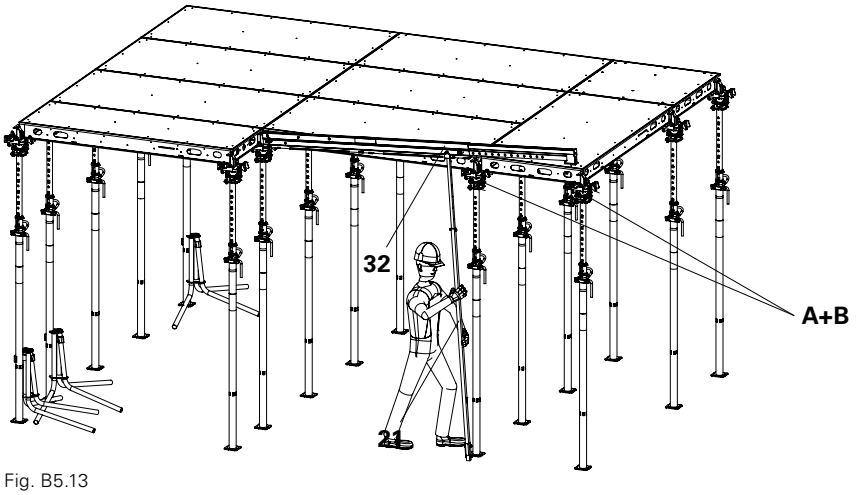


Fig. B5.13

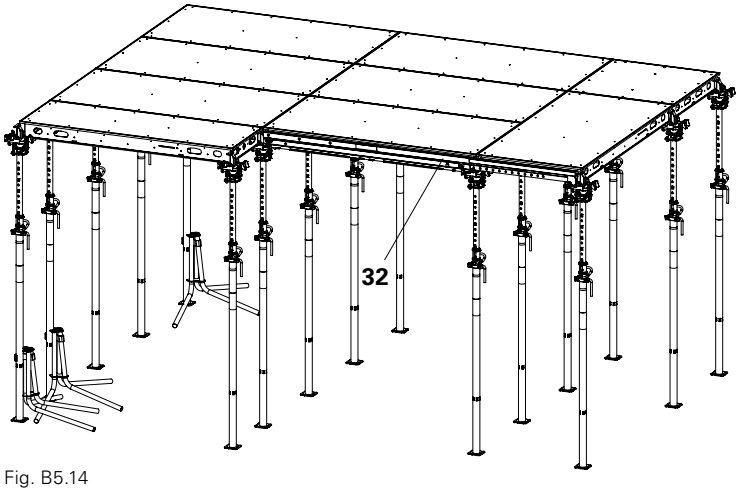


Fig. B5.14

B6 Shuttering of columns

General information

- The cross-section and position of the building column and the slab thickness to be cast may mean that additional measures are required to transfer the load in the infill area around the building column.
- The cross struts of the column frame are suitable for nailing in.

Preparation

Always use Prop Heads SXP S or SXP S Poly on the Column Frame SXP CF T2.

Normally, two Column Frames SXP CF are used for shuttering around the building column.

Prepare Column Frame SXP CF T2 with cross struts and a formwork panel, see Section "A5 Column frames" on page 31.

Form the slab with Panels SXP P as far as possible, see Section "B3 Control range" on page 56.

Shutter around the building column area with Panels SXP P 200x100 (**1**). Depending on the position of the building column, leave out an area measuring 200x100 cm or 200x200 cm, see the following chapter.
If necessary, offset this beforehand with Panels SXP P 200x66.5 (**2**).

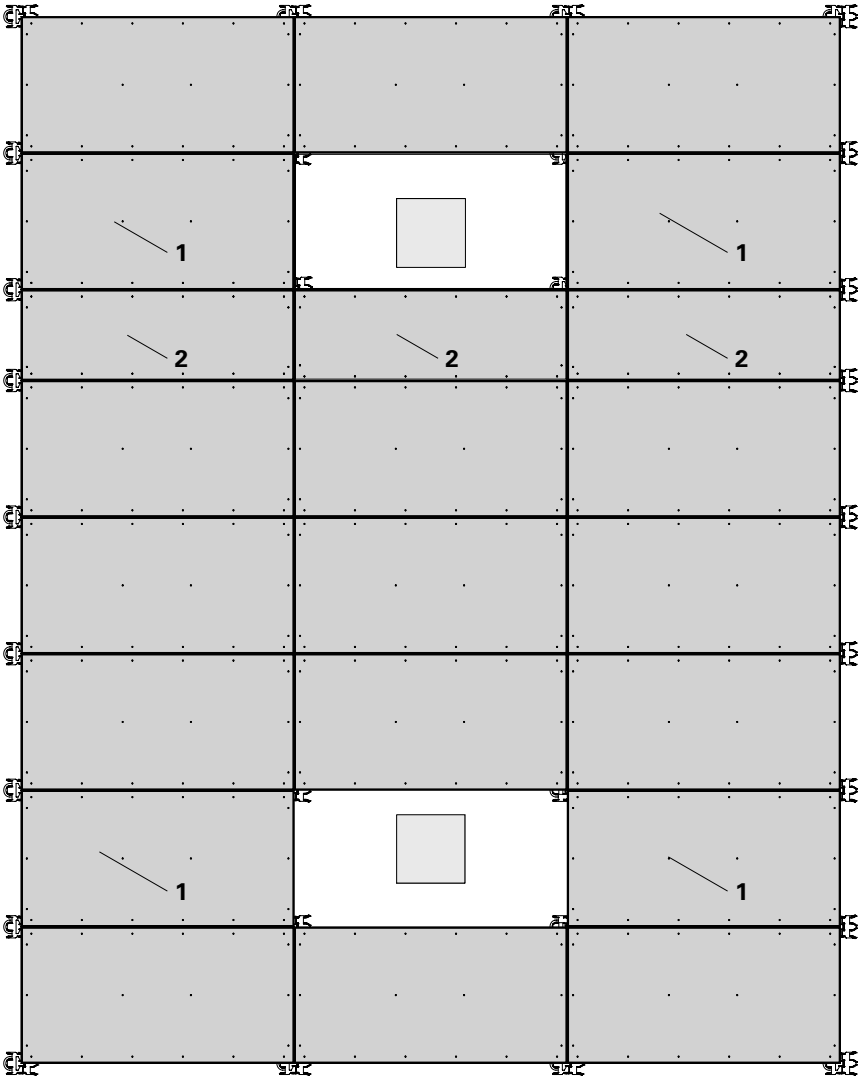


Fig. B6.01

Columns within the panel grid

1. Attach two opposing Column Frames SXP CF (**5**) to existing Prop Heads SXP S (**7**). (Fig. B6.02 + Fig. B6.02a)
2. Insert one shuttering aid (**21**) into the centre of the recess of a cross strut (**5.2**) on both column frames.
3. Push both column frames upwards at the same time.
4. Place two additional slab props (**50**) with Prop Heads SXP S (**7**) in the centre of the two column frames and move them into a vertical position. (Fig. B6.03 + Fig. B6.03a)
5. Cut a 21 mm formwork panel (**55**) to size. So that the column frames can be swung down later, separate the formwork panel at the joint of the column frame, leaving a little striking clearance. Do not surround building columns with a section of formwork panel.
6. Secure the formwork panels to prevent horizontal movement. To do so, nail or screw the formwork panel onto the cross struts (**5.2**) of the column frame. (Fig. B6.04)

If necessary, provide the infill areas of the formlining on the column with additional support.

Clad the building column with foam. This will facilitate the striking process.

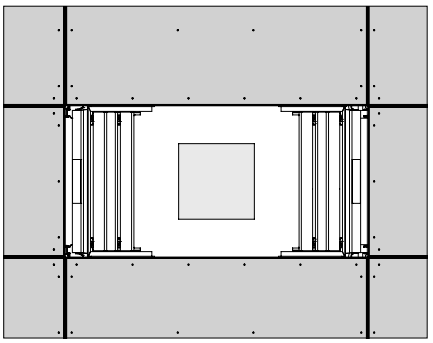


Fig. B6.02

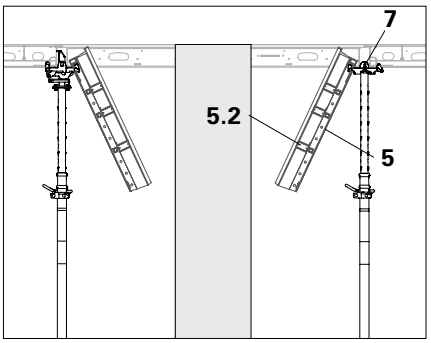


Fig. B6.02a

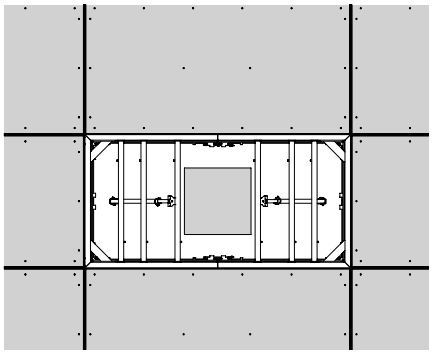


Fig. B6.03

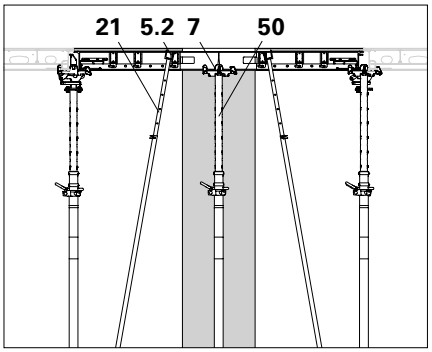


Fig. B6.03a

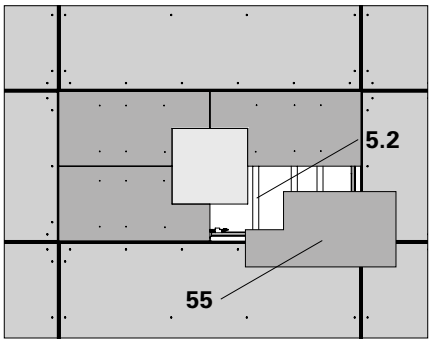


Fig. B6.04

Columns outside the panel grid

Assembly

1. Place four additional slab props with Prop Heads SXP S (**7**) halfway under existing panels (**1**) to serve as supports for column frames.
2. Position Prop Heads SXP S in the centre of the panel. Adhere to the system distance of 1 m and the shuttering direction.
3. Position slab props vertically and secure them with tripods to prevent them from tipping over.
4. Hang two Column Frames SXP CF T2 (**5**) as described in the previous section, swing them up and place them on two more slab props with Prop Heads SXP S (**7a**).

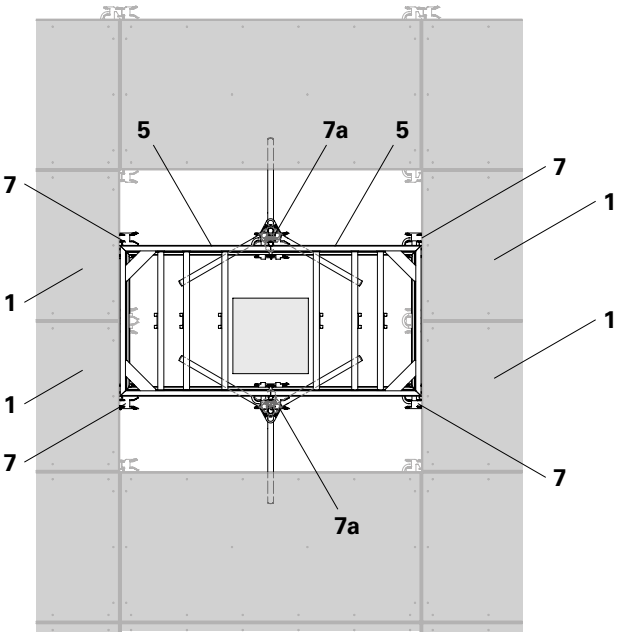


Fig. B6.05

The position of the prop heads under the column frames depends on the position and size of the building column, and the remaining areas are to be closed as planned.

Place the second side of the prop head
- within the column frame
  - in order to provide the infill area with additional support using, for example, squared timber,
- or place it outside the column frame
  - in order to support a compensation beam centrally.

5. Attach four Compensation Beams SXP AB 200 T2 (**12**) to Prop Heads SXP S, push them up with shuttering aids and attach them to the opposing prop heads.
6. Mount four additional slab props (**50**) with Prop Heads SXP S (**7**) in the centre between the panel and column frame at the short edge of the panel, move them into a vertical position and set them down. Secure the slab props with tripods to prevent them from falling.
7. Attach a double compensation beam (**30**), see Section "Double compensation beam" on page 42, to the Prop Head SXP S, push it up with Shuttering Aid SXP A and attach it to the opposing Prop Head SXP S. When you swivel the single beams upwards, make sure that they cannot rotate out of the head. (Fig. B6.06)
8. Proceed in the same manner on the other side of the filler area.
9. Cut the 21 mm formwork panel to size and mount it as described in the previous section.

Alternatively

1. Install a Panel SXP P 200x66.5 (**3**) on one side of the column adjustment.
2. Position the column frame in such a way that the building column is positioned away from the centre of the column frame.
3. Close the other side with two compensation beams (**12**). (Fig. B6.07)

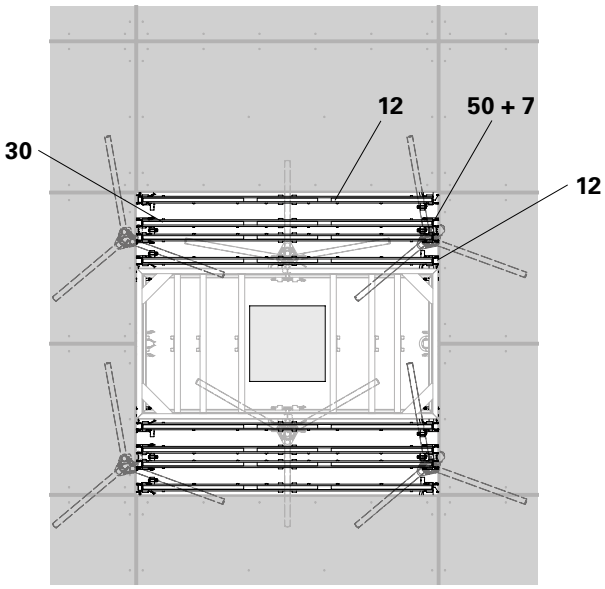


Fig. B6.06

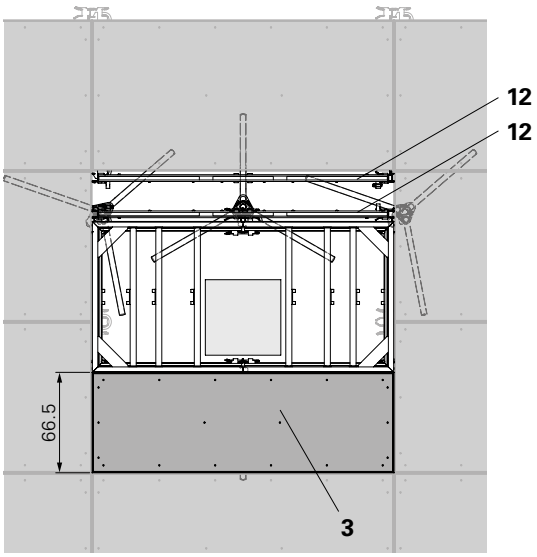


Fig. B6.07

Alternatively
In the case of columns within the column frame, the cross struts (**5.2**) must be subsequently integrated.

1. Remove the cross struts (**5.2**).
2. Swing up the Column Frame SXP CF T2 (**5**) with two shuttering aids and set it down on slab props (**50**) with Prop Heads SXP S.
3. Insert cross struts (**5.2**) in 30 cm increments.

(Fig. B6.08)

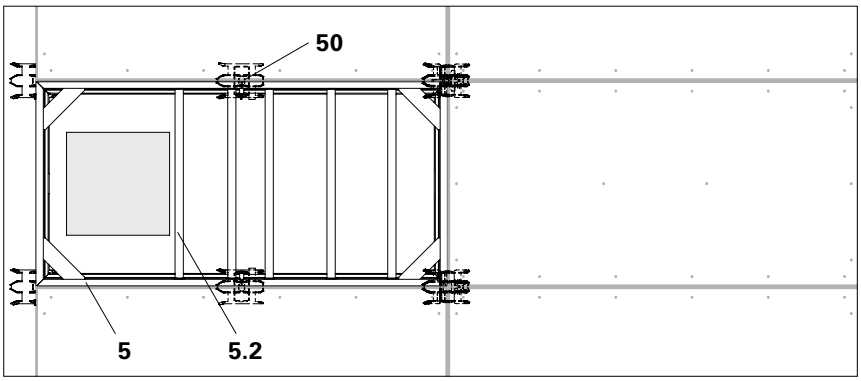


Fig. B6.08

The area can also be closed with Panel SXP P 100x100 (**3**) and a Column Frame SXP CF T2 (**5**). (Fig. B6.09)

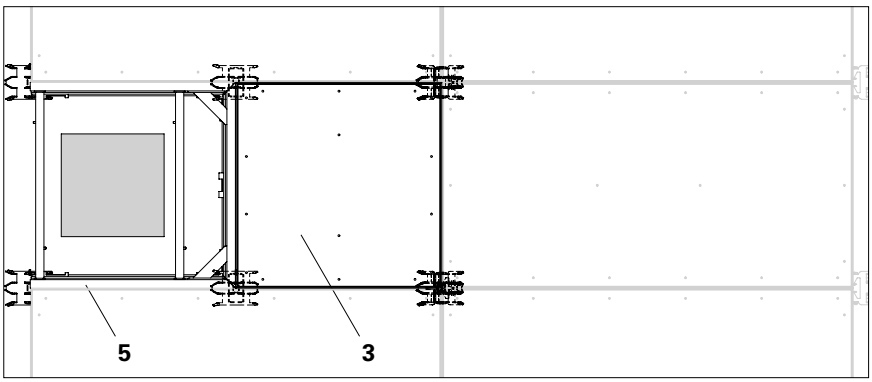


Fig. B6.09

General information

Warning

Personnel could fall down if edges or openings in the slab formwork are not secured! A fall can result in serious injury or even death.
Never walk on slab formwork before
⇒ ensuring it is in a horizontal position,
⇒ mounting the guardrails,
⇒ form-fit bracing the cantilevers.
⇒ Every panel must be supported by at least four slab props.

The working area is designed for Load Class 2 according to DIN EN 12811-1.

- The number of panels that run in the direction of the cantilevered panel is dependent on the following factors:
  – guardrails used,
  – slab thickness to be cast,
  – ratio of working area to concreted area in the cantilever. See tables in the following two sections.
- Install guardrails along the slab edges that are already completed.

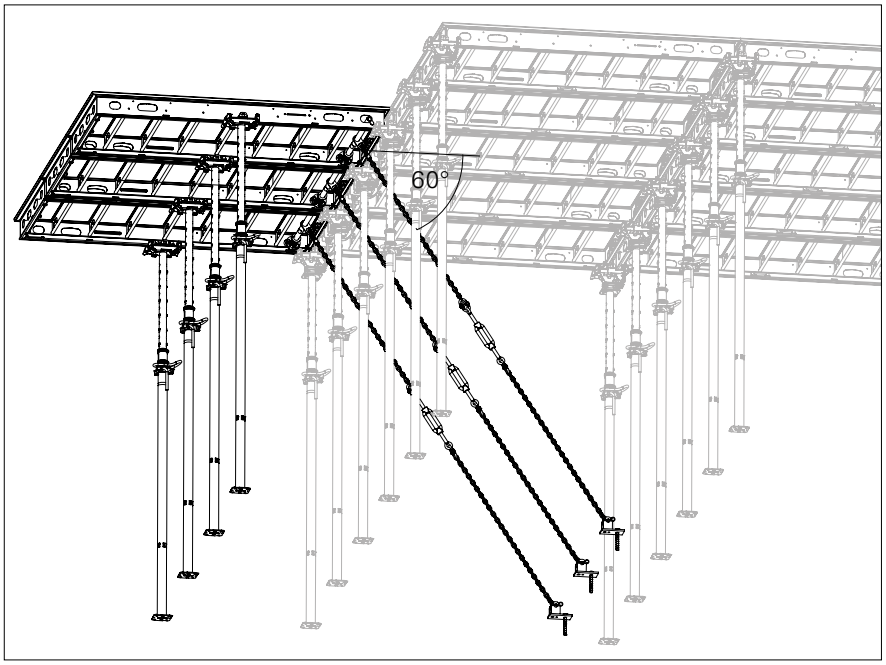


Fig. B7.01

Guardrail Unit SXP GU 100

Planning

For planning, observe the PERI structural design information for SKYMAX Large Panel Slab Formwork Bracing. Plan the projection of the slab (**P**) and the resultant width of the working area (W_A) in accordance with the table Tab. B7.01 and illustration.

Always install the front pair of slab props (**50**) at the prop support (**1.6**) in the centre of the panel. The total overhang must be 1.0 m (W_A + P).

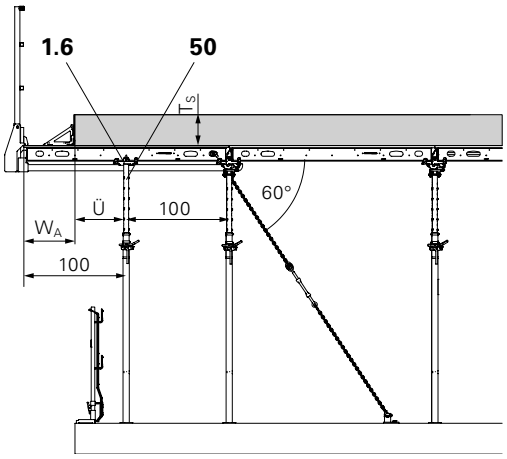


Fig. B7.02

Observe the minimum number of panels (**1**) in the cantilever direction. Tab. B7.01 If required, count the panels in the cantilever direction starting from the filler panels (**2**). The cantilevered panel (**1a**) is included in this.
(**A**) = cantilever direction.
(Fig. B7.03)

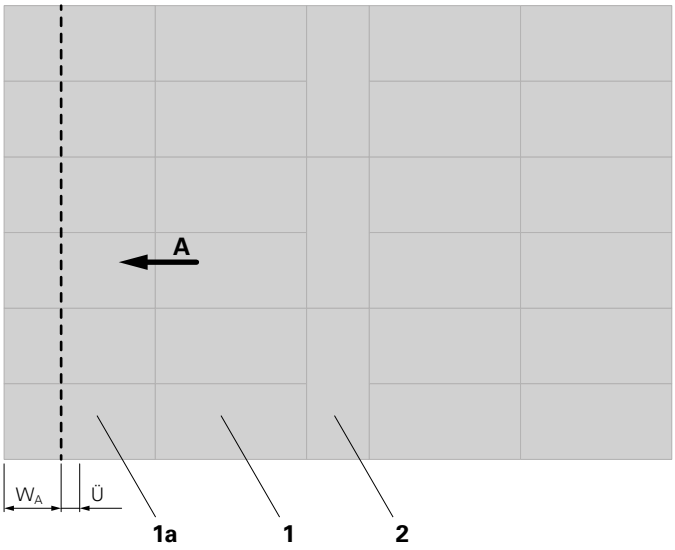


Fig. B7.03

- Tension forces can only be transferred via the Prop Head SXP S POLY to a limited extent!
- When using the Prop Head SXP S POLY with Bracing SXP TU 3 T2 at the open edge of building: For transfer of horizontal loads only permissible up to max. 40 cm slab thickness and installation in shuttering direction!
- The horizontal loads on the Prop Head SXP S POLY in connection with the Tensioning Unit SXP TU 15 may only be accumulated via pressure between the panels!

Planning values for Guardrail Unit SXP GU 100 and Bracing SXP TU 3 T2 with Anchor Chain 250/3.0kN							
Slab thickness [cm] (T_S)	≤ 25	30	35	40	45	50	55
Width of working area [cm] (W_A) *	50 – 80			55 – 80			
Projection of the slab [cm] (**P**) *	50 – 20			45 – 20			
Min. number of panels in cantilever direction	1	2	2	2	3	3	4

Tab. B7.01

* W_A + P must always equal 1.00 m

Mounting the traverse for the guardrail unit

On each panel, install a Traverse SXP GU 100 on the short side that is pointing downwards before the final panel row but one is pushed up.

1. Attach the entire penultimate panel row before the edge of the building, see “B1 General information” on page 52.
2. Move the clamping lever (**16.1**) into the horizontal position.
3. From the inside of the panel, use the centring lug (**16.2**) to slide the Traverse SXP GU 100 (**16**) into the slot on the panel.
4. Turn the clamping lever in a clockwise direction through 90° until there is noticeable resistance and the Traverse SXP GU 100 is in an immovable state. (Fig. B7.04 + Fig. B7.04a + Fig. B7.04b)
5. Push up the penultimate panel row and install the slab prop together with the system-specific prop head. (Fig. B7.04c)

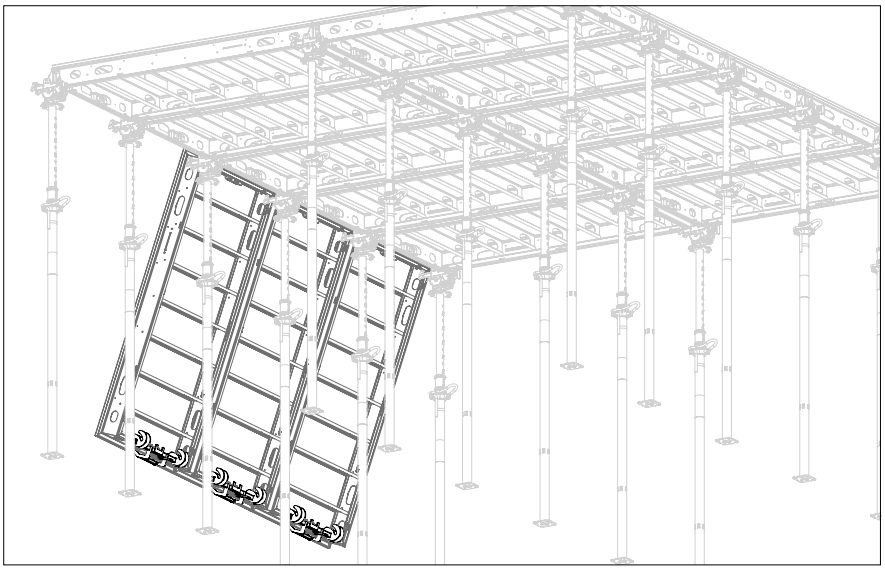


Fig. B7.04

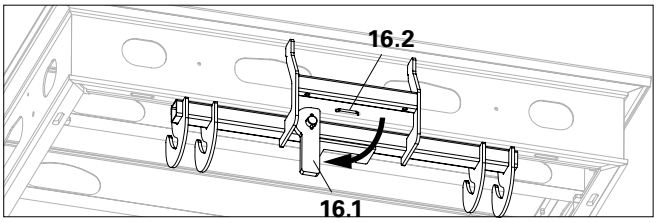


Fig. B7.04a

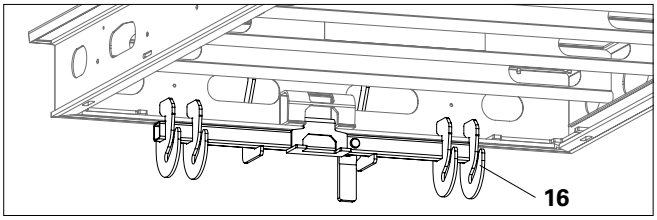


Fig. B7.04b

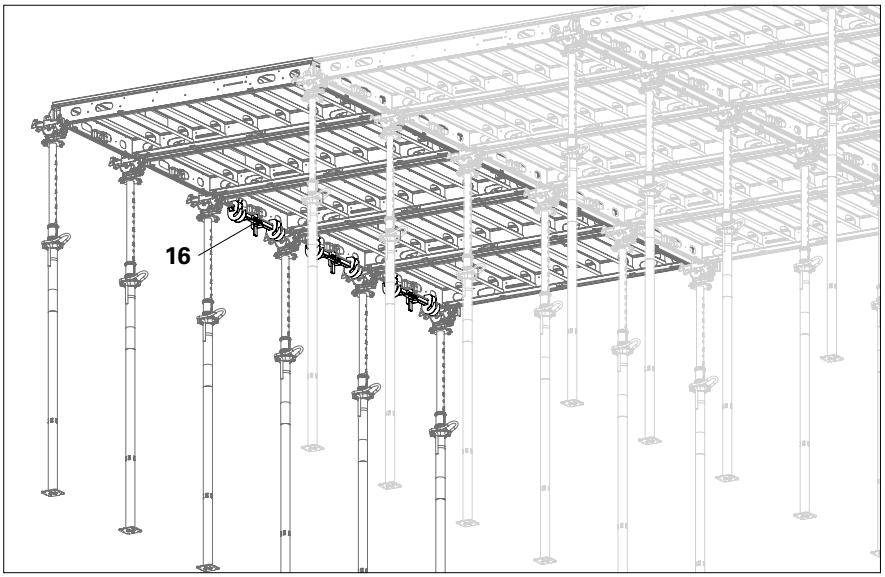


Fig. B7.04c

Mounting the tensioning unit

1. Pre-assemble the tensioning unit before attaching the cantilevered panel. See Section A9 "Bracing SXP TU 3 T2".

Mounting cantilevered panels

- Push the panel up carefully. (Fig. B7.05b)
- In the case of low ceiling heights, it may be necessary to temporarily remove the lateral protection below the cantilevered panel.
  → Use PPE.
  → Push the panel up carefully.

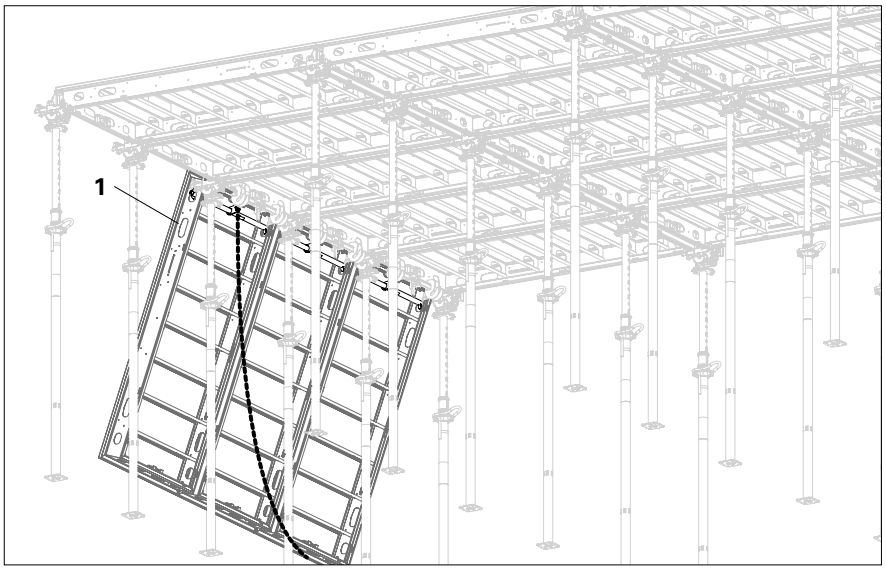


Fig. B7.05

1. Attach the entire row of SXP P 200x100 Panels (**1**) with pre-assembled Bracing SXP TU 3 100 T2 (**22**) and Anchor Chain 250/3.0kN (**53**). (Fig. B7.05 + Fig. B7.05a)
2. Push up the first Panel SXP P with the Shuttering Aid SXP A.

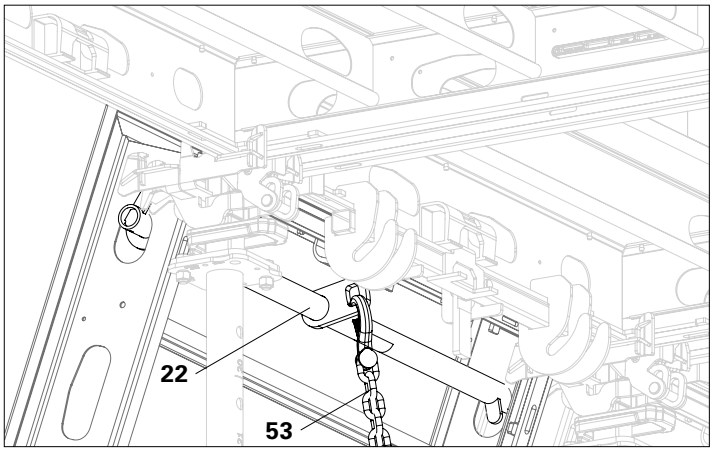


Fig. B7.05a

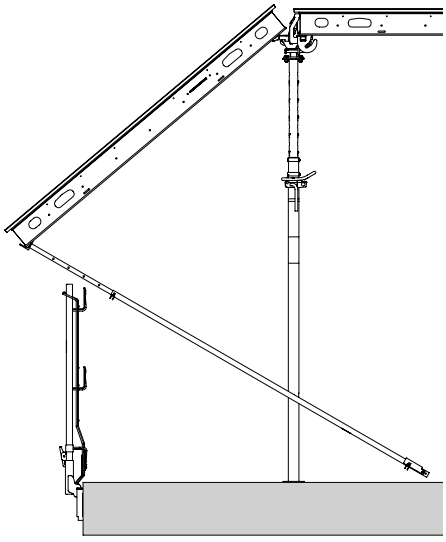


Fig. B7.05b

3. Install the slab prop (**50**) with Prop Head SXP S (**7**) on the centre support (**1.6**) of the panel. Prop the panel up with the shuttering aid until the bracing is securely mounted.
4. Mount the base plate for RS (**52**) on the existing construction with the PERI tie bolt 14/20 x 130 (**57**). Bracing angle 60°
5. Attach the Anchor Chain 250/3.0kN (**53**) to the Turnbuckle M12/3.0kN and attach the Turnbuckle M12/3.0kN (**54**) to the Base Plate RS.
6. Tighten the Turnbuckle M12/3.0kN until the anchor chain is taut.
7. Mount additional panels in the same way. (Fig. B7.06)

- Refer to the PERI tie bolt 14/20 x 130 data sheet.
- Bracing angle between anchor chain and panel 60°.

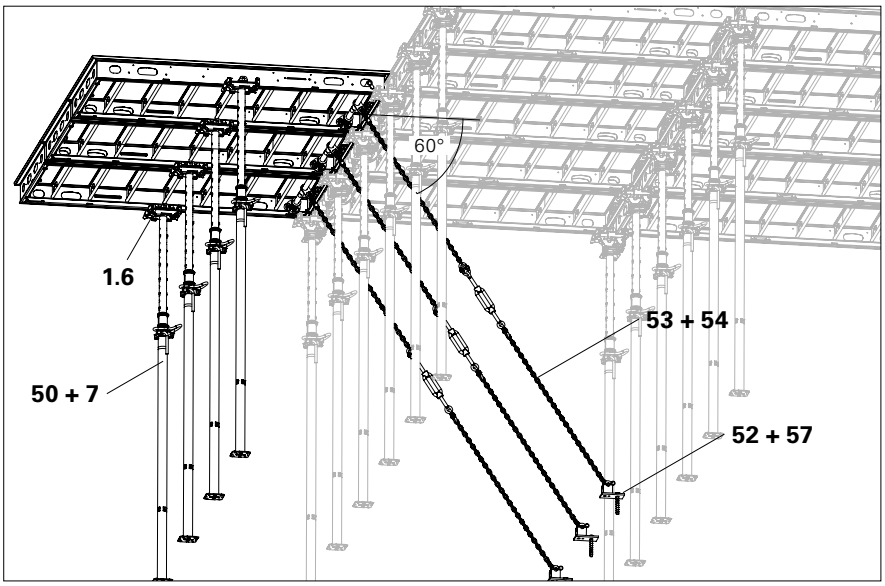


Fig. B7.06

Mounting the guardrail unit

Warning

Unlocked Guardrail Unit SXP GU can come loose at any time and swing down in an uncontrolled manner! This could result in personnel being struck and seriously injured.

⇒ Only take the shuttering aid away once the safety device (**15.5**) has fully engaged. (Fig. B7.10b)

- Carefully swing up the Guardrail Unit SXP GU. (Fig. B7.09a)
- In the case of low ceiling heights, it may be necessary to temporarily remove the lateral protection below the cantilevered panel.
  → Use PPE.
  → Carefully swivel up the guardrail unit.

Assembly

To hook in and swivel up the guardrail unit, see "A6 Guardrail unit" on page 32.

1. Mount all Guardrail Units SXP GU 100 in the same way until the edge of the construction is completely secured.
2. Mount 3x15 cm toe boards (**47**) (supplied by client) on all guardrail units between the base frame (**15.2**) and swivel frame (**15.3**).
   It is absolutely essential that the toe board is fitted. It provides additional security to prevent the guardrail unit from becoming detached due to vibrations or other influences.
3. Fold out the plug guardrail's closing leaf (**14.1**) towards the next guardrail. (Fig. B7.09)
   → The gap between the guardrails is closed.

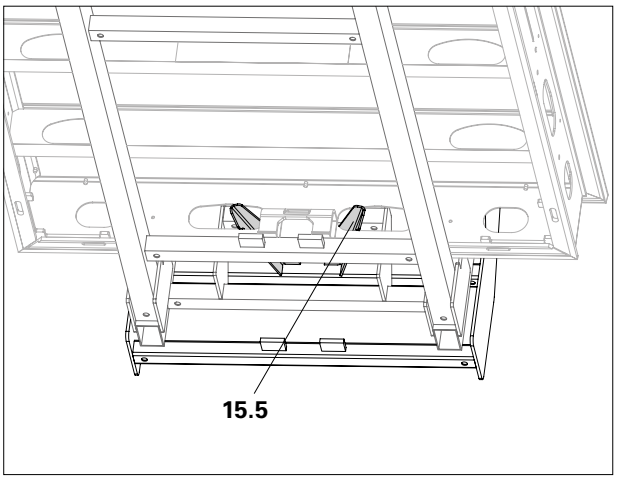


Fig. B7.07

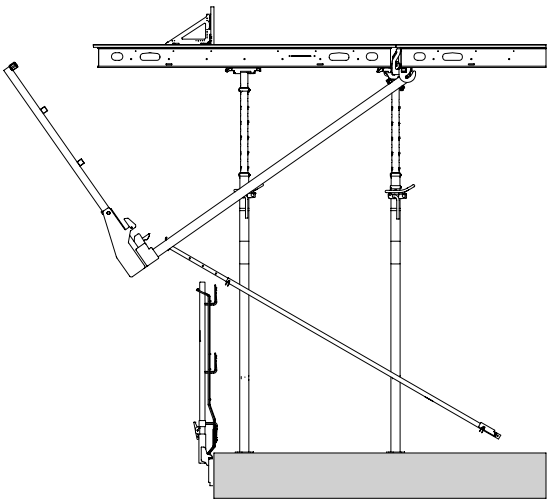


Fig. B7.08

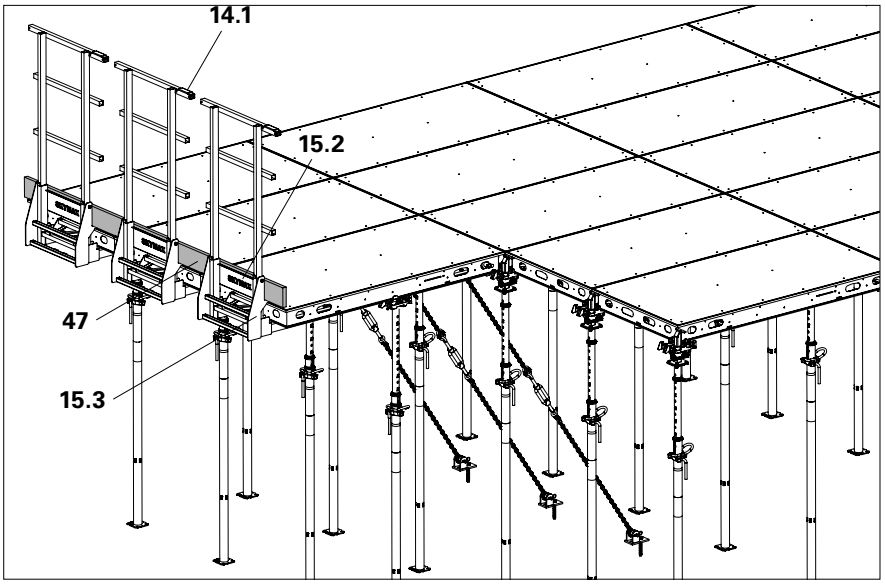


Fig. B7.09

Guardrail Post Holder SXP GPR/GPL T2

Planning
For planning, observe the PERI structural design information for SKYMAX Large Panel Slab Formwork Bracing. Plan the projection of the slab P and the resultant width of the working area W_A in accordance with Tab. B7.02and the illustration.

Depending on the circumstances, the cantilever dimensions can be adapted with a filler area (**2**) (Fig. B7.10a) .

Observe the minimum number of panels (**1**) in the cantilever direction.(Tab. B7.02)If required, count the panels in the cantilever direction starting from the filler panels (**2**). The cantilevered panel (**1a**) is included in this.
(**A**) = cantilever direction.
(Fig. B7.10a)

The total overhang (W_A + P) must be 1.00 m.

- Tension forces can only be transferred via the Prop Head SXP S POLY to a limited extent!
- When using the Prop Head SXP S POLY with Bracing SXP TU 3 T2 at the open edge of building:
  For transfer of horizontal loads only permissible up to max. 40 cm slab thickness and installation in shuttering direction!
- The horizontal loads on the Prop Head SXP S POLY in connection with the Tensioning Unit SXP TU 15 may only be accumulated via pressure between the panels!

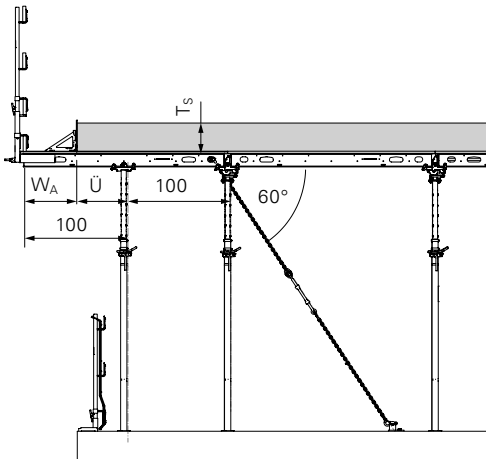


Fig. B7.10

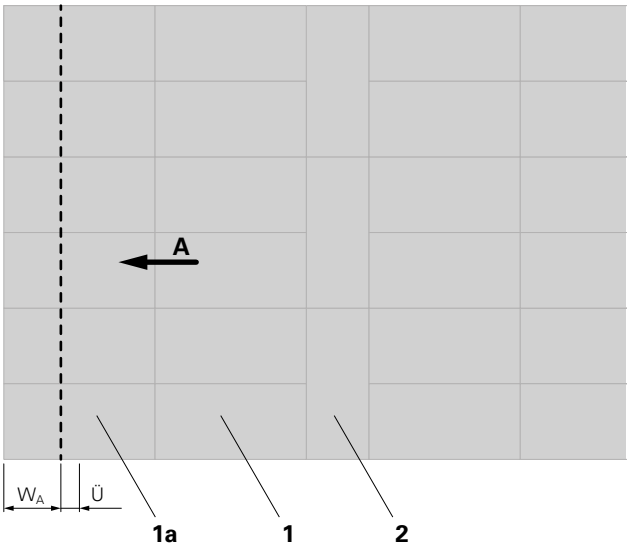


Fig. B7.10a

The following table values are generally valid for use with lateral protection boards or Side Mesh Barriers PMB. More user-friendly values for use with Side Mesh Barriers PMB, see PERI structural design information for SKYMAX Large Panel Slab Formwork Bracing.

For use with Guardrail Post Holder SXP GPR/GPL T2:

- Maximum total influence width per panel of lateral protection ≤ 2.00 m. (Fig. B7.11)
- If two guardrail post holders are mounted on one panel, the influence width is reduced due to the utilisation of the panel. (Fig. B7.11a)

Planning values for Guardrail Post Holders SXP GPR T2/GPL T2 + guardrail boards and Bracing SXP TU 3 T2 with Anchor Chain 250/3.0kN									
Slab thickness [cm] (T_S)	≤ 15	20	25	30	35	40	45	50	55
Width of working area [cm] (W_A) *	55 – 80	60 – 80		65 – 80					
Projection of the slab [cm] (**P**) *	45 – 20	40 – 20		35 – 20					
Min. no. of panels in cantilever direction	1		2			3		4	
Influence width of guardrail post holder [m] (W_E)	≤ 2.00								

Tab. B7.02

* W_A + P must always equal 1.00 m

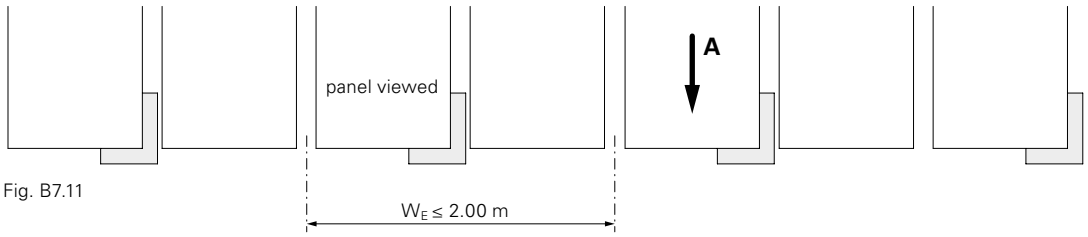


Fig. B7.11

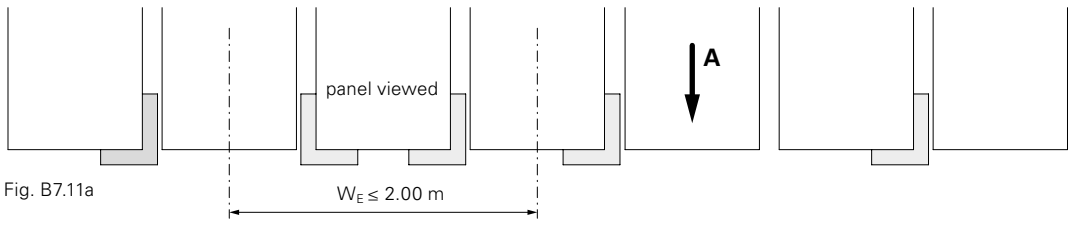


Fig. B7.11a

- Install guardrails along the slab edges.
- Install Guardrail Post Holders SXP GPR T2 in every second panel. (Influence width ≤ 2.00 m).
- Not authorised for use on longitudinal sides of panels.

Pre-assembly

- Before attaching the final panel row:

1. Pre-assemble the guardrail post holder on panel SXP P, see Section "A7 Guardrail post holders" on page 35.
2. Pre-assemble tensioning unit on opposing, short panel side and attach the anchor chain, see Section, see Section A9 "Bracing SXP TU 3 T2". (Fig. B7.12)

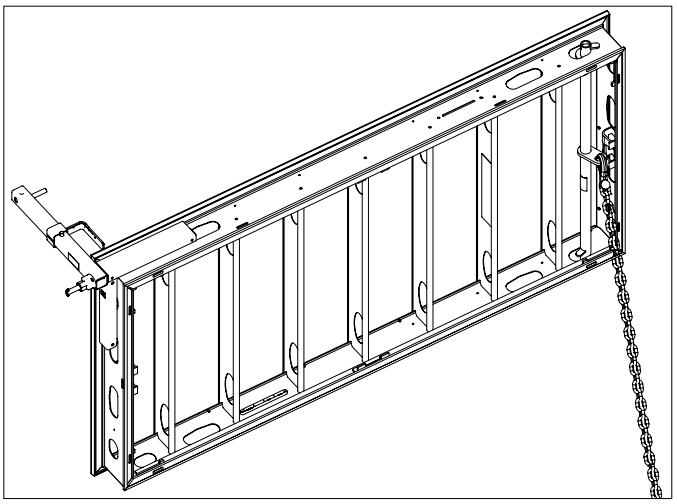


Fig. B7.12

Assembly

1. Attach the entire row of SXP P 200x100 Panels (**1**) with pre-assembled Bracing SXP TU 3 100 T2 (**22**) and anchor chain.
2. Push up the first Panel SXP P with the Shuttering Aid SXP A. (Fig. B7.13)
3. Install the slab prop (**50**) with Prop Head SXP S (**7**) on the centre support (**1.6**) of the panel. Prop the panel up with the shuttering aid until the bracing is securely mounted.
4. Mount the base plate for RS (**52**) on the existing construction with the PERI tie bolt 14/20 x 130 (**57**). Bracing angle 60°
5. Attach the Anchor Chain 250/3.0kN (**53**) to the Turnbuckle M12/3.0kN and attach the Turnbuckle M12/3.0kN (**54**) to the base plate for RS.
6. Tighten the Turnbuckle M12/3.0kN until the anchor chain is taut.
7. Mount additional panels in the same way. (Fig. B7.14)

- Refer to the PERI tie bolt 14/20 x 130 data sheet.
- Bracing angle between anchor chain and panel 60°.

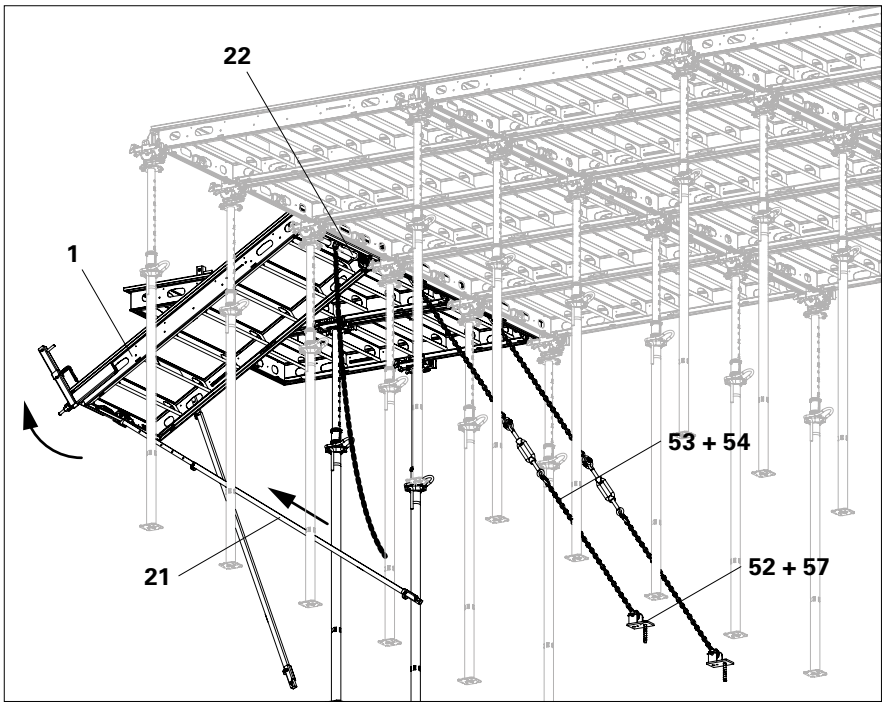


Fig. B7.13

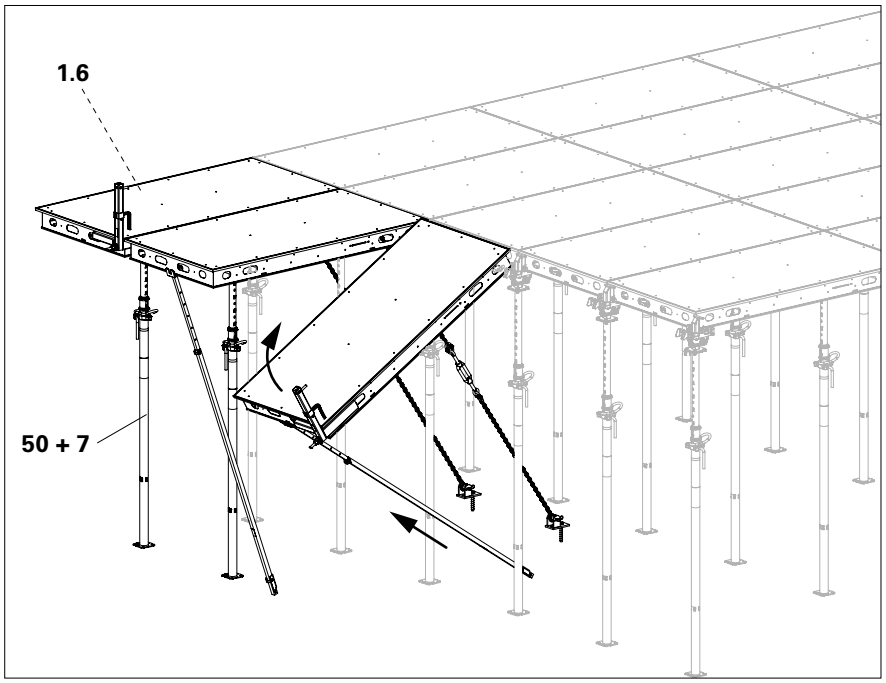


Fig. B7.14

Installing the guardrails

Danger

The guardrail boards and side mesh barriers are not climbing aids.
Danger to life due to falling!
⇒ The guardrail boards and side mesh barriers must not be climbed.

Warning

Slab formwork that is not adequately braced can collapse! This can lead to serious injuries or even death.
Never walk on slab formwork before
⇒ ensuring it is in a horizontal position,
⇒ form-fit bracing the cantilevers.
⇒ Every panel must be supported by at least four slab props.

Assembly

- If the slab has been shuttered in full and braced:

1. Walk onto the slab formwork wearing PPE and install the Post PP (**76**) in the pre-assembled Guardrail Post Holder SXP GPR/GPL T2.
2. Attach the Side Mesh Barrier PMB S (**75**)

- When using the Side Mesh Barrier PMB, see structural design information for SKYMAX Large Panel Slab Formwork in the Section “Bracing”.
- Maximum overlap of the barriers is ≤ 60 cm. (Fig. B7.15)

Alternatively

Use guardrail and toe boards, 15x3 cm, instead of Side Mesh Barriers PMB. The toe boards must always be doubled up. (Fig. B7.16).

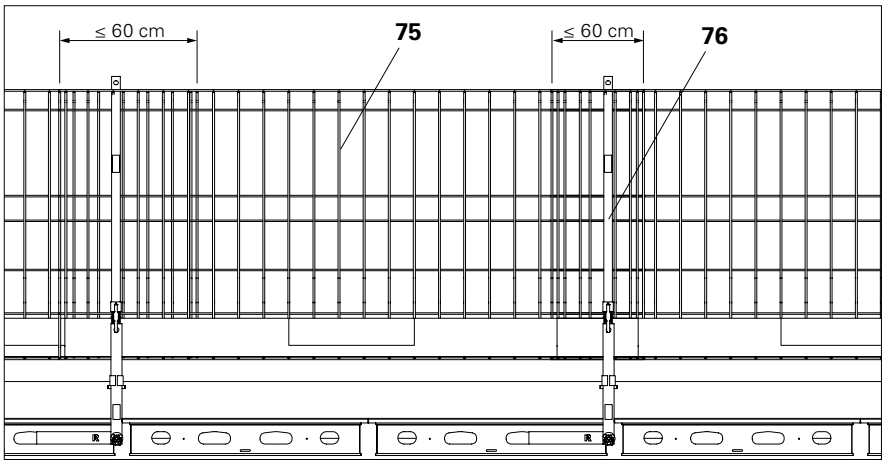


Fig. B7.15

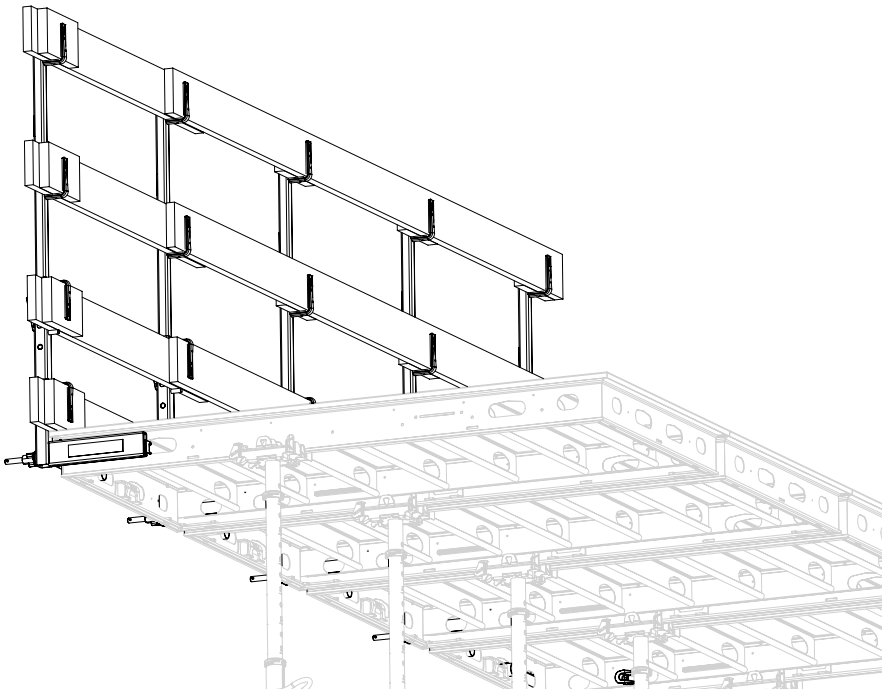


Fig. B7.16

Fall protection

- It may be necessary to install bracing to transfer additional horizontal forces. Take into account the project-specific planning.
- Follow the other striking procedure, see Section "C6 Concreting section" on page 122.

Assembly

1. Carry out the shuttering process as described in Section "B3 Control range" on page 56.
2. Lowering head system only: Rotate the lowering heads (**7a**) through 180° and install them in the penultimate row of slab props, see the section on deshuttering "Lowering head system" on page 122. (Fig. B8.01)
3. Install the last two panel rows together with tensioning units and guardrail units as described in Section "B7 Cantilevers, guardrails" on page 78.
4. Install any additional horizontal bracing in accordance with the project-specific planning. (Fig. A8.01 + Fig. B8.02)

Alternatively

Install the Guardrail Post Holders SXP GPR T2 instead of the guardrail unit. See Section B7 "Cantilevers, guardrails, guardrail with Guardrail Post Holders SXP GPR T2/GPL T2.

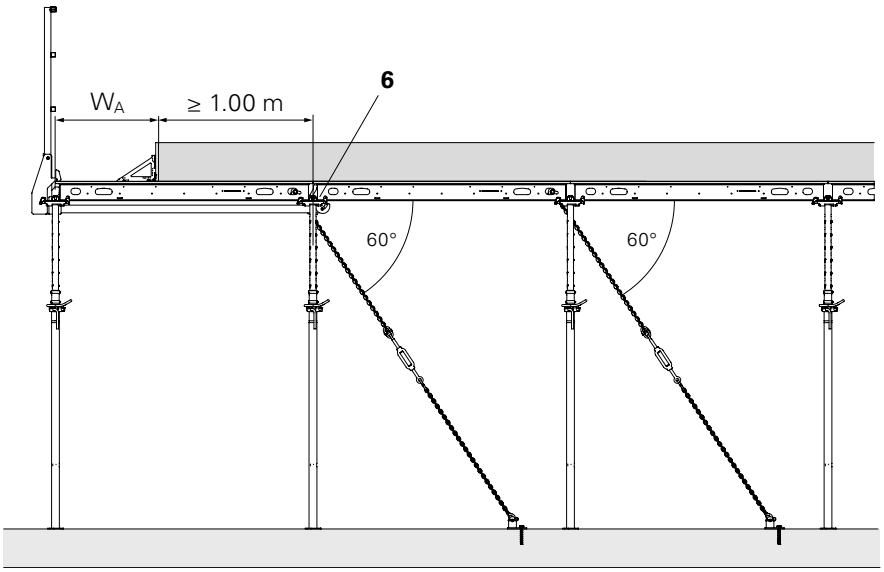


Fig. B8.01

Fig. B8.01

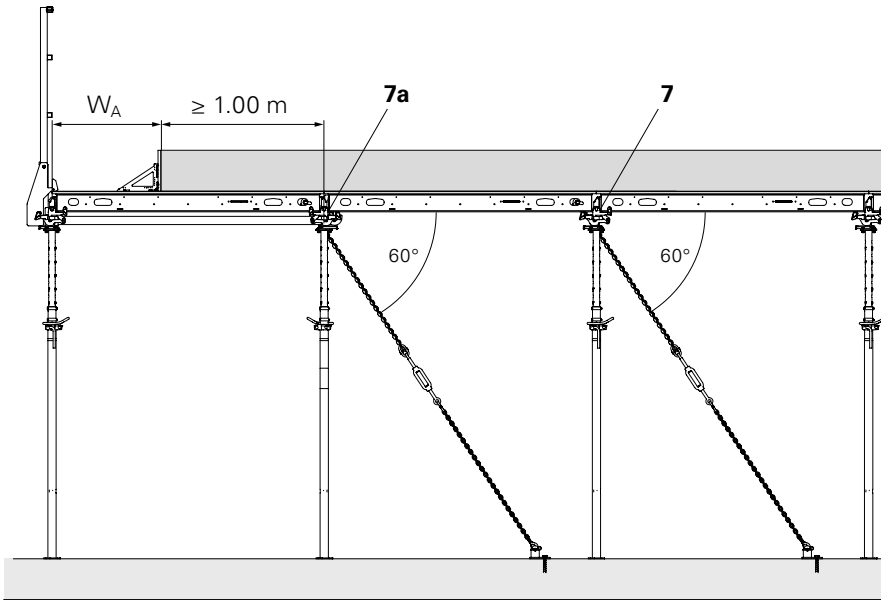


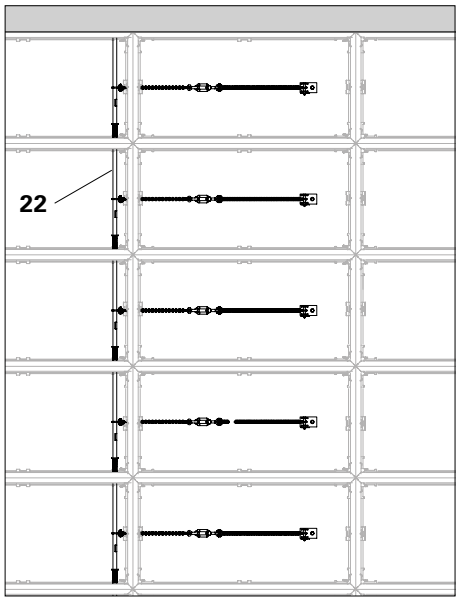
Fig. B8.02

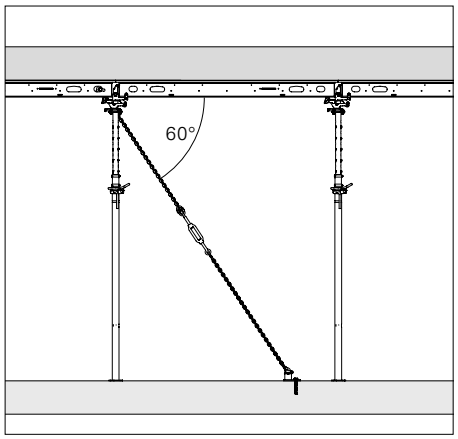
Fig. B8.02

Bracing SXP TU 3 T2

Bracing SXP TU 3 T2 (**22**)

- Horizontal loads can only be transferred by way of tension and compression at the Prop Head SXP S. With other SKYMAX heads, only compressive forces may be transferred.





Tensioning Unit SXP TU 15

Tensioning Unit SXP TU 15 (**24**)
(Fig. B9.01)
– Without cantilever in the bay.

- Horizontal loads can only be transferred by way of tension and compression at the Prop Head SXP S. With other SKYMAX heads, only compressive forces may be transferred.

- Only apply tension forces to the tensioning unit; compressive forces cannot be transferred via the articulated brace connector (**24.2**).

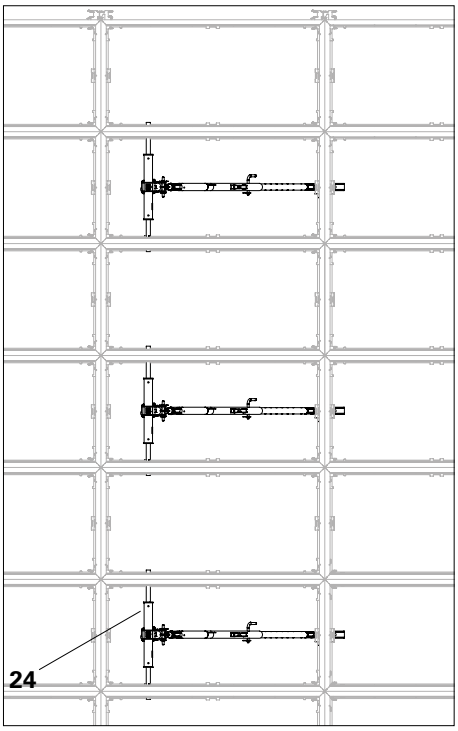


Fig. B9.01

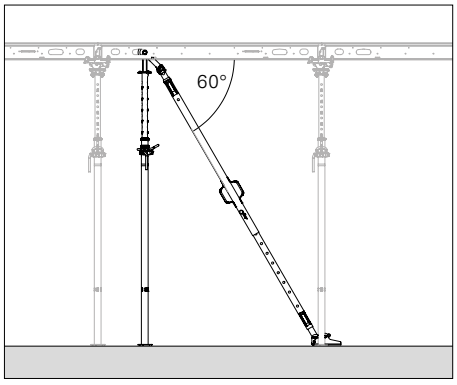


Fig. B9.01a

When using the Tensioning Unit SXP TU 15 (**24**) on a cantilevered slab
– with a guardrail unit
– with guardrail post holder,
the Panel Clip SXP C (**38**) must be used. (Fig. B9.02)

Edge panels, whether attached to walls or free-standing, must also be braced with Tensioning Unit SXP TU 3 (**22**).

Assembly sequence

1. Hook in the panels and swing them up.
2. Centre the props beneath the panel (**50**)
3. Insert Panel Clamps SXP C (**38**) and use them to secure the cantilevered panel.
4. Fit the Tensioning Unit SXP TU 15 (**24**) with push-pull prop.
5. Mount the guardrail unit and swivel it up.
6. Place an additional slab prop (**50a**) under the tensioning unit.

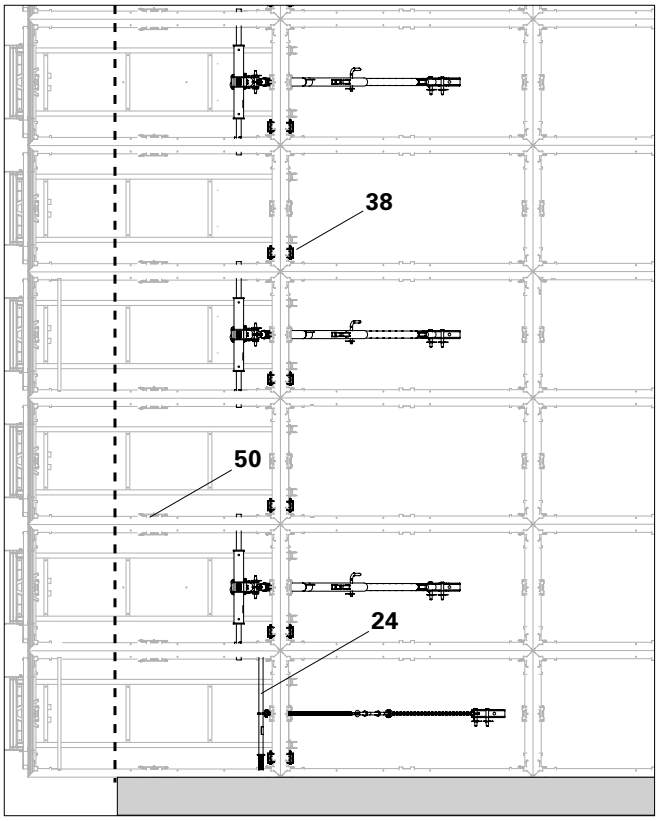


Fig. B9.02

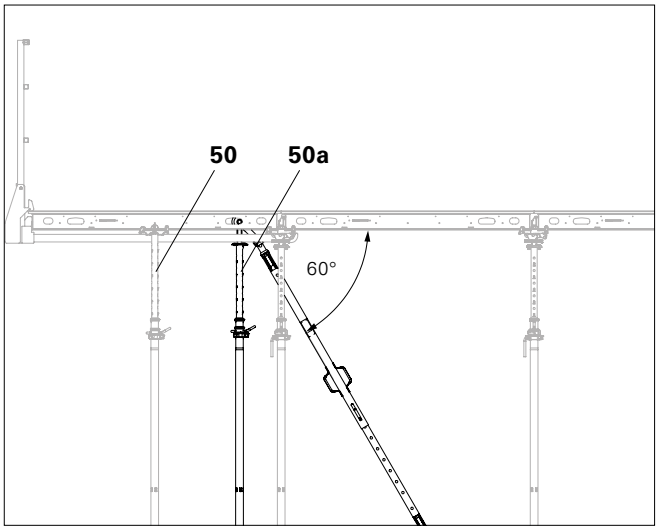


Fig. B9.02a

B9 Bracing

- Bracing in transverse direction – e.g. concrete joints.
- For a description of the assembly procedure, see Section A9 Tensioning unit.

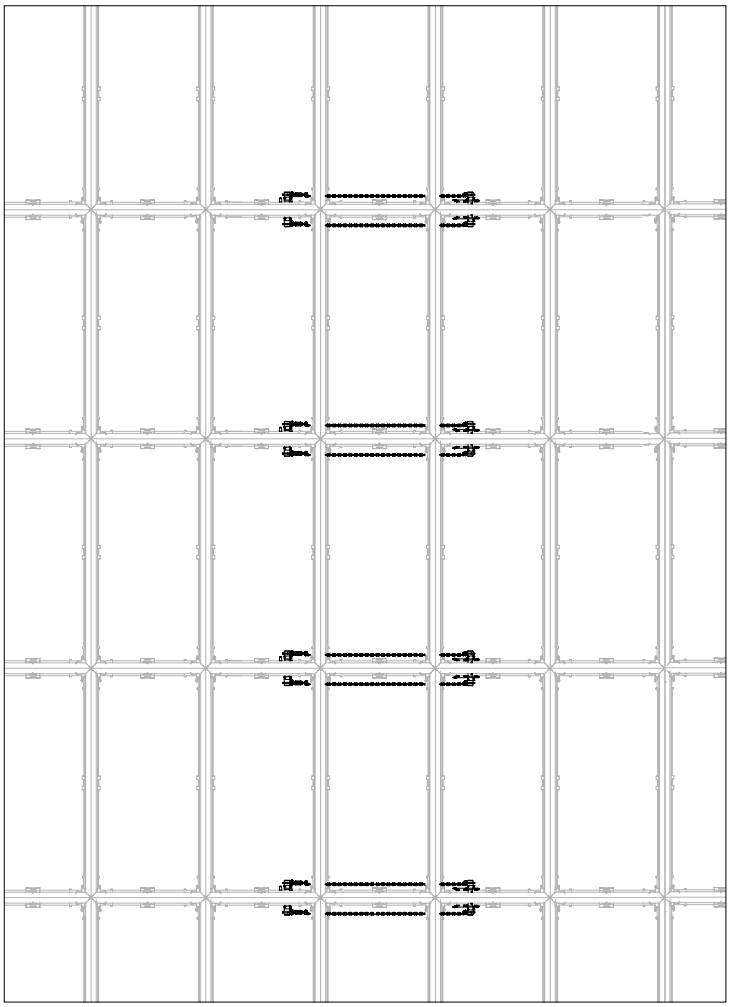


Fig. B9.03

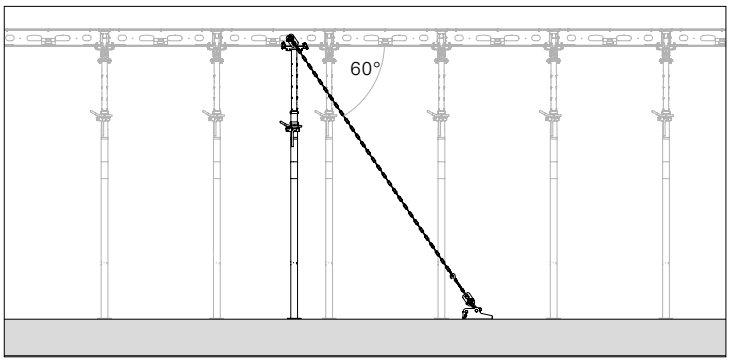


Fig. B9.04

B9 Bracing



- When using Guardrail Unit SXP GU and Guardrail Post Holder SXP GPR T2 / GPL T2 at the same panel at the same time, the specifications for bracing for guardrail post holders are applicable, see Section “B7 Cantilevers, guardrails” on page 85.
- When using double compensation beams, brace both compensation beams with one tension sleeve each.
- Select the formlining blockouts such that striking is possible.
- if necessary, the formlining must be supported with additional slab props (observe max. influence width of compensation beams and max. possible span width of the formlining used).
- Fix the formlining to the compensation beams with screws.
- See Section B5 “Filler areas” and B6 “Shuttering around columns”.
- Use PPE if necessary.
- Cantilevers may only be accessed after bracing has been mounted.

- Cantilevered slab with building column with Compensation Beam SXP AB 200 T2
  - Bracing via Tension Sleeve SAO (this is attached to the compensation beam beforehand)

Assembly sequence

First set up the panels to the right and left of the filler area.

Place the slab props (**50a**) under the panels in a fully recessed manner.

1. Pre-assemble the base plate.
2. Pre-assemble the Tension Sleeve SAO (**77**) on the Compensation Beam SXP AB 200 T2 (**12**), suspend the Anchor Chain 250/3.0 kN in the Tension Sleeve SAO.
3. Hook the compensation beam into the prop head (**50b**), hook the Anchor Chain 250/3.0 kN into the base plate.
4. Swivel up the compensation beam and prop it with the shuttering aid.
5. Secure the adjacent panel with a shuttering aid and move the slab props (**50a**) out from under the compensation beams.
6. Tighten the Turnbuckle M12/3.0kN in the Anchor Chain 250/3.0 kN.
7. Repeat the procedure for all compensation beams

When using the Side Mesh Barrier PMB, refer to Section “Installing the guardrails” on page 88 .

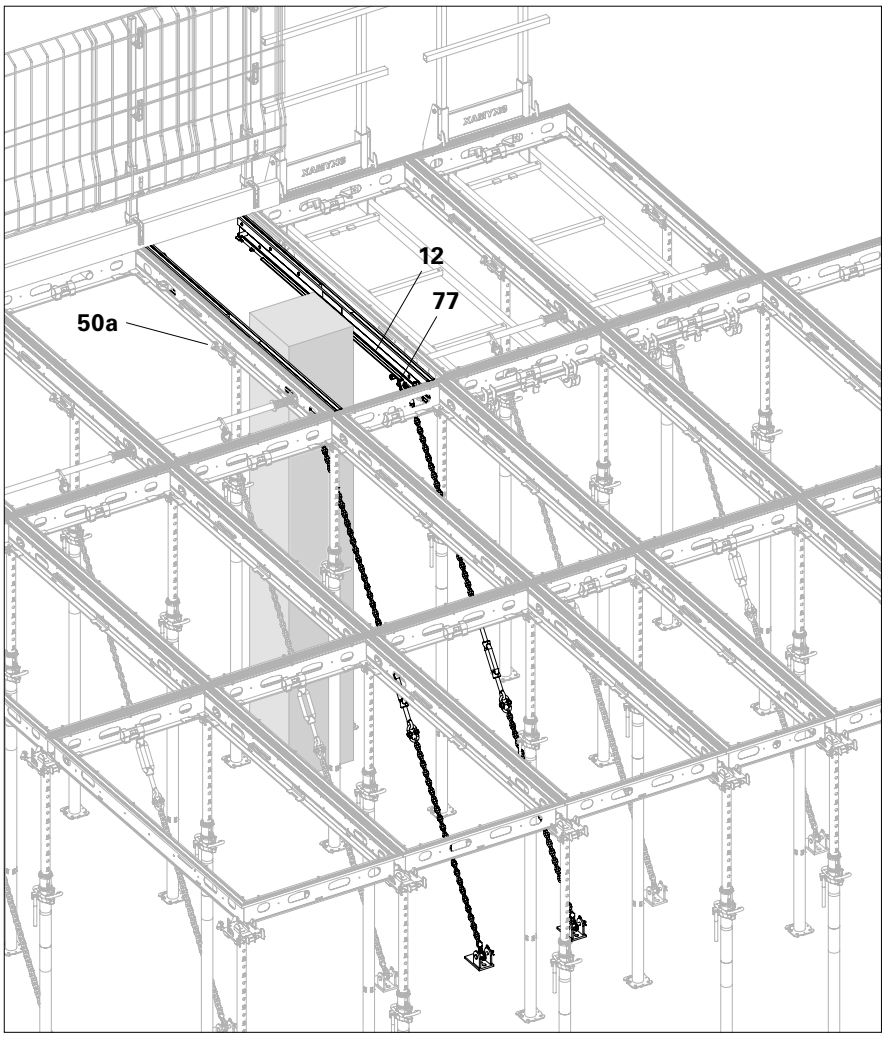


Fig. B9.05

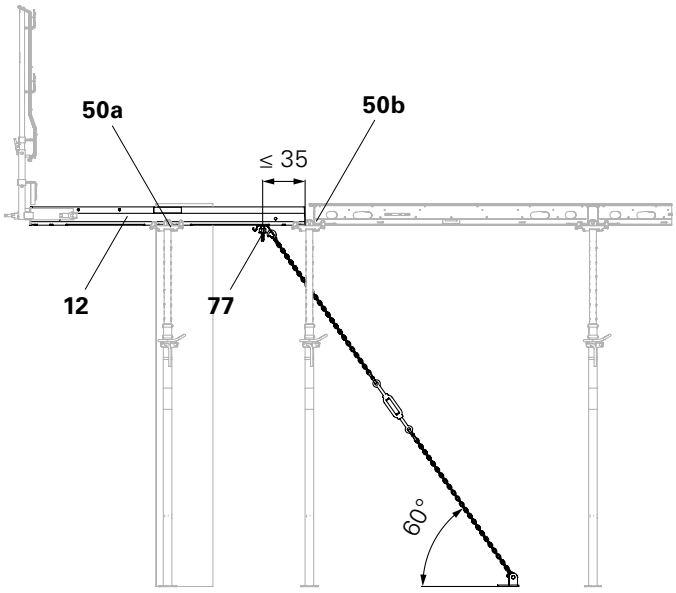


Fig. B9.05a

Shuttering without wall

Buildings with a skeleton structure require precise, project-specific planning of the construction sequence.

Required for assembly: Frame PRK, props and prop head.

Assembly

1. Connect three props (**50**) to two Frames PRK (**58**) and adjust to the required height. (Fig. B10.01)
2. Hook in the panel (**1**) and swivel it up, have another person push the foremost prop (**50a**) to the side and swivel the panel (**1**) past it.
3. Move the prop (**50a**) back and place the panel on it. Place the Shuttering Aid SXP A (**21**) centrally on the floor to secure the panel (**1**). (Fig. B10.02)
4. Erect another prop (**50c**) next to the rear prop (**50b**). Attach the second panel (**1**) to the heads of the props, swing it up and secure it with Shuttering Aid SXP A (**21**). (Fig. B10.03)

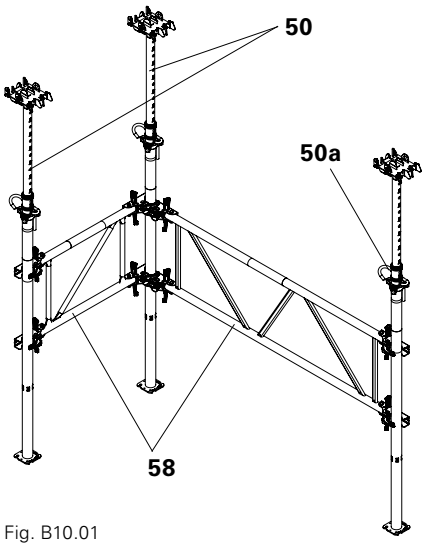


Fig. B10.01

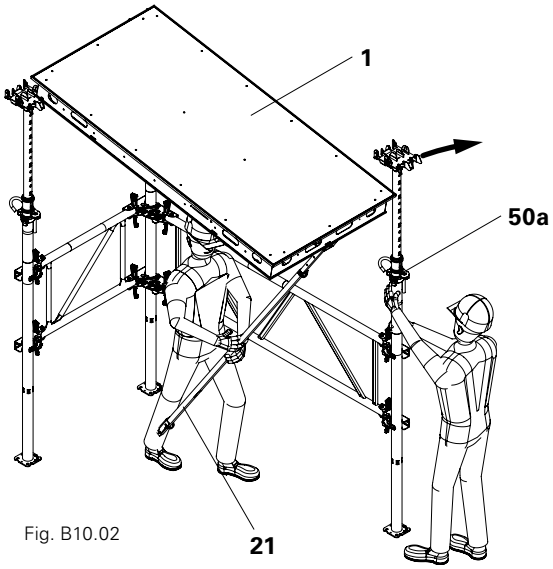


Fig. B10.02

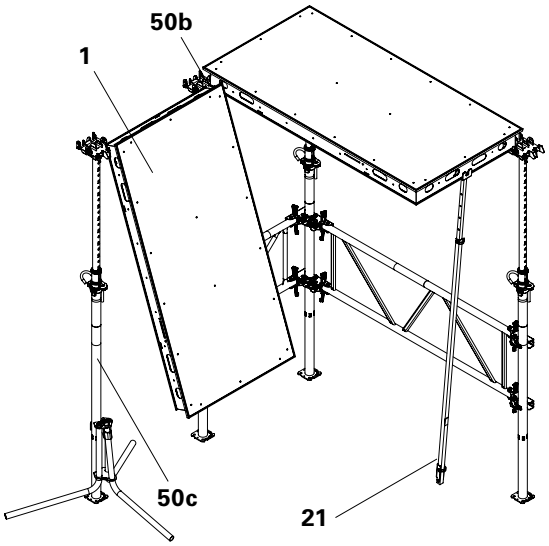


Fig. B10.03

5. Fit the two front props (**50**). (Fig. B10.04)
6. Complete the Frames PRK (**58**) on the first panel using two more frames to form a rectangle. (Fig. B10.05)

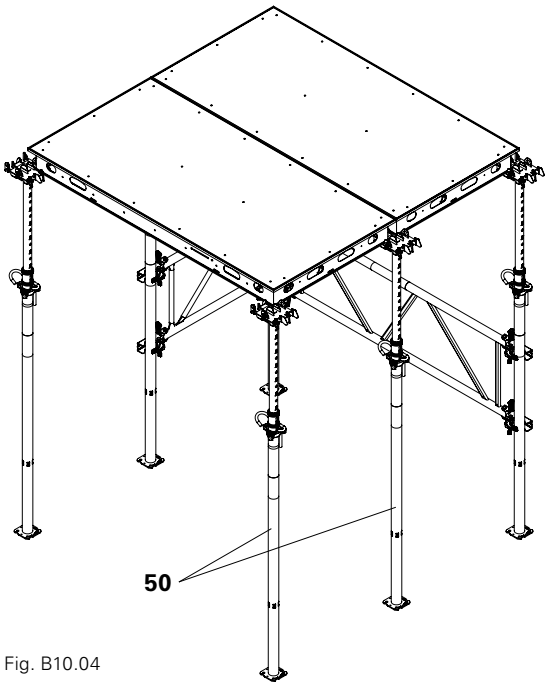


Fig. B10.04

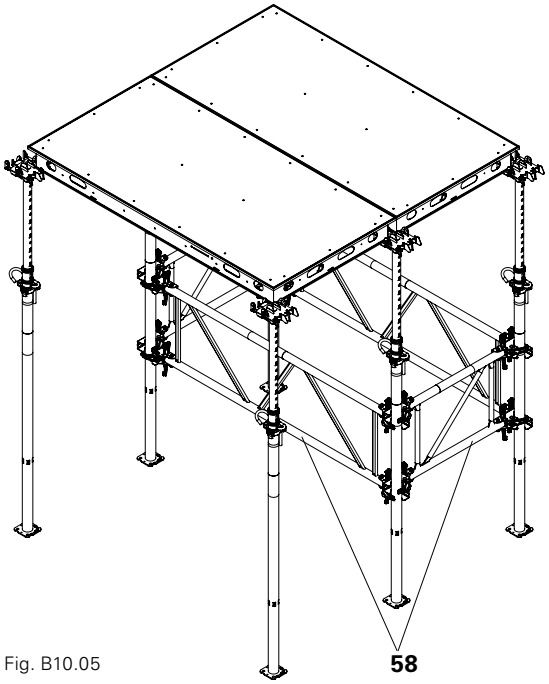


Fig. B10.05

B11 Assembly without a starter beam

Slab formwork without starter beams must always be erected with recessed prop heads.
This is only possible with a Prop Head SXP S or SXP S Poly on the wall side.

The slab props in the first row must be secured with tripods to prevent them from falling over.

1. Erect two props (**50**) with Prop Head SXP S (**7**) and secure with tripods (**51**). Hook blocks of Prop Heads SXP S must point in the shuttering direction.
   – First prop in the corner of the room must be moved close to both walls.
   – Set up the second prop at the shorter wall with a spacing of 90 cm to the first prop. (Fig. B11.01a)
2. Attach Panel SXP P with the recessed prop head support (**1.7**) to the teeth of Prop Heads SXP S (**7**). (Fig. B11.01b)
3. For the rest of the assembly procedure, see Section "Panels" on page 56.

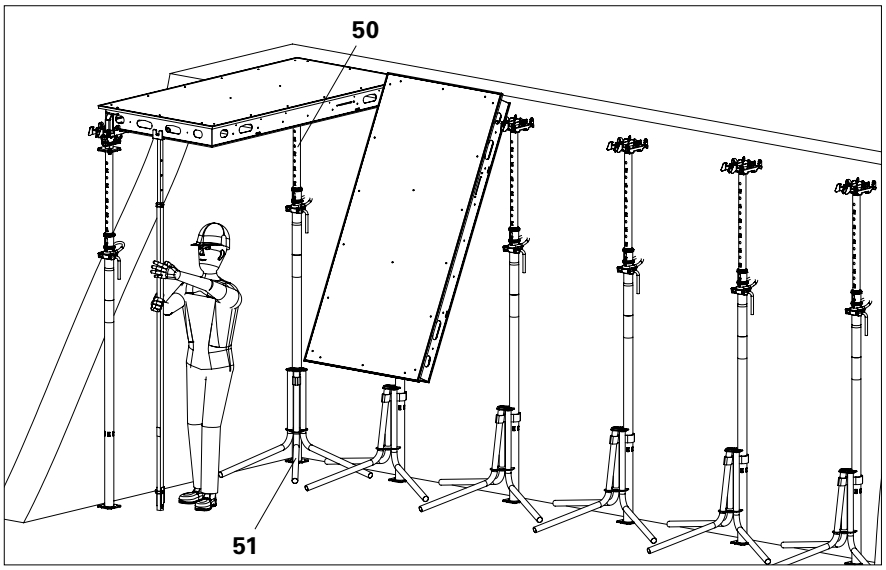


Fig. B11.01

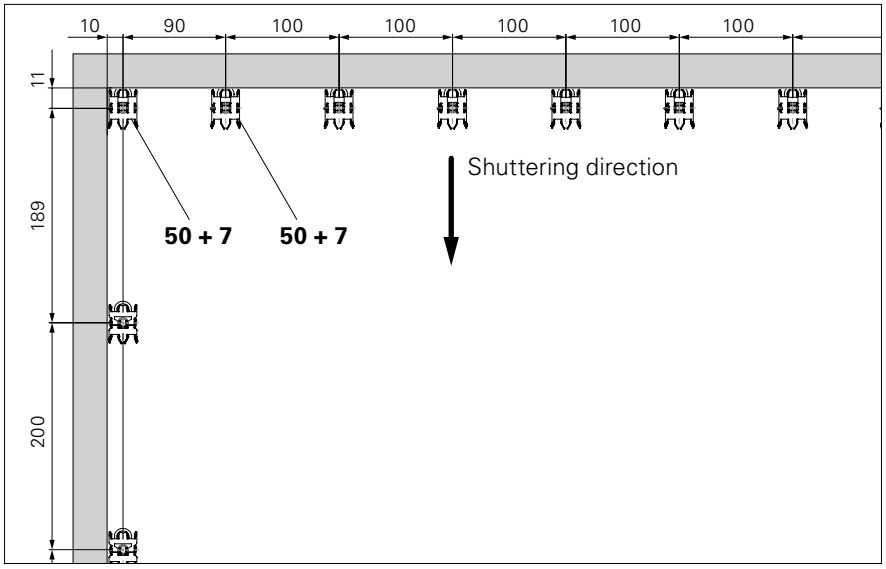


Fig. B11.01a

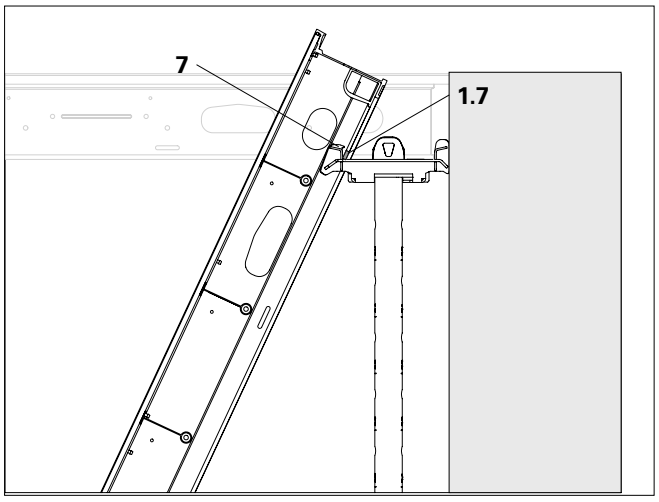


Fig. B11.01b

Forming above 3.80 m

When using the starter beam, only the lowering head may be used for safety reasons.

Recommendation: up to a height of 4.70 m

Position the PERI UP Mobile Working Platform 100 (**59**).
Together with another worker, pick up the panel from the stack and climb up the wide stairs onto the PERI UP Mobile Working Platform (**59**) and hook in the panel. (Fig. B12.01)
This is pivoted upwards in the same way as you would for heights up to 3.80 m, see Section B3, "Control range".
When pivoting upwards above a height of 3.80 m, use Shuttering Aid SXP A 530 instead of the Shuttering Aid SXP A.

Use PERI UP Mobile Working Platform 75 for up to 4.50 m, PERI UP Mobile Working Platform 100 for up to 4.70 m and Stripping Cart ASW465 (article number 102031) for up to 5.30 m.

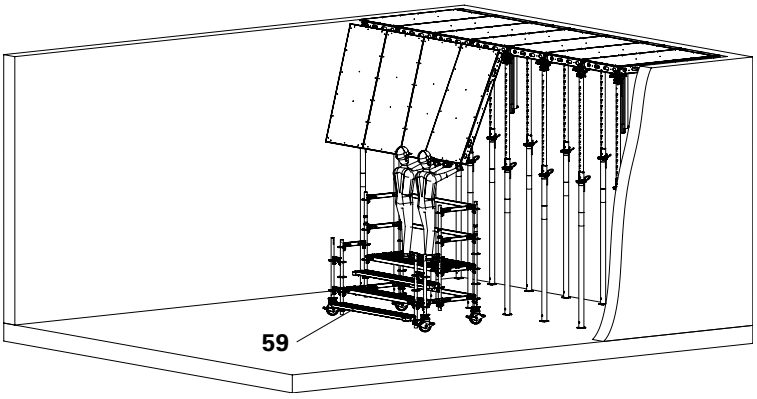


Fig. B12.01

B13 Outside corners

Solutions for forming outside corners are available for the SKYMAX Large Panel Slab Formwork.

Outside corner solutions:
- with building column right at the edge
- recessed with building columns
- without building columns.

See the Instructions for Assembly and Use for the SKYMAX Outside Corner.

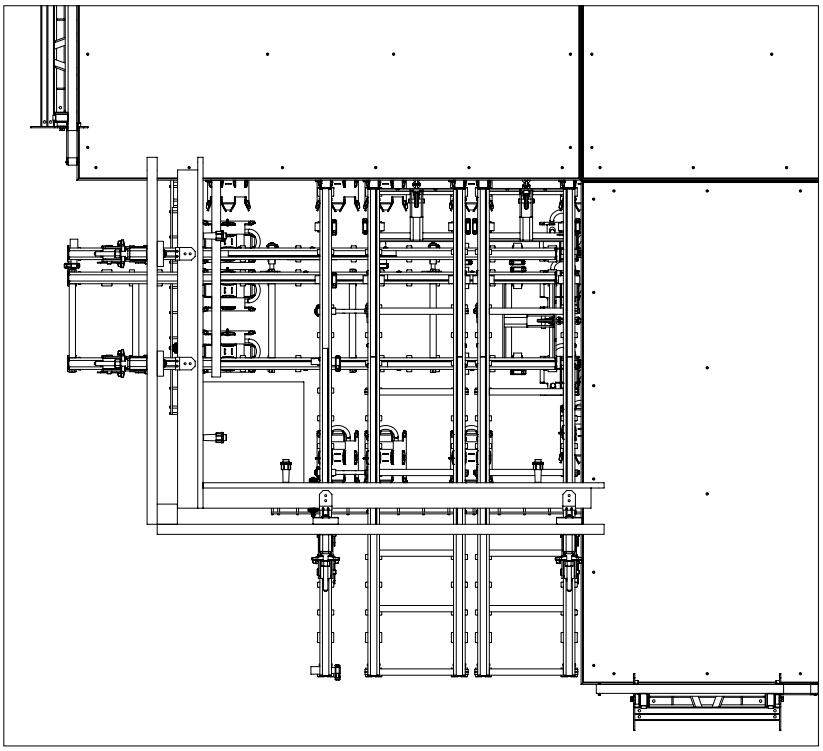


Fig. B13.01

B14 Slab Tables

Solutions for slab tables are available for the SKYMAX Large Panel Slab Formwork.

Slab table sizes:
- 200 x 400 cm
- 200 x 600 cm
- 400 x 400 cm
- 400 x 600 cm

See the Instructions for Assembly and Use for the SKYMAX Slab Table.

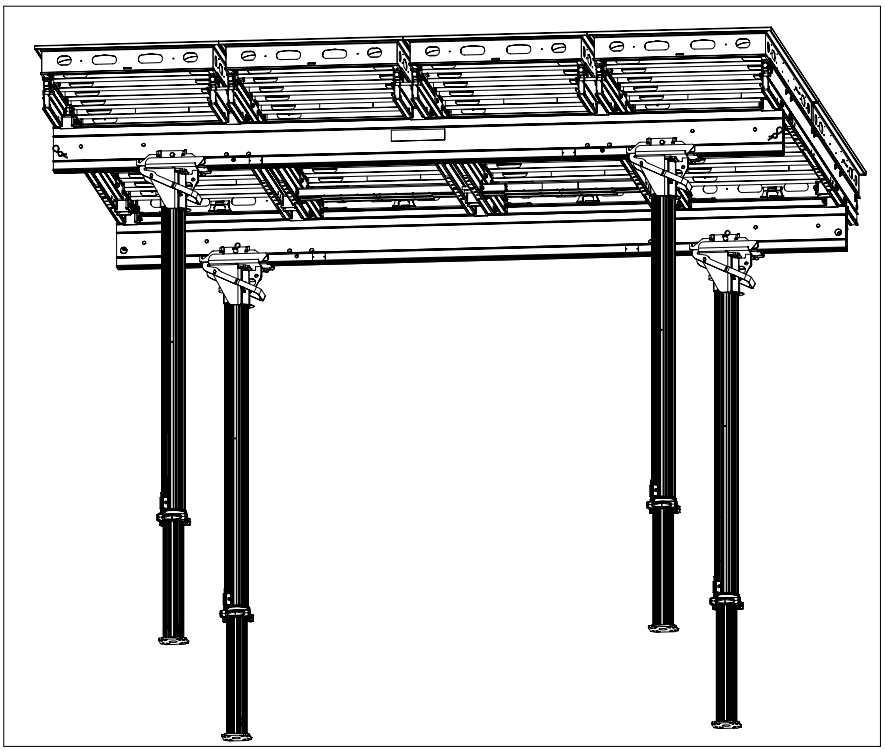


Fig. B14.01

C1 Deshuttering – General information

- Only begin deshuttering when the concrete has sufficiently hardened and the person in charge has given the go-ahead for deshuttering to take place.
- Early striking is only possible if the system makes use of a lowering head and additional slab props for backpropping, see Table "Prop loads for backpropping and required concrete strength" on page 150.
- As a general rule, the striking procedure should be carried out by reversing the shuttering process.
- Do not lower slab props too far or the panels will no longer hold them in place and they will become unstable.
- Secure any slab props that are free-standing at a later time using tripods to prevent them from falling over.
- When striking, always secure panels that are not held in place by 4 slab props with a shuttering aid.
- Secure shuttering aids so they cannot be knocked over.
- Strike the corner areas and longitudinal infill areas first.
- Striking is always carried out in the longitudinal and transverse direction starting from the corner area.
- Remove the wall holder only when dismantling the panel which is directly connected to it.
- Only remove the bracing if the instructions tell you to do so or if the panel which is directly connected to it is being dismantled.

Depending on the way the work is organised, the entire panel row can be pivoted downwards first and then detached.
Alternatively, each panel can be detached and taken away as soon as it is pivoted downwards, as described above.

General information

Use two shuttering aids for the striking process. Position the shuttering aid that becomes available at the next free panel.

During the striking process, the panels can become stuck to the concreted slab. If the panel cannot be released using its weight force alone, use an additional shuttering aid to release the panel.

1. Adjust the Shuttering Aid SXP A (**21a**) to the appropriate length: Clear room height less approx. 20 cm.
2. Open the hinged step (**21.2**) and put the linch pin back into position (Fig. C1.01 + Fig. C1.01a)
3. Insert the head into the grip hole on the panel and align the shuttering aid vertically. (Fig. C1.02 + Fig. C1.02a + Fig. C1.02b)
4. Secure the panel in the middle of the panel edge using the second shuttering aid (**21b**). (Position used for pushing the panel upwards.)

⚠ Make sure that your standing position is secure before stepping on the hinged step.

5. Step on the hinged step, if necessary, give the shuttering aid a slight kick until the panel comes away from the slab.

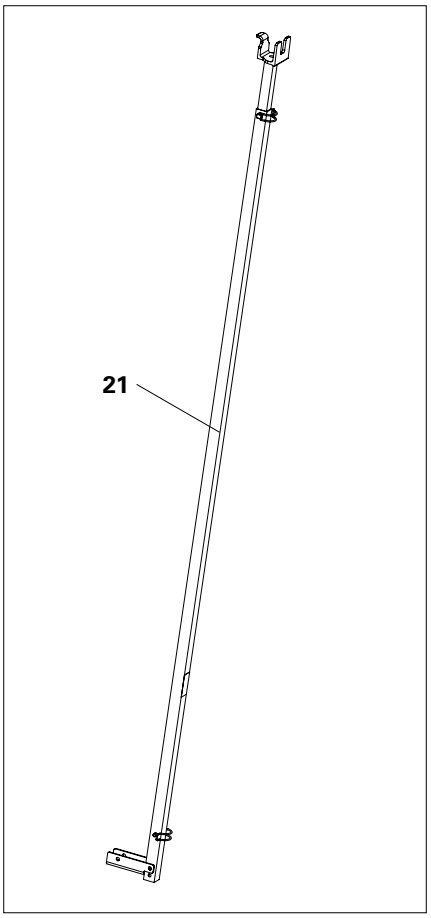


Fig. C1.01

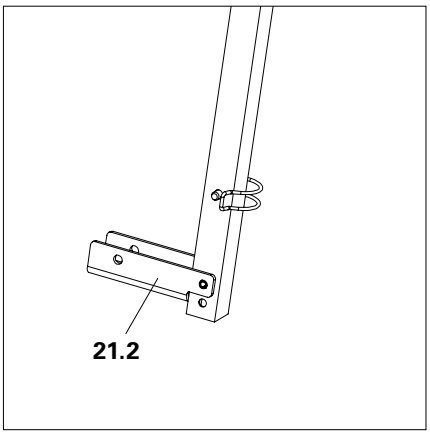


Fig. C1.01a

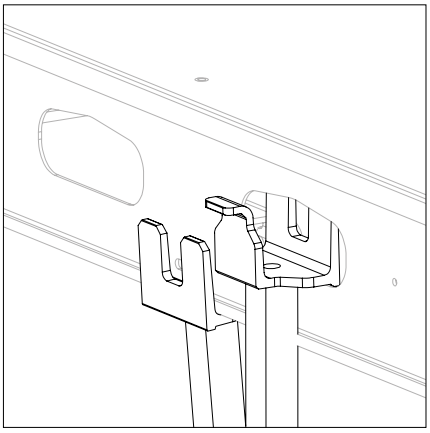


Fig. C1.02a

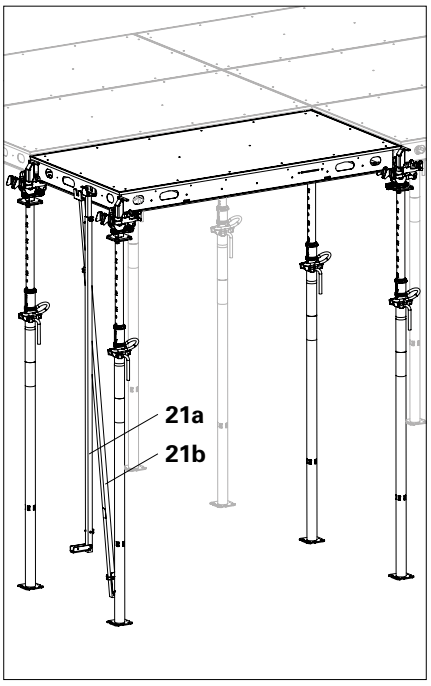


Fig. C1.02

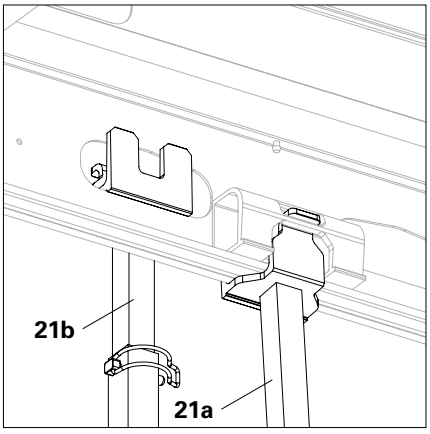


Fig. C1.02b

Corner areas

1. Secure the Double Telescopic Girder SXP TBR/TBL 200-300 (**34**) and the formlining with the shuttering aid (**21**) to prevent them from falling down.
2. Use the adjusting nut to lower the slab props (**50**) beneath the corner area by approx. 2.5 cm.
3. Remove the slab props (**50**) in the corner.
4. Remove the Double Telescopic Girder SXP TBR/TBL 200-300 (**34**) and formlining.
5. If necessary, use the shuttering aid to detach the compensation beam including formlining from the concrete slab. (Fig. C2.01)

First secure any formlining that may be stuck, then remove it in a controlled manner.

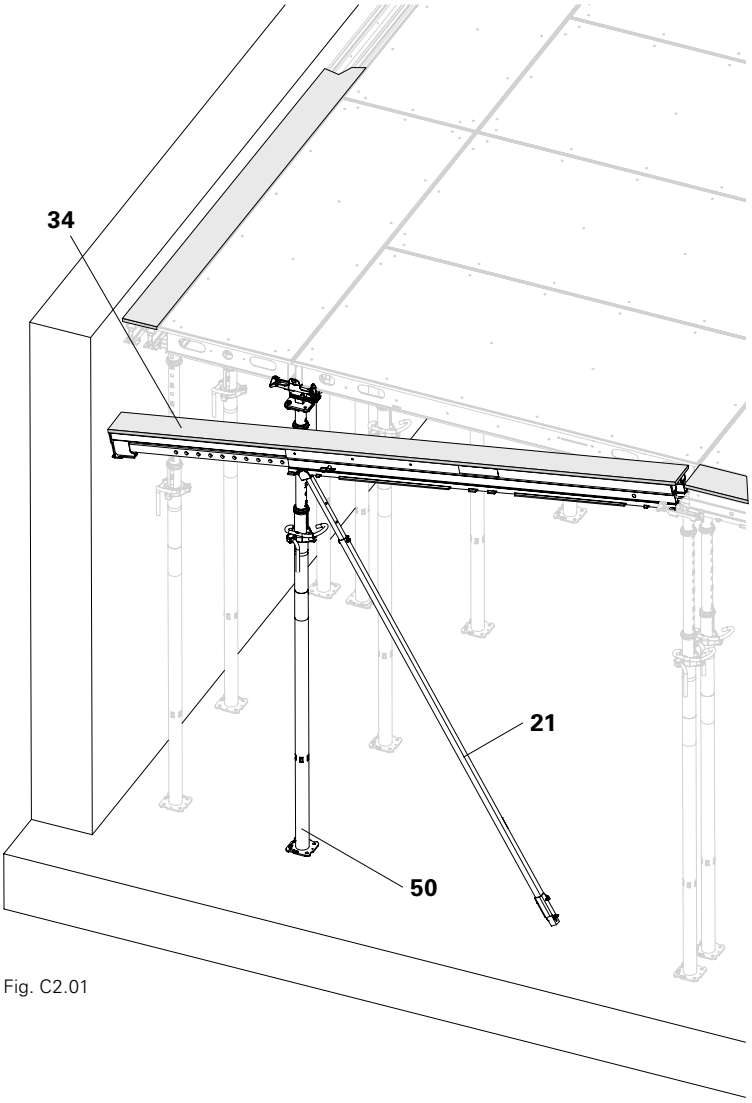


Fig. C2.01

Longitudinal infill

When removing filler panels that are installed at right angles to the prop head, have two people remove them immediately instead of leaving them to hang down.
To swing down, engage the slab prop if necessary so that the compensation beam can be swung down.

Depending on the size of the filler area and the concrete strength, check whether backpropping will need to be provided by an additional slab prop, see Section E3 Prop load, "Backpropping" on page 112.

Longitudinal infill at final row of panel props

(filler area 10 - 19 cm)

Dismantling

1. Use the adjusting nut to release both slab props on the first compensation beam and lower it by 2.5 cm.
2. Use a shuttering aid (**21**) to release the compensation beam (**12**) with its bolt-on formwork panel from the concrete.
3. Prop up the compensation beam (**12**) and the adjacent panel (**3**) facing the corner area with shuttering aids (**21**). (Fig. C2.02)
4. Remove the slab prop (**50**) on the side facing the corner area.
5. Use a shuttering aid (**21**) to pivot the compensation beam (**12**) with its bolt-on formwork panel downwards and detach it from the other prop head (**7**). (Fig. C2.03)
6. Position the shuttering aid in the next filler area.
7. Remove adjacent panel, see Section "C3 Control range" on page 110.
8. Repeat the striking procedure for the entire longitudinal filler area.

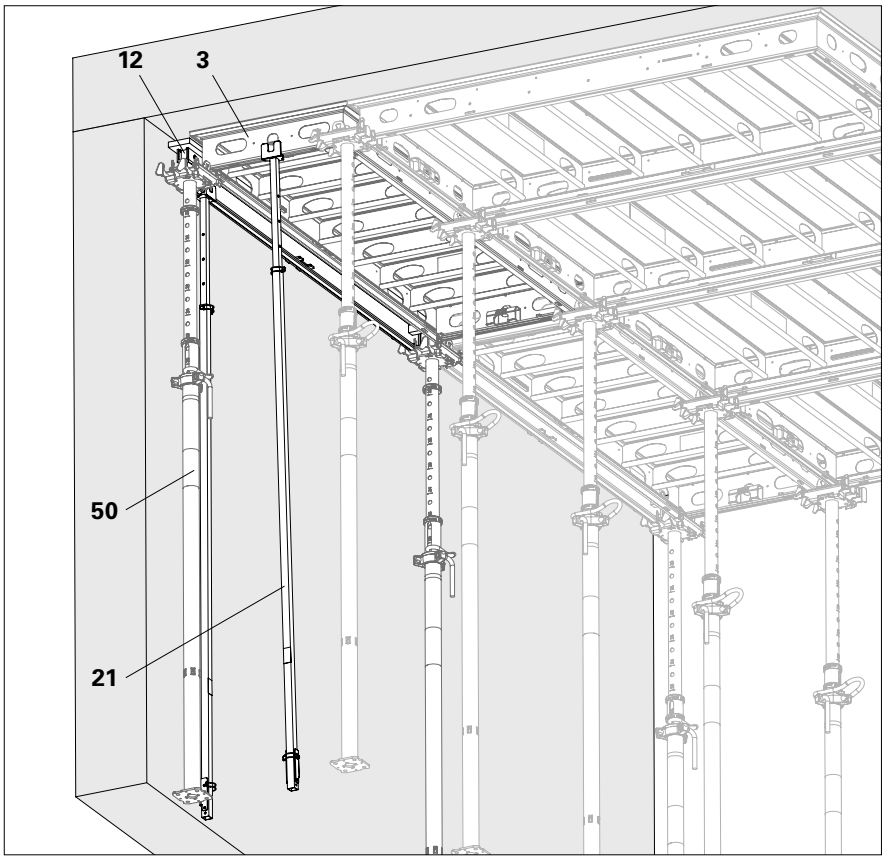


Fig. C2.02

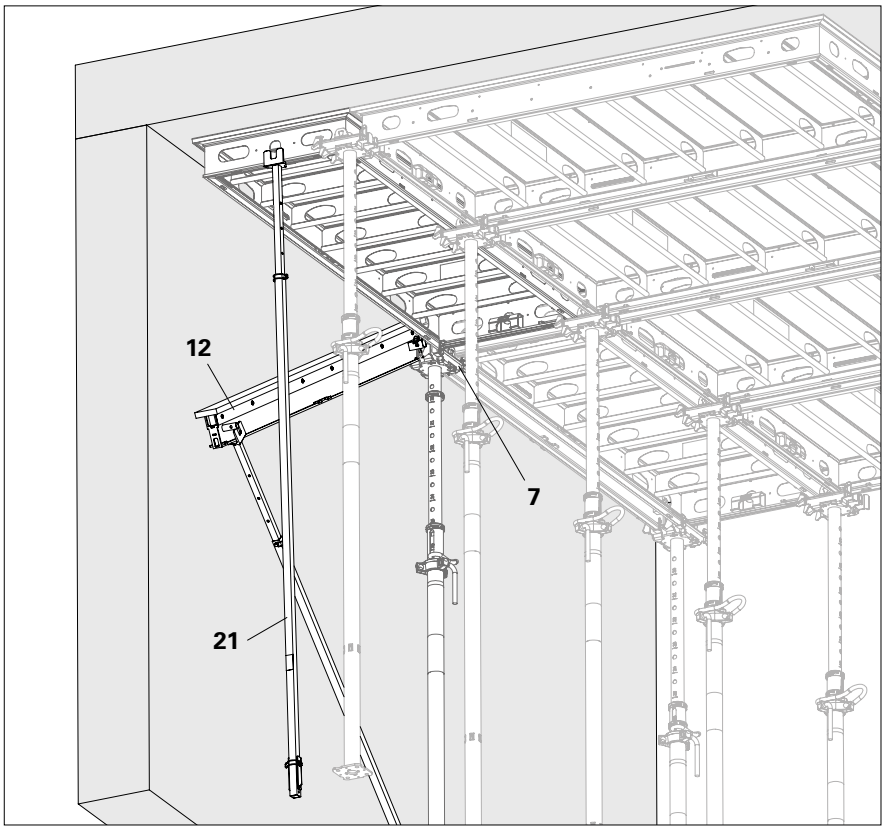


Fig. C2.03

Longitudinal infill at additional row of props

(filler area 19 - 33 cm)

Dismantling

1. Use the adjusting nut to release both slab props (**50**) on the double compensation beam (**30**) and lower it by approx. 2.5 cm.
2. Use a shuttering aid (**21**) to release the double compensation beam (**30**) with its bolt-on formwork panel from the concrete.
3. Use a shuttering aid (**21**) to prop up the double compensation beam (**30**) facing the corner area.
4. Remove the slab prop on the side facing the corner area.
5. Use a shuttering aid (**21**) to pivot the double compensation beam (**30**) with its bolt-on formwork panel downwards and detach it from the other prop head (**7**).
6. Position the shuttering aid in the next double filler area.
7. Repeat the striking procedure for the entire longitudinal filler area.
8. Remove the adjacent panels, see Section “C3 Control range” on page 110.

(Fig. C2.04 + Fig. C2.05)

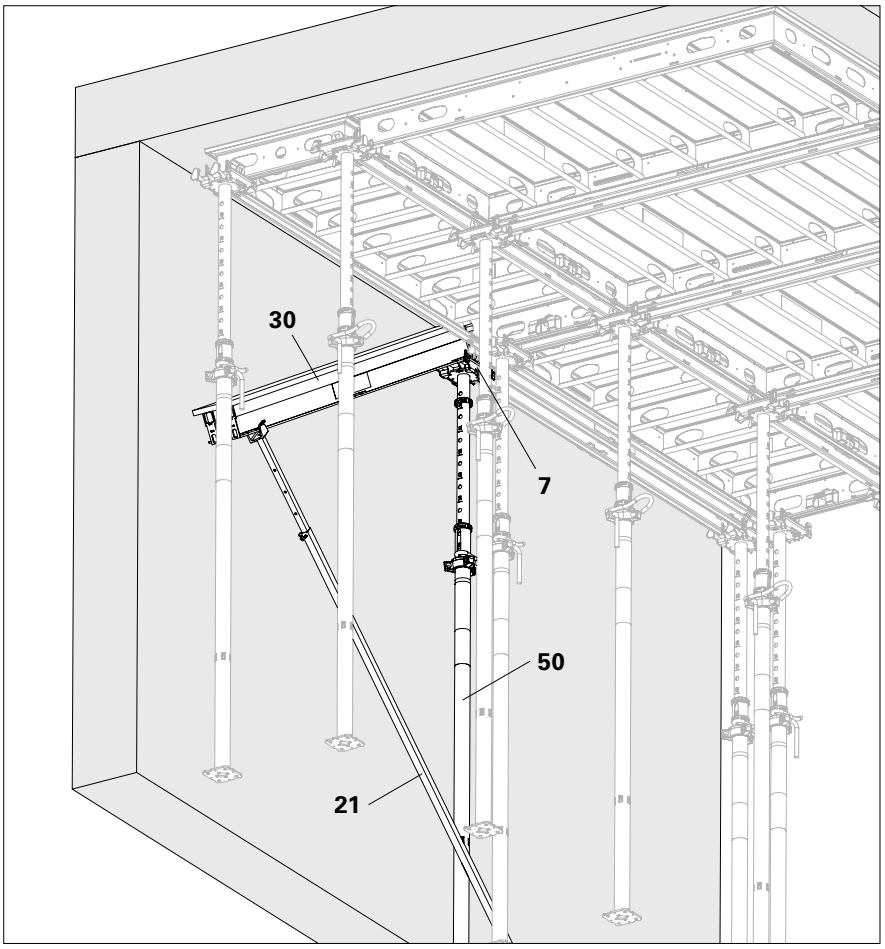


Fig. C2.04

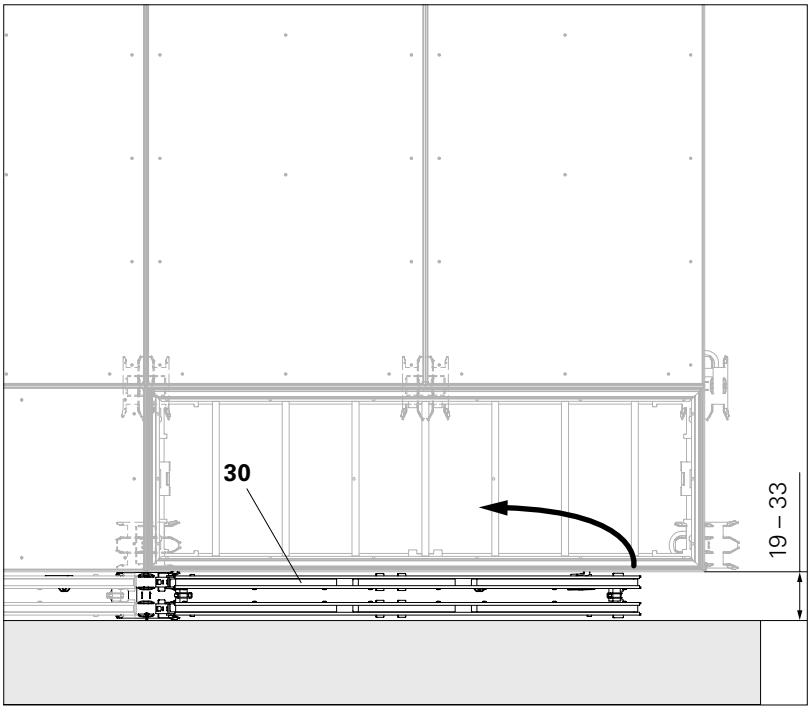


Fig. C2.05

At final row of panel props and additional row of props

(filler area 33 - 43 cm)

Dismantling

1. Prop up the panel (**2**) with a shuttering aid and place the slab prop (**50a**) at the panel edge in a recessed manner.
2. Use the adjusting nut to release the slab props on the compensation beam (**50b**) and lower it by approx. 2.5 cm. (Fig. C2.06)
3. Use a shuttering aid (**21**) to release the double compensation beam (**30**) with its bolt-on formwork panel from the concrete.(Fig. C2.07)

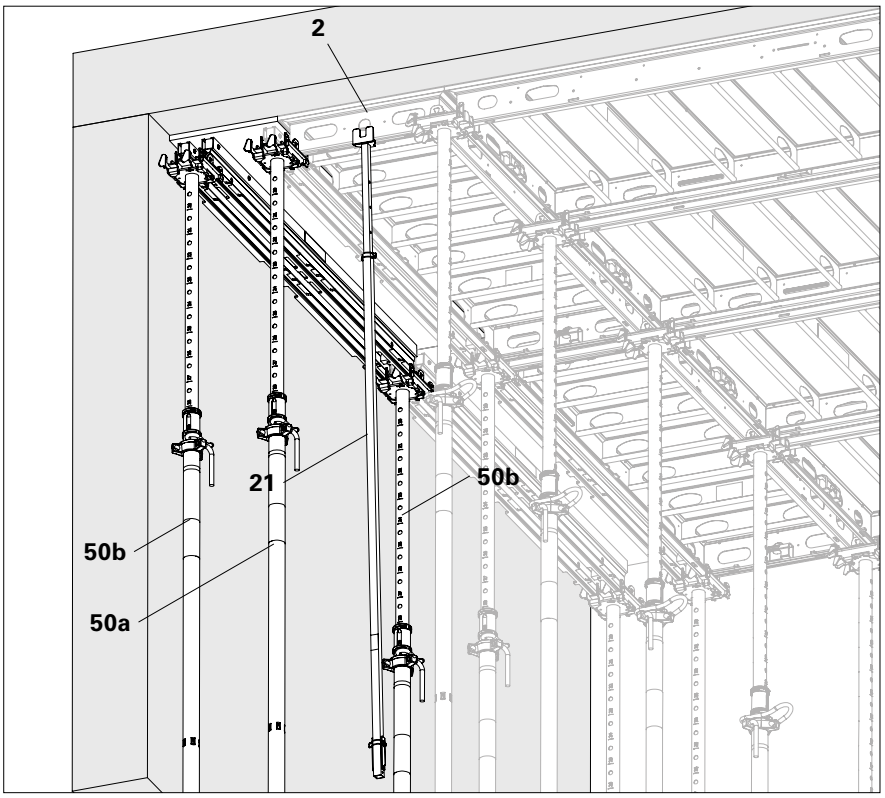


Fig. C2.06

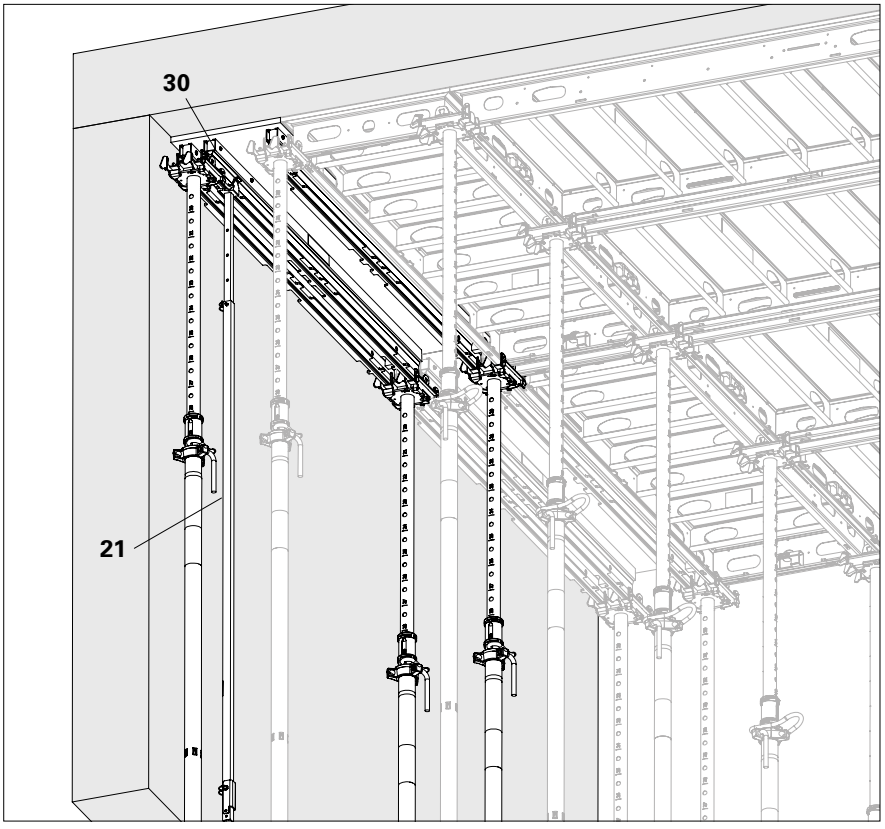


Fig. C2.07

5. Remove the slab prop on the side facing the corner area.
6. Use a shuttering aid (**21**) to pivot the double compensation beam (**30**) and its compensation beam (**12**) bolted-on with a formwork panel downwards and detach it from the prop heads (**7**).
7. Position the shuttering aid in the next filler area.
8. Repeat the striking procedure for the entire longitudinal filler area. (Fig. C2.08)
9. Remove the adjacent panels, see Section “C3 Control range” on page 110.

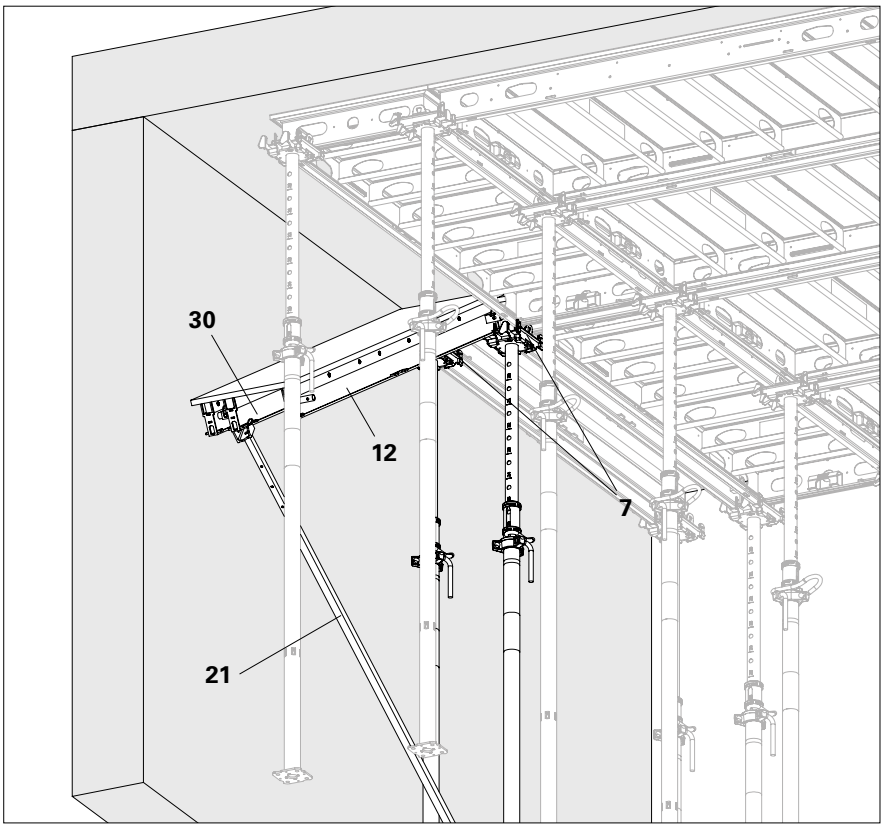


Fig. C2.08

Transverse infill

Dismantling
The transverse infill is dismantled row by row together with the control range.

Pivot the compensation beam and double compensation beam downwards in the direction of the remaining formwork. This will mean that there are no free-standing slab props.

The striking procedure is carried out in the manner described in the longitudinal infill section.

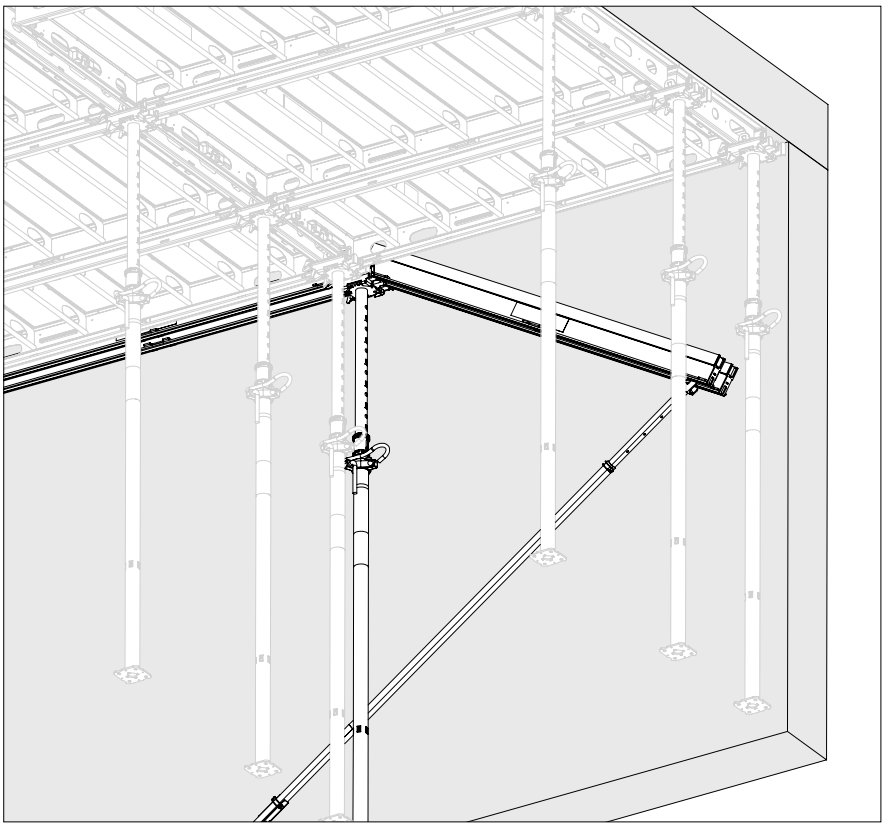


Fig. C2.09

Lowering head system
(In case of early striking)

First panel row

Strike the longitudinal filler area first.

Dismantling

1. Lower all of the lowering heads (**6**) in the second row of slab props. Release the lowering head wedges (**6.3**) with a hammer. (Fig. C3.01a)
   → This causes the yellow section of the lowering head to drop down by approx. 2.5 cm.
   → The first panel row is released, the second panel row remains supported.
2. From the perspective of the filler area, prop up the first two panels with shuttering aids. (Fig. C3.01)
3. Use the adjusting nut to release and remove both slab props (**50**) on the first panel on the outer side.

Working from ground level, use the Striking Hammer SXP SH to safely detach the lowering head wedges, see Section A4 Shuttering aid, "Striking Hammer SXP SH".

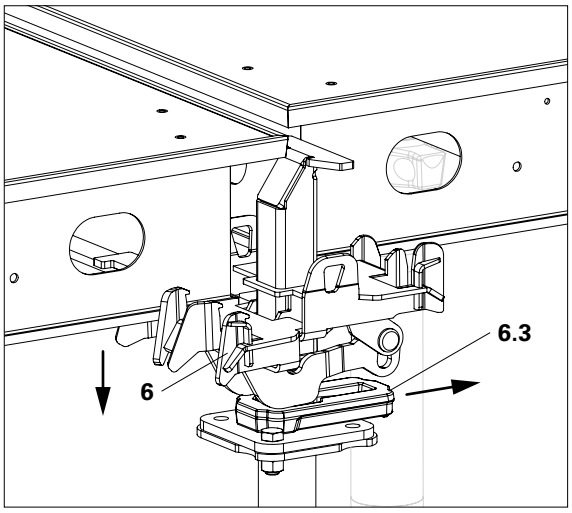


Fig. C3.01a

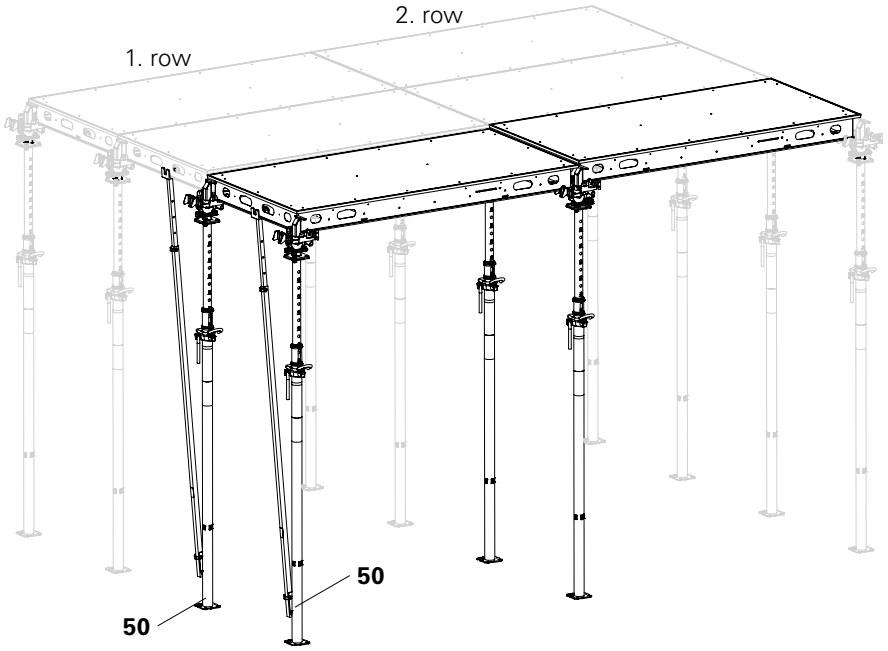


Fig. C3.01

4. Pivot the panel downwards with the shuttering aid (**21**). Position the shuttering aid at the next panel and prop it up. (Fig. C3.02)
5. Have two people raise the panel slightly out of the hook blocks of the lowering heads, remove it and carry it away.
6. Depending on the size of the struck surface and the concrete strength, check whether backpropping will need to be provided by an additional slab prop, see Section "E3 Prop loads" on page 150.
7. Remove the slab prop at the next panel.
8. Pivot the panel downwards with the shuttering aid. Position the shuttering aid at the next panel and prop it up.
9. Repeat the process for the entire first panel row.
   (Fig. C3.02 + Fig. C3.02a)

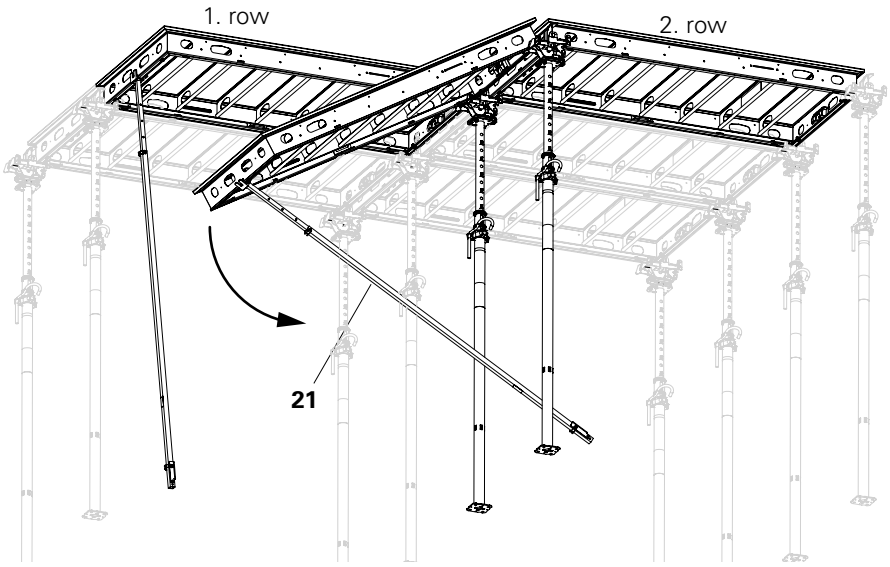


Fig. C3.02

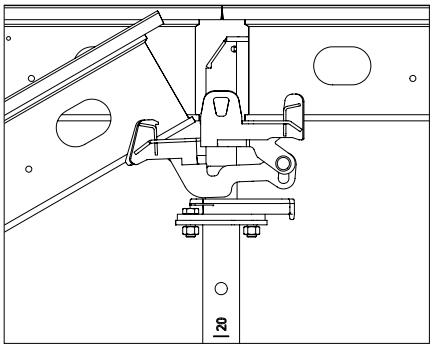


Fig. C3.02a

Other panel rows

Dismantling

1. The striking procedure is carried out in the manner described for the first panel row.
2. Install and tension the backpropping. For prop positions, see Fig. C3.03.
3. Remove the wall holder before pivoting the final panel downwards.

In the lowering head system, it is also possible to carry out the striking process once the final concrete strength of the slab has been achieved.
Due to the slab load of the concreted slab, backpropping is not necessary.

Backpropping

for partial early striking

- Depending on the width of the filler area and the concrete strength, install slab props for backpropping right after the first row of filler panels.
- Select the additional slab props in line with the loads that occur (possibly shoring of loads) and the construction geometry.
- Set up the backpropping in increments of max. 2 x 2 m. See Fig. C3.03.
- Place the slab prop as close as possible to the next panel edge. Spacing max. 20 cm.

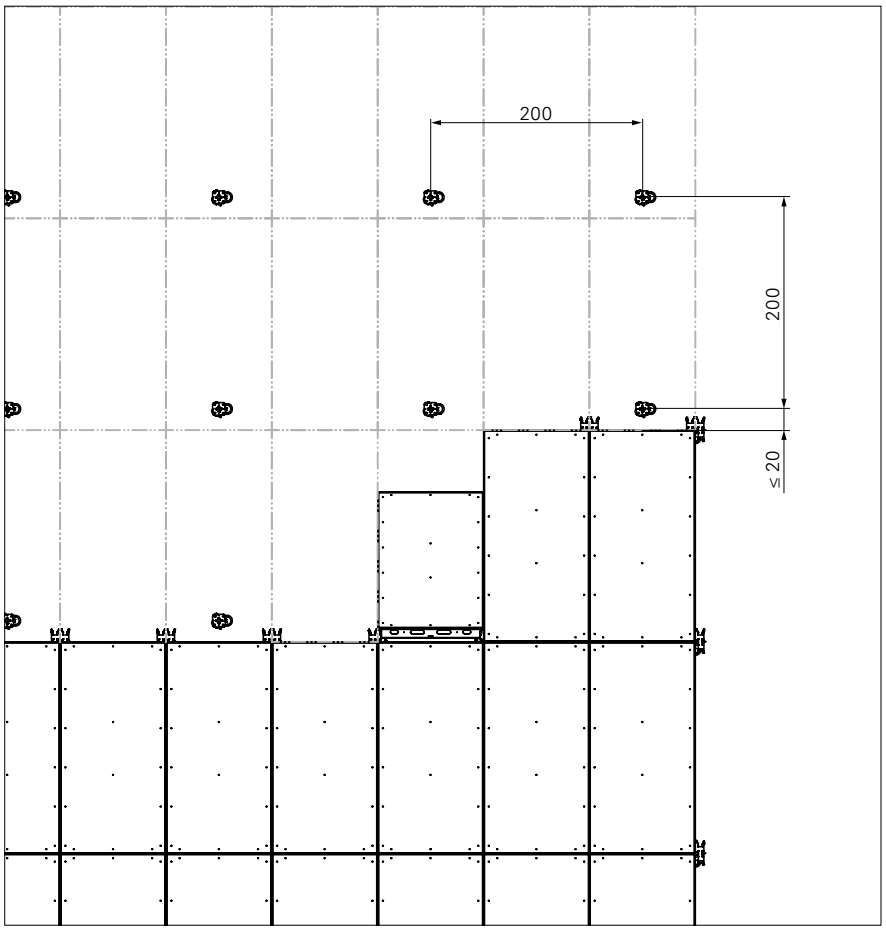


Fig. C3.03

For the loads exerted on backpropping by an early-struck slab and the required concrete strength, see Section "E3 Prop loads" on page 150.

Prop head system

Danger
Only strike once the required concrete strength has been reached!
Otherwise the slab can collapse.
⇒ Retract components only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for striking to take place.

Warning
Do not lower the props too far!
Otherwise the props will be unstable, could fall down and could strike personnel and objects.
⇒ Lower props in the manner specified.

Dismantling
Strike the longitudinal filler area first.

1. Undo the adjusting nuts in the first and second row of slab props and lower by approx. 2.5 cm.
   → The first and second panel rows are released.
2. Carry out the rest of the striking procedure as specified for the lowering head system. Backpropping (step 6) is not required.

(Fig. C3.04 + Fig. C3.04a)

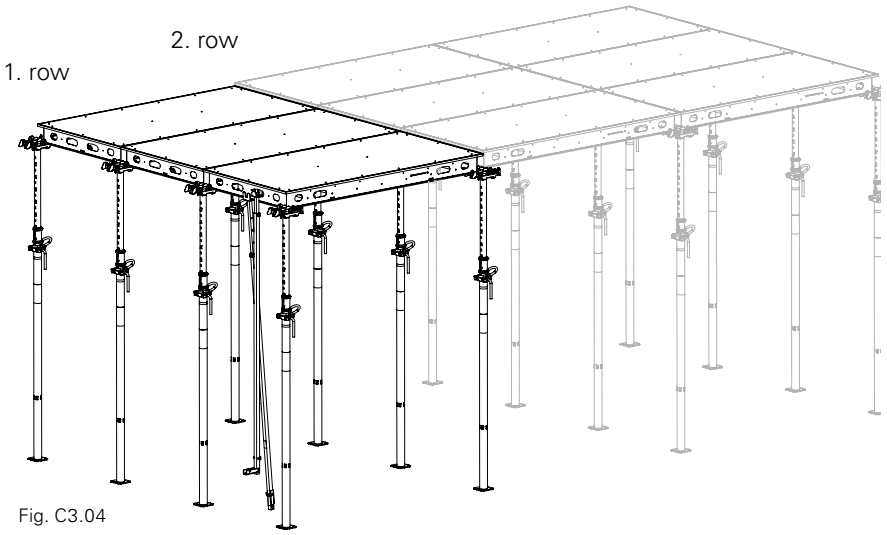
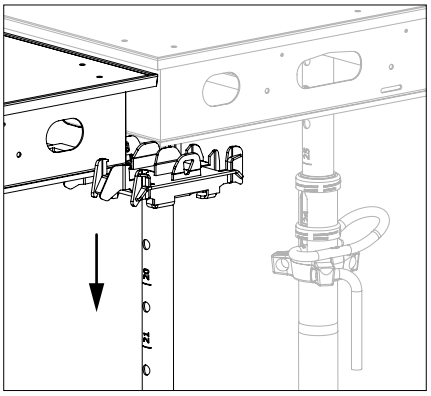


Fig. C3.04


Fig. C3.04a

Lowering head system

Dismantling

Remove all adjacent panels before dismantling the starter beams.

1. Secure each of the slab props installed externally at the starter beam using tripods (**51**) to prevent them from falling over.
2. Dismantle both centre slab props at Starter Beam SXP SB 300 (**9**).
3. Dismantle Wall Holder SXP W.
4. Lower both remaining slab props (**50**) as far as possible. (Fig. C4.01)
5. Use a shuttering aid (**21**) to pivot the starter beam (**9**) downwards and detach it from the Lowering Head SXP L (**6**). (Fig. C4.02)
6. Dismantle slab props and tripods.

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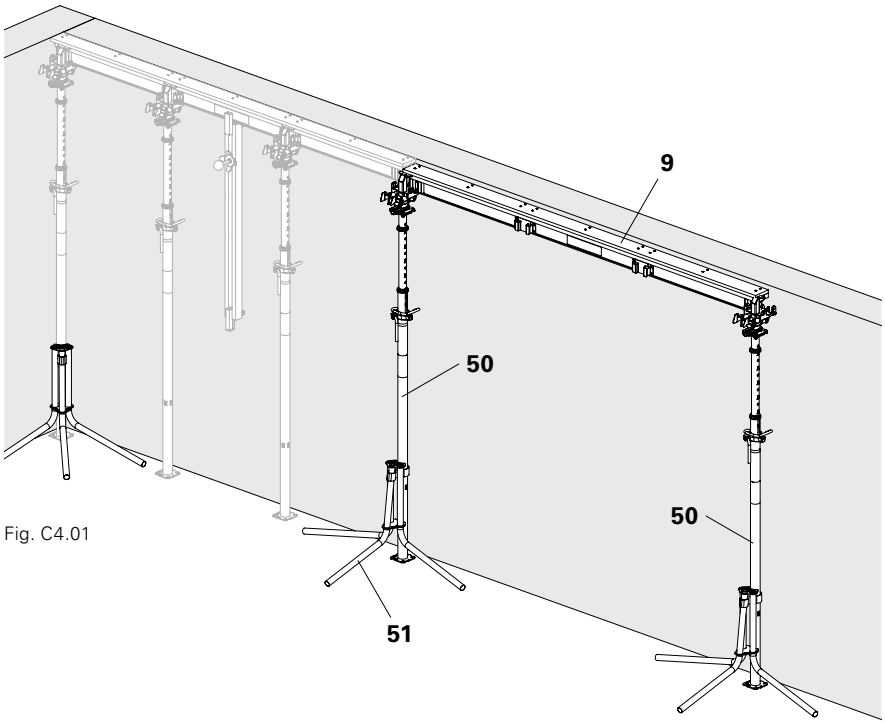


Fig. C4.01

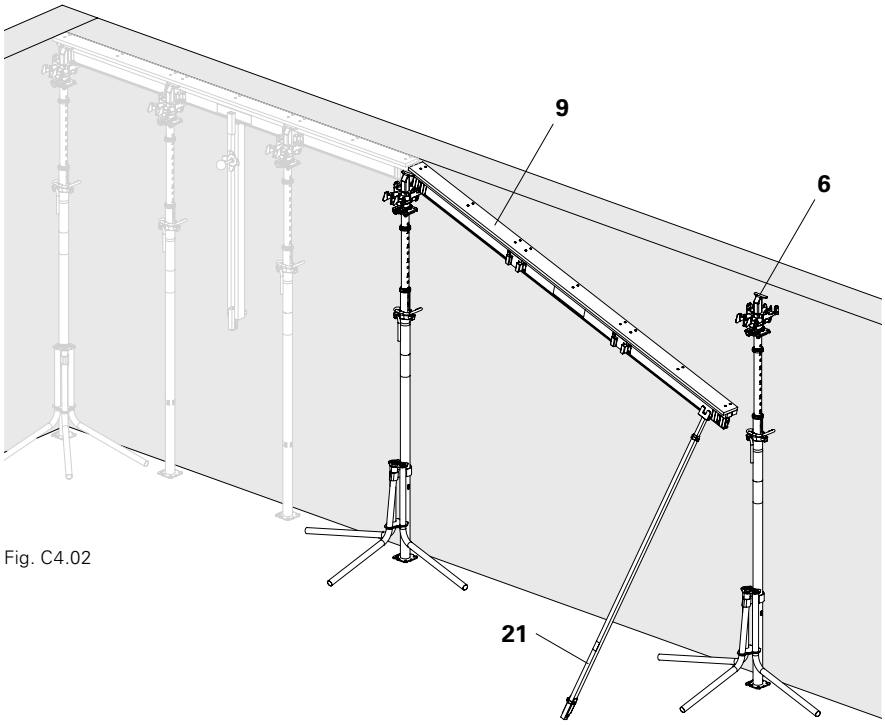


Fig. C4.02

Prop head system without starter beam

Caution

If striking is carried out in the opposite direction to the main shuttering direction, there are no hook blocks between the panel and the head to provide a safeguard!
When it is pivoted downwards, the panel can come away from the prop head (**7**), fall down and injure personnel.

⇒ Pivot the panel downwards carefully.
⇒ Make sure that the panel is held in place in the prop head.

Dismantling

1. Strike the panels in the main shuttering direction until the penultimate panel row, see Section "C3 Control range" on page 113.
2. In the penultimate row of slab props, attach a tripod (**51**) to each slab prop (**50**).
3. In the opposite direction to the main shuttering direction, prop up the first two panels with shuttering aids (**21**).
4. Dismantle wall holders that are connected directly to the panel.
5. Remove both slab props from the panel in the final row of slab props. (Fig. C4.03)

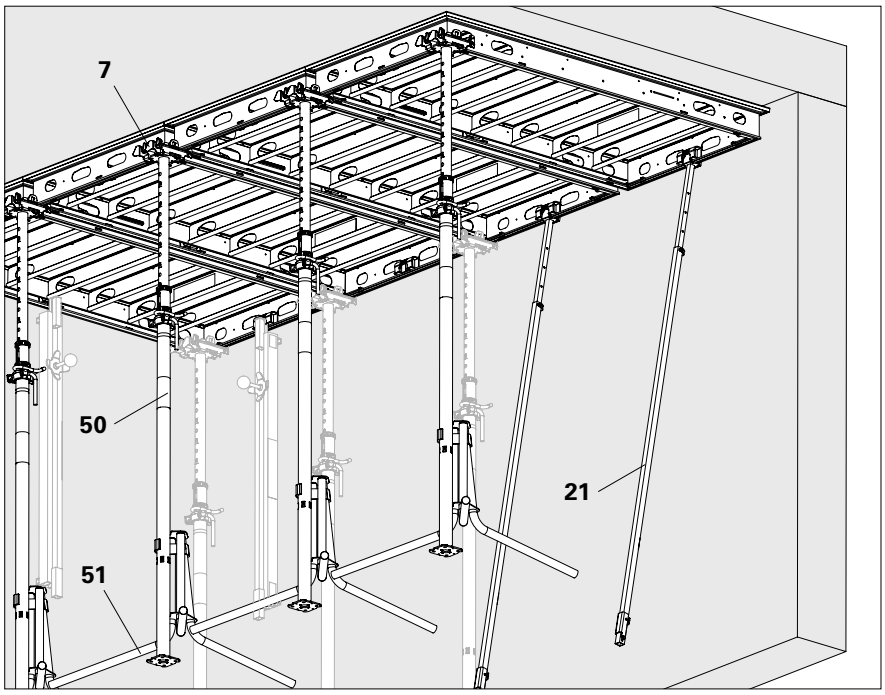


Fig. C4.03

6. Using the shuttering aid, pivot the panel downwards in the opposite direction to the main shuttering direction. Position the shuttering aid in the next panel but one. (Fig. C4.04 + C4.04a)
7. Have two people raise the panel slightly out of the prop heads, remove it and carry it away.
8. Repeat the striking procedure for all other panels.
9. Remove the slab props.

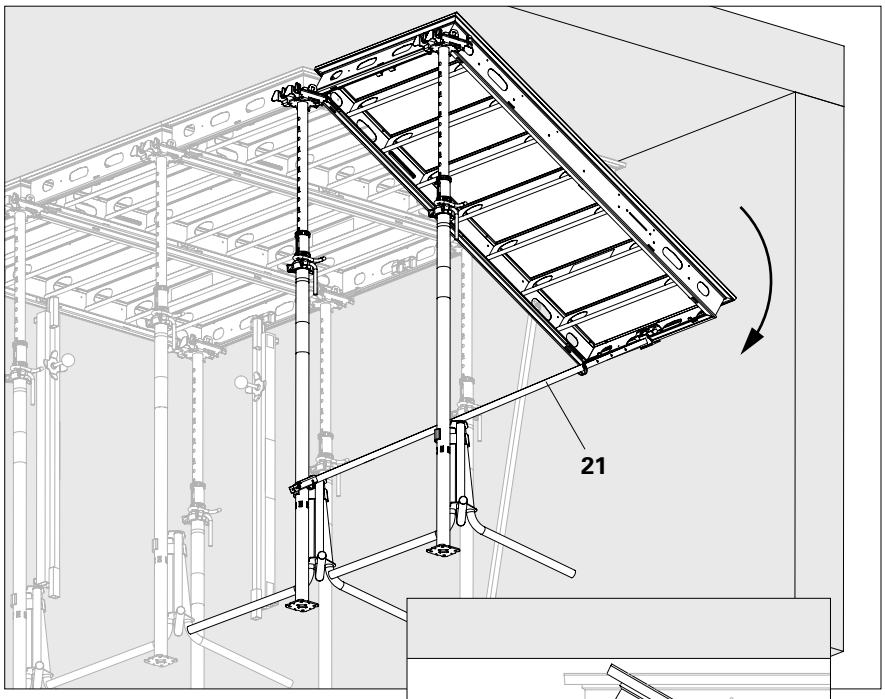


Fig. C4.04

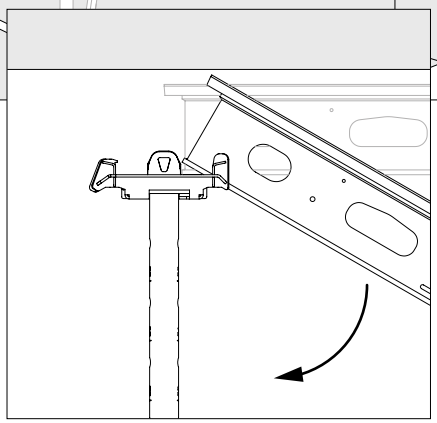


Fig. C4.04a

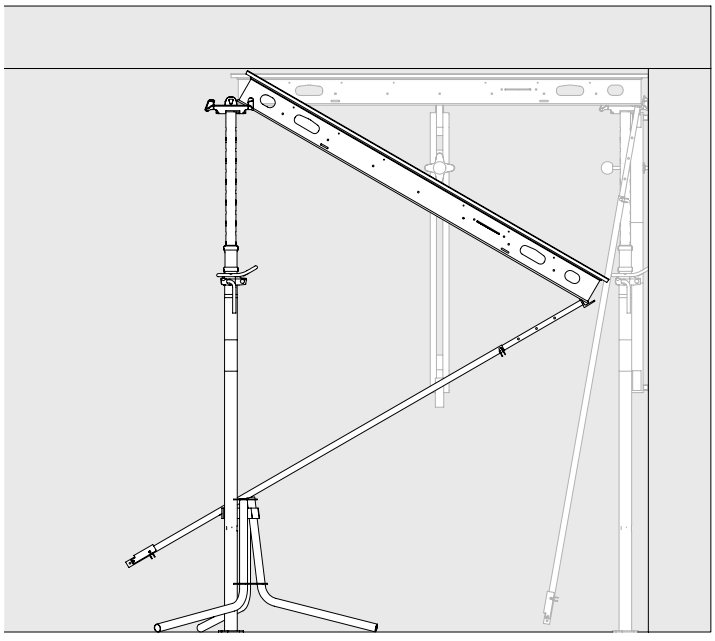


Fig. C4.04b

Lowering head system
Guardrail Unit SXP GU 100

- When detaching the guardrail unit, make sure that the red rear handles (**15.2**) on the swivel frame swivel out of the panel frame entirely.
  → Carefully pivot the guardrail unit past the panel edge. (Fig. C5.01b)
  → In the case of low ceiling heights, it may be necessary to temporarily remove the lateral protection below the guardrail unit.
  Use PPE.

Preparation

1. Dismantle the stop end formwork and other attachments that are alien to the system. Remove the material and tools.
2. Attach temporary lateral protection, e.g. PROKIT EP 110, to the concreted slab.
3. Dismantle the toe boards between the base frame and swivel frame from the guardrail units.
4. Undo or remove other connections from between the guardrail units.
5. Slacken and detach anchor chains, remove base plates.

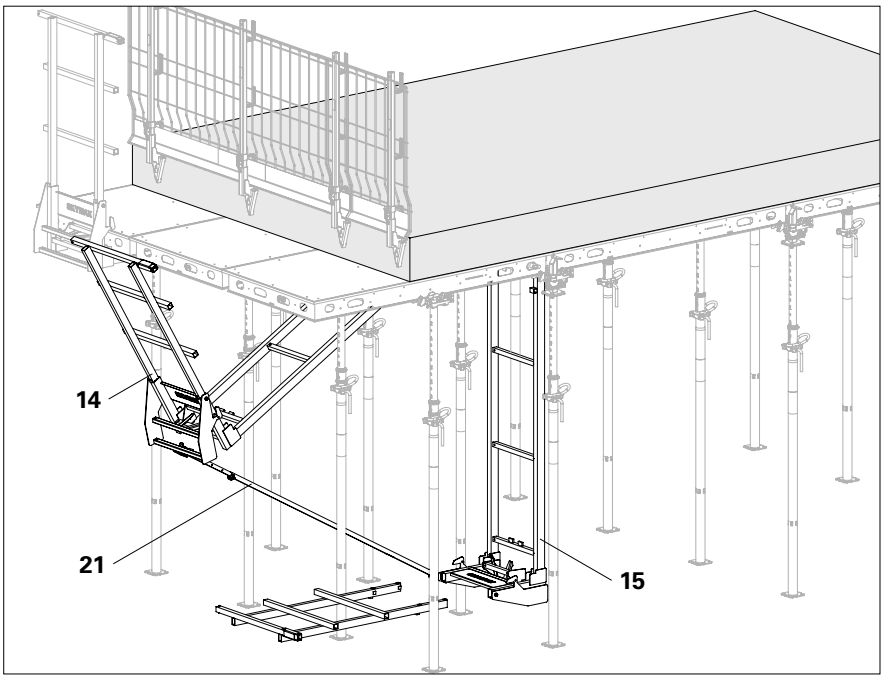


Fig. C5.01

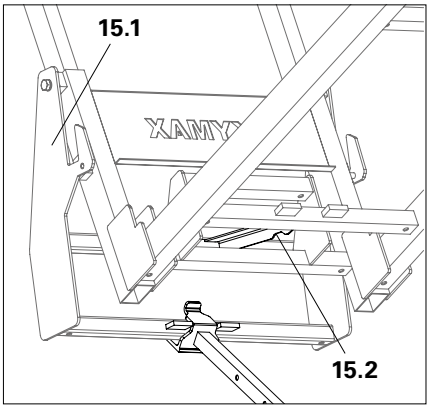
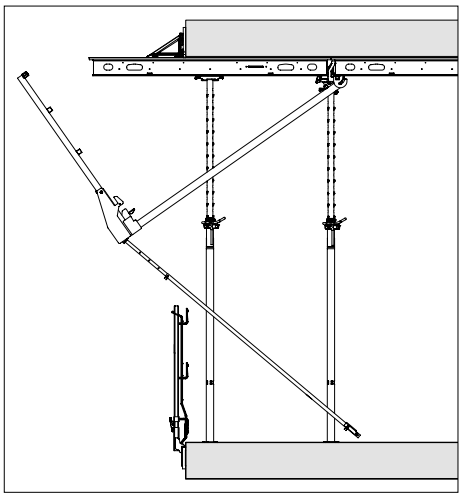


Fig. C5.01a


Fig. C5.01b

Dismantling the guardrail unit

1. Position the shuttering aid (**21**) centrally between the guide plates on the red swivel frame (**15.1**), push it upwards and pivot the guardrail unit downwards. (Fig. C5.01 + C5.01a)
2. Dismantle the plug guardrail (**14**).
3. Detach the frame (**15**) of the guardrail unit. (Fig. C5.02)
4. Repeat the procedure for all Guardrail Units SXP GU 100.

→ The guardrail unit is now dismantled.

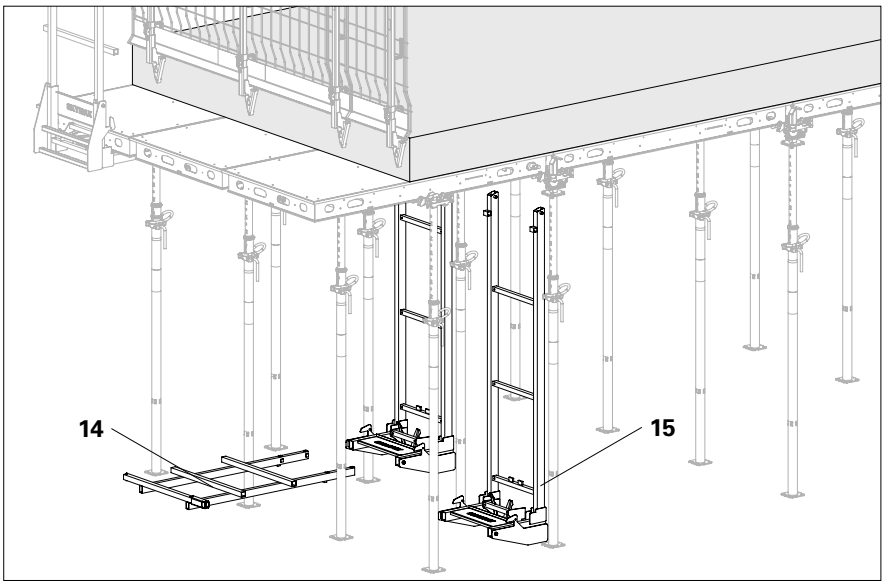


Fig. C5.02

Dismantling the cantilever

1. Lower all of the lowering heads (**6**) in the second row of slab props (**50b**).
2. Prop up two cantilevered panels with two shuttering aids (**21**), secure the shuttering aids so they do not fall over.
3. On the first panel, remove both slab props (**50a**) in the first row of slab props. (Fig. C5.03)
4. Using the shuttering aid, pivot the first panel (**1**) downwards. Position the shuttering aid in the next panel but one. (Fig. C5.04)
5. Detach the panel and carry it away.
6. In the case of partial early striking, install backpropping. To do so, install slab props in increments of ≤ 20 cm in front of the 2nd row of panels and along the slab edges.
7. Remove the next slab prop and pivot the next panel downwards, detach it and carry it away.
8. Repeat the process for all cantilevered panels.
9. In the second panel row, position the shuttering aids at the traverse of the guardrail unit (**16**).

Carry out the rest of the dismantling process as described in Section "Lowering head system" on page 110.

Before stacking the panels, dismantle the Bracing SXP TU 3 T2 and Traverse SXP GU 100, see Section A7 "Guardrail Unit SXP GU 100" on page 32, as well as Section A9 "Bracing SXP TU 3 T2".

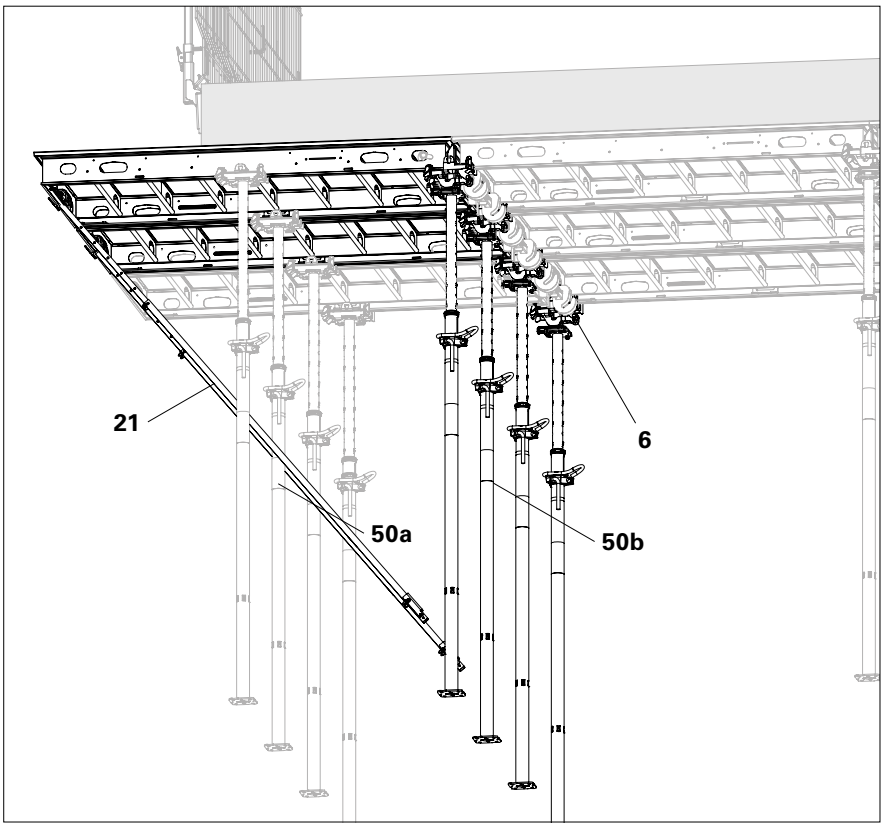


Fig. C5.03

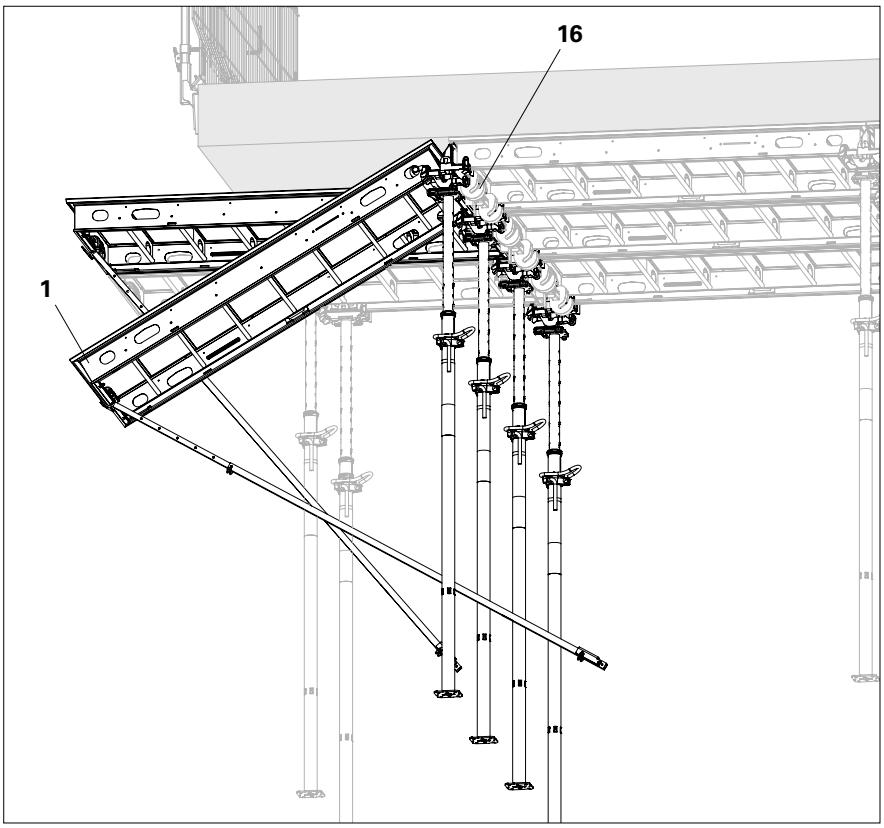


Fig. C5.04

Prop head system
Guardrail Unit SXP GU 100

Preparation and dismantling
Carry out the work as described at "Lowering head system" in the previous article.

Dismantling the cantilever
1. Undo the adjusting nuts in the second row of slab props (**50b**) and lower by approx. 2.5 cm.
2. Carry out the rest of the striking procedure as specified for the lowering head system.

(Fig. C5.05)

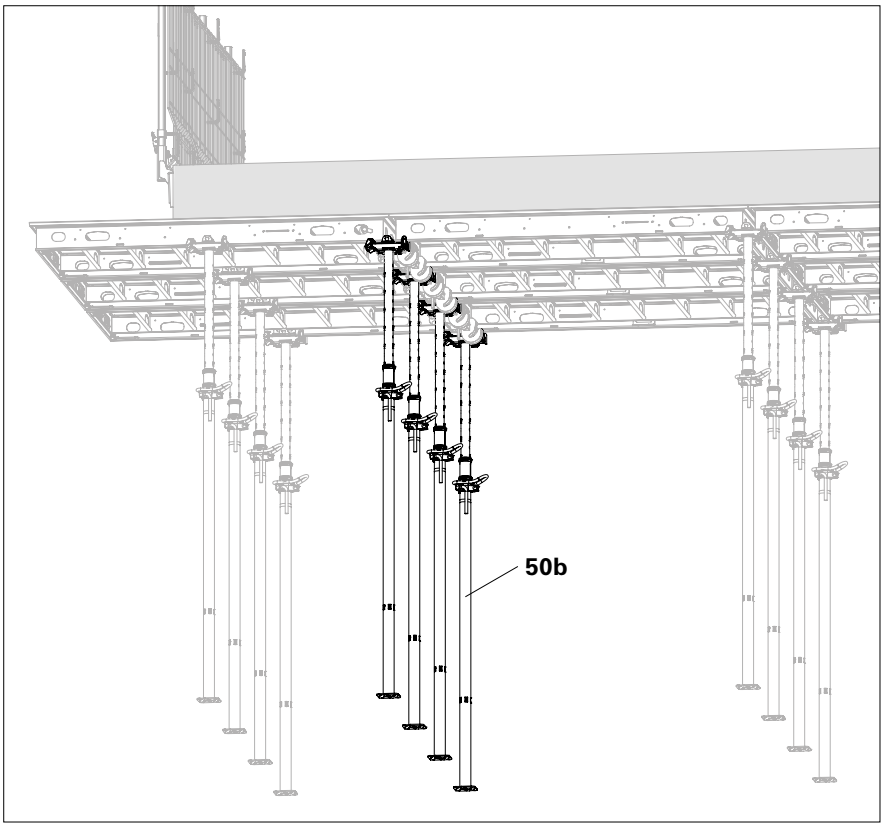


Fig. C5.05

Guardrail Post Holder SXP GPR T2/GPL T2

Preparation

1. Dismantle the stop end formwork and other attachments that are alien to the system. Remove the material and tools.
2. Attach temporary lateral protection, e.g. PROKIT EP 110, to the concreted slab.
3. In the protection provided by the guardrail, dismantle the guardrail boards (**47 / 48**) or Side Mesh Barrier PMB and Post PP (**45**). Use PPE if there is a more significant formwork overhang.
4. Slacken and detach anchor chains, remove base plates.

(Fig. C5.06)

Dismantling the cantilever

Carry out the striking procedure as described in the previous sections for the lowering head system or prop head system with guardrail unit.

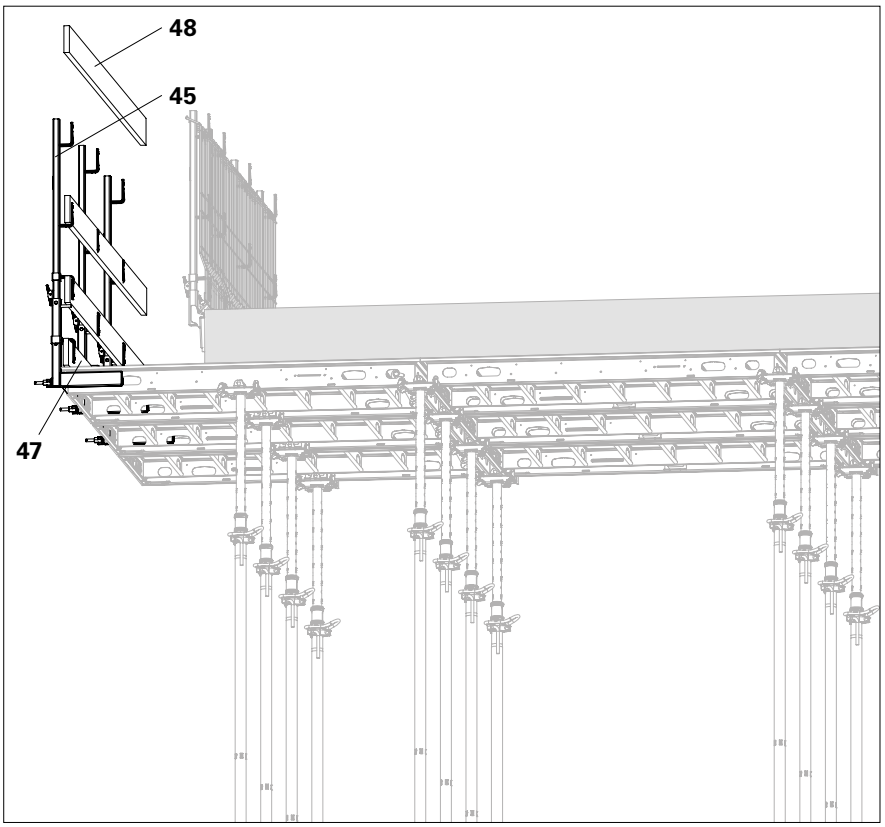


Fig. C5.06

Before stacking the panels, dismantle the Guardrail Post Holders SXP GPR T2 / GPL T2, see Section A8 “A7 Guardrail post holders” on page 35.

Lowering head system

- Do not walk onto the remaining panel rows on the concreting section and slab edges. There is a risk of falling until the next formwork section has been shuttered in full. If necessary, fit guardrails onto the newly cast slab.
- Dismantle the stop end formwork from the next formwork section.
- Additional slab props (**50a**) must be mounted on the lowering head with the wedge hammered home and as close as possible to the existing lowering head (**50a**).

Precondition
In the second row of slab props, the lowering head is rotated through 180° before installation.

Preparation
1. Dismantle the guardrails and bracing as described in Section "C5 Cantilevers" on page 117.

Dismantling
1. Lower all lowering heads (**6**) in the second (**50b**) and third row of slab props (**50c**). The attached parts of the lowering head (**6.4**) face each other.
2. Hold the first two panels (**1**) of the third panel row in position by repositioning the support. To do so, install additional slab props (**50a**) with prop heads (**6 / 7**) in the third row of slab props (**50c**). (Install the slab prop (**50a**) directly alongside the existing lowering head (**6**), recessed on the long edge profile of the panel.)

(Fig. C6.01 – C6.01d)

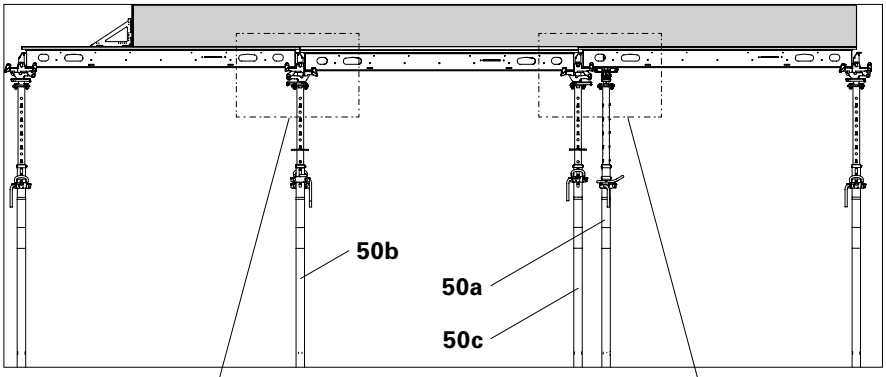


Fig. C6.01

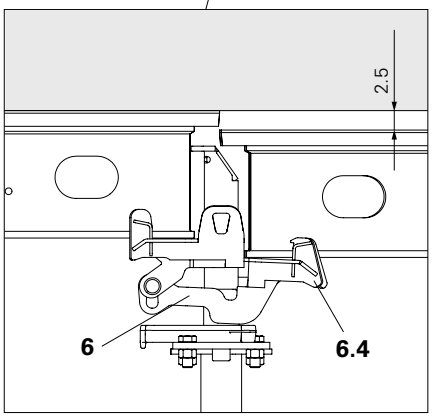


Fig. C6.01a

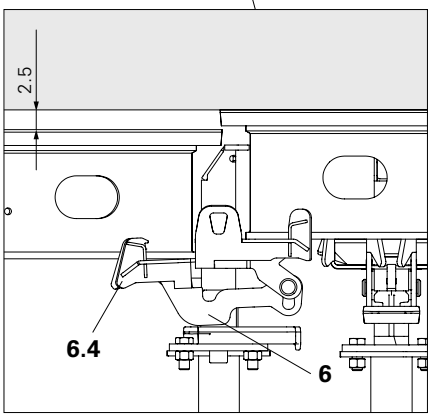


Fig. C6.01b

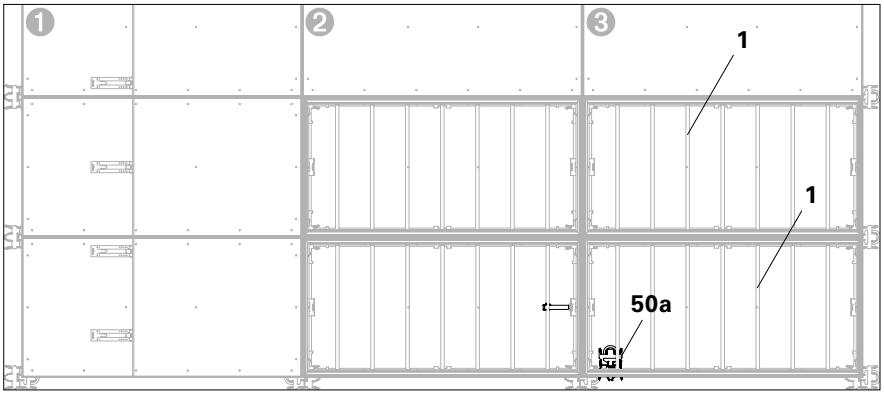


Fig. C6.01c

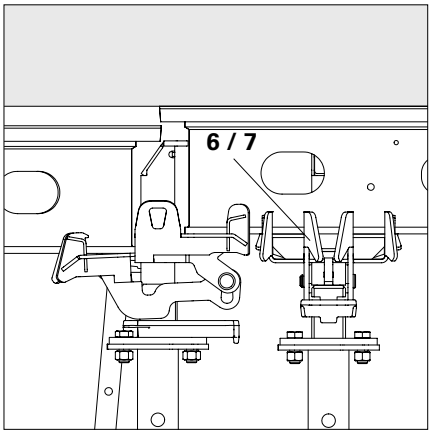


Fig. C6.01d

3. Prop up the first two panels (**1**) in the second panel row with shuttering aids (**21**) in the direction opposite to the main shuttering direction and secure them to prevent them from falling over.
4. Remove the first two slab props (**50**) with the lowering head of the third row of props and pivot the panel downwards with the shuttering aid (**21**). (Fig. C6.02 + C6.02a)
5. Use slab props that become available to reposition the support for other panels in the third panel row.
6. Provide backpropping for partial early striking, see Section E3 Prop loads"Backpropping" on page 112.
7. Strike other panels in the second panel row in the same way.
8. Strike the third and other panel rows in the manner described in Section "C3 Control range" on page 110.

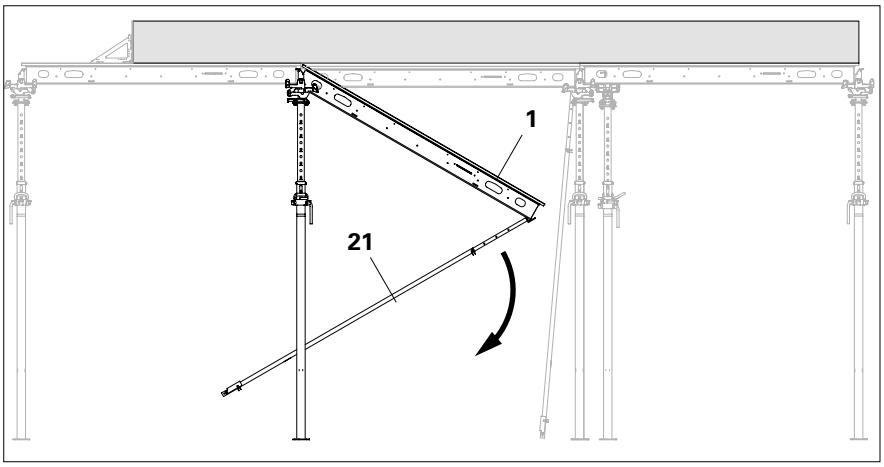


Fig. C6.02

- PERI advises against removing slab props or panels in the area around the concrete joint. Otherwise it will not be possible to achieve a smooth, clean concrete finish at the concrete joint.
- Secure the slab props in the second row of props with tripods to prevent them from falling over so that the next concreting section can be struck.

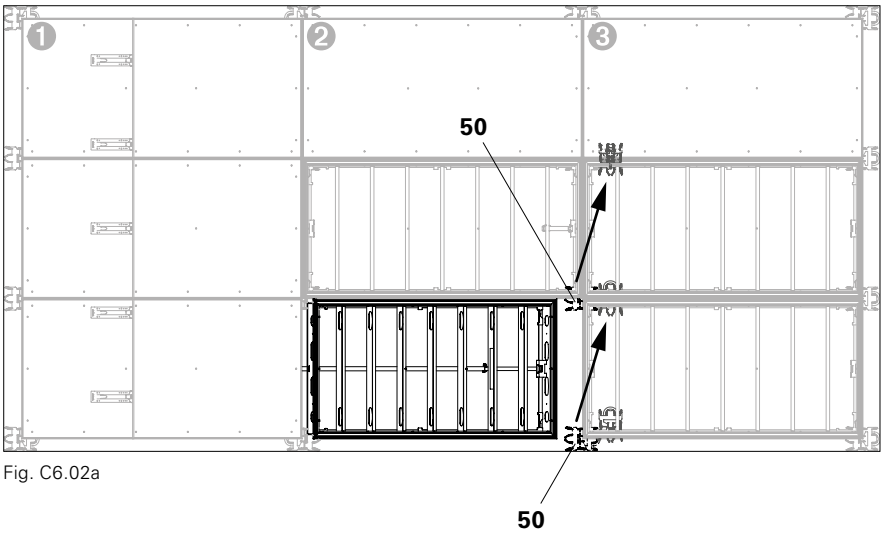


Fig. C6.02a

Prop head system

- Do not walk onto the remaining panel rows on the concreting section and slab edges. There is a risk of falling until the next formwork section has been shuttered in full. If necessary, fit guardrails onto the newly cast slab.
- Dismantle the stop end formwork from the next formwork section.
- There are only 2 more panel rows to complete until the next concreting section is finished.

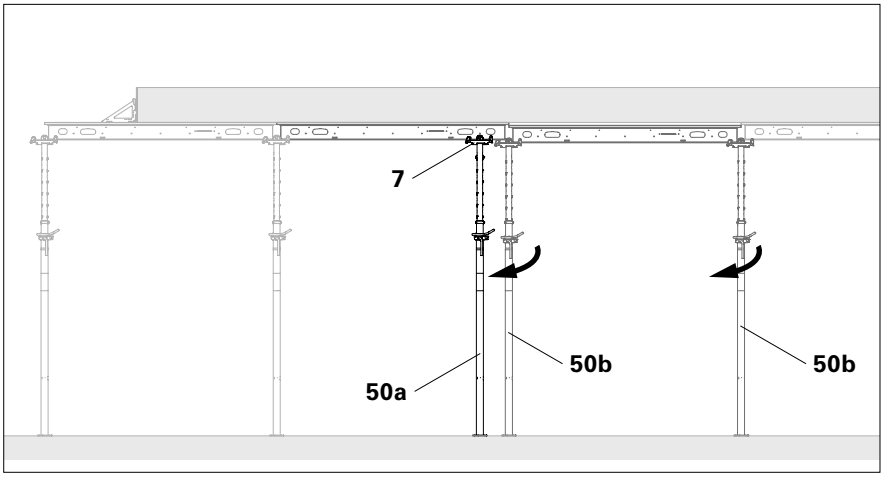


Fig. C6.03

Preparation

1. Dismantle the guardrails and bracing as described in Section "C5 Cantilevers" on page 117.

Dismantling

1. Hold the first two panels of the second panel row in position by repositioning the support. To do so, install additional slab props (**50a**) with prop heads (**7**) in the third row of slab props. Install the slab prop in a recessed manner and away from the centre of the panel.
2. Lower all slab props (**50b**) in the third and fourth rows of slab props by approx. 2.5 cm.

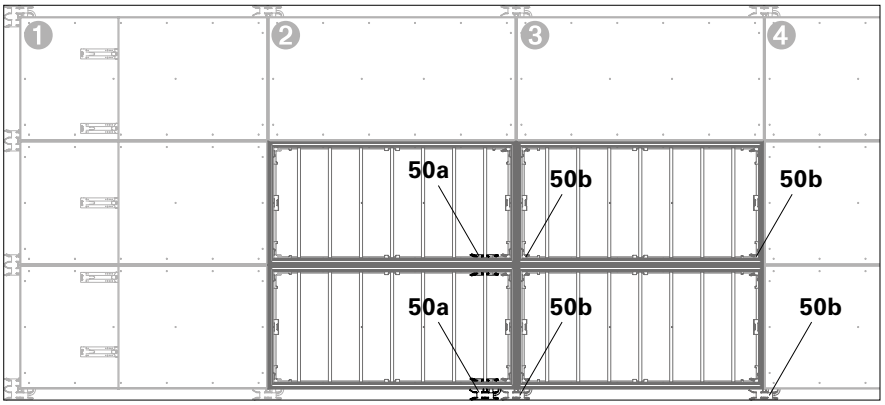


Fig. C6.03a

3. Prop up the first two panels (**1**) in the third panel row with shuttering aids (**21**) in the main shuttering direction and secure them to prevent them from falling over.
4. Remove the first two slab props (**50a**) in the third row of props and pivot the panel downwards with the shuttering aid. (Fig. C6.04 + C6.04a)
5. Use slab props (**50b**) that become available to reposition the support for other panels in the second panel row.
6. Strike other panels in the third panel row in the same way.
7. Strike the fourth and other panel rows in the manner described in Section "C3 Control range" on page 110.

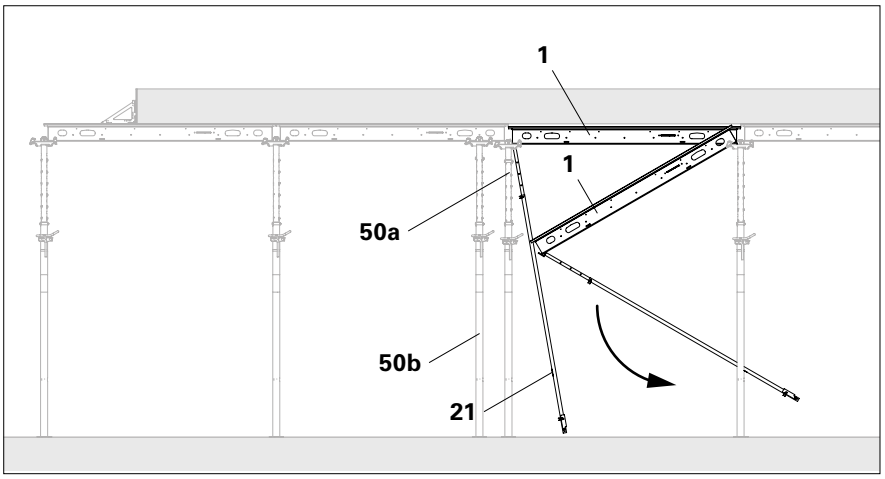


Fig. C6.04

- PERI advises against removing slab props or panels in the area around the concrete joint. Otherwise it will not be possible to achieve a smooth, clean concrete finish at the concrete joint.
- Secure the slab props in the third row of props with tripods to prevent them from falling over so that the next concreting section can be struck.

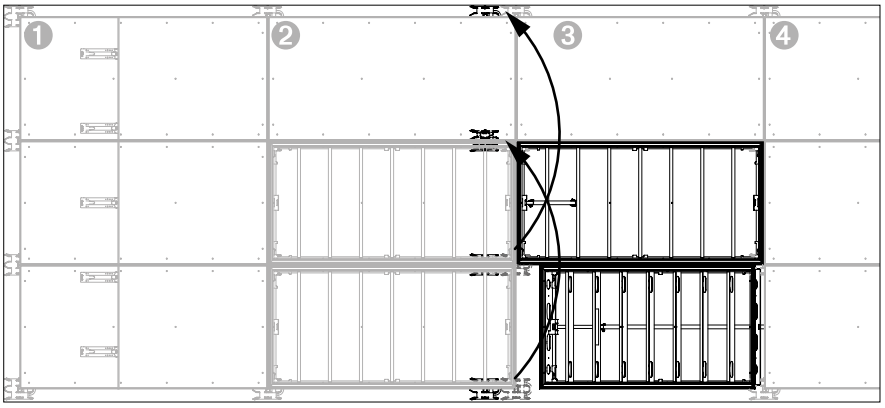


Fig. C6.04a

Column frames

Caution

If striking of the column frame is carried out in the opposite direction to the main shuttering direction, there are no hook blocks between the column frame and the head to provide a safeguard! When it is pivoted downwards, the column frame can come away from the prop head, fall down and injure personnel.

⇒ Pivot the column frame downwards carefully.

⇒ Make sure that the column frame is held in place in the prop head.

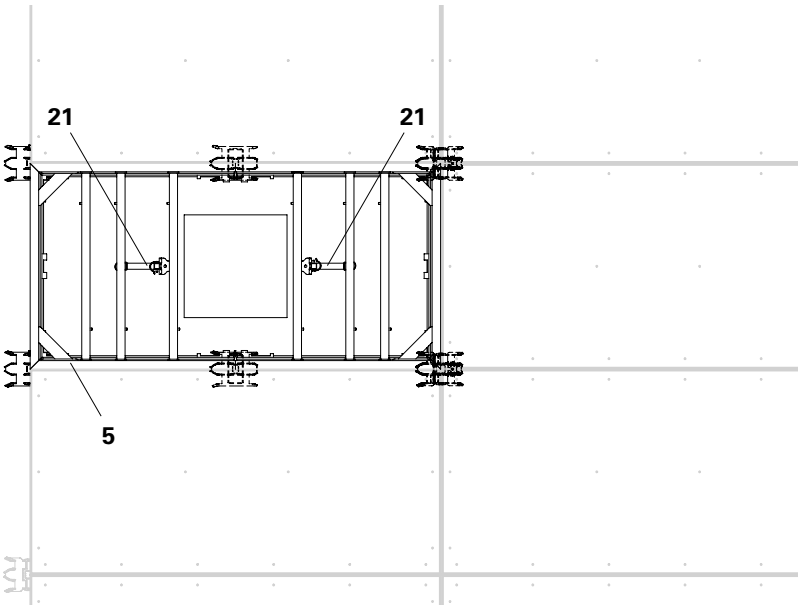


Fig. C7.01

Strike the infill areas around building columns progressively with the control range.

Centrally positioned building column

The building column is positioned approximately in the centre between the two column frames. (Fig. C7.01)

Dismantling

1. Strike the panel row before the column frame (**5**) in accordance with the SKYMAX striking system.
2. Lower all slab props beneath the column frame by 2.5 cm.
3. Use two shuttering aids (**21**) to prop up both individual column frames (**5**) at the inner lying cross strut and secure them to prevent them from falling over. (Fig. C7.01 + Fig. C7.01a)

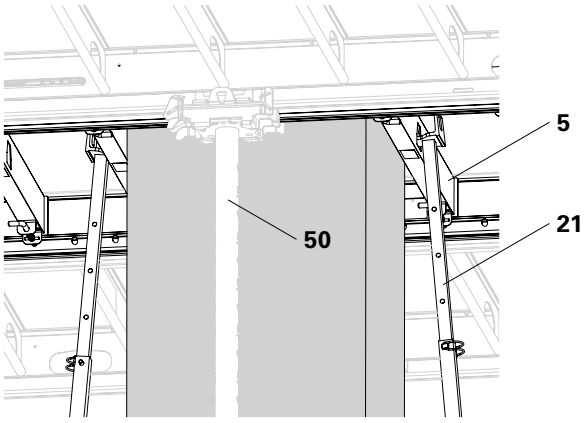


Fig. C7.01a

3. Secure the formlining to prevent it from falling down.
4. Remove both slab props (**50**) from between the two column frames (**5**). (Fig. C7.01a)
5. Use a shuttering aid (**21**) to pivot both column frames (**5**) downwards one after the other and have two people detach them from the lowering heads/prop heads. (Fig. C7.02)
6. Dismantle the formlining.
7. Resume the striking procedure in both directions, one after the other, in accordance with Section "C3 Control range" on page 110.

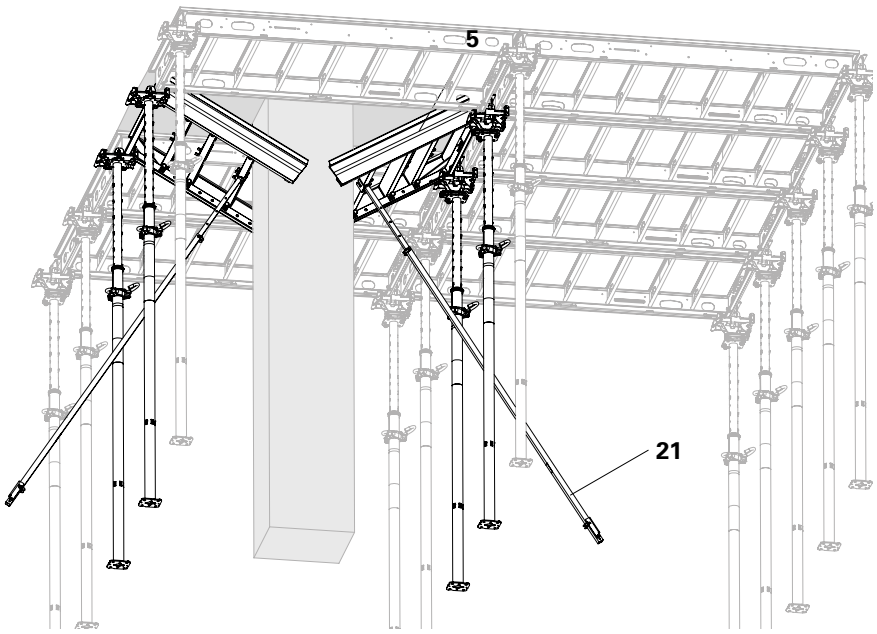


Fig. C7.02

Building column near edge of room
The building column is enclosed by cross struts.

Dismantling
1. Strike the panel row before the column frame in accordance with the SKYMAX striking system.
2. Remove the cross struts (**5.2**) from the column frame (**5**) that prevent the downward pivoting motion.

(Fig. C7.03 + C7.03a)

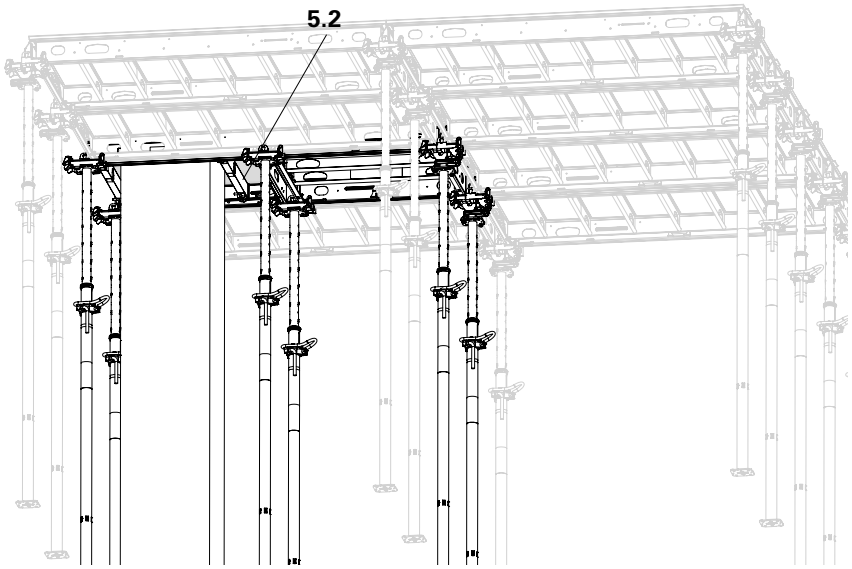


Fig. C7.03

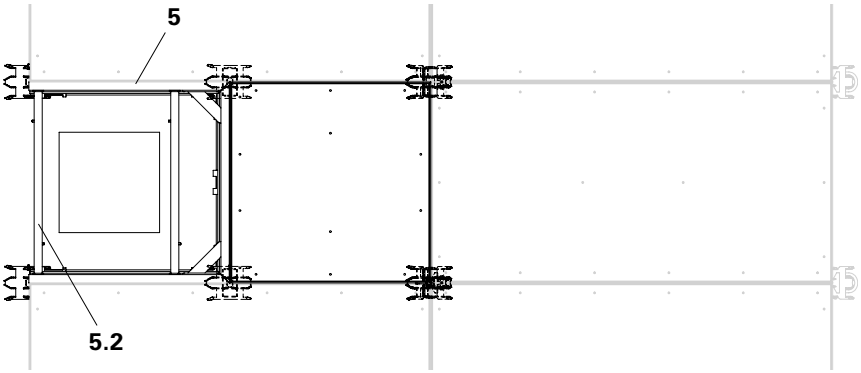


Fig. C7.03a

3. With two shuttering aids: Support the column frame (**5**) around the building column on the left and right web with one shuttering aid each and secure it to prevent it from overturning.
4. Reposition the external slab props (**50a**) under adjacent panels.
5. Lower the centre slab props (**50**) beneath Panel SXP P 100x100 (**26**) by 2.5 cm.
6. Secure the formlining to prevent it from falling down.
7. Carefully pivot the column frame (**5**) that is being held in place by the shuttering aids (**21**) downwards and have two people detach it. (Fig. C7.03b)
8. Remove Panel SXP P 100x100 (**26**).
9. Resume the striking procedure in both directions, one after the other, in accordance with Section "C3 Control range" on page 110.

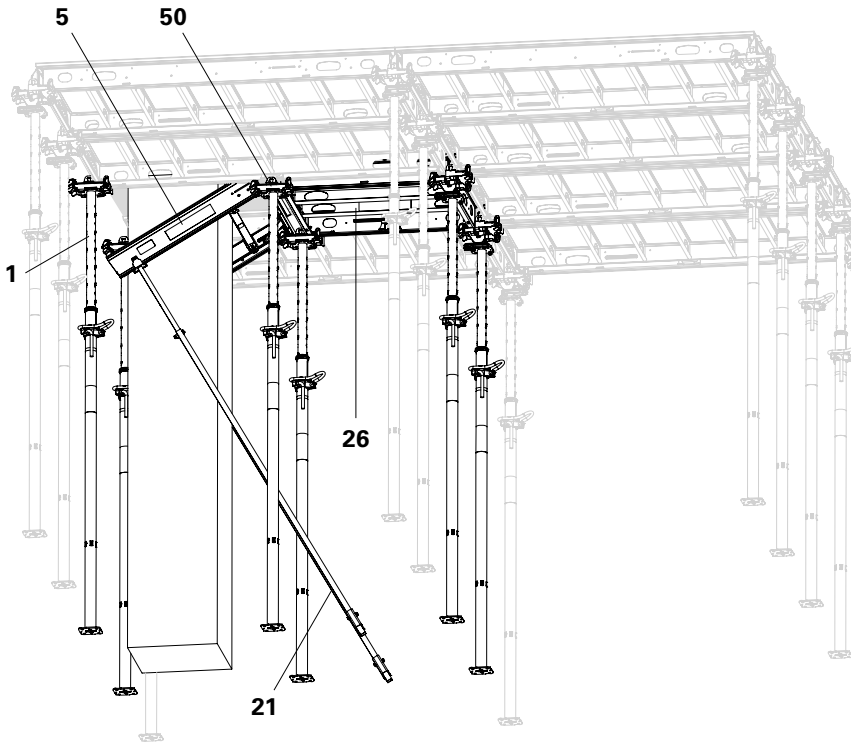


Fig. C7.03b

C8 Change of direction

General information

Information

Do not let go of panels that are pivoted down laterally via the lowering head or prop head and do not leave them hanging! This may cause damage to the lowering head or the prop head.

⇒ Pivot the panels downwards carefully.

⇒ Have two people carry panels away.

Remove the slab formwork in the direction of change first of all, then proceed row by row in the main bay.

Lowering head system

Install the slab props in accordance with the backpropping plan as soon as the relevant panel has been removed.

Precondition

The row of props at the transition between the main bay and the change of direction is rotated through 90°.

Dismantling

1. Remove the panels (**1**) for the change of direction entirely. Provide backpropping for partial early striking, see Section E3 Prop load, "Backpropping" on page 112.
2. Remove the slab props (**50**) that are positioned at the centre of the panels at the transition to the change of direction. (Fig. C8.01)

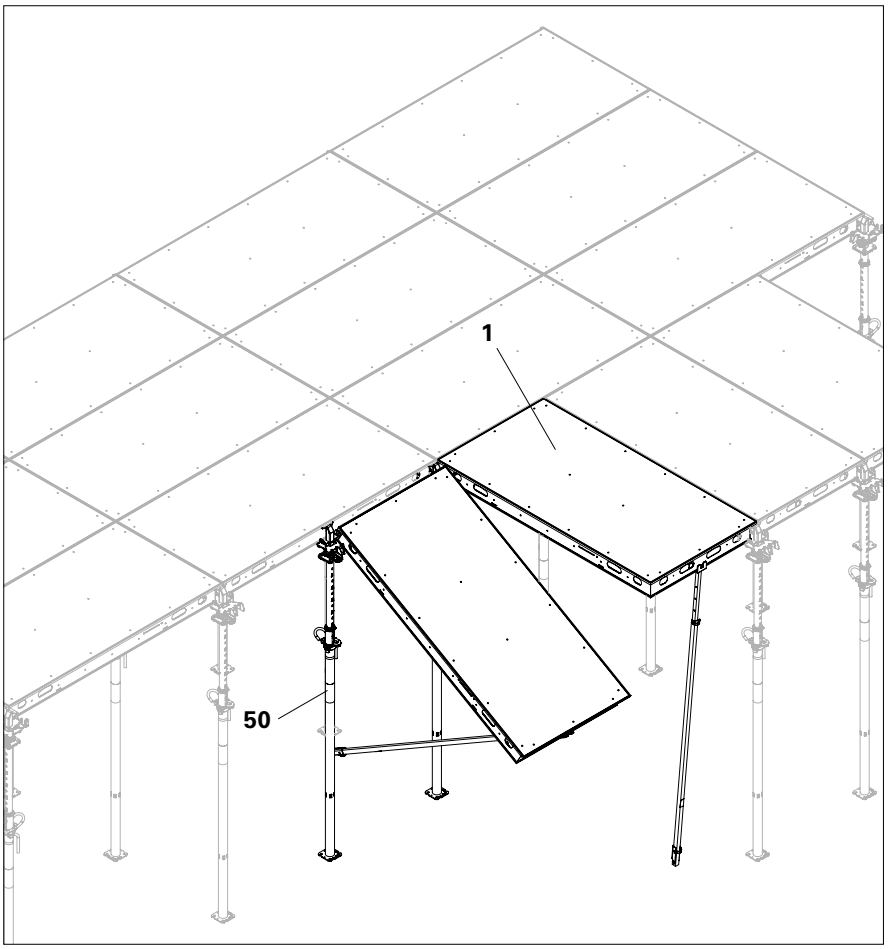


Fig. C8.01

3. For the subsequent panels on rotated slab props (**50a**) in the main shuttering direction (**1a**), position an additional slab prop (**50b**) with a prop head as an auxiliary prop at the long edge profile directly alongside the slab prop (**50a**).
4. Prop up the panels (**1b**) with shuttering aids (**21**).
5. Screw down the rotated slab prop (**50a**) from which the panel is pivoted down by 2.5 cm. The panel and slab load is held in place by an additional slab prop (**50b**). (Fig. C8.02)
6. Carefully swivel the panel down (**1b**) with the shuttering aid (**21**) as the panel is not hooked onto the transverse prop head. Detach the panel and carry it away. (Fig. C8.03)

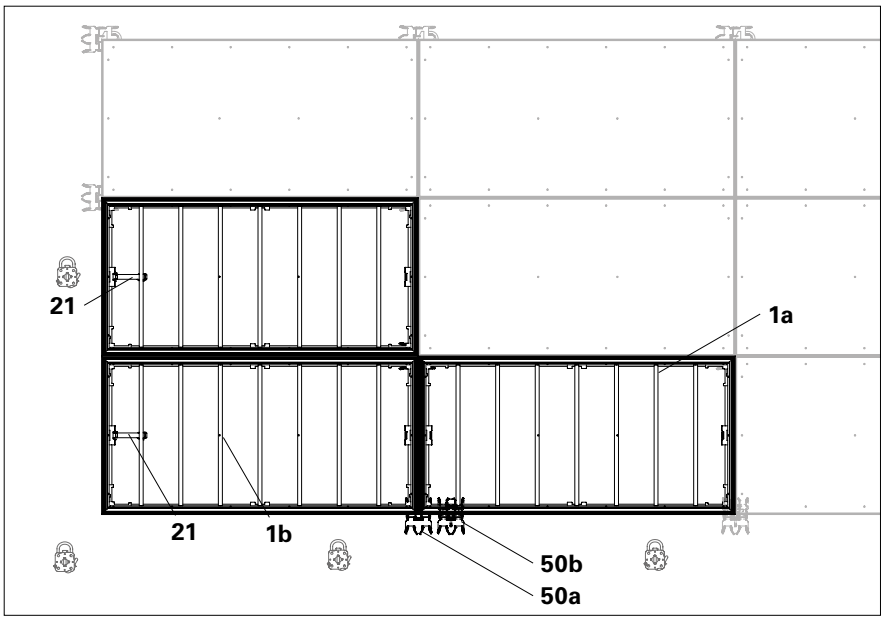


Fig. C8.02

To pivot the panels downwards safely, first turn the rotated slab prop through 90° and align it in the main shuttering direction. Then pivot the panel downwards safely and unhook it from the hook blocks of the prop heads.
This is particularly advisable for large ceiling heights.

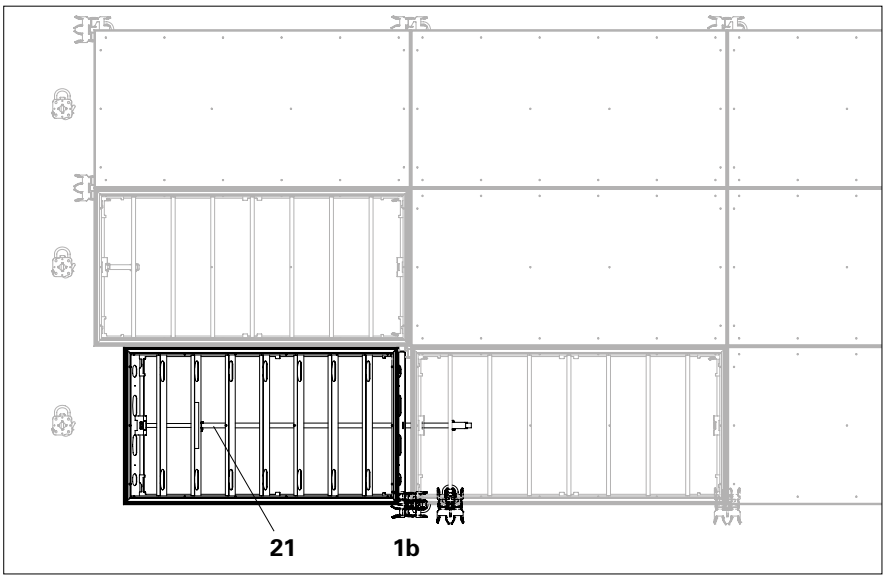


Fig. C8.03

7. If necessary, set up backpropping for partial early striking, see Section C3 Control range.
8. Remove the entire panel row.
9. Move the auxiliary prop (**50b**) with its prop head to the subsequent panel. (Fig. C8.04)

Repeat steps 4 – 9 until the section with rotated slab props has been removed. Once this is done, repositioning of support is no longer required.

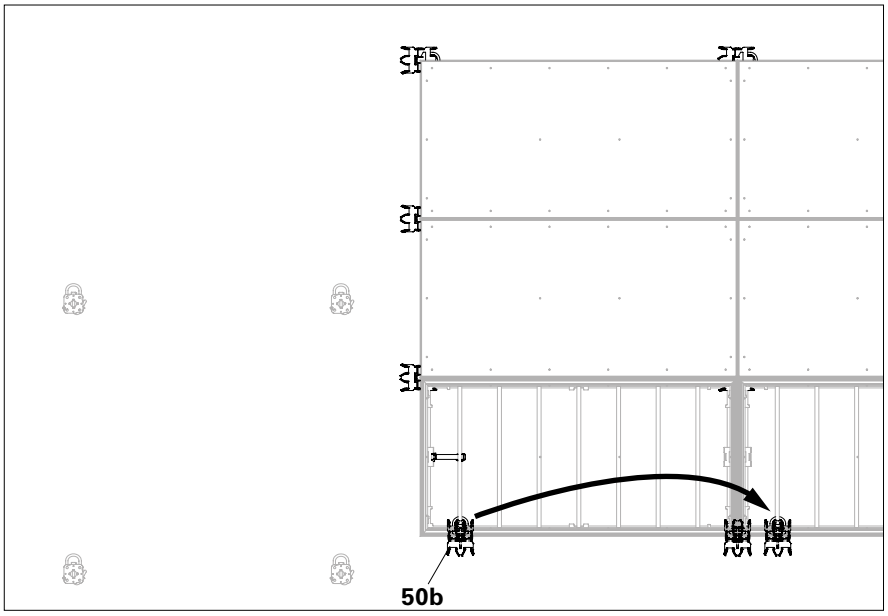


Fig. C8.04

Prop head system

Auxiliary props are not required in a system with a prop head.

Dismantling

1. Remove the panels for the change of direction entirely.
2. Remove the slab props that are positioned at the centre of the panels at the transition to the change of direction.
3. Remove the panels from the main bay entirely.

- Instructions for Use for PERI pallets and stacking devices must be taken into consideration.
- Manually-created transportation units must be correctly stacked and secured.
- Pallets and stacked items are to be protected against the effects of the weather, e.g. panels secured against lifting by means of tension belts.
- Always attach crane lifting gear to all load-bearing points.
- Before transporting, close flaps and locking mechanisms and, if available, secure the cover.

Transport Pallet SXP TP 200x200

Capacity
A maximum of 13 panels on top of each other per stack.
Use crane slings (**20.2**) to position the long panel sides at the side of the pallet.

2 stacks of Panels SXP P 200x100 (**1**).
Total weight 937 kg
(Fig. D1.01)

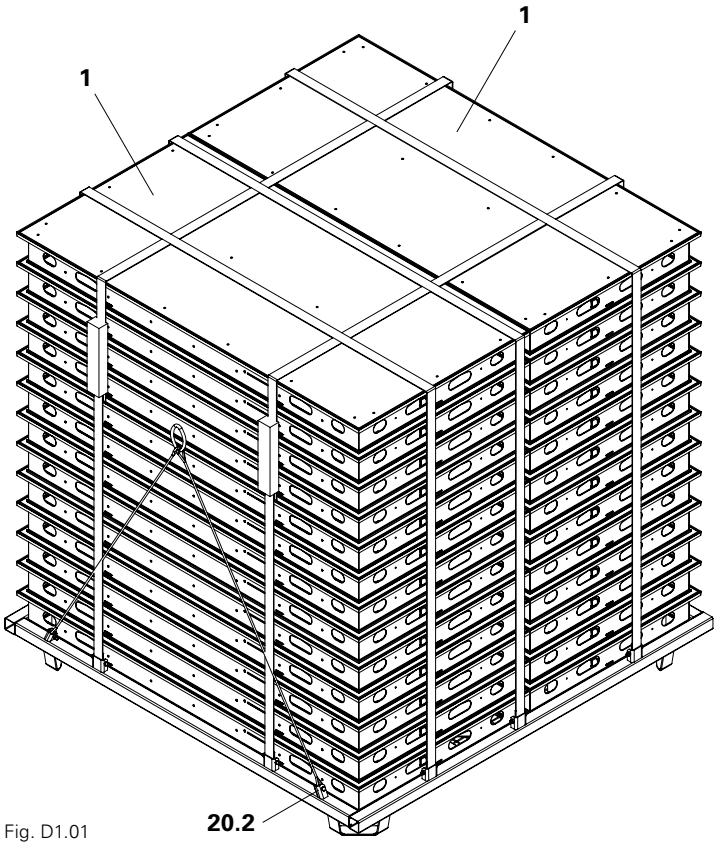


Fig. D1.01

3 stacks of Panels SXP P 200x66.5 (**3**).
Total weight 1,075 kg
(Fig. D1.02)

9 empty Transport Pallets SXP TP 200x200
Total weight 921 kg

Do not mix the stacks.
Always ensure that the stacks are of equal height on each transport pallet.

Always turn the formlining side upwards so that water can drain off.

Do not load stacked empty pallets with panels or mix the stacks.

Keep the transport pallets as horizontal as possible during stacking and removal processes so that the panels cannot slide off.

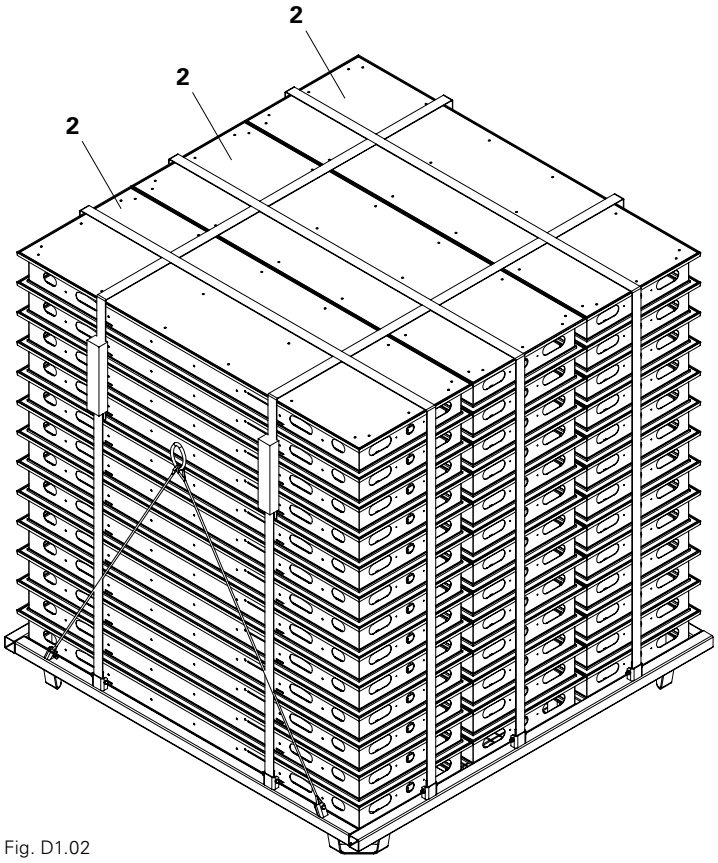


Fig. D1.02

Transportation
Prior to transportation, stack the panels at an equal height and secure them with all 5 tension belts (**20.4**).
Roll up and secure the ends of the belts.

Use the attachment points for crane lifting gear (**20.1**) for transportation by crane.
Minimum length for crane lifting gear ≥ 3.00 m.

The transport pallet is accessible from all sides for transportation by forklift or pallet lifting truck.
Minimum fork length ≥ 1.5 m

If empty pallets are being transported, place the steel rope and belts on the grid provided.

Stacking
Two filled transport pallets can be stacked on top of each other.
Use non-slip, pressure-distributing support items.

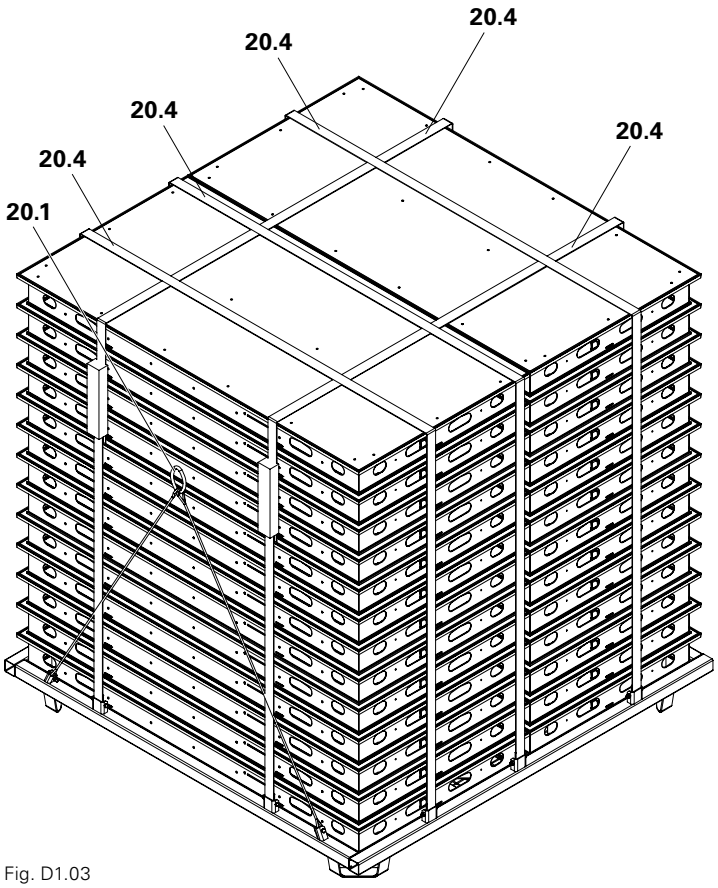


Fig. D1.03

Single-use Pallet SXP TPO 200x100

(Fig. D1.04)

Capacity

1 stack with
max. 13 panels SXP P 200x100 (**1**).
Total weight 448 kg
(Fig. D1.05)

1 stack with
max. 13 panels SXP P 200x66.5 (**3**).
Stack panels centrally on the pallet.
Total weight 353 kg
(Fig. D1.06)

Always turn the formlining side upwards so that water can drain off.

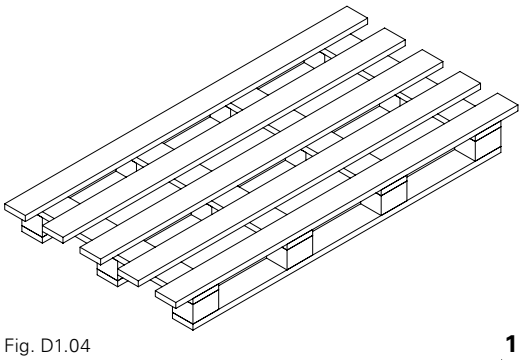


Fig. D1.04

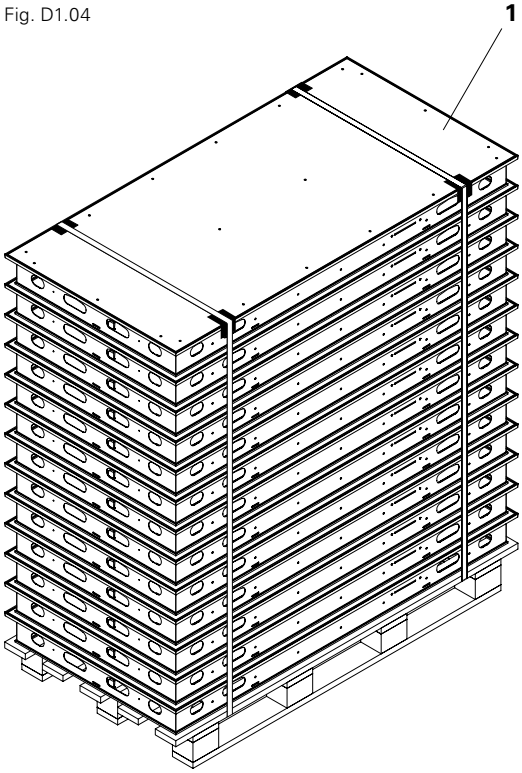


Fig. D1.05

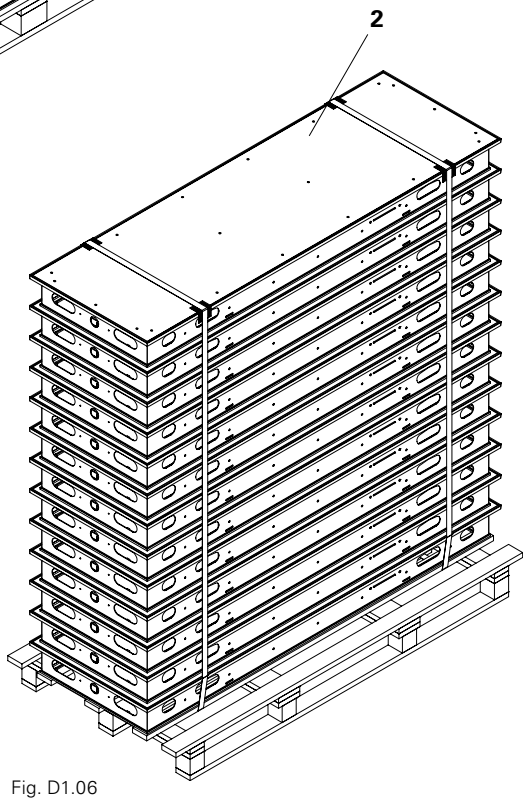


Fig. D1.06

Transportation
Prior to transportation, secure the pallet stack with tension belts (**42**). Roll up and secure the ends of the belts.
If steel belts are used for strapping (**43**), use edge protection (**41**) on the uppermost panel.

When SXP P 200x100 panels are loaded onto pallets for transportation by crane, place round slings around the outer longitudinal braces.

When SXP P 200x66.5 panels are loaded onto pallets for transportation by crane, place the round slings around an inset left-hand and right-hand longitudinal brace.

For transportation, the single-use pallet
- is accessible from all sides for forklift trucks.
- is accessible from the narrow side for pallet lifting trucks.
- minimum fork length ≥ 1.4 m when aligned lengthwise

Keep the transport pallets as horizontal as possible during stacking and removal processes so that the panels cannot slide off.

Stacking
Filled single-use pallets must not be stacked on top of each other.

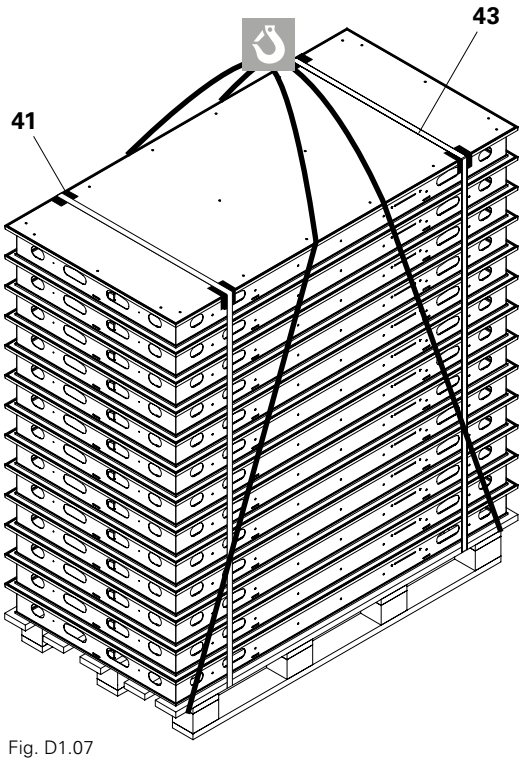


Fig. D1.07

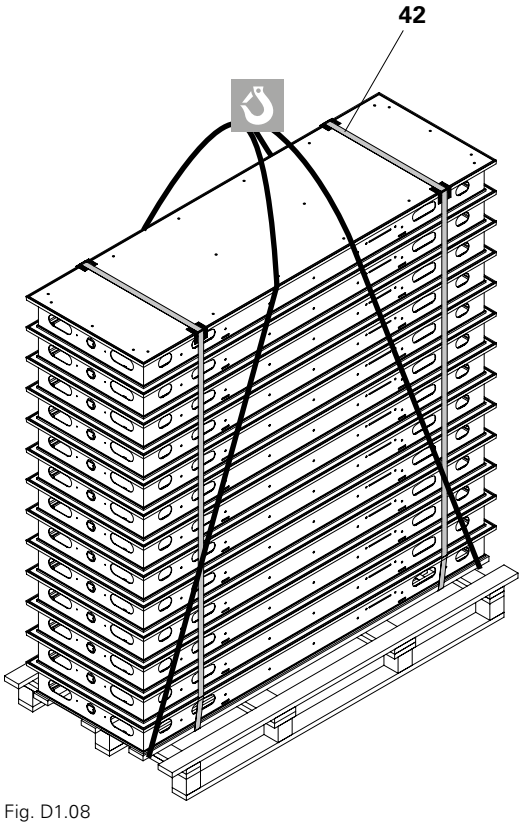


Fig. D1.08

Crate Pallet 80 x 120

(Fig. D1.09 + D1.09a + D1.09b)

Load-bearing capacity = 1.5 t
Crane sling angle ≤ 15°
Stacking height: 3 crate pallets on top of each other

Capacity
For better loading and unloading, the flap (**40.1**) can be pivoted downwards. If the loaded goods have slipped slightly, only open the flap if it is safe to do so.

Take the mesh width of the crate pallet into account. If thin material is present, insert wooden boards to prevent slippage.

To secure the load against theft, there is the option of fitting the crate pallet with a lid (article no.: 065067).

Transportation
Before transportation, close the flap and check that locking mechanisms (**40.2**) have properly engaged.

Use all 4 attachment points for crane lifting gear (**40.3**) for transportation by crane.

The crate pallet is accessible from all sides for transportation by forklift or pallet lifting truck.

Stacking
Adhere to the maximum stacking height specified in the manufacturer's instructions.
Do not transport crate pallets as stacks.
When stacking, place heavy crate pallets at the bottom.

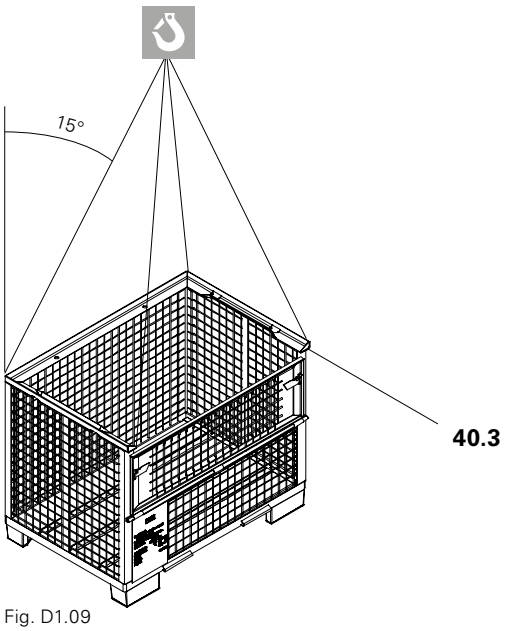


Fig. D1.09

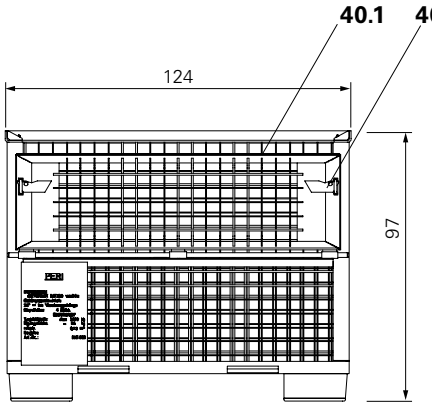


Fig. D1.09a

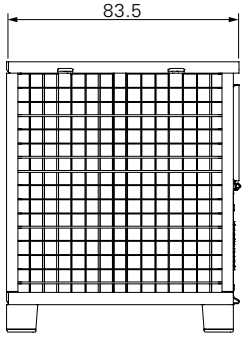


Fig. D1.09b

Transport Pallet SXP TPF 200x100

(Fig. D1.10)

Capacity

SKYMAX elements can be stacked and transported using the Transport Pallet SXP TPF 200x100.

A maximum of seven SKYMAX panels can be stacked on top of each other (Fig. D1.12).
Total weight 295 kg

Transportation

Secure the stanchion wings (**41.1**) and (**41.2**) with a steel strap (**A**) when removing them from the construction site; corresponding recesses can be found on the stanchion wings for this purpose. (Fig. D1.10 + D1.12)

The two stanchion wings can be removed for loading and unloading by loosening the locking pin (**B**).
(Fig. D1.12 + D1.12a)

Place the dismantled stanchion wings beneath the pallet. (Fig. D1.13)
Once the unloading process is complete, place the stanchion wings crosswise in Transport Pallet SXP TPF 200x100 and fold down the stanchion wing (**41.3**). (Fig. D1.11)

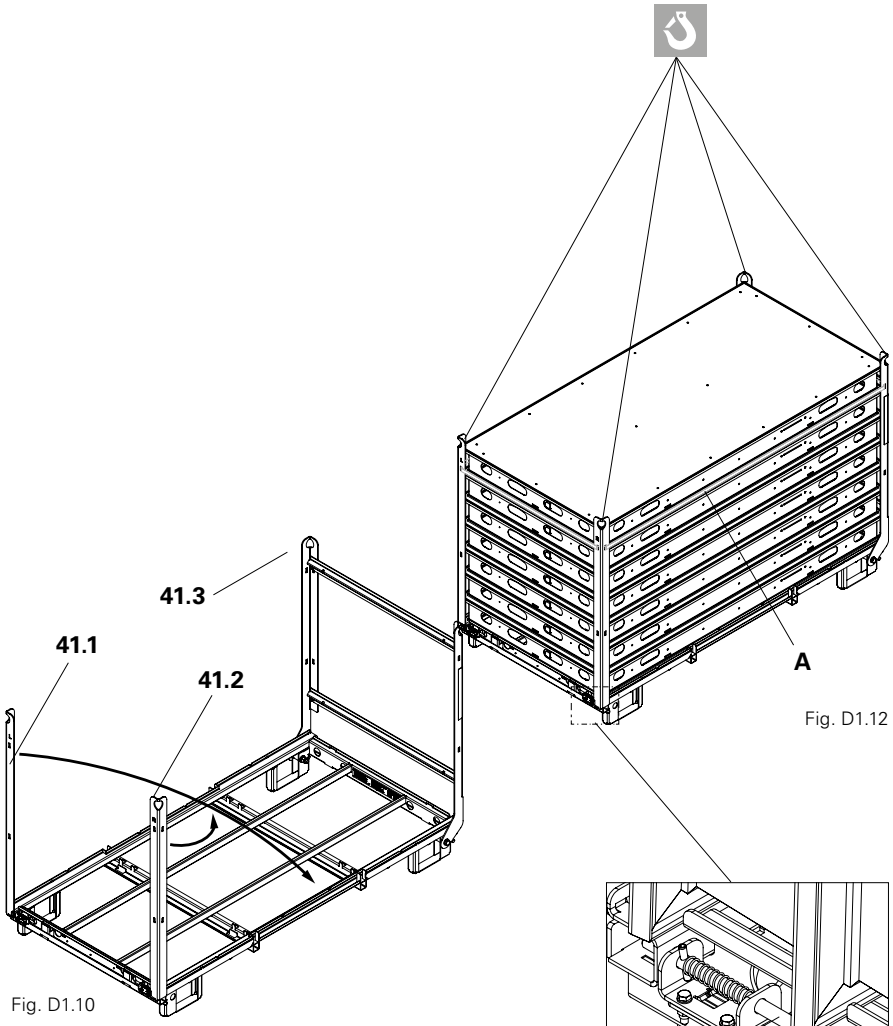


Fig. D1.10

Fig. D1.12

Fig. D1.12a

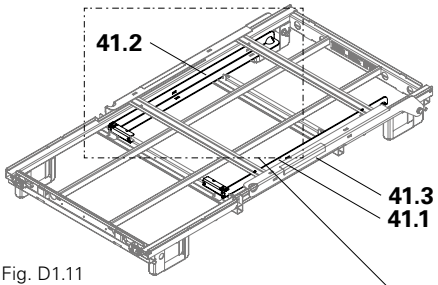
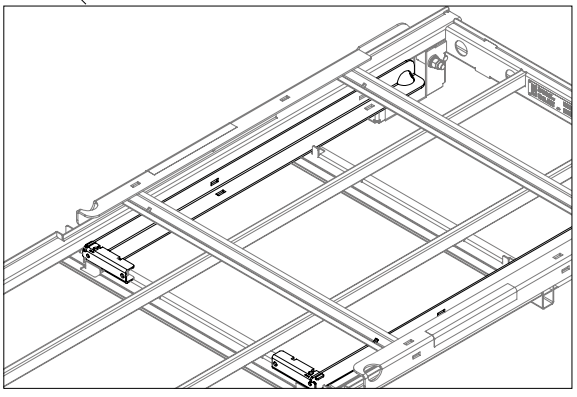


Fig. D1.11



Stacking
A maximum of six Transport Pallets SXP TPF 200x100 can be stacked on a transport pallet to save space. (Fig. D1.14)
Total weight 473 kg

Filled Transport Pallets SXP TPF 200x100 must not be stacked on top of each other.

- For crane operation, e.g. with Lifting Gear Combi MX, a chain length of 4 m is required.
- Loading Transport Pallet SXP TPF with anything other than panels and empty panels is not permitted.

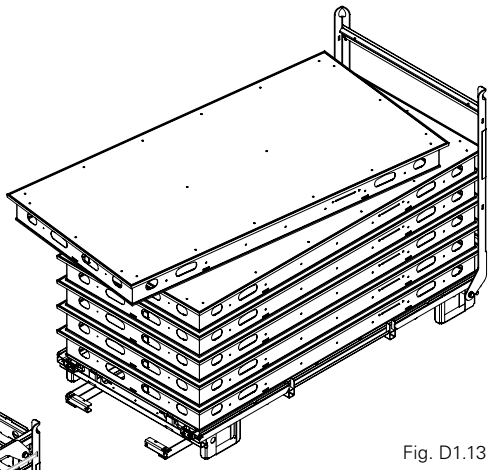


Fig. D1.13

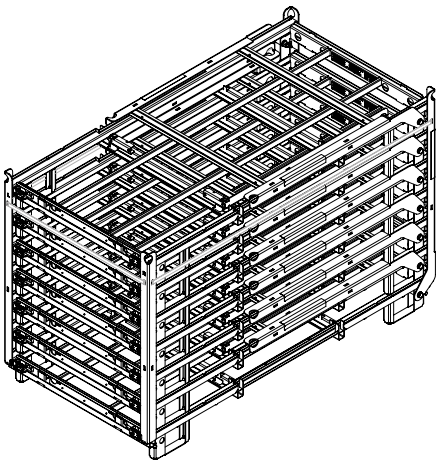


Fig. D1.14

Transport Pallet SXP TPF 200x66.5

(Fig. D1.15)

Capacity

An alternative to Transport Pallet SXP TPF 200x100 is Transport Pallet SXP TPF 200x66.5. (**42**) This allows SKYMAX panels with the dimensions 200x66.5 to be stacked and transported in the same way. (Fig. D1.17)

1 stack with
max. 6 Panels SXP TPF 200x66.5.
Stack the panels on the pallet.
Total weight 231 kg

7 empty Transport Pallets SXP TPF 200x100
Total weight 380 kg

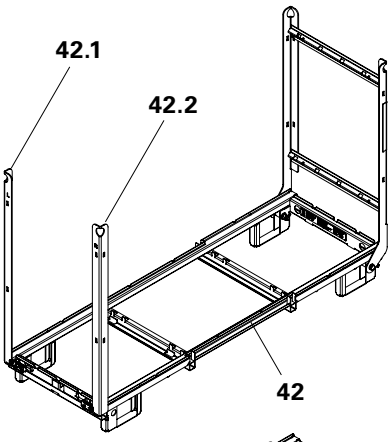


Fig. D1.15

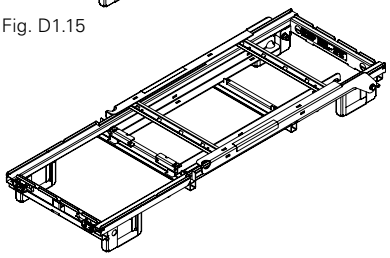


Fig. D1.16

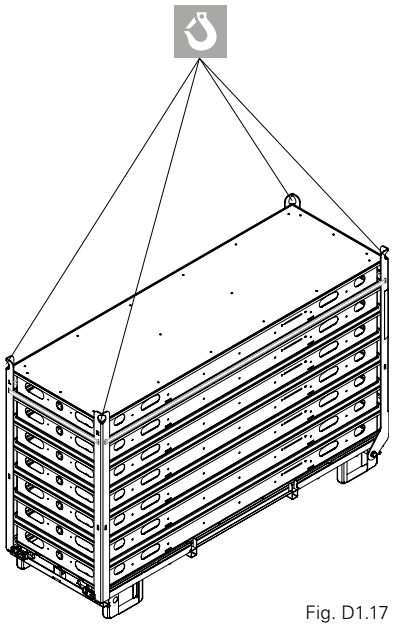


Fig. D1.17

Transportation

For narrow passages, there is the option of transporting panels of size 200x100 with Transport Pallet SXP TPF 200x66.5. The 200x100 panels can be stacked vertically on Transport Pallet SXP TPF 200x66.5 and taken away with a lift truck. (Fig. D1.19)

In the case of horizontal transportation, a lift truck can only enter from the side with yellow stanchion wings (**42.1**) and (**42.2**).

Operating the crane with horizontally stacked panels:
For example, with Lifting Gear Combi MX, the required chain length is 4 m

- If panels are stacked vertically, transportation by crane is not permitted.

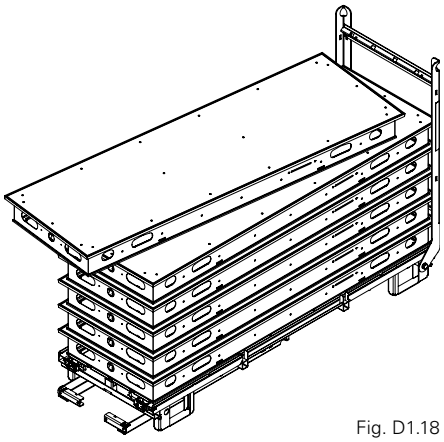


Fig. D1.18

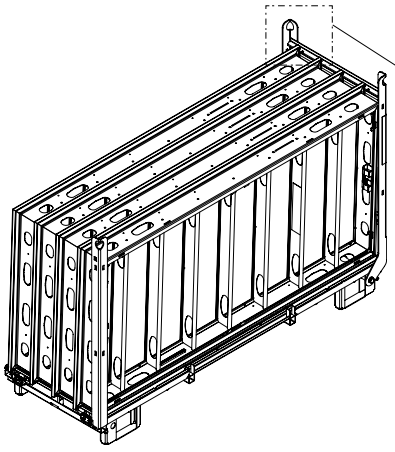


Fig. D1.19

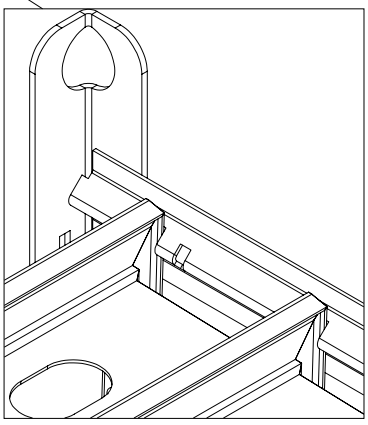


Fig. D1.19a

Alternatively, Stacking Device Wheels DUO (article no. 128276) can be used to move the transport pallets.
(Fig. D1.20+ + D1.20a)

Stacking

- Filled Transport Pallets SXP TPF 200x66.5 must not be stacked on top of each other.

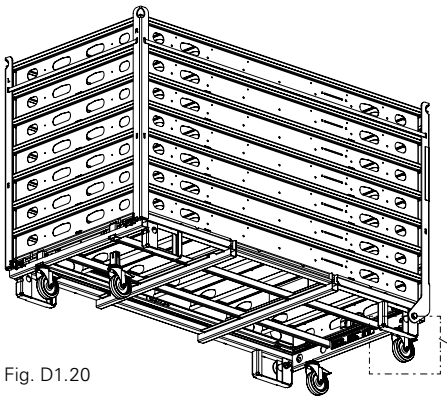


Fig. D1.20

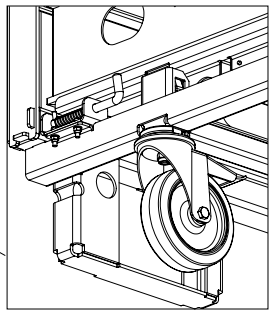


Fig. D1.20a

RFID in the SKYMAX system

The abbreviation RFID stands for "Radio Frequency Identification".

Dual-frequency RFID transponders (**1.10**) are built into both long sides of a panel. (Fig. D2.01 + D2.01a)
These connect the hardware to a smart product with a range of digital services.

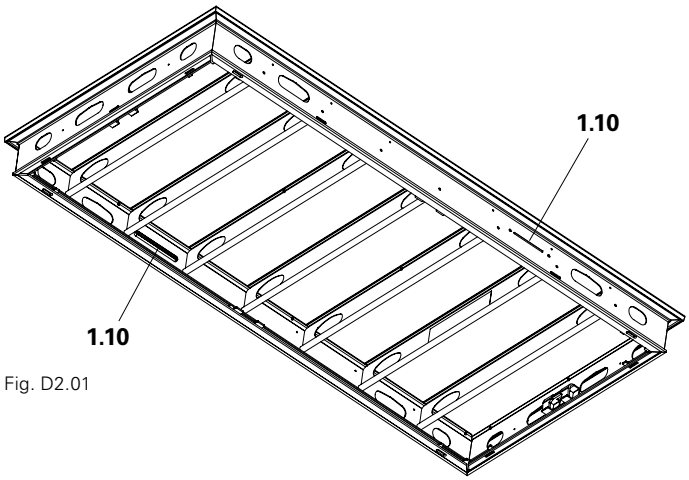


Fig. D2.01

PERI dual-frequency RFID transponder

- The PERI dual-frequency RFID transponder contains a high-frequency (HF) and an ultra-high frequency module (UHF).
- Both modules are passive, radiation-free and maintenance-free.
- Do not open RFID transponders or damage them in any other way.

Application

Reading the high-frequency module (HF) with NFC
In order to read the module and retrieve specific product information, PERI Material Scan and an NFC-compatible smartphone are required.
This application is available on the App Store* or Google Play**.

Reading
1. Start the app.
2. Select the relevant function.
3. Move the smartphone across the RFID integration point in a swiping motion. Distance to the component <1°cm. (Fig. D2.02)

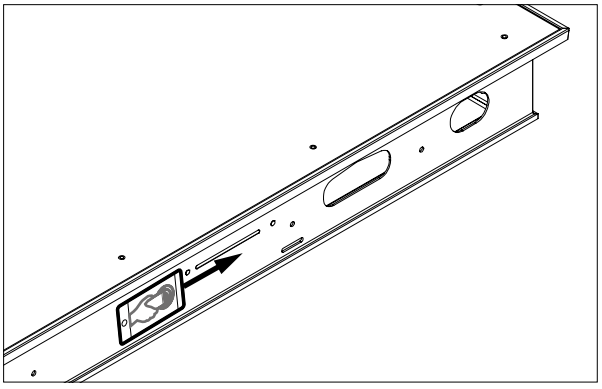


Fig. D2.02

iOS **Android**

* App Store is a service brand of Apple Inc., listed in the United States of America and other countries.
** Google Play is a brand of Google LLC.

Reading the UHF module
The UHF module can be detected and read with a customary UHF reader from distances of several metres.
All conventional readers are suitable. Refer to the respective manufacturer's documentation.

To transmit data, refer to the manufacturer's documentation of the respective merchandise management system.

Several PERI dual-frequency RFID transponders can be detected together (bulk detection). (Fig. D2.03)

These applications are predominantly used in the logistics sector, e.g in order to detect and book the movement of goods automatically.

Reach
The reach of both transponders is influenced by various factors:
- Performance of
  - reader,
  - antennas.
- Shielding effect from
  - other panels,
  - crate pallets,
  - concrete fouling,
  - vehicle side panel,
  - other metallic components.
- With the performance level of the reader and no shielding effect (optimal conditions), a detection distance of up to 12 m is possible.

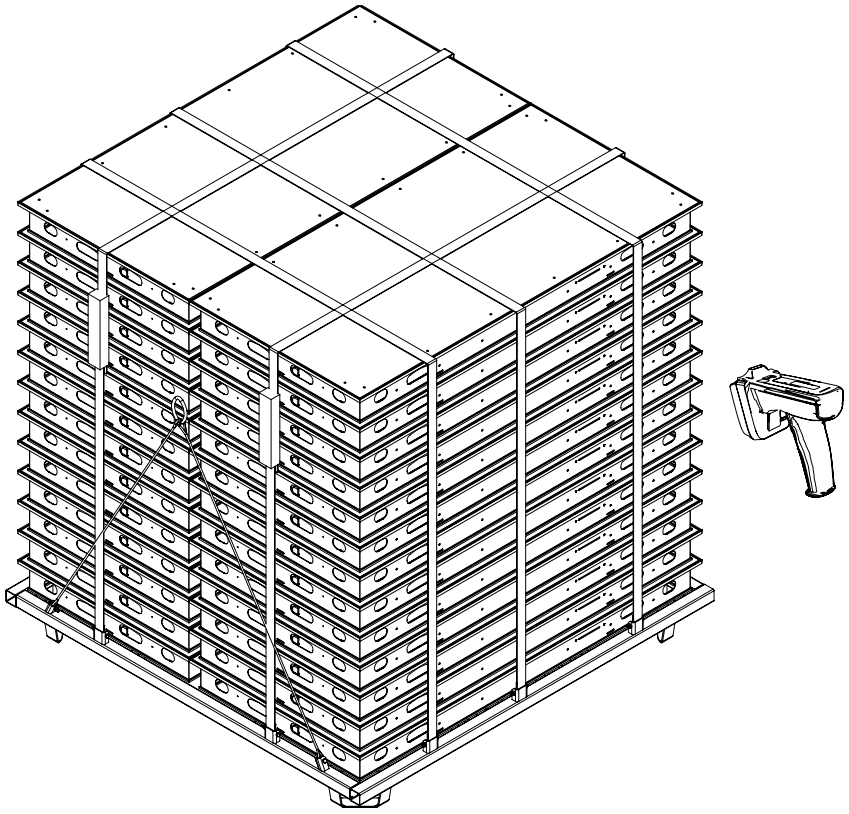


Fig. D2.03

Caution

Small parts and concrete residue may chip off during cleaning!
These small splintered parts can cause injuries.
⇒ Wear safety goggles.
⇒ Wear safety gloves.

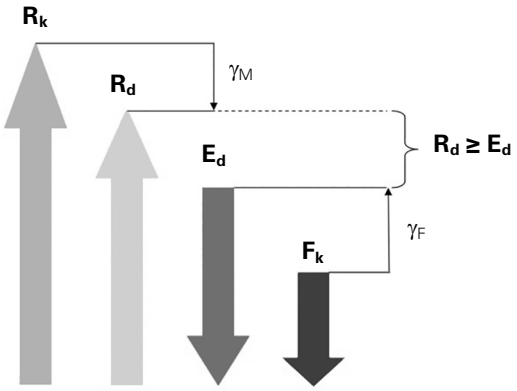
Material damage!
- When using high pressure cleaners, do not exceed the maximum water pressure of 200 bar and maximum temperature of 60 °C!
- Do not use a hammer! If you need to use one, only use a rubber mallet (e.g. DUO rubber mallet)!

Notes on structural design

This design information is used for the design and planning of the SKYMAX Slab Formwork System.
It covers standard configurations for slab thicknesses from 14 cm to 55 cm.
- For further information, see the separate structural design information.

Comparison of the structural design methods

The structural design concept with partial safety factors

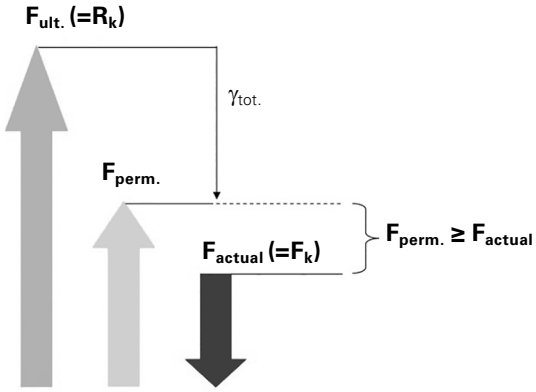


Method of proof

$$\frac{R_k}{\gamma_M} \geq F_k \cdot \gamma_F$$

$$R_d \geq E_d$$

The old structural design concept with absolute safety factor (see PERI Design Tables)



Method of proof

$$\frac{F_{ult.}}{\gamma_{tot.}} \geq F_{actual} (=F_k)$$

$$F_{perm.} \geq F_{actual} (=F_k)$$

Key

R_k = Characteristic resistance
R_d = Design value of the resistance
F_k = F_{actual} = Existing or characteristic action
E_d = Design value of the action
$F_{ult.}$ = R_k = Characteristic resistance (e.g. breaking load)
$F_{perm.}$ = Permissible load-bearing capacity

γ_M = Partial safety factor for the material (steel ≈ 1.1 / concrete ≈ 1.5)
γ_F = Partial safety factor for the load (permanent = 1.35 / changeable = 1.5)
$\gamma_{tot.}$ = Global safety factor ≈ $\gamma_M \cdot \gamma_F$ (steel ≈ 1.65 / concrete ≈ 2.25)

Design method used in this design information

This design information is based on the design concept with the absolute safety factor.

The prop load tables feature the permissible load-bearing capacities $F_{perm.}$. After multiplication using $\gamma_F = 1.5$, the maximum load-bearing capacity can also be converted into a design value of the resistance R_d for the method with partial safety factors.

E2 Implementation log

Contractor: .....

Construction project: .....

Component: .....

Copy and complete this page and file in the site journal.

Execution / installation of the formwork

Slab thickness	=	cm
Clearance height	=	m
Prop length = clear room height – formwork construction height	=	m
max. panel span	=	cm
Chosen prop	=	
Actual prop load (according to PERI Tables)	=	kN
Mounting orientation	Inner tube bottom	☐
	Lower Outer Tube.....	☐
≤ perm. prop load (according to PERI Tables)	=	kN

Check to be carried out on the construction site before concreting

Check whether above assumptions and/or specifications apply on the construction site?

Slab thickness	=	cm
max. panel span	=	cm
Chosen prop	=	
Chosen prop length	=	m
Mounting orientation	Inner tube bottom	☐
	Lower Outer Tube.....	☐
All props positioned vertically in both axes? (≤1 %)	.....	yes ☐
Horizontal support for the formwork available in all directions?	.....	yes ☐
Mounted parts are obviously undamaged?	.....	yes ☐
Required bracing has been mounted?	.....	yes ☐

Place	Date	Site manager in charge (signature)

E3 Prop loads

System with Prop Head SXP S

Slab thick-ness in cm	Load Q in kN/m²	Prop load in kN without centre support	Prop load in kN with centre support
14	5.13	10.3	
16	5.62	11.2	
18	6.11	12.2	
20	6.60	13.2	
22	7.09	14.2	8.4
24	7.58	15.2	8.9
26	8.07	16.1	9.5
28	8.56	17.1	10.1
30	9.05	18.1	10.7
32	9.57	19.1	11.3
35	10.38	20.8	12.3
40*	11.73*	23.5*	13.8*
45*	13.08*		15.4*
50*	14.43*		17.0*
55*	15.77*		18.6*

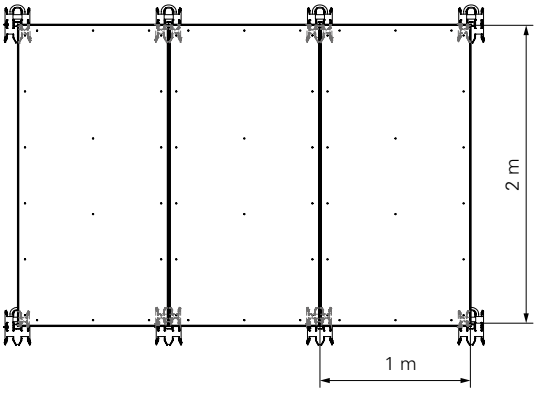
Tab. E3.01

* These values apply exclusively to the aluminium version. Not for the polymer version.

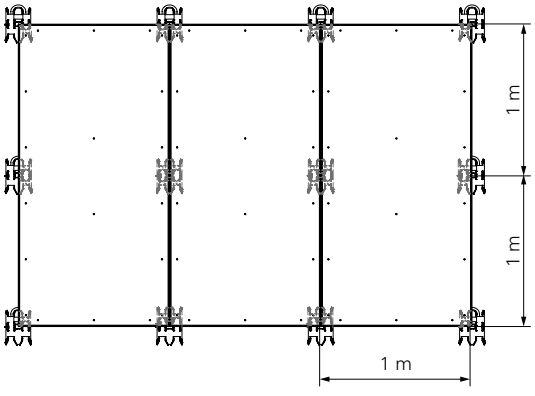
When using the Bracing SXP TU 3 T2, increase the prop loads of all four props on the braced panel by 2.6 kN.

Load according to DIN EN 12812:

Total load Q =	$Q_1 + Q_{2,b} + Q_{2,p} + Q_4$
Dead weight Q_1 =	0.20 kN/m²
Concrete weight $Q_{2,b}$ =	24.5 kN/m³ * d in m
Live load working operations $Q_{2,p}$ =	0.75 kN/m²
Live load concreting Q_4 =	0.1 * $Q_{2,b}$ (with 0.75 kN/m² ≤ Q_4 ≤ 1.75 kN/m²)



without centre support



with centre support

E3 Prop loads

System with Lowering Head SXP L T2

Slab thick-ness in cm	Load Q in kN/m²	Prop load in kN without centre support
14	5.13	10.3
16	5.62	11.2
18	6.11	12.2
20	6.60	13.2
22	7.09	14.2
24	7.58	15.2
26	8.07	16.1
28	8.56	17.1
30	9.05	18.1
32	9.57	19.1
35	10.38	20.8
40*	11.73*	23.5*

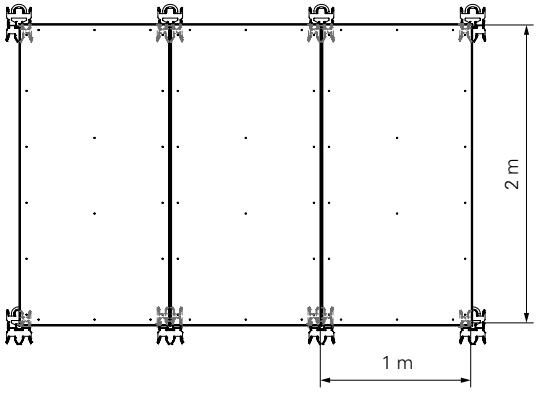
Tab. E3.02

* These values apply exclusively to the aluminium version. Not for the polymer version.

When using the Bracing SXP TU 3 T2, increase the prop loads of all four props on the braced panel by 2.6 kN.

Load according to DIN EN 12812:

Total load Q =	$Q_1 + Q_{2,b} + Q_{2,p} + Q_4$
Dead weight Q_1 =	0.20 kN/m²
Concrete weight $Q_{2,b}$ =	24.5 kN/m³ * d in m
Live load working operations $Q_{2,p}$ =	0.75 kN/m²
Live load concreting Q_4 =	0.1 * $Q_{2,b}$ (with 0.75 kN/m² ≤ Q_4 ≤ 1.75 kN/m²)



without centre support

System with Lowering Head SXP L T2 – partial early striking with backpropping

Prop loads for backpropping and required concrete strength

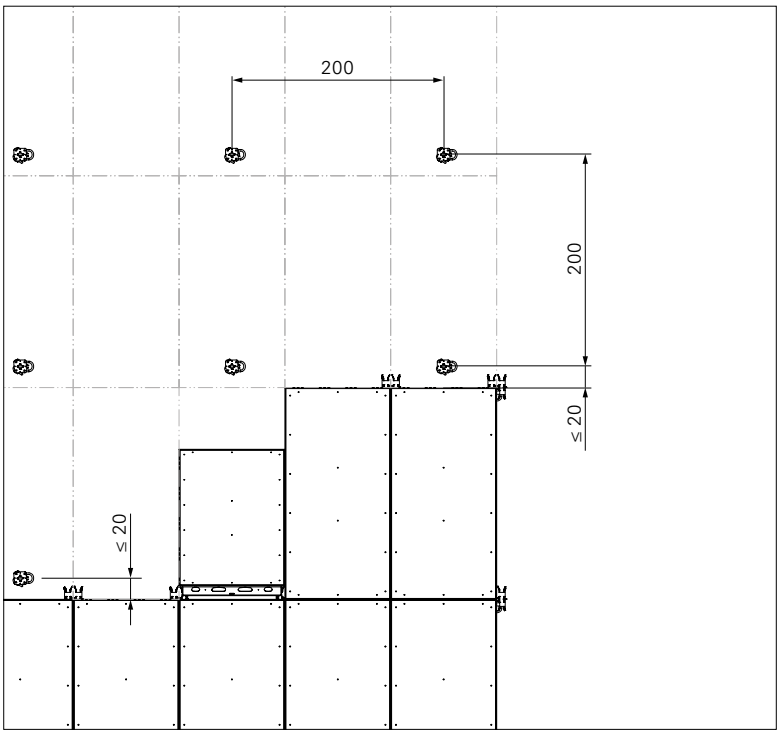
Slab thickness in cm	Backpropping grid: 2.00 x 2.00 m		Backpropping grid: 2.00 x 1.00 m	
	Prop load in kN[1]	Required concrete strength $f_{ck,cube}$ [2] in N/mm²	Prop load in kN[1]	Required concrete strength $f_{ck,cube}$ [2] in N/mm²
14	20.6	18	10.3	10
16	22.4	13	11.2	9
18	24.4	11	12.2	8
20	26.4	10	13.2	7
22	28.4	9	14.2	7
24	30.4	9	15.2	6
26	32.2	9	16.1	6
28	34.2	9	17.1	6
30	36.2	7	18.1	5
32	38.2	7	19.1	5
35	41.6	7	20.8	5
40	47.0	7	23.5	5 [3,]

Tab. E3.03

[1] Loads on backpropping from slab struck early
[2] Required concrete strength at time of striking
[3] Prop with minimum top tube diameter ≥ 58 mm

E3 Prop loads

- Reinforced concrete with a concrete strength class of at least C20/25 is required.
- A minimum reinforcement of 1.88 cm²/m in both directions (e.g. Q 188) is required as bottom reinforcement.
- A live load of 1.50 kN/m² is factored in for the early-struck slab.
- The maximum permissible distance between the backpropping and the final (still shuttered) panel row is 20 cm.
- The backpropping props must be in direct and full contact with the concrete slab and the concrete floor/ foundation.
- If may also be necessary to take the loads from shoring of the upper slabs into account when selecting the backpropping.



Suitable props when using Lowering Head SXP L T2 and SXP LQ

When using lowering heads, the actual prop length L_{real} must be increased by the construction height of the lowering head for props when selecting slab props from the standard prop tables. Refer to Table E3.04 when selecting a suitable slab prop.
Select the suitable prop from the prop tables with the resultant length $L_{fictitious}$.

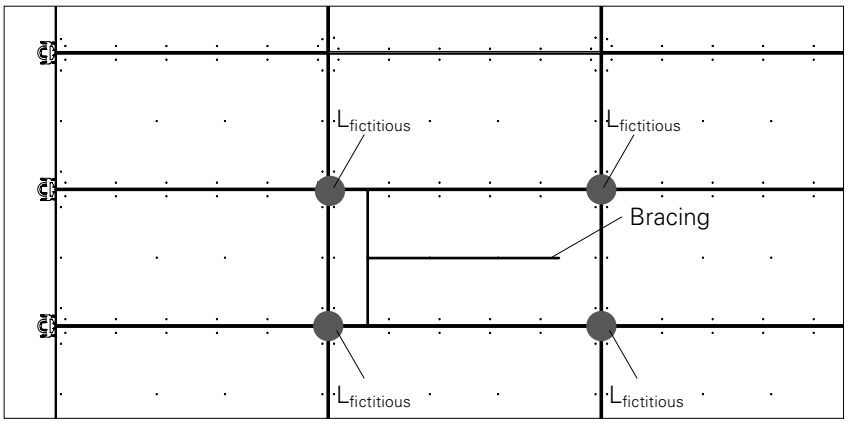
Alternatively: Use the SKYMAX slab prop tables with the fictitious increase already taken into account (Section E4 Slab props).

Panels (aluminium version) with Lowering Heads SXP L T2 and SXP LQ							
Slab props with SKYMAX Lowering Head SXP L T2 SXP LQ	PEP Ergo			PEP Alpha-2		PEP 20/30	
	B	D	E	B	D	20	30
without bracing	√	√	√	+13 cm	+13 cm	+13 cm	√
with bracing	+13 cm*	+13 cm	√	+13 cm	+13 cm	+13 cm	√

Tab. E3.04

√ = Slab prop may be selected with the actual extension length from the table.
+13 cm = Slab prop must be selected from the table with the length increased based on the construction height of the lowering head ("fictitiously" increased extension length).

Example
When using aluminium panels with Props PEP Ergo B and Lowering Heads SXP L T2 or SXP LQ in combination with Bracing SXP TU 3 T2, all four slab props of the braced panel must be fictitiously raised by 13 cm. This increase corresponds to the construction height of the lowering head.



Calculation of the fictitious prop height

Example
Room height: 2.95 m.
Slab prop length:
Room height - 28 cm: L_{real} = 2.67 m.
Lowering head height: $h_{lowering\ head}$ = 0.13 m.
Fictitious prop height:
$L_{fictitious}$ = Room height - 28 cm + 13 cm
$L_{fictitious}$ = 2.80 m

Intermediate values can be interpolated linearly.

Setting
Do not pull the prop out by a further 13 cm, leave it at the actual required value.

→ The additional required load-bearing capacity of the slab prop has been taken into account.

Alternative way to select suitable props: See additional SKYMAX Slab Prop Tables with fictitious increase, see Section E4.

Looking for:
permissible prop loads for slab props on braced panel

	Permissible prop load [kN] according to approval			
Extension length [m]	PEP Ergo B-300 L = 1.97 – 3.00 m		PEP Ergo B-350 L = 2.25 – 3.50 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
...	...	...	...	...
2.60	20.3	29.5	23.1	28.4
2.70	19.3	27.5	21.3	28.0
$L_{fictitious}$ 2.80	18.3	24.8	19.8	27.4
2.90	16.9	22.3	18.6	26.1
3.00	15.6	20.2	17.5	24.4
3.10			16.3	22.8
3.20			15.2	20.8
...	...	...	...	...

Tab. E3.05

Number of screws in system with Lowering Head SXP L T2 and SXP LQ

- As a rule, screw the lowering heads diagonally with two screws.
- Use additional screws for increased prop loads.
  See table

Additional components

57 Screw M12x30-8.8
58 Nut M12-8

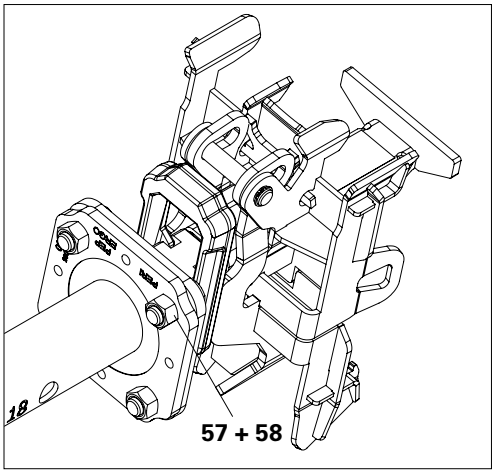


Fig. E3.01

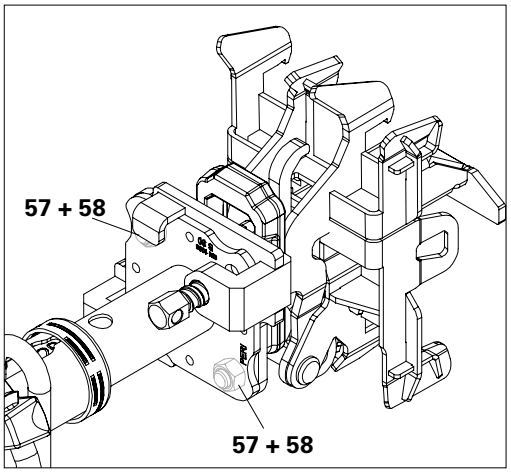


Fig. E3.02

Required number of screws		
with PEP Ergo, PEP Alpha-2 and PEP 20/30	SXP L T2	SXP LQ
Standard case	2 screws fitted diagonally	Tighten 2 DW15 screws
Exception: Using slab props with a 6-mm-thick* end plate and a slab thickness > 33 cm and load from use of 3 kN tensioning unit	4 screws	2 additional M12x30-8.8 bolts and nuts.

Tab. E3.06

* Slab props with a 6-mm-thick* end plate:
PEP Ergo B, PEP Ergo D-250, PEP 20, PEP Alpha-2 B

Standard table without fictitious increase

Permissible prop load [kN] according to approval				
Extension length [m]	PEP Ergo B-300 L = 1.97 – 3.00 m		PEP Ergo B-350 L = 2.25 – 3.50 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
2.00	30.8	30.8		
2.10	29.8	30.8		
2.20	27.0	30.8		
2.30	24.6	30.8	30.8	28.6
2.40	23.0	30.8	28.6	28.6
2.50	21.5	30.8	25.5	28.6
2.60	20.3	29.5	23.1	28.4
2.70	19.3	27.5	21.3	28.0
2.80	18.3	24.8	19.8	27.4
2.90	16.9	22.3	18.6	26.1
3.00	15.6	20.2	17.5	24.4
3.10			16.3	22.8
3.20			15.2	20.8
3.30			14.3	19.0
3.40			13.2	17.4
3.50			12.4	15.7
3.60				
3.70				
3.80				
3.90				
4.00				

Tab. E4.01

Table valid for the applications:
- Prop head without bracing
- Prop head with bracing
- Lowering head without bracing

Notes:
- PERI PEP Ergo B-300 and PEP Ergo B-350 props meet the load-bearing capacity requirements of Prop Class B as stipulated in DIN EN 1065.
- General Technical Approval Z-8.311-934 issued by the German Institute for Structural Engineering.

SKYMAX table with fictitious increase

Permissible prop load [kN]				
Extension length [m]	PEP Ergo B-300 L = 1.97 – 3.00 m		PEP Ergo B-350 L = 2.25 – 3.50 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
2.00	29.0	30.8		
2.07	27.0	30.8		
2.10	26.3	30.8		
2.17	24.6	30.8		
2.20	24.1	30.8		
2.27	23.0	30.8		
2.30	22.6	30.8	27.7	28.6
2.37	21.5	30.8	25.5	28.6
2.40	21.1	30.4	24.8	28.5
2.47	20.3	29.5	23.1	28.4
2.50	20.0	28.9	22.6	28.3
2.57	19.3	27.5	21.3	28.0
2.60	19.0	26.7	20.9	27.8
2.67	18.3	24.8	19.8	27.4
2.70	17.9	24.1	19.4	27.0
2.77	16.9	22.3	18.6	26.1
2.80	16.5	21.7	18.3	25.6
2.87	15.6	20.2	17.5	24.4
2.90	15.5	21.4	17.1	23.9
2.97	14.8	20.2	16.3	22.8
3.00	14.4	20.2	16.0	22.2
3.07			15.2	20.8
3.10			14.9	20.3
3.17			14.3	19.0
3.20			14.0	18.5
3.27			13.2	17.4
3.30			13.0	16.9
3.37			12.4	15.7
3.40			12.2	15.1
3.47			11.7	13.5
3.50			11.4	12.7

Tab. E4.02

Table valid for the applications:
- Lowering head with bracing

The table takes into account a “fictitious” increase in the prop of 13 cm.

Standard table without fictitious increase

Permissible prop load [kN] according to approval												
Extension length [m]	PEP Ergo D-150 L = 0.98 – 1.50 m		PEP Ergo D-250 L = 1.47 – 2.50 m		PEP Ergo D-300 + L = 1.79 – 3.00 m		PEP Ergo D-350 + L = 2.08 – 3.50 m		PEP Ergo D-400 L = 2.51 – 4.00 m		PEP Ergo D-500 L = 3.26 – 5.00 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.00	30.8	30.8										
1.10	30.8	30.8										
1.20	30.8	30.8										
1.30	30.8	30.8										
1.40	28.5	30.8										
1.50	26.4	30.8	35.0	35.0								
1.60			35.0	35.0								
1.70			32.9	35.0								
1.80			30.7	35.0	35.0	35.0						
1.90			29.1	35.0	35.0	35.0						
2.00			28.1	35.0	35.0	35.0						
2.10			27.3	35.0	35.0	35.0	40.0	40.0				
2.20			26.5	34.1	35.0	35.0	40.0	40.0				
2.30			25.7	32.3	33.4	35.0	40.0	40.0				
2.40			24.3	29.4	31.7	34.0	39.7	40.0				
2.50			22.4	26.3	30.1	32.7	36.9	40.0				
2.60					28.3	31.3	34.7	40.0				
2.70					26.2	29.1	32.9	40.0	40.0	40.0		
2.80					24.3	26.9	31.6	40.0	40.0	40.0		
2.90					22.4	24.9	30.3	40.0	40.0	40.0		
3.00					20.6	22.8	29.2	39.1	40.0	40.0		
3.10							27.2	35.4	37.7	40.0		
3.20							25.4	32.1	35.7	40.0		
3.30							23.7	29.4	33.9	40.0	40.0	40.0
3.40							22.1	27.0	32.5	40.0	40.0	40.0
3.50							20.7	24.7	31.0	39.7	40.0	40.0
3.60									29.0	36.4	40.0	40.0
3.70									27.0	33.3	40.0	40.0
3.80									25.2	30.7	40.0	40.0
3.90									23.5	28.2	40.0	40.0
4.00									21.8	26.0	40.0	40.0
4.10											39.3	40.0
4.20											36.5	40.0
4.30											34.0	39.2
4.40											31.8	37.0
4.50											29.9	34.6
4.60											28.1	32.4
4.70											26.4	30.4
4.80											24.8	28.5
4.90											23.4	26.8
5.00											21.8	25.3

Tab. E4.03

Table valid for the applications:
- Prop head without bracing
- Prop head with bracing
- Lowering head without bracing

Notes:
- PERI PEP Ergo D-150, PEP Ergo D-250, PEP Ergo D-300 +, PEP Ergo D-350 +, PEP Ergo D-400 and PEP Ergo D-500 props fulfil the Prop Class D load-bearing capacity requirements of DIN EN 1065.
- The PEP Ergo D-250 Prop also fulfils the Prop Class B requirements of DIN EN 1065.
- General Technical Approval Z-8.311-934 for PERI PEP Ergo D-150 and PEP Ergo D-250 and PEP Ergo D-300 +.
- General Technical Approval Z-8.311-941 for PERI PEP Ergo D-350 +, PEP Ergo D-400 and PEP Ergo D-500.

SKYMAX table with fictitious increase

Permissible prop load [kN]								
Extension length [m]	PEP Ergo D-250 L = 1.47 – 2.50 m		PEP Ergo D-300 + L = 1.79 – 3.00 m		PEP Ergo D-350 + L = 2.08 – 3.50 m		PEP Ergo D-400 L = 2.51 – 4.00 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.50	34.4	35.0						
1.57	32.9	35.0						
1.60	32.2	35.0						
1.67	30.7	35.0						
1.70	30.2	34.7						
1.77	29.1	34.0						
1.80	28.8	33.6	35.0	35.0				
1.87	28.1	32.7	35.0	35.0				
1.90	27.9	32.3	35.0	35.0				
1.97	27.3	31.3	35.0	35.0				
2.00	27.1	30.6	35.0	35.0				
2.07	26.5	29.1	35.0	35.0				
2.10	26.3	28.4	34.5	35.0	40.0	40.0		
2.17	25.7	26.9	33.4	35.0	40.0	40.0		
2.20	25.3	26.3	32.9	34.7	39.9	40.0		
2.27	24.3	24.9	31.7	34.0	39.7	40.0		
2.30	23.7	24.3	31.2	33.6	38.9	40.0		
2.37	22.4	22.8	30.1	32.7	36.9	40.0		
2.40	21.8	22.1	29.6	32.3	36.2	40.0		
2.47	20.5	20.4	28.3	31.3	34.7	40.0		
2.50	19.8	19.8	27.7	30.6	34.2	40.0		
2.57			26.2	29.1	32.9	40.0		
2.60			25.6	28.4	32.5	40.0		
2.67			24.3	26.9	31.6	40.0		
2.70			23.7	26.3	31.2	40.0	40.0	40.0
2.77			22.4	24.9	30.3	40.0	40.0	40.0
2.80			21.9	24.3	30.0	39.7	39.9	40.0
2.87			20.6	22.8	29.2	39.1	39.7	40.0
2.90			20.0	22.1	28.6	38.0	39.1	40.0
2.97			18.7	20.6	27.2	35.4	37.7	40.0
3.00			18.2	20.0	26.7	34.4	37.1	40.0
3.07					25.4	32.1	35.7	40.0
3.10					24.9	31.3	35.2	40.0
3.17					23.7	29.4	33.9	40.0
3.20					23.2	28.7	33.5	40.0
3.27					22.1	27.0	32.5	40.0
3.30					21.7	26.3	32.1	39.9
3.37					20.7	24.7	31.0	39.7
3.40					20.2	24.0	30.4	38.7
3.47					19.1	22.5	29.0	36.4
3.50					18.5	21.9	28.4	35.5
3.57							27.0	33.3
3.60							26.5	32.5
3.67							25.2	30.7
3.70							24.7	30.0
3.77							23.5	28.2
3.80							23.0	27.5
3.87							21.8	26.0
3.90							21.3	25.2
3.97							20.0	23.7
4.00							19.4	23.2

Tab. E4.04

Table valid for the applications:
- Lowering head with bracing

The table takes into account a "fictitious" increase in the prop of 13 cm.

SKYMAX table with fictitious increase

Permissible prop load [kN]		
Extension length [m]	PEP Ergo D-500 L = 3.26 – 5.00 m	
	Lower Outer Tube	Lower Inner Tube
3.30	40.0	40.0
3.37	40.0	40.0
3.40	40.0	40.0
3.47	40.0	40.0
3.50	40.0	40.0
3.57	40.0	40.0
3.60	40.0	40.0
3.67	40.0	40.0
3.70	40.0	40.0
3.77	40.0	40.0
3.80	40.0	40.0
3.87	40.0	40.0
3.90	39.8	40.0
3.97	39.3	40.0
4.00	38.5	40.0
4.07	36.5	40.0
4.10	35.8	39.8
4.17	34.0	39.2
4.20	33.3	38.5
4.27	31.8	37.0
4.30	31.2	36.3
4.37	29.9	34.6
4.40	29.4	33.9
4.47	28.1	32.4
4.50	27.6	31.8
4.57	26.4	30.4
4.60	25.9	29.8
4.67	24.8	28.5
4.70	24.4	28.0
4.77	23.4	26.8
4.80	22.9	26.4
4.87	21.8	25.3
4.90	21.3	24.7
4.97	20.2	23.6
5.00	19.8	23.1

Tab. E4.05

Table valid for the applications:
- Lowering head with bracing

The table takes into account a “fictitious” increase in the prop of 13 cm.

Standard table without fictitious increase

Permissible prop load [kN] according to approval						
Extension length [m]	PEP Ergo E-300 + L = 1.79 – 3.00 m		PEP Ergo E-350 + L = 2.08 – 3.50 m		PEP Ergo E-400 L = 2.51 – 4.00 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.80	50.4	50.4				
1.90	50.4	50.4				
2.00	50.4	50.4				
2.10	50.4	50.4	50.4	50.4		
2.20	50.4	50.4	50.4	50.4		
2.30	50.4	50.4	50.4	50.4		
2.40	47.3	50.4	50.4	50.4		
2.50	45.6	50.4	50.4	50.4		
2.60	44.5	50.4	50.4	50.4	50.4	50.4
2.70	43.3	50.4	48.5	50.4	50.4	50.4
2.80	41.8	50.4	46.4	50.4	50.4	50.4
2.90	40.3	48.0	44.5	50.4	50.4	50.4
3.00	37.5	43.0	43.0	50.4	50.4	50.4
3.10			41.5	50.4	50.4	50.4
3.20			38.7	46.1	50.4	50.4
3.30			36.0	41.9	50.4	50.4
3.40			33.3	38.2	50.4	50.4
3.50			30.9	34.9	48.5	50.4
3.60					46.0	50.4
3.70					42.7	48.4
3.80					39.7	44.7
3.90					36.9	41.1
4.00					34.1	37.7
4.10						
4.20						
4.30						
4.40						
4.50						

Tab. E4.06

Table valid for the applications:
- Prop head without bracing
- Prop head with bracing
- Lowering head without bracing
- Lowering head with bracing

Notes:
- PERI Props PERI PEP Ergo E-300 +, PEP Ergo E-350 + and PEP Ergo E-400 fulfil the Prop Class E load-bearing capacity requirements of DIN EN 1065.
- General Technical Approval Z-8.311-941 of the German Institute for Structural Engineering (DIBt).

Standard table without fictitious increase

Permissible prop load [kN]				
Extension length [m]	PEP Alpha-2 B-300 L = 1.80 – 3.00 m		PEP Alpha-2 B-350 L = 2.00 – 3.50 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.80	32.4	32.4		
1.90	31.7	32.4		
2.00	30.9	32.4	34.9	34.9
2.10	27.9	32.4	34.9	34.9
2.20	25.5	32.4	30.1	34.9
2.30	23.4	32.4	27.3	34.9
2.40	22.6	32.4	25.0	34.9
2.50	21.7	30.5	23.3	34.9
2.60	20.4	27.2	22.1	34.9
2.70	19.0	24.6	21.1	31.5
2.80	17.8	22.4	19.7	28.1
2.90	16.7	20.7	18.5	25.3
3.00	15.5	18.9	17.4	23.1
3.10			16.5	21.3
3.20			15.5	19.6
3.30			14.6	17.7
3.40			13.3	15.8
3.50			12.1	14.3

Table valid for the applications:
- Prop head without bracing
- Prop head with bracing

The props fulfil the load-bearing capacity requirements of DIN EN 1065.

SKYMAX table with fictitious increase

Permissible prop load [kN]				
Extension length [m]	PEP Alpha-2 B-300 L = 1.80 – 3.00 m		PEP Alpha-2 B-350 L = 2.00 – 3.50 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.80	31.5	32.4		
1.87	30.9	32.4		
1.90	30.0	32.4		
1.97	27.9	32.4		
2.00	27.2	32.4	33.5	34.9
2.07	25.5	32.4	30.1	34.9
2.10	24.9	32.4	29.3	34.9
2.17	23.4	32.4	27.3	34.9
2.20	23.2	32.4	26.6	34.9
2.27	22.6	32.4	25.0	34.9
2.30	22.3	31.8	24.5	34.9
2.37	21.7	30.5	23.3	34.9
2.40	21.3	29.5	22.9	34.9
2.47	20.4	27.2	22.1	34.9
2.50	20.0	26.4	21.8	33.9
2.57	19.0	24.6	21.1	31.5
2.60	18.6	23.9	20.7	30.5
2.67	17.8	22.4	19.7	28.1
2.70	17.5	21.9	19.3	27.3
2.77	16.7	20.7	18.5	25.3
2.80	16.3	20.2	18.2	24.6
2.87	15.5	18.9	17.4	23.1
2.90	15.4	18.4	17.1	22.6
2.97	14.7	17.2	16.5	21.3
3.00	14.3	16.7	16.2	20.8
3.07			15.5	19.6
3.10			15.2	19.0
3.17			14.6	17.7
3.20			14.2	17.1
3.27			13.3	15.8
3.30			12.9	15.4
3.37			12.1	14.3
3.40			11.8	13.9
3.47			10.9	12.8
3.50			10.5	12.2

Table valid for the applications:
- Lowering head without bracing
- Lowering head with bracing

The table takes into account a “fictitious” increase in the prop of 13 cm.

Standard table without fictitious increase

Permissible prop load [kN]				
Extension length [m]	PEP Alpha-2 D-300 L = 1.80 – 3.00 m		PEP Alpha-2 D-350 L = 2.00 – 3.50 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.80	36.1	36.1		
1.90	36.1	36.1		
2.00	36.1	36.1	36.1	36.1
2.10	36.0	36.1	36.1	36.1
2.20	33.8	36.1	36.1	36.1
2.30	32.1	36.1	36.1	36.1
2.40	30.9	36.1	36.1	36.1
2.50	29.7	36.1	36.1	36.1
2.60	27.5	34.3	35.7	36.1
2.70	25.5	30.9	34.3	36.1
2.80	23.6	28.1	32.9	36.1
2.90	21.9	25.8	31.8	36.1
3.00	20.6	23.5	29.8	36.1
3.10			27.9	34.3
3.20			26.1	32.4
3.30			24.4	28.8
3.40			22.7	26.5
3.50			21.1	24.3

Table valid for the applications:
- Prop head without bracing
- Prop head with bracing

The props fulfil the load-bearing capacity requirements of DIN EN 1065.

SKYMAX table with fictitious increase

Permissible prop load [kN]				
Extension length [m]	PEP Alpha-2 D-300 L = 1.80 – 3.00 m		PEP Alpha-2 D-350 L = 2.00 – 3.50 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.80	36.1	36.1		
1.87	36.1	36.1		
1.90	36.1	36.1		
1.97	36.0	36.1		
2.00	35.3	36.1	36.1	36.1
2.07	33.8	36.1	36.1	36.1
2.10	33.3	36.1	36.1	36.1
2.17	32.1	36.1	36.1	36.1
2.20	31.7	36.1	36.1	36.1
2.27	30.9	36.1	36.1	36.1
2.30	30.5	36.1	36.1	36.1
2.37	29.7	36.1	36.1	36.1
2.40	29.0	35.6	36.00	36.1
2.47	27.5	34.3	35.7	36.1
2.50	26.9	33.3	35.3	36.1
2.57	25.5	30.9	34.3	36.1
2.60	24.9	30.1	33.9	36.1
2.67	23.6	28.1	32.9	36.1
2.70	23.1	27.4	32.6	36.1
2.77	21.9	25.8	31.8	36.1
2.80	21.5	25.1	31.2	36.1
2.87	20.6	23.5	29.8	36.1
2.90	20.1	22.7	29.2	35.6
2.97	19.0	20.9	27.9	34.3
3.00	18.7	20.2	27.4	33.7
3.07			26.1	32.4
3.10			25.6	31.3
3.17			24.4	28.8
3.20			23.9	28.1
3.27			22.7	26.5
3.30			22.2	25.8
3.37			21.1	24.3
3.40			20.5	23.6
3.47			19.1	22.1
3.50			18.5	21.5

Table valid for the applications:
- Lowering head without bracing
- Lowering head with bracing

The table takes into account a “fictitious” increase in the prop of 13 cm.

Standard table without fictitious increase

Permissible prop load [kN] according to type test								
Extension length [m]	PEP 20-300 L = 1.80 – 3.00 m		PEP 20-350 L = 2.00 – 3.50 m		PEP 20-400 L = 2.30 – 4.00 m		PEP 20-500 L = 2.80 – 5.00 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.80	36.4	36.4						
1.90	36.4	36.4						
2.00	36.1	36.4	36.4	36.4				
2.10	33.2	36.4	36.4	36.4				
2.20	31.4	36.4	36.4	36.4				
2.30	29.9	36.4	36.4	36.4	36.4	36.4		
2.40	28.7	36.4	36.4	36.4	36.4	36.4		
2.50	27.7	36.4	36.4	36.4	36.4	36.4		
2.60	26.9	36.3	34.8	36.4	36.4	36.4		
2.70	25.7	32.7	33.4	36.4	36.4	36.4		
2.80	24.0	29.3	32.1	36.4	36.4	36.4	36.4	36.4
2.90	22.3	26.5	31.1	36.4	36.4	36.4	36.4	36.4
3.00	20.5	23.9	30.1	36.4	36.4	36.4	36.4	36.4
3.10			28.3	35.7	34.6	36.4	36.4	36.4
3.20			26.5	32.5	33.5	36.4	36.4	36.4
3.30			24.8	29.7	32.1	36.4	36.4	36.4
3.40			23.1	27.2	30.5	36.4	36.4	36.4
3.50			21.3	24.8	28.7	34.9	36.4	36.4
3.60					26.9	32.1	36.4	36.4
3.70					25.3	29.8	36.4	36.4
3.80					23.7	27.6	36.4	36.4
3.90					22.3	25.5	36.4	36.4
4.00					20.7	23.5	35.3	36.4
4.10							33.3	36.4
4.20							31.5	36.4
4.30							29.8	35.0
4.40							28.2	32.9
4.50							26.8	30.8
4.60							25.3	28.9
4.70							24.1	27.2
4.80							22.8	25.7
4.90							21.5	24.1
5.00							20.3	22.1

Table valid for the applications:
- Prop head without bracing
- Prop head with bracing

All PEP 20 props correspond to Class D of DIN EN 1065.

SKYMAX table with fictitious increase

Permissible prop load [kN]						
Extension length [m]	PEP 20-300 L = 1.80 – 3.00 m		PEP 20-350 L = 2.00 – 3.50 m		PEP 20-400 L = 2.30 – 4.00 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.80	36.3	36.4				
1.87	36.1	36.4				
1.90	35.2	36.4				
1.97	33.2	36.4				
2.00	32.7	36.4	36.4	36.4		
2.07	31.4	36.4	36.4	36.4		
2.10	31.0	36.4	36.4	36.4		
2.17	29.9	36.4	36.4	36.4		
2.20	29.5	36.4	36.4	36.4		
2.27	28.7	36.4	36.4	36.4		
2.30	28.4	36.4	36.4	36.4	36.4	36.4
2.37	27.7	36.4	36.4	36.4	36.4	36.4
2.40	27.5	36.4	35.9	36.4	36.4	36.4
2.47	26.9	36.3	34.8	36.4	36.4	36.4
2.50	26.5	35.2	34.4	36.4	36.4	36.4
2.57	25.7	32.7	33.4	36.4	36.4	36.4
2.60	25.2	31.7	33.0	36.4	36.4	36.4
2.67	24.0	29.3	32.1	36.4	36.4	36.4
2.70	23.5	28.5	31.8	36.4	36.4	36.4
2.77	22.3	26.5	31.1	36.4	36.4	36.4
2.80	21.8	25.7	30.8	36.4	36.4	36.4
2.87	20.5	23.9	30.1	36.4	36.4	36.4
2.90	19.8	23.1	29.6	36.2	35.9	36.4
2.97	18.5	21.3	28.3	35.7	34.6	36.4
3.00	18.0	20.6	27.8	34.7	34.3	36.4
3.07			26.5	32.5	33.5	36.4
3.10			26.0	31.7	33.1	36.4
3.17			24.8	29.7	32.1	36.4
3.20			24.3	29.0	31.6	36.4
3.27			23.1	27.2	30.5	36.4
3.30			22.6	26.5	30.0	36.0
3.37			21.3	24.8	28.7	34.9
3.40			20.8	24.0	28.2	34.1
3.47			19.5	22.2	26.9	32.1
3.50			18.9	21.5	26.4	31.4
3.57					25.3	29.8
3.60					24.8	29.1
3.67					23.7	27.6
3.70					23.3	27.0
3.77					22.3	25.5
3.80					21.8	24.9
3.87					20.7	23.5
3.90					20.1	22.8
3.97					18.8	21.1
4.00					18.3	20.5

Permissible prop load [kN]		
Extension length [m]	PEP 20-500 L = 2.80 – 5.00 m	
	Lower Outer Tube	Lower Inner Tube
2.80	36.4	36.4
2.87	36.4	36.4
2.90	36.4	36.4
2.97	36.4	36.4
3.00	36.4	36.4
3.07	36.4	36.4
3.10	36.4	36.4
3.17	36.4	36.4
3.20	36.4	36.4
3.27	36.4	36.4
3.30	36.4	36.4
3.37	36.4	36.4
3.40	36.4	36.4
3.47	36.4	36.4
3.50	36.4	36.4
3.57	36.4	36.4
3.60	36.4	36.4
3.67	36.4	36.4
3.70	36.4	36.4
3.77	36.4	36.4
3.80	36.1	36.4
3.87	35.3	36.4
3.90	34.7	36.4
3.97	33.3	36.4
4.00	32.8	36.4
4.07	31.5	36.4
4.10	31.0	36.0
4.17	29.8	35.0
4.20	29.3	34.4
4.27	28.2	32.9
4.30	27.8	32.3
4.37	26.8	30.8
4.40	26.4	30.2
4.47	25.3	28.9
4.50	24.9	28.4
4.57	24.1	27.2
4.60	23.7	26.8
4.67	22.8	25.7
4.70	22.4	25.2
4.77	21.5	24.1
4.80	21.1	23.5
4.87	20.3	22.1
4.90	19.8	21.6
4.97	19.0	20.2
5.00	18.6	19.8

Table valid for the applications:
- Lowering head without bracing
- Lowering head with bracing

The table takes into account a “fictitious” increase in the prop of 13 cm.

Standard table without fictitious increase

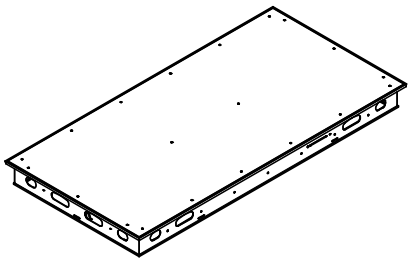
Permissible prop load [kN] according to type test										
Extension length [m]	PEP 30-150 L = 0.96 – 1.50 m		PEP 30-250 L = 1.46 – 2.50 m		PEP 30-300 L = 1.71 – 3.00 m		PEP 30-350 L = 1.96 – 3.50 m		PEP 30-400 L = 2.21 – 4.00 m	
	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube	Lower Outer Tube	Lower Inner Tube
1.00	36.4	36.4								
1.10	36.4	36.4								
1.20	36.4	36.4								
1.30	35.9	36.4								
1.40	35.3	36.4								
1.50	34.5	36.4	42.9	42.9						
1.60			42.9	42.9						
1.70			42.9	42.9						
1.80			42.1	42.9	42.9	42.9				
1.90			39.7	42.9	42.9	42.9				
2.00			37.9	42.9	42.9	42.9	45.5	45.5		
2.10			36.4	42.9	42.9	42.9	45.5	45.5		
2.20			35.5	42.9	42.9	42.9	45.5	45.5		
2.30			34.3	41.5	42.9	42.9	45.5	45.5	41.5	41.5
2.40			33.1	38.7	42.7	42.9	45.5	45.5	41.5	41.5
2.50			31.0	35.9	41.1	42.9	45.5	45.5	41.5	41.5
2.60					40.0	42.9	45.5	45.5	41.5	41.5
2.70					38.5	42.9	45.5	45.5	41.5	41.5
2.80					36.9	41.6	45.5	45.5	41.5	41.5
2.90					34.2	38.3	45.0	45.5	41.5	41.5
3.00					31.3	34.8	43.6	45.5	41.5	41.5
3.10							41.4	44.2	41.5	41.5
3.20							38.7	42.1	41.5	41.5
3.30							36.1	38.7	41.5	41.5
3.40							33.3	35.7	41.5	41.5
3.50							30.7	32.5	41.5	41.5
3.60									41.5	41.5
3.70									41.3	41.5
3.80									38.5	41.3
3.90									35.9	38.1
4.00									33.2	34.9

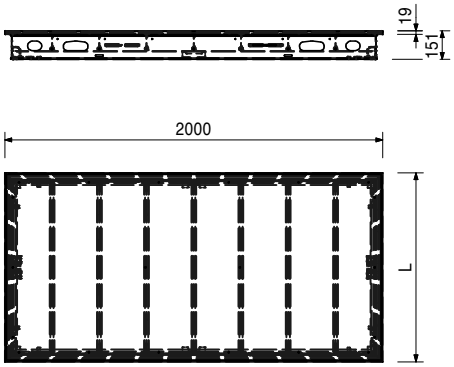
Table valid for the applications:
- Prop head without bracing
- Prop head with bracing
- Lowering head without bracing
- Lowering head with bracing

All PEP 30 props correspond to Class E of DIN EN 1065.

Art-Nr.	Weight [kg]		L [mm]
		Panels SXP P 200 Alu	
433381	25.100	**Panel SXP P 200x66.5 Alu**	665
433382	32.500	**Panel SXP P 200x100 Alu**	1000

Panel with 9 mm formlining.



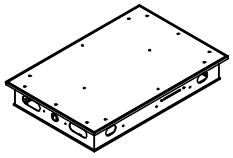


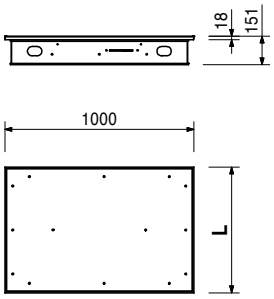
Art-Nr.	Weight [kg]	
		Panels SXP-2 P 200 Alu
142526	26.800	**Panel SXP-2 P 200x66.5 Alu**
142527	32.500	**Panel SXP-2 P 200x100 Alu**

Panel with 9 mm formlining. Without RFID chip!

Art-Nr.	Weight [kg]	
		Panels SXP P 100 Alu
416839	14.000	**Panel SXP P 100x66,5 Alu**
437260	18.900	**Panel SXP P 100x100 Alu**

Panel with 9 mm formlining.



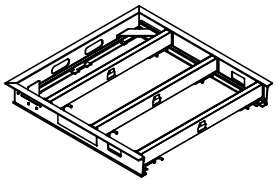


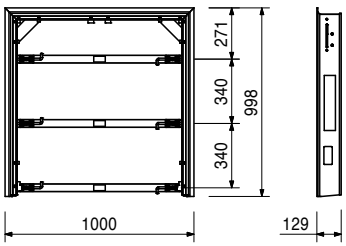
Art-Nr.	Weight [kg]	
		Panels SXP-2 P 100 Alu
142528	13.700	**Panel SXP-2 P 100x66,5 Alu**
142529	18.200	**Panel SXP-2 P 100x100 Alu**

Panel with 9 mm formlining. Without RFID chip!

Art-Nr.	Weight [kg]	
436753	14.800	**Column Frame SXP CFT2**

1 x 1 m. Formwork panel with 21 mm required on site.



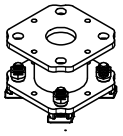


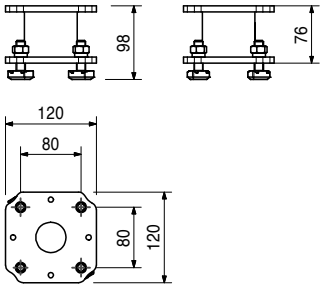
Art-Nr.	Weight [kg]	
142530	14.800	**Column Frame SXP CF-3**

1 x 1 m. Formwork panel with 21 mm required on site. Without RFID chip!

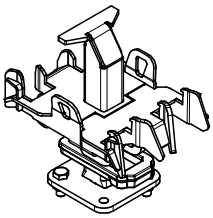
Art-Nr.	Weight [kg]		B [mm]	L [mm]
137543	2.100	**Shoring Adapter SXP SA**	120	120

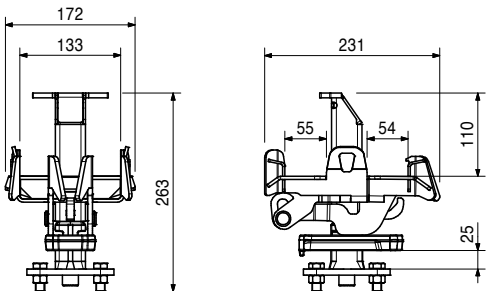
For use with MULTIPROP MP Prop.



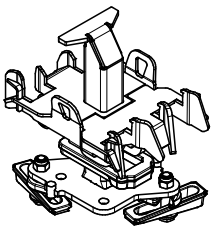


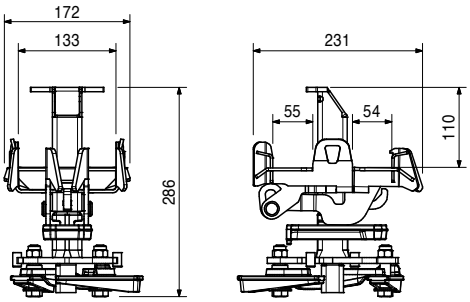
Art-Nr.	Weight [kg]	
136560	6.090	**Lowering Head SXP LT2**



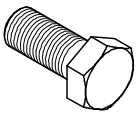


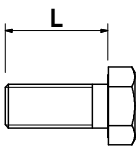
Art-Nr.	Weight [kg]	
136869	7.070	**Lowering Head SXP LQ**





Art-Nr.	Weight [kg]		L [mm]
102120	0.030	**Screw ISO4017-M12x30-8.8-ga**	30





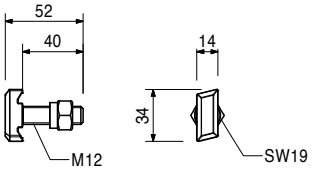
Art-Nr.	Weight [kg]	
710330	0.017	**Nut ISO4032-M12-8-ga**





Art-Nr.	Weight [kg]		B [mm]	L [mm]
166806	0.090	**MP-Scr.w.Nut M12x040-8.8**	14	52



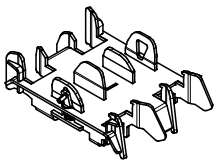


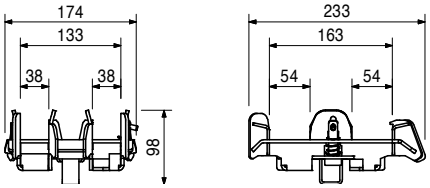
Included in delivery

022004 Prop Section HDS 270 3 pc

Art-Nr.	Weight [kg]	
133701	2.450	**Support Head SXP S**

Head for all positions with quick-release fastener.

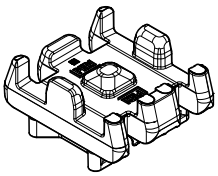


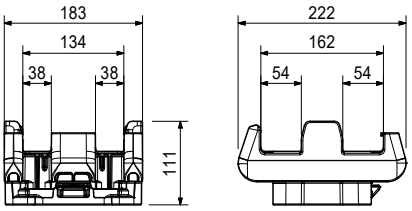


Art-Nr.	Weight [kg]	
133855	1.050	**Support Head SXP S Poly**

Notes

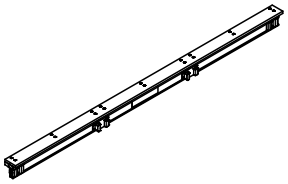
Insert for Support Head SXP S Poly.

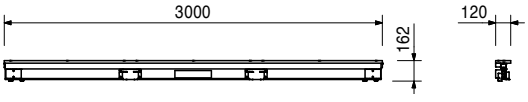




Art-Nr.	Weight [kg]	
134194	18.800	**Starter Beam SXP SB 300**

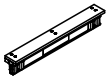
For quick shuttering and easy striking.

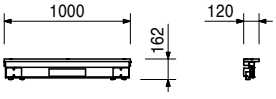




Art-Nr.	Weight [kg]	
134203	6.120	**Starter Beam SXP SB 100**

For quick shuttering and easy striking.

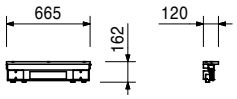




Art-Nr.	Weight [kg]	
134202	4.310	**Starter Beam SXP SB 66.5**

For quick shuttering and easy striking.

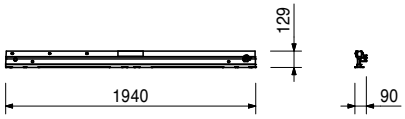




Art-Nr.	Weight [kg]	
136124	8.100	**Adjustment Beam SXP AB 200 T2**

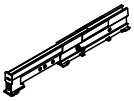
Allows easy and safe closing of compensation areas.

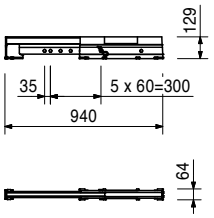




Art-Nr.	Weight [kg]	
142326	3.620	**Telescop. Beam SXP TB 66.5-100**

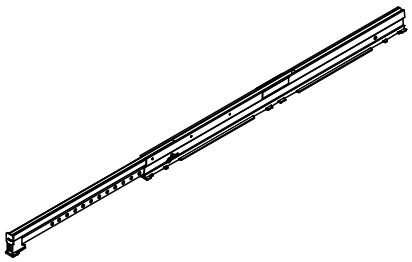
For simple, safe and flexible closing of fitting surfaces (L = 0.67 - 1.00 m).

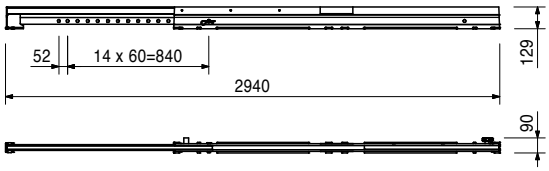




Art-Nr.	Weight [kg]	
136132	11.200	**Telescop. Beam SXP TBR 200-300**

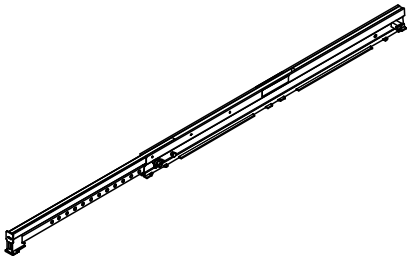
Allows easy, safe and flexible closing of compensation areas (L = 2.00 - 3.00 m).

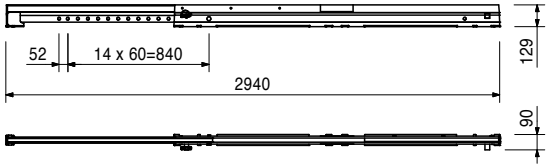




Art-Nr.	Weight [kg]	
136133	11.200	**Telescop. Beam SXP TBL 200-300**

Allows easy, safe and flexible closing of compensation areas (L = 2.00 - 3.00 m), left version.





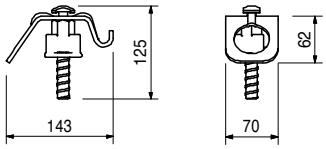
Art-Nr.	Weight [kg]	
061310	0.996	**Tension Sleeve SAO**

For bracing cantilevered and telescopic beams.

Notes

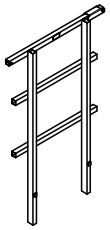
Permissible tension force 3.0 kN.

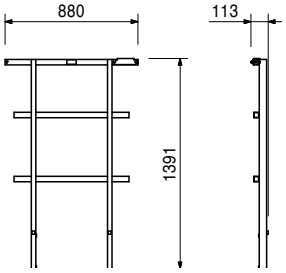




Art-Nr.	Weight [kg]	
135132	4.570	**Plug Guardrail SXP GU 100**

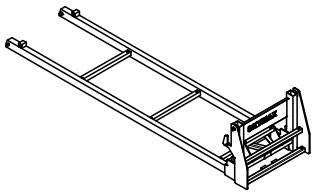
Guardrail for safe working after shuttering. Use only in combination with Frame SXP GU 100 and Traverse SXP GU 100.

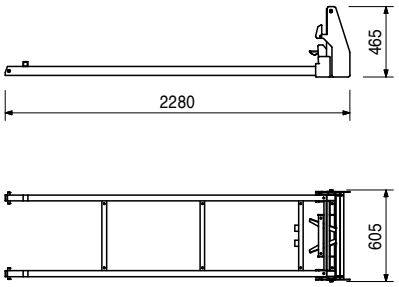




Art-Nr.	Weight [kg]	
135069	15.000	**Frame SXP GU 100**

For swivelling up Plug Guardrail SXP GU 100.

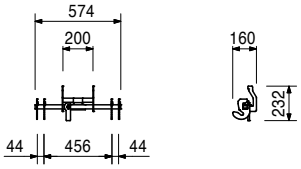




Art-Nr.	Weight [kg]	
135129	3.640	**Traverse SXP GU 100**

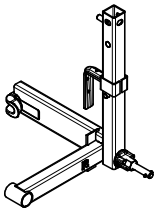
For inserting Frame SXP GU 100.

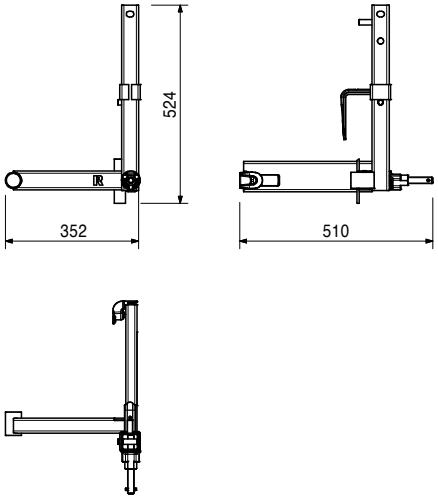




Art-Nr.	Weight [kg]	
136181	6.730	**Guardrail Post HLR. SXP GPR T2**

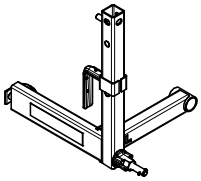
For aluminium Panels.

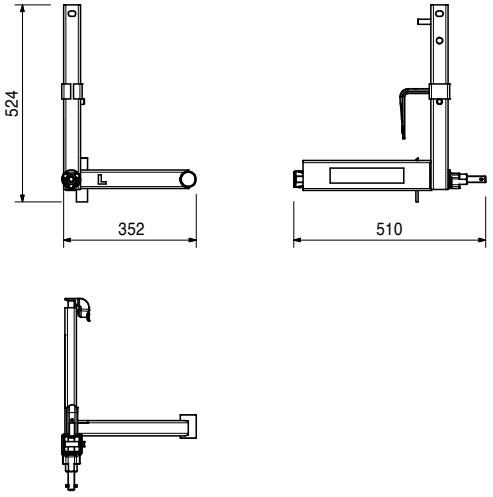




Art-Nr.	Weight [kg]	
136187	6.740	**Guardrail Post HLR. SXP GPL T2**

For aluminium Panels.





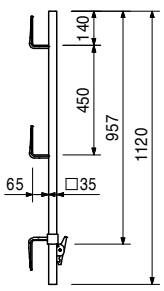
Art-Nr.	Weight [kg]	
117325	4.270	**Post PP**

For the fixation of the Side-Mesh-Barriers.

Notes

Distance of posts with Side Mesh Barrier 260 max. 2.40 m.

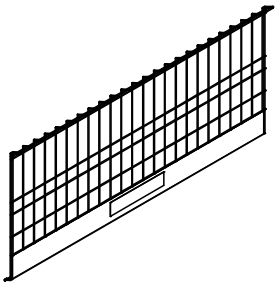


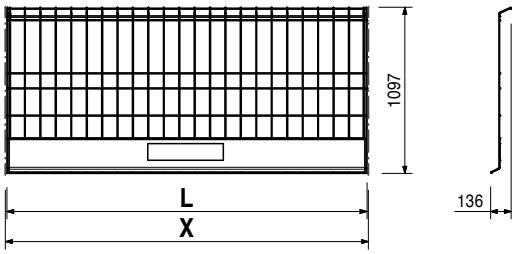


Art-Nr.	Weight [kg]		L [mm]	X [mm]
		Side Mesh Barriers-2 PMB S		
033839	5.600	**Side Mesh Barrier-2 PMB S 90**	900	880
033840	7.400	**Side Mesh Barrier-2 PMB S 120**	1200	1180
033841	14.300	**Side Mesh Barrier-2 PMB S 240**	2400	2380

Notes

Maximum distance of posts with Side Mesh Barrier: PMB S 260 max. 2.40 m.

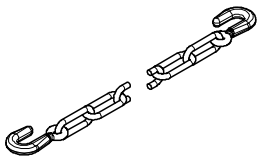


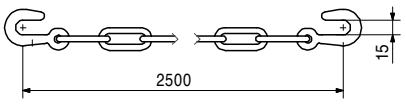


Art-Nr.	Weight [kg]	
065073	1.370	**Anchor Chain 250/3.0kN**

Notes

Permissible tension force 3.0 kN.

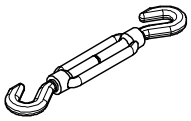


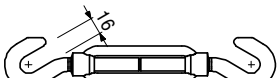


Art-Nr.	Weight [kg]	
065074	0.450	**Turnbuckle M12/3.0kN**

Notes

Permissible tension force 3.0 kN.



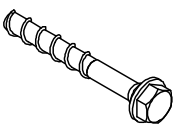


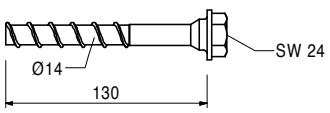
Art-Nr.	Weight [kg]	
124777	0.210	**Anchor Bolt AF24 Ø14/20x130 TG**

For temporary attachment of construction site facilities in concrete.

Notes

Take the PERI Data Sheet into consideration!
Hole Ø 14 mm.



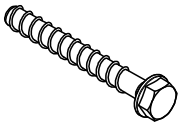


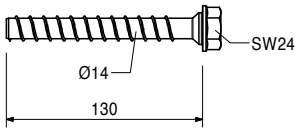
Art-Nr.	Weight [kg]		B [mm]	L [mm]
141466	0.210	**Anchor Bolt AF24 Ø14/20x130 HC**	24	142

For temporary fixation to reinforced concrete structures.

Notes

See PERI Data Sheet!

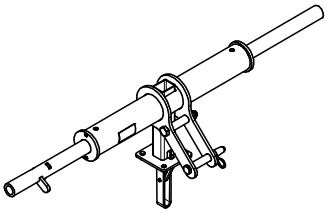


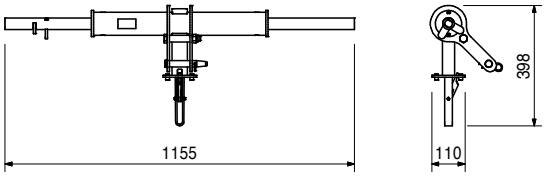


Art-Nr.	Weight [kg]	
135952	11.600	**Tensioning Unit SXP TU 15**

Notes

Permissible tensioning force max. 15.0 kN.

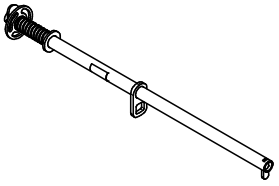


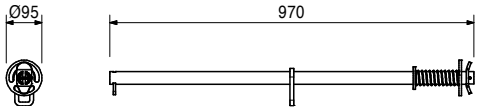


Art-Nr.	Weight [kg]	
136765	3.540	**Tension Unit SXP TU 3 100 T2**

Notes

Permissible tensioning force max. 3.0 kN.

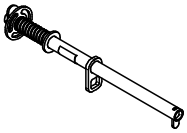


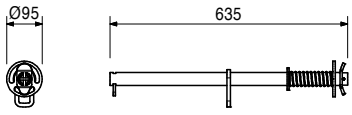


Art-Nr.	Weight [kg]	
136769	2.560	**Tension Unit SXP TU 3 66.5 T2**

Notes

Permissible tensioning force max. 3.0 kN.



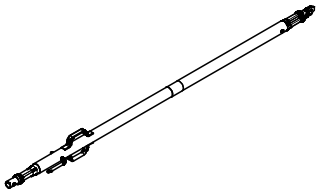


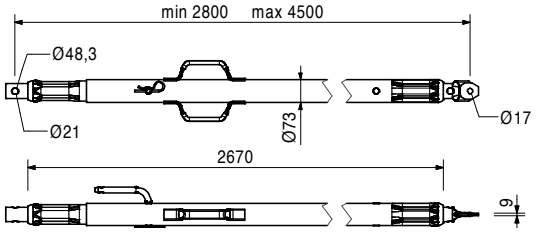
Art-Nr.	Weight [kg]	
117468	23.000	**Push-Pull Prop RS 450 ga**

Extension length L = 2.80 – 4.50 m.
For aligning PERI Formwork Systems and precast concrete elements.

Notes

Permissible load see Instructions for Assembly and Use.



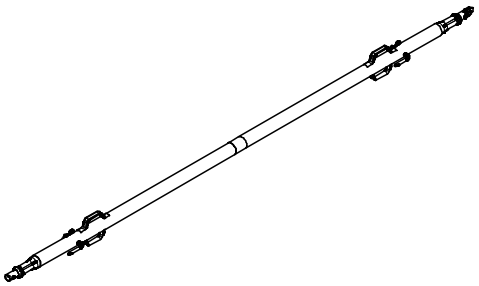


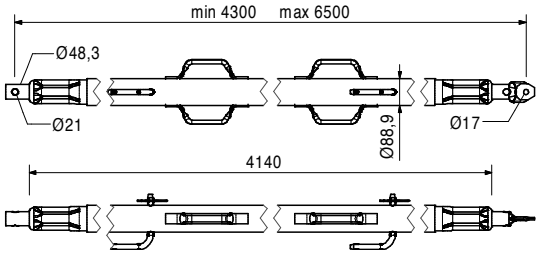
Art-Nr.	Weight [kg]	
117469	39.900	**Push-Pull Prop RS 650 ga**

Extension length L = 4.30 – 6.50 m.
For aligning PERI Formwork Systems.

Notes

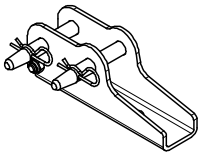
Permissible load see Instructions for Assembly and Use.

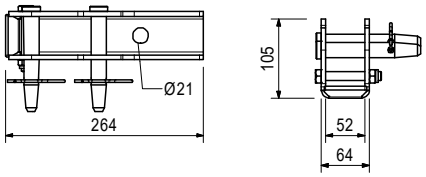




Art-Nr.	Weight [kg]	
126666	3.040	**Base Plate-3 f. RS 210-1400**

For assembly of Push-Pull Props RS 210, 260, 300, 450, 650, 1000 and 1400.





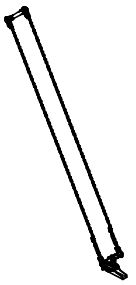
Accessory (not included)

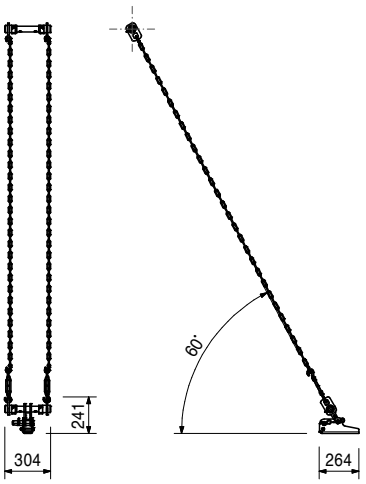
124777	Anchor Bolt AF24 Ø14/20x130 TG
141466	Anchor Bolt AF24 Ø14/20x130 HC

Included in delivery

113063 Screw ISO4014-M12x80-8.8-ga 1 pc
113064 Hex-Nut ISO7040-M12-8-ga 1 pc
105400 Pin Ø20x140mm ga 2 pc
018060 Cotter Pin 4/1 ga 2 pc

Art-Nr.	Weight [kg]	
001174	0.000	**Trans. Tension Unit SXP TUT**



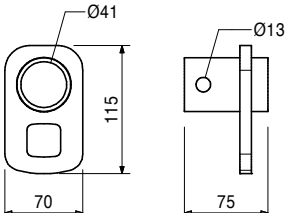


Included in delivery

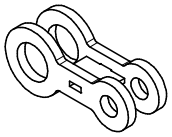
111053 Locking Pin Ø48-57mm 4 pc
100301 Spigot ULT 32 2 pc
133358 Connector SXP CO 1 pc
133343 Eyelet Connector SXP EC 4 pc
065073 Anchor Chain 250/3.0kN 2 pc
126666 Base Plate-3 f. RS 210-1400 1 pc
065074 Turnbuckle M12/3.0kN 2 pc

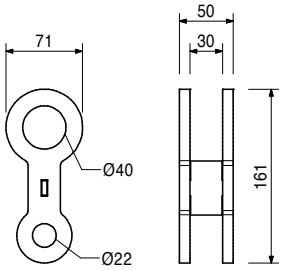
Art-Nr.	Weight [kg]	
133343	0.674	**Eyelet Connector SXP EC**





Art-Nr.	Weight [kg]	
133358	0.930	**Connector SXP CO**

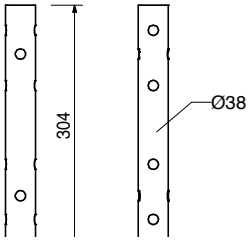




Art-Nr.	Weight [kg]	
100301	0.920	**Spigot ULT 32**

Single pin for connection of tubes Ø 48.3 x 3.2 mm, e.g. lattice girders or top standards without interlock.





Accessory (not included)

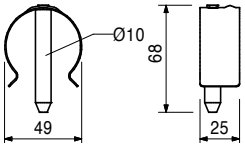
100719 Screw ISO4014-M10x70-8.8-ga-Nu

111053 Locking Pin Ø48-57mm

Art-Nr.	Weight [kg]	
111053	0.059	**Locking Pin Ø48-57mm**

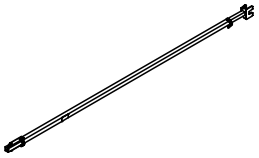
As tension-proof connection of standards with Ø 48 up to 57 mm.

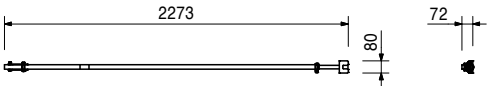




Art-Nr.	Weight [kg]	
134472	2.820	**Shuttering Aid SXP A**

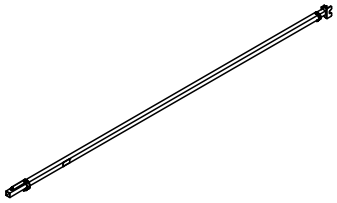
For forming up to 3.80 m in height.

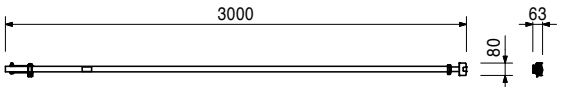




Art-Nr.	Weight [kg]	
136590	4.410	**Shuttering Aid SXP A 530**

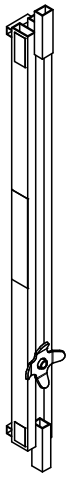
For shuttering up to a slab height of 5.30 m.

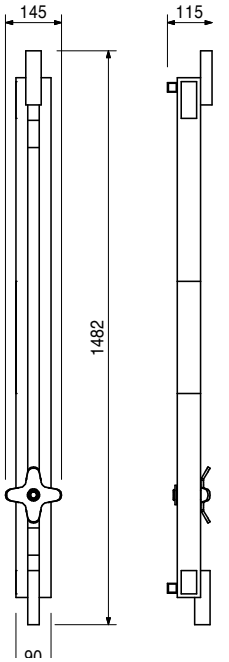




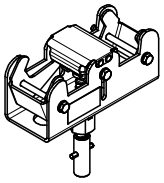
Art-Nr.	Weight [kg]	
133934	4.790	**Wall Holder SXP W**

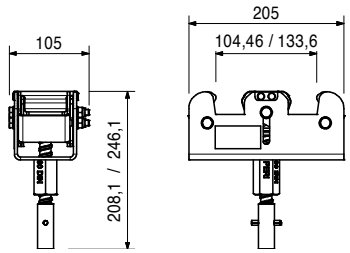
For horizontal anchoring to the wall.





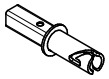
Art-Nr.	Weight [kg]	
136897	2.660	**Panel Coupler SXP C**

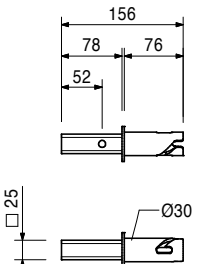




Art-Nr.	Weight [kg]	
136901	0.307	**Mounting AID SXP MA**

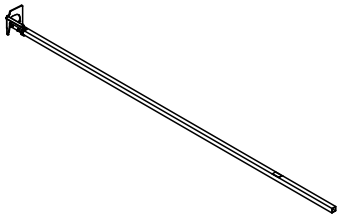
For Mounting of Panel Couplers. Only in combination with shuttering aid SXP A.

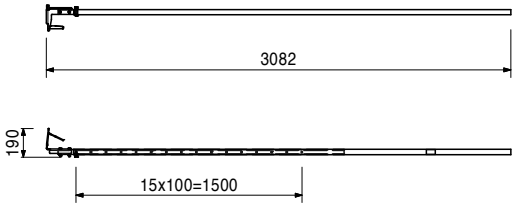




Art-Nr.	Weight [kg]	
136596	4.240	**Prop Guide SXP PG**

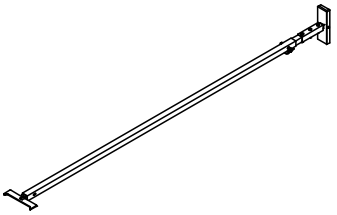
Positioning aid for ceiling supports with a minimum tube diameter of 83 mm.

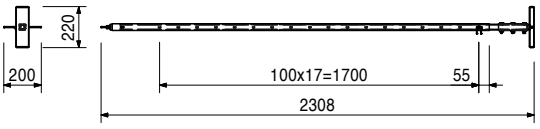




Art-Nr.	Weight [kg]	
136713	8.630	**Striking Hammer SXP SH**

For shuttering up to a height of 5,30 m.



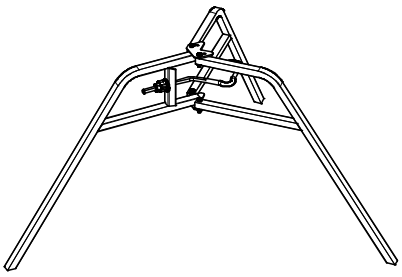


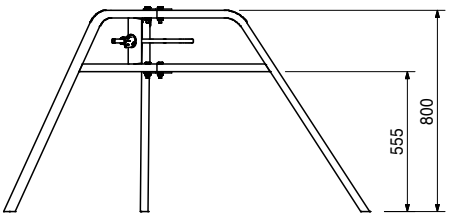
Art-Nr.	Weight [kg]	
028000	9.190	**Universal Tripod Ø57-120mm**

Erection aid for slab props with Ø 57 – 120 mm and 120 x 120 mm.
Can also be used in combination with MULTIPROP Slab Props and all slab props with Base MP 50.

Notes

Only use as erection aid!



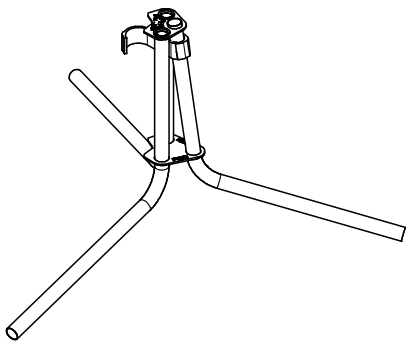


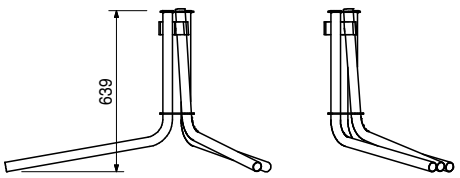
Art-Nr.	Weight [kg]	
107152	5.810	**Tripod Ø44-64mm**

Erection aid for PEP Ergo Slab Props with Ø 44 – 64 mm.

Notes

Only use as erection aid!



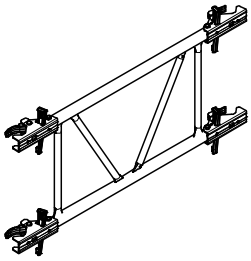


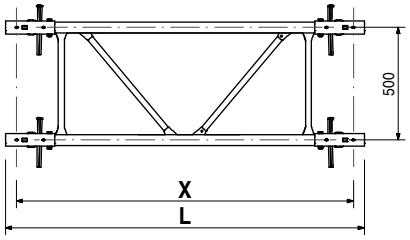
Art-Nr.	Weight [kg]		L [mm]	X [mm]
		PEP Frames PRK ST		
112813	15.900	**PEP Frame PRK 100 ST**	1098	1000
112814	17.800	**PEP Frame PRK 120 ST**	1298	1200
111813	19.200	**PEP Frame PRK 137,5 ST**	1473	1375
111814	20.100	**PEP Frame PRK 150 ST**	1598	1500

Stiffening frame for Slab Props PEP. Complete with captive wedge coupling.

Notes

L = Loading Length
X = Axis Length



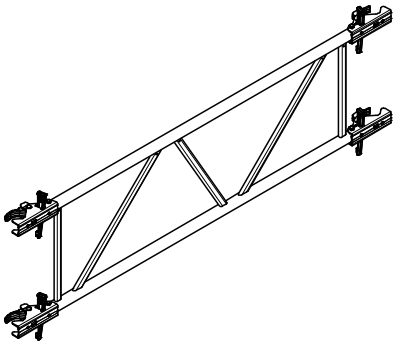


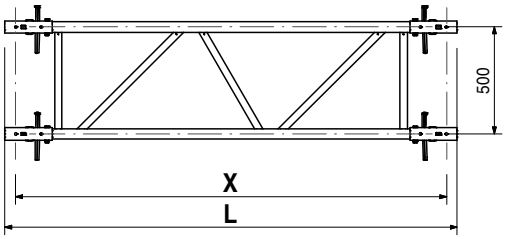
Art-Nr.	Weight [kg]		L [mm]	X [mm]
112718	15.300	**PEP Frame PRK 200 AL**	2098	2000

Stiffening frame for Slab Props PEP. Complete with captive wedge coupling.

Notes

L = Loading Length
X = Axis Length

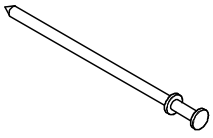


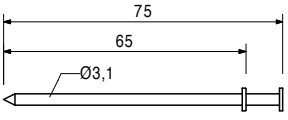


Art-Nr.	Weight [kg]	
018280	1.000	**Double Head Nail 65mm**

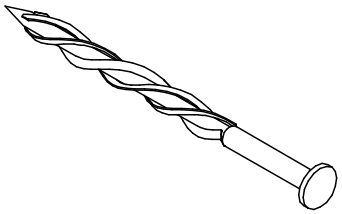
Notes

Delivery unit: carton with 1000 pieces.





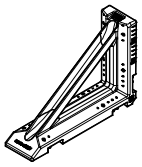
Art-Nr.	Weight [kg]	
		Screwnails ga
024530	0.001	**Screwnails 40mm ga**
024310	0.005	**Screwnails 70 mm ga**
024350	0.010	**Screwnails 90 mm ga**

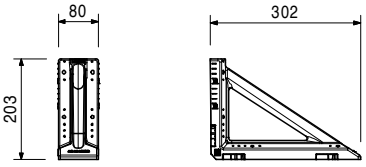


Art-Nr.	Weight [kg]	
126299	0.466	**Slab Stopend Angle Plastic**

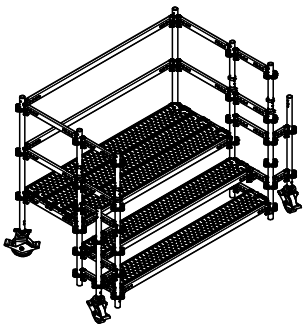
Notes

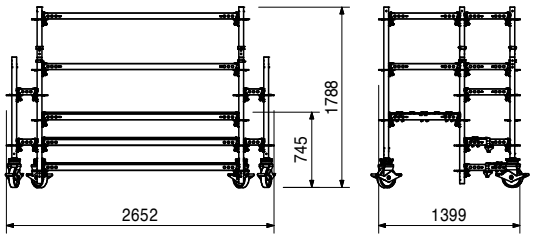
See data sheet!



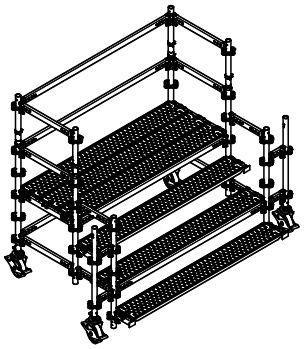


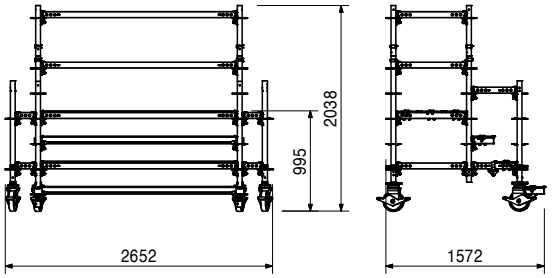
Art-Nr.	Weight [kg]	
001154	0.000	**PERI UP UDG-1 Rollpodest 75**





Art-Nr.	Weight [kg]	
001155	0.000	**PERI UP UDG-1 Rollpodest 100**





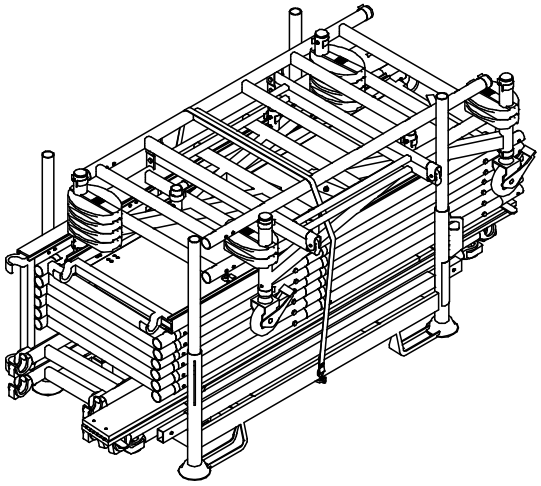
Art-Nr.	Weight [kg]	
102031	363.000	**Stripping Cart ASW 465**

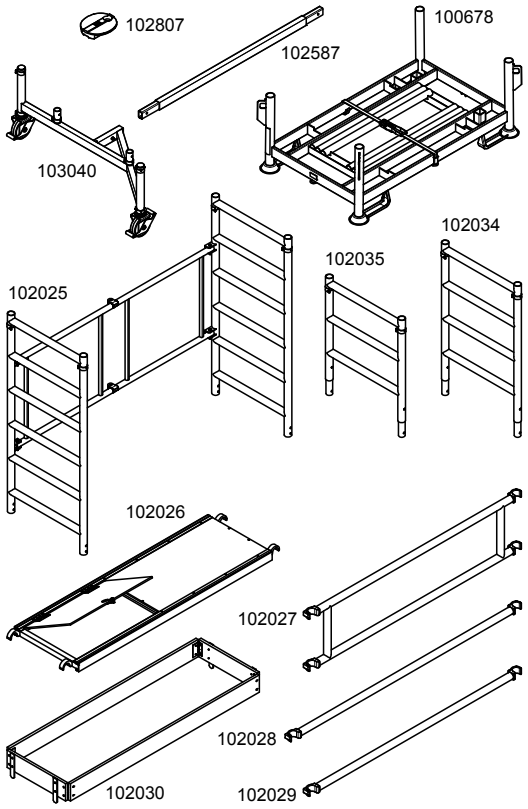
Mobile working scaffold. Height-adjustable in 30-cm-increments. Platform height max. 4.65 m.

Packed in:
Ring Pallet USP 104 Item no. 100678, with Lashing Strap 25x575 Item no. 100707 (x 1) and Scaffold Tube Steel L=100 Item no. 100706 (x 6).

Notes

Follow Instructions for Use! Permissible load 100.0 kg/m².



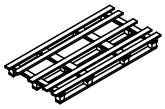


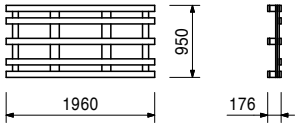
Included in delivery

102025 Folding Base Unit ASW 160/190 1 pc
102035 Vertical Frame ASW 70/90 6 pc
102034 Vertical Frame ASW 70/120 6 pc
102026 Entry Platform ASW 190 2 pc
102030 Toe-Board Set ASW 70/190 1 pc
102027 Double Handrail ASW 190 4 pc
102028 Diagonal Brace ASW 210 3 pc
102029 Horizontal Brace ASW 190 2 pc
102807 Ballast ASW 10kg 12 pc
103040 Side Section ASW comp 2 pc
102587 Centre Piece ASW coat 1 pc

Art-Nr.	Weight [kg]	
135466	25.700	**One Way Palett SXP TPO 200x100**

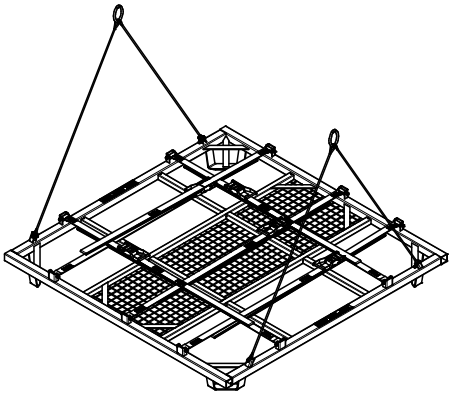
For stacking and transportation of Panels SXP P 200.

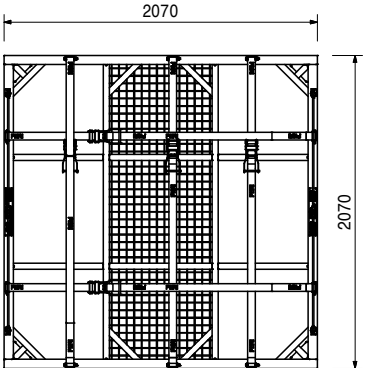




Art-Nr.	Weight [kg]	
135205	90.400	**Transp. Palett SXP TP 200x200**

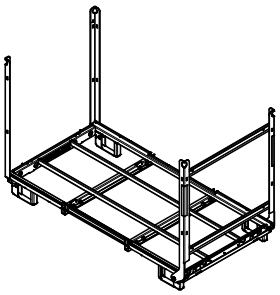
For stacking and transportation of Panels SXP P 200.

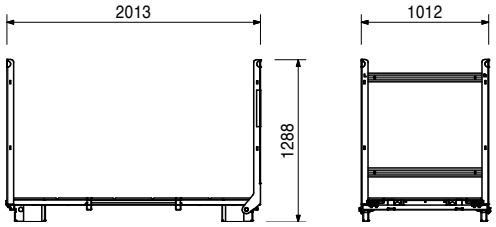




Art-Nr.	Weight [kg]	
136238	67.600	**Transportpal. SXP TPF 200x100**

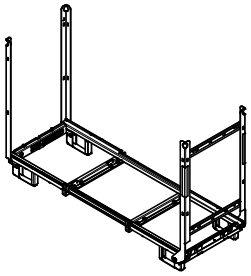
Foldaway, castors can be fixed.

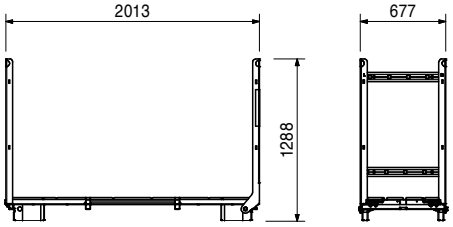




Art-Nr.	Weight [kg]	
136332	54.400	**Transportpal. SXP TPF 200x66.5**

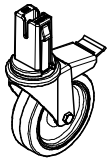
Foldaway, castors can be fixed.

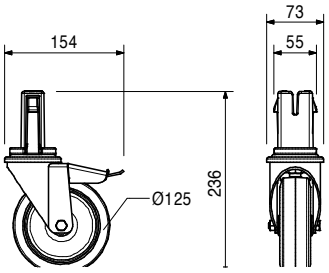




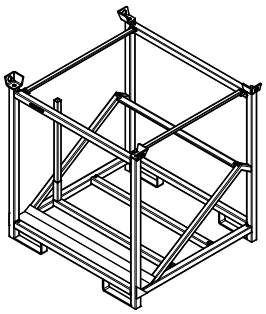
Art-Nr.	Weight [kg]	
128276	1.240	**Stacking Device Wheel DUO**

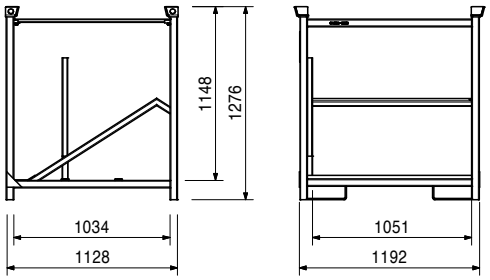
For horizontal transport on the construction site.
For moving filled stacking stanchions.





Art-Nr.	Weight [kg]	
033880	93.000	**Pallet RP PMB S Barrier**



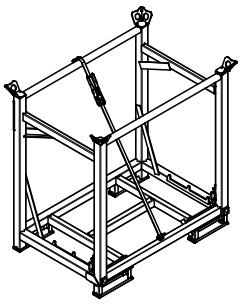


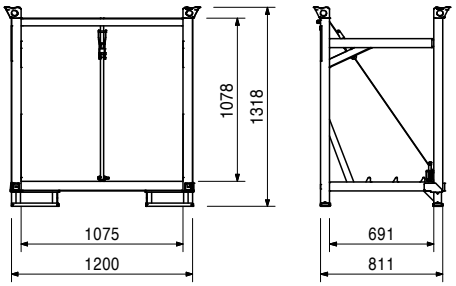
Art-Nr.	Weight [kg]	
123960	70.400	**Pallet EP 110**

For stacking and transportation of 25 Side Mesh Barriers PMB.

Notes

Follow Instructions for Use!
Permissible load-bearing capacity 600.0 kg.





Included in delivery

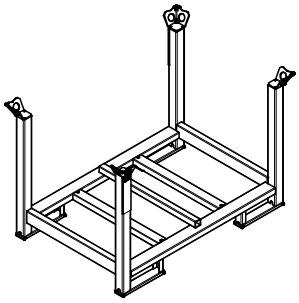
117560 Lashing Strap 25x2550mm 1 pc

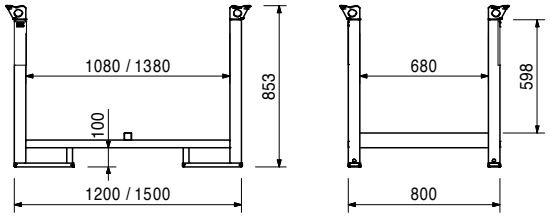
Art-Nr.	Weight [kg]		L [mm]
103434	38.500	**Pallet RP 80x120/2 ga**	1200

For stacking and transportation of formwork and scaffolding components.

Notes

Follow Instructions for Use!
Permissible load-bearing capacity 1.5 t.



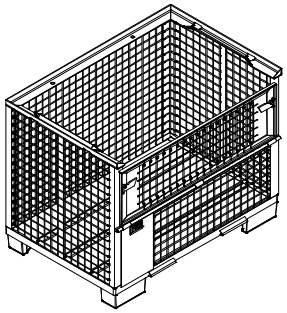


Art-Nr.	Weight [kg]	
065016	88.200	**Crate Pallet 80x120 painted**

For stacking and transportation of formwork and scaffold components.

Notes

Follow Instructions for Use!
Capacity approx. 0.75 m³.
Load-carrying capacity 1.5 t.

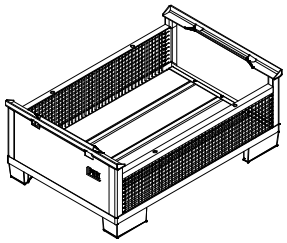


Art-Nr.	Weight [kg]	
025670	66.500	**Hardware Box 80x120 painted**

For stacking and transportation of formwork and scaffold components.

Notes

Capacity approx. 0.28 m³



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