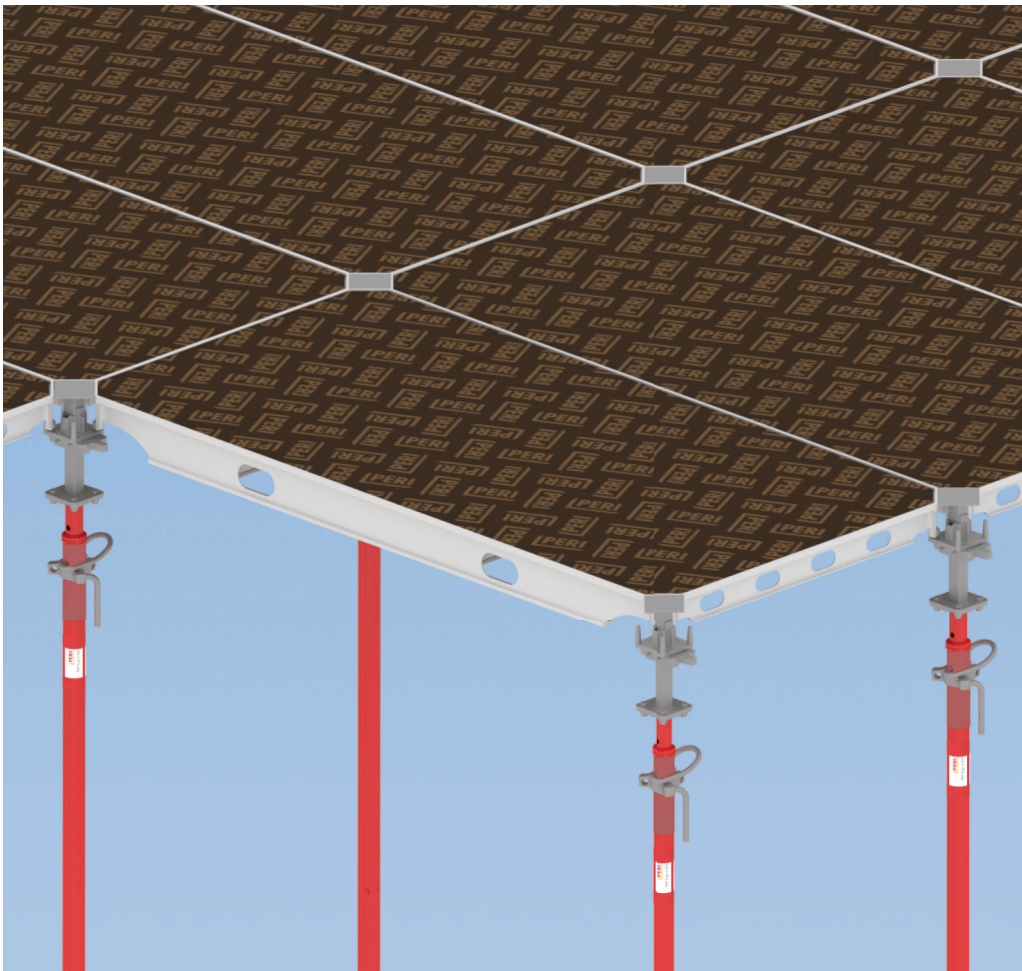


PERI ALPHADECK

Large Area Slab Panel Formwork System



ALPHADECK

The modular aluminium slab formwork system with economic and faster cycle times

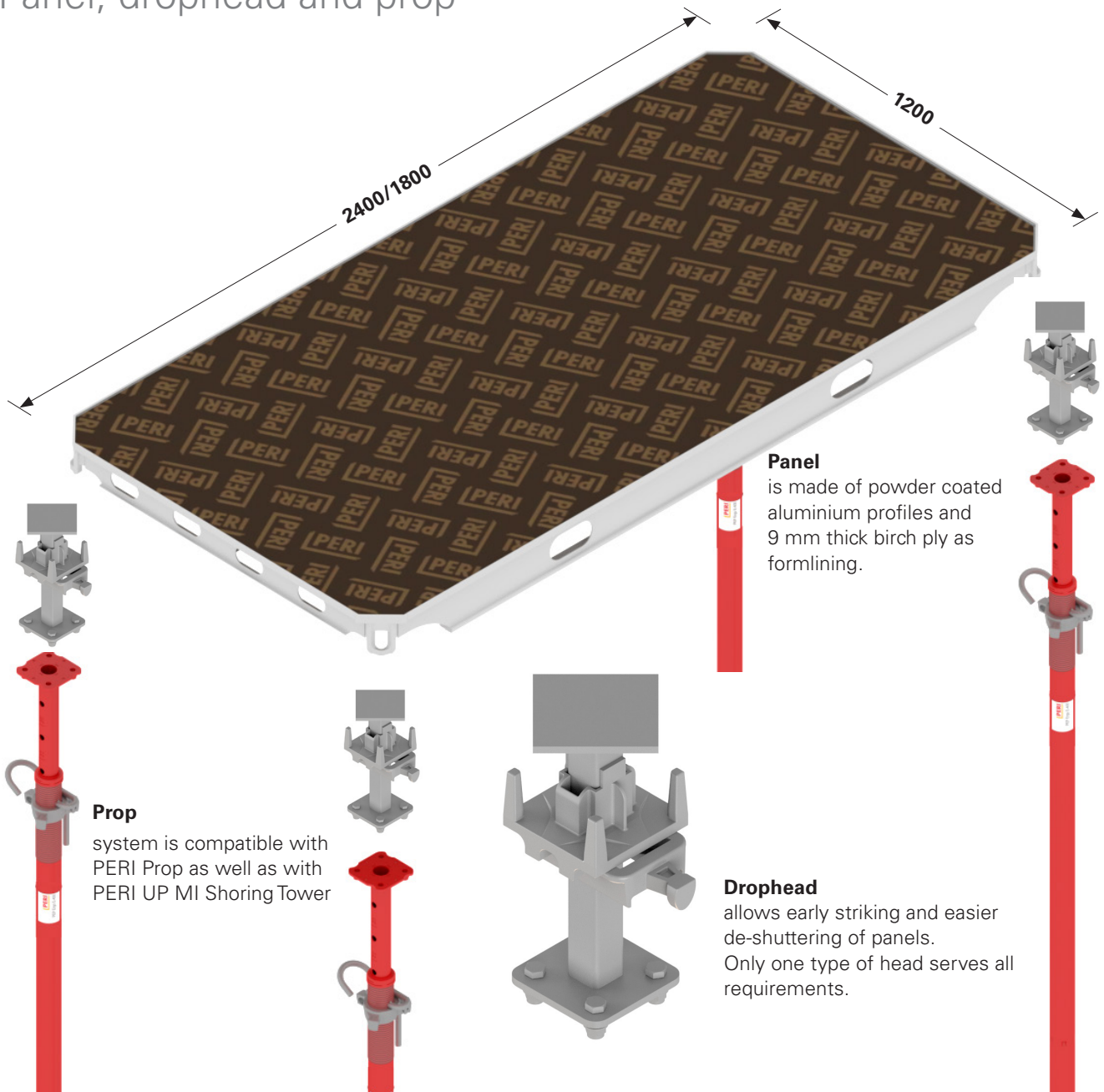
PERI ALPHADECK is a modular slab panel formwork system which allows fast as well as safe forming operations with a systematic assembly sequence. The system provides efficient solutions for standard applications.

The unique design of the system offers safe and confident erection from level below. It also ensures easier de-shuttering of panels, while the props remain undisturbed.

The PERI ALPHADECK slab formwork system is designed for slab thickness of 350 mm for the panel size of 2400 mm x 1200 mm and 550 mm for panel size of 1800 mm x 1200 mm.

Only 3 basic parts

Panel, drophead and prop



Panel
is made of powder coated aluminium profiles and 9 mm thick birch ply as formlining.

Prop
system is compatible with PERI Prop as well as with PERI UP MI Shoring Tower

Drophead
allows early striking and easier de-shuttering of panels. Only one type of head serves all requirements.

Low on-site material requirement

Early striking minimizes onsite material requirements as the same panels can be used for the next cycle.

Fast forming

Simple, easy assembly sequence and faster erection.

Cost-effectiveness

Better economy through high labour productivity due to bigger panels and fewer slab props.

Safe shuttering procedure

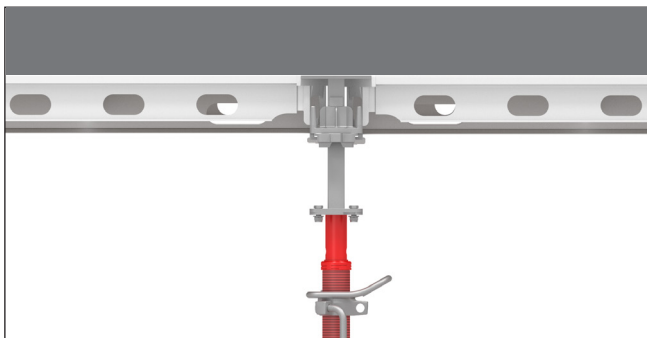
The site personnel can safely swivel the panels upward from the slab below.

With the ALPHADECK system, early striking is possible depending on strength of the concrete. The drophead is released with the help of a hammer which causes the panel to drop by 13 cm. The panels can be separated easily from the concrete and immediately re-used for the next cycle.

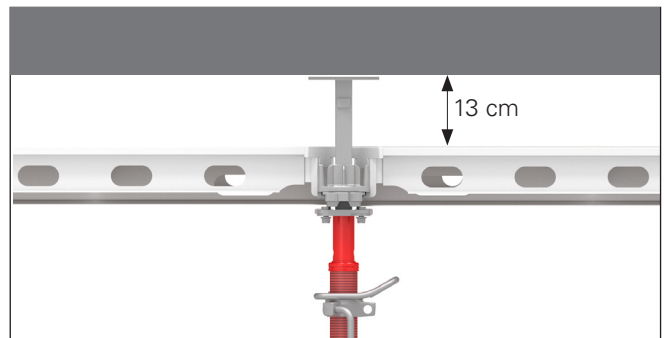
Note: Make sure that the workers keeps minimum 200 mm clearance between head and bottom of the panel to avoid injury.



Drophead mechanism allows the formwork to be lowered by 13 cm



View of the panels before striking.

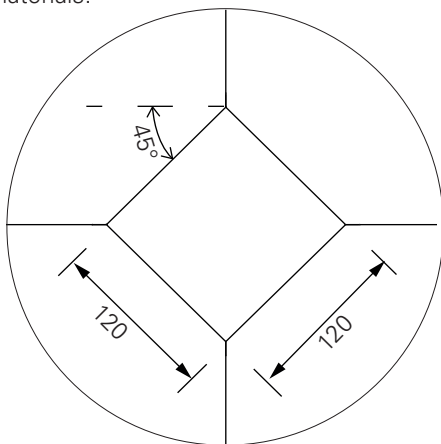


View after striking: the dropheads along with props remain in position while panels are lowered.

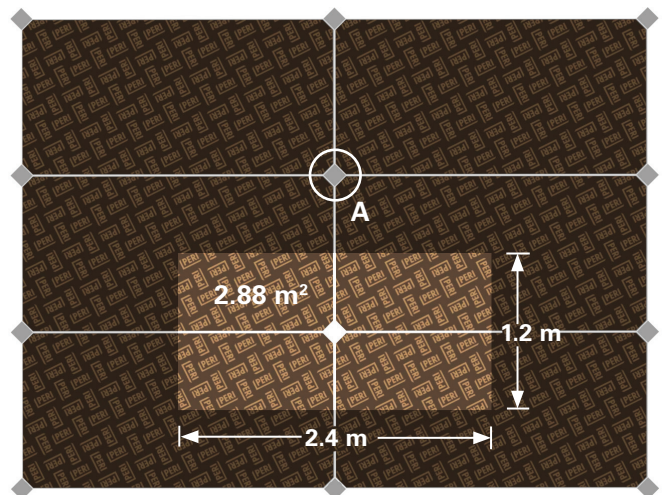
Thanks to the large sized panel, one prop can support a field size of up to 2.88 m² of slab area.

This saves on both materials and working time.

In addition, the large prop spacing provides a comfortably spaced working area under the slab formwork. This facilitates the transport of formwork materials as well as the storage of construction materials.



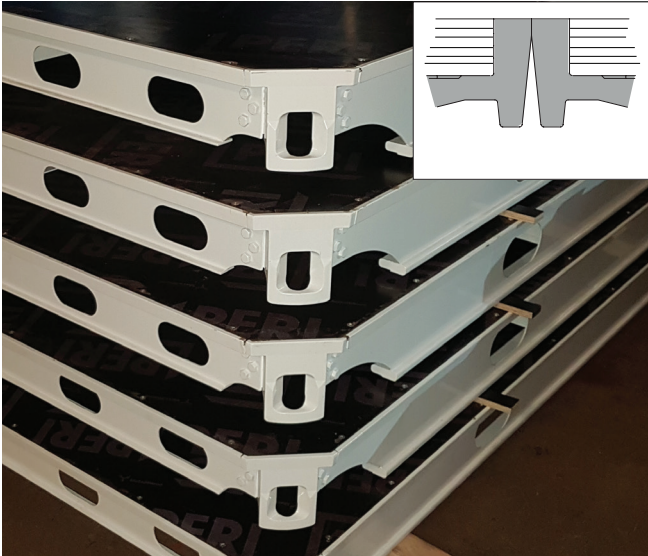
Detail A



Easy cleaning

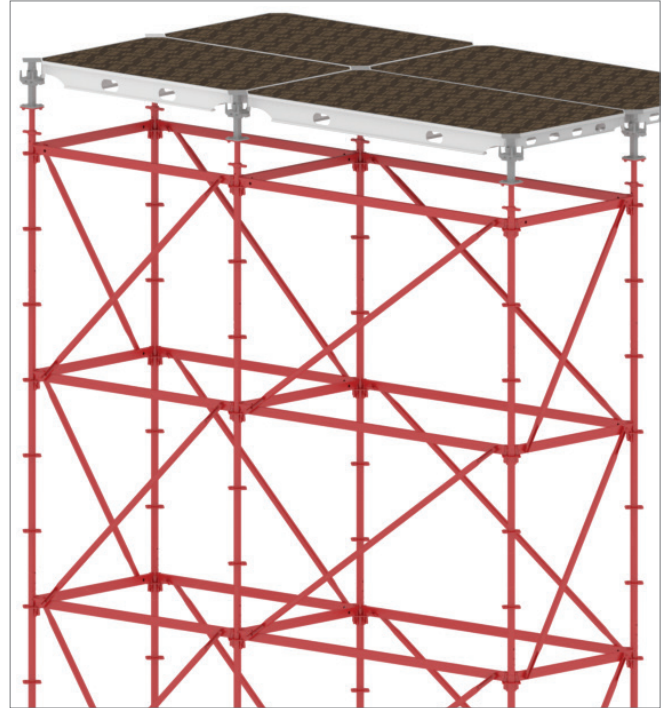
PERI ALPHADECK slab formwork system has been designed in all respects to ensure that only a minimum of cleaning effort is required. This guarantees additional time-savings.

ALPHADECK panels are powder-coated. The panels have minimal contact area and undercut edges. This minimizes the accumulation of slurry on the sides of the panels.



Compatibility

ALPHADECK panels are compatible with PERI UP MI shoring towers which have configurations of 2400 mm x 1200 mm and 1800 mm x 1200 mm.



Ease of handling

ALPHADECK panel frame is designed with a unique profile shape with rounded edges that allows easy, safe and fast handling at job site.



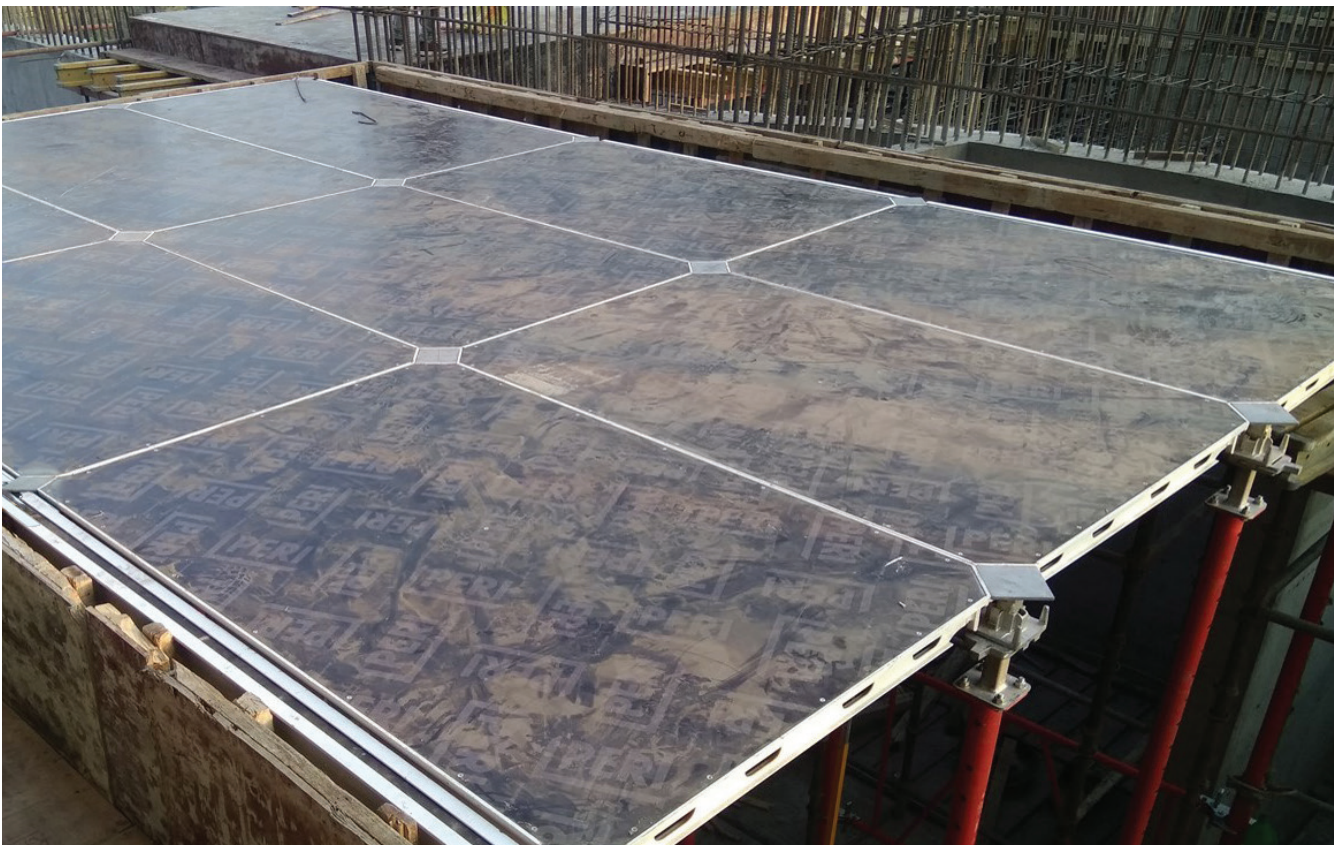
Infill areas

Infill areas can be closed with the filler beam and 12 mm (cut to suit) plywood. The filler beam can be safely secured into the drophead without any additional accessories.



Note: The standard filler beams are of sizes 1200/1800/2400 which suits the standard panels.

ALPHADECK in use



ALPHADECK in use



Actual Prop Loads

Slab Thickness (mm)	Total Load * (kN/m ²)	Prop Loads (kN)	
		2400 x 1200 Panel	1800 x 1200 Panel
100	4.2	12.1	9.1
125	4.9	14.2	10.6
150	5.5	15.9	11.9
175	6.1	17.6	13.2
200	6.7	19.3	14.5
225	7.4	21.4	16.0
250	8.0	23.1	17.3
275	8.6	24.8	18.6
300	9.2	26.5	19.9
325	9.9	28.6	21.4
350	10.6	30.6	22.9
375	11.3	-	24.5
400	12.0	-	26.0
425	12.7	-	27.5
450	13.4	-	29.0
475	14.1	-	30.5
500	14.7	-	31.8
525	15.4	-	33.3
550	16.1	-	34.8

Note:

- 1) When calculating the prop loads, the actual extension length may be used.

The exact extension length of the prop when using the ALPHADECK drophead is:
Prop height = Clear room height - 310 mm

- 2) Please use suitable prop so that the permissible prop load is more than actual prop loads.

- 3) The load capacity of PERI Props and PERI UP MI shoring towers need to be checked from respective design tables.

*Load according to EN 12812:

$$\text{Dead Load, } Q_1 = 0.2 \text{ kN/m}^2$$

$$\text{Concrete Load, } Q_{2,b} = 25 \text{ kN/m}^3 \times d \text{ [m]}$$

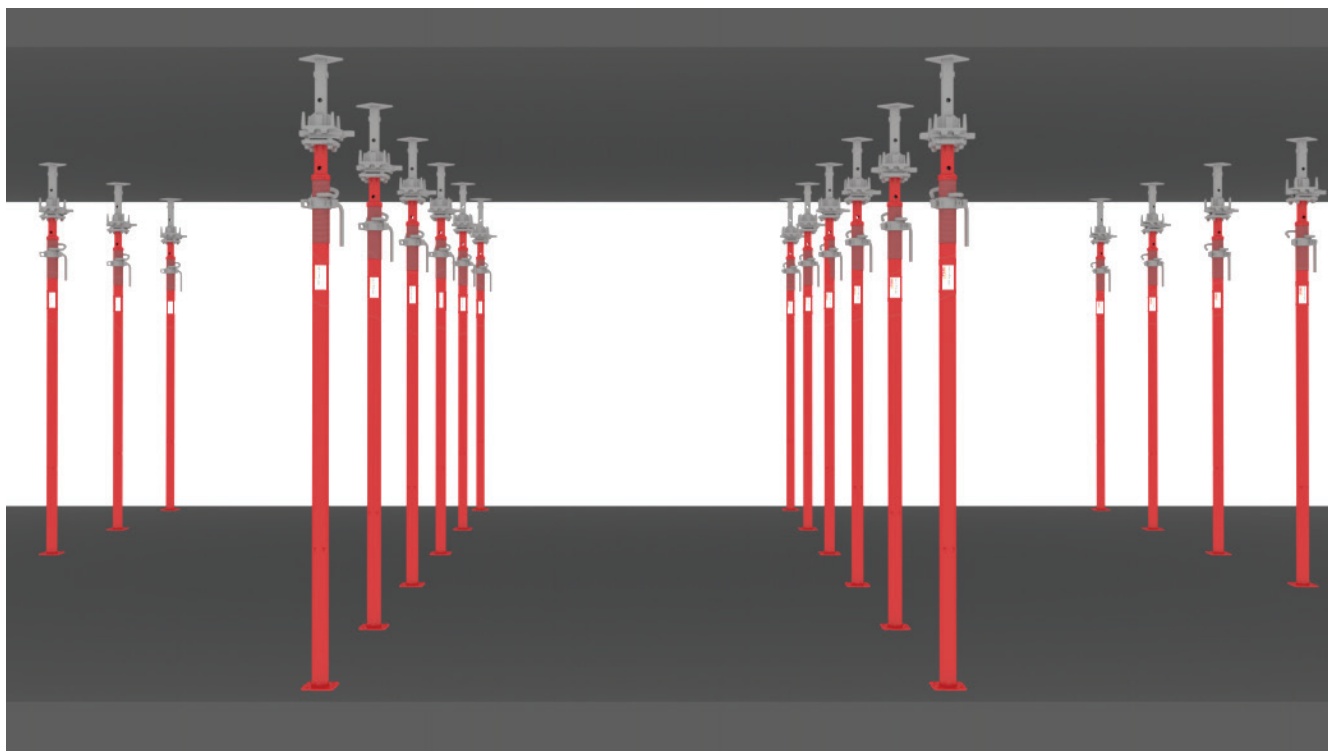
Equivalent load:

$$\text{concreting, } Q_4 = 0.1 \times Q_{2,b} \\ 0.75 \text{ kN/m}^2 \leq Q_4 \leq 1.75 \text{ kN/m}^2$$

Equivalent load:

$$\text{working condition, } Q_{2,p} = 0.75 \text{ kN/m}^2$$

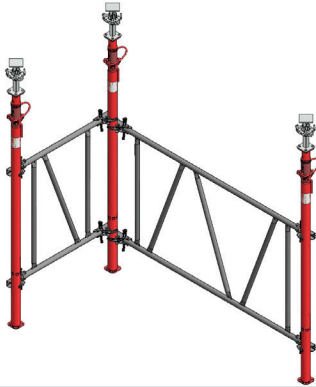
$$\text{Total Load, } Q = Q_1 + Q_{2,b} + Q_{2,p} + Q_4$$



De-shuttered view: the props with dropheads remain undisturbed

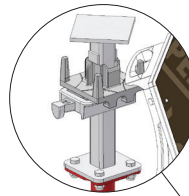
Erection

Safe, Fast & Efficient

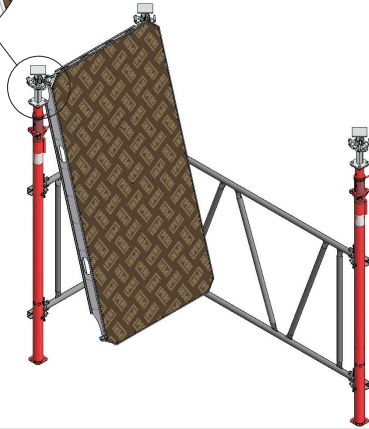


Step 1

Erect three props at the starting corner (L-shaped) with the help of bracings for ensuring stability.

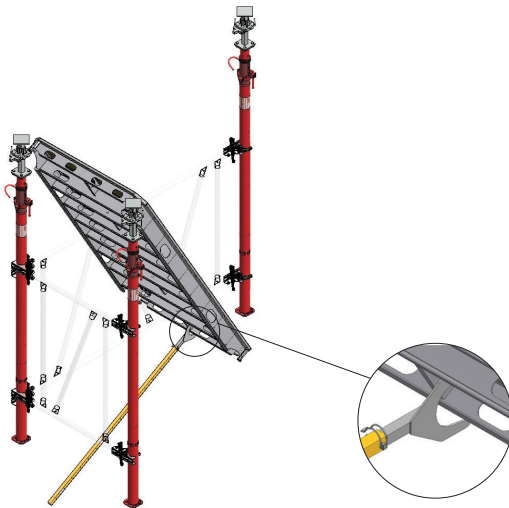


To facilitate easy striking, ensure that the direction of wedge is parallel to the width of the panel.



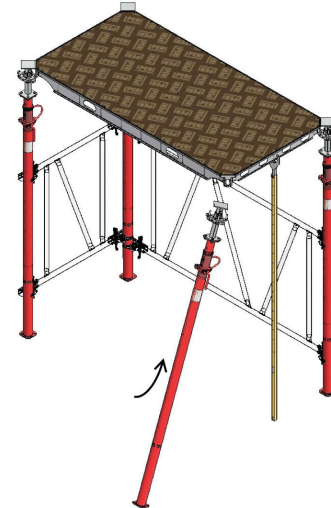
Step 2

Hang the panel into the two props. Make sure that the panel corners are properly hooked onto the drophead flyplate pins.



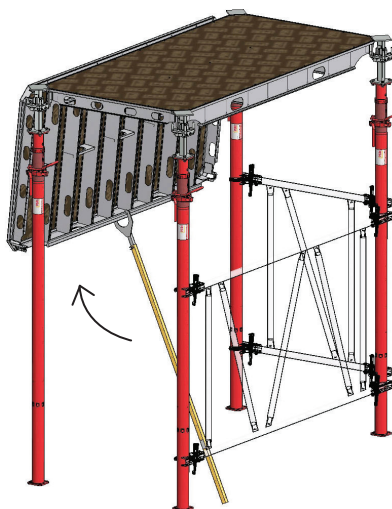
Step 3

Using the shuttering aid, swing the panel up and hook on the third prop.



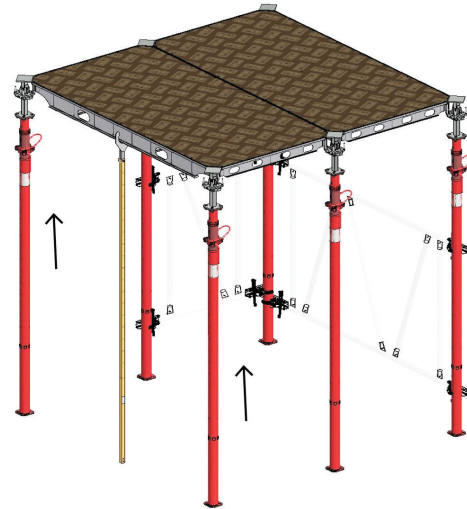
Step 4

While temporarily securing the panel with shuttering aid in place, attach the fourth prop to the panel corner. This completes the first panel erection.



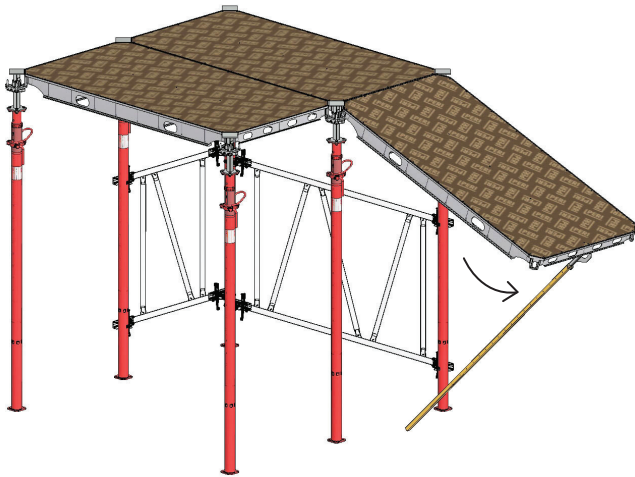
Step 5

To continue erection, assemble the adjacent panel as shown in step 2. Using the shuttering aid, swing the panel up supporting it temporarily until the next two props are installed.



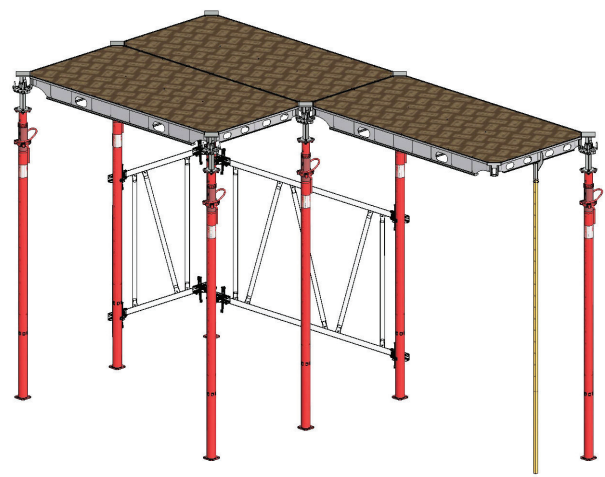
Step 6

Attach the next two props to the panel corners as shown in step 4. To continue the erection in the same direction, repeat the steps 1, 2, 3, 4, & 5



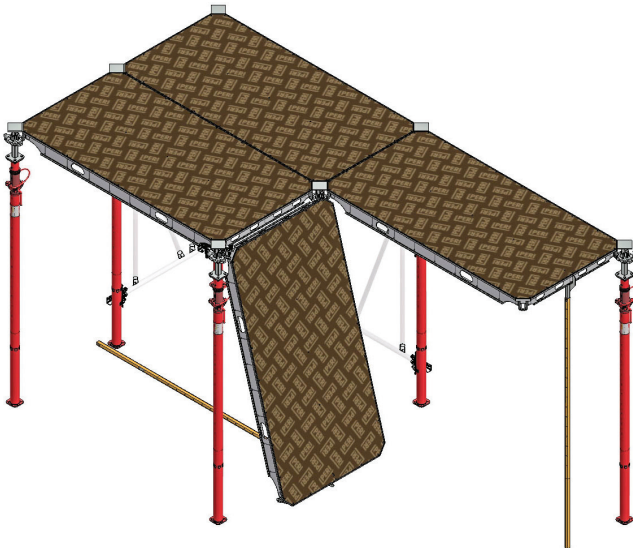
Step 7

The assembly can continue in any direction. Hang the next panel into the props and swing the panel up using shuttering aid. This temporarily secures the panels until the next two props are installed.



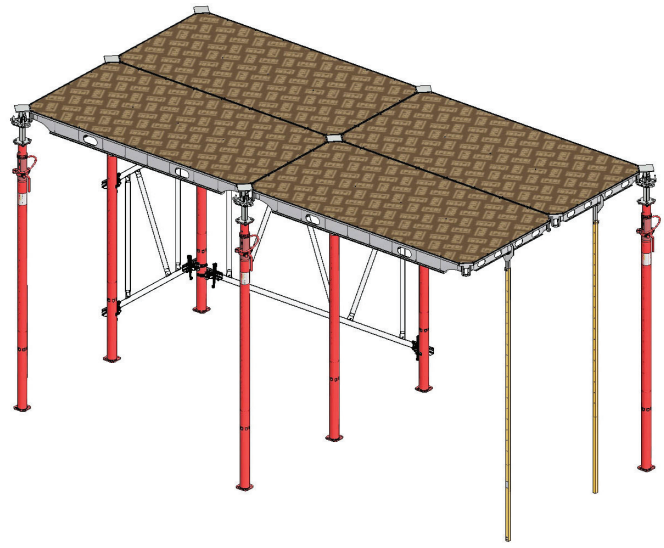
Step 8

While keeping the shuttering aid as a temporary support, attach the next prop to the third corner of the panel.



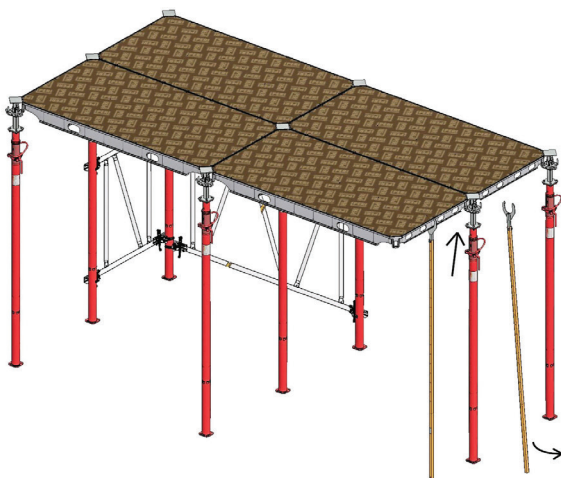
Step 9

To erect the adjoining panel, repeat step 7 using an additional shuttering aid.



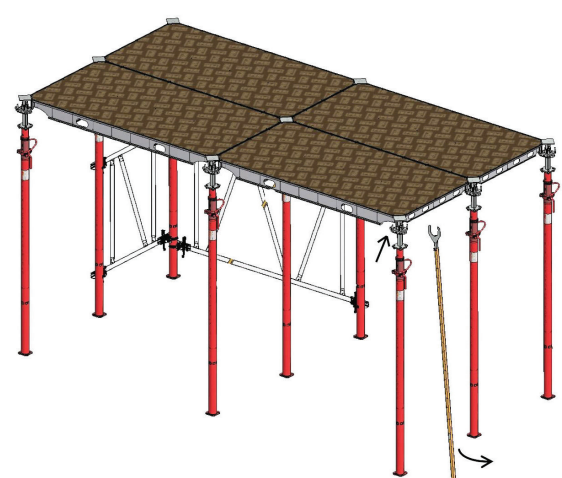
Step 10

Now, both shuttering aids act as temporary support until the next prop is attached to the panel corner.



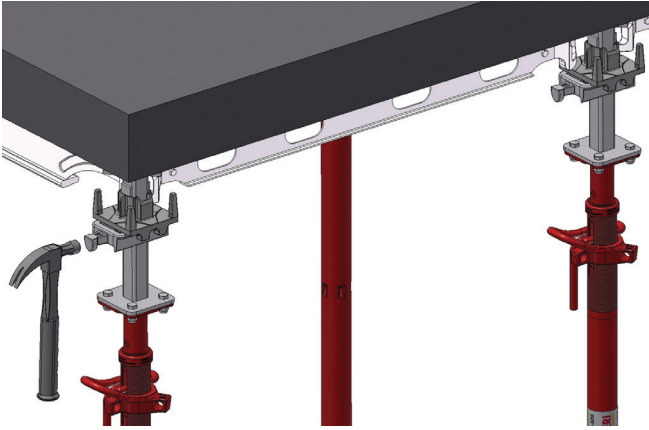
Step 11

Once the prop is set into position, the first shuttering aid can be removed while the second shuttering aid supports the panel further.

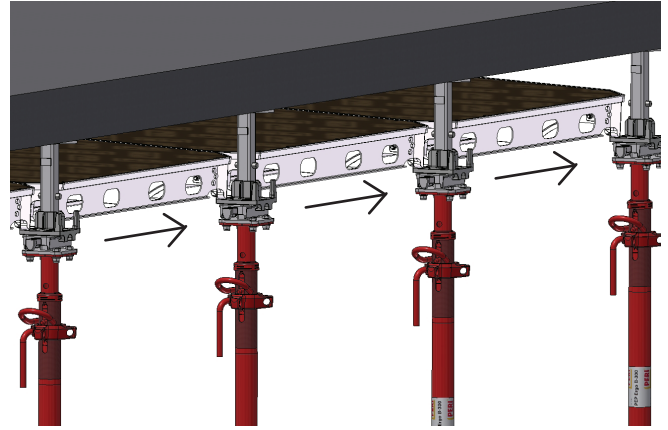


Step 12

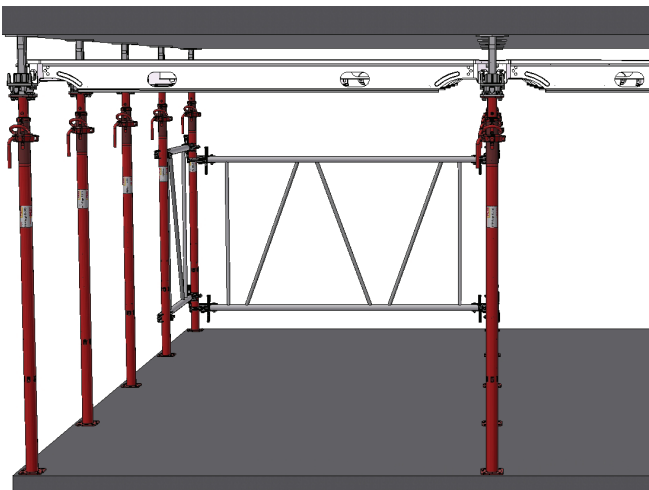
Once the last prop is set into position, remove the second shuttering aid. This completes the assembly cycle.
* Bracings can be provided after every third bay in longer direction and every sixth bay in shorter direction.



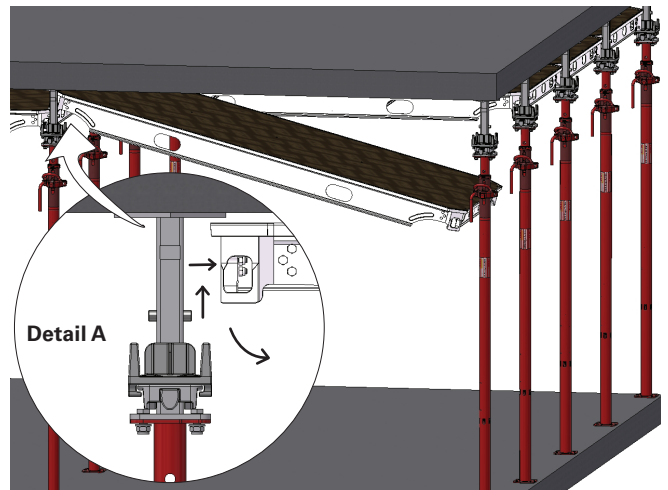
Step 1
Strike the drophead wedge with a hammer at starting corner.
De-shuttering should commence from infill areas.



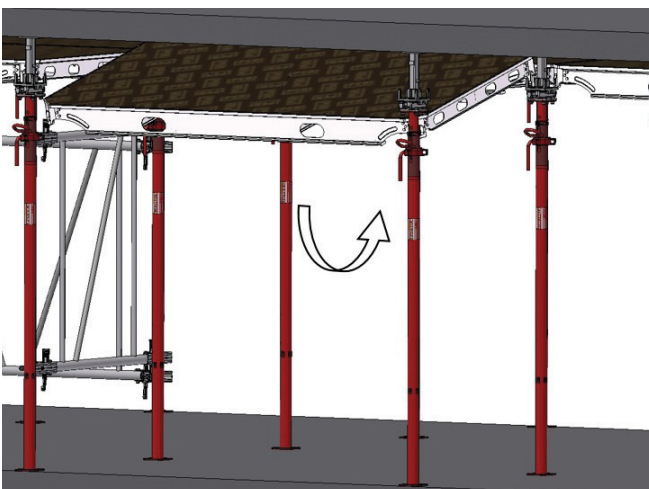
Step 2
Strike the next drophead wedge on one side row by row as shown by arrow mark. This causes the panel drop by 13 cm.



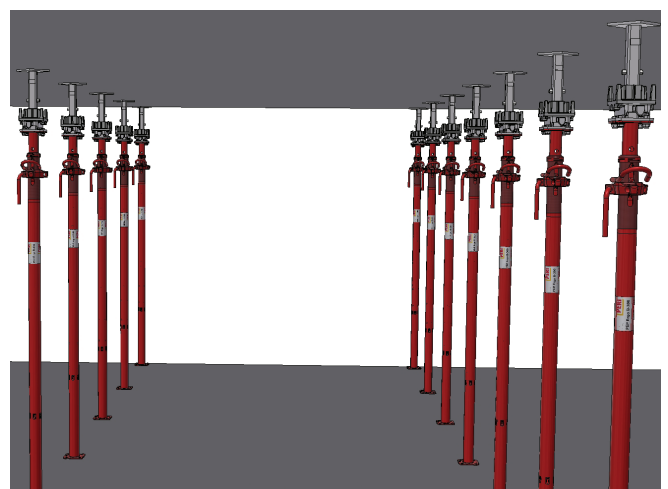
Step 3
Similarly, release all the wedges as shown in step 1 & 2. All the panels are released from the concrete surface which allows easy de-shuttering.



Step 4
To remove the panel from its position, lift the panel from flyplate pin and push aside then tilt the panel and lower it to the ground. See arrow mark in Detail A.



Step 5
Similarly, panels can be removed in other direction.
In ALPHADECK system, de-shuttering is possible in both direction.



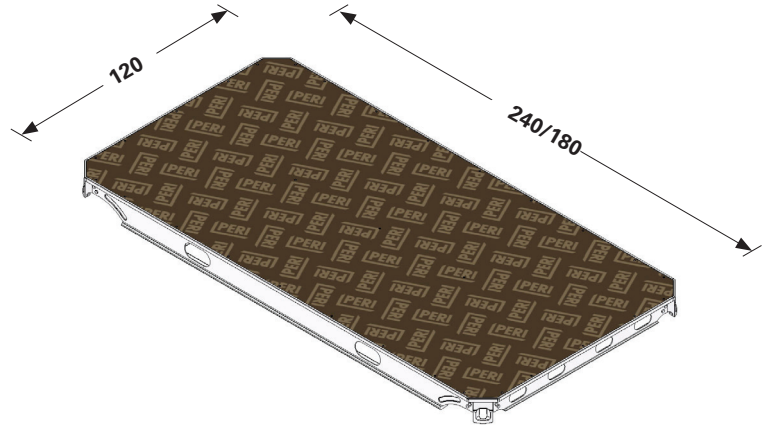
Step 6
Once all the panels are removed, the prop with dropheads remain undisturbed.

Component lists

Weight (kg)

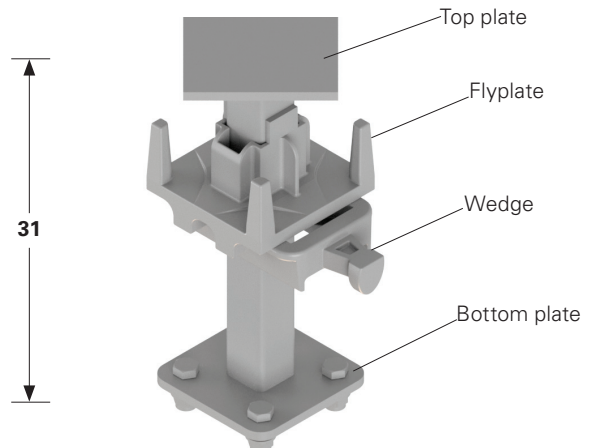
**ALPHADECK Panels
(with 9 mm plywood formlining)**

- 48.9 Panel ADP 240 x 120
- 36.7 Panel ADP 180 x 120



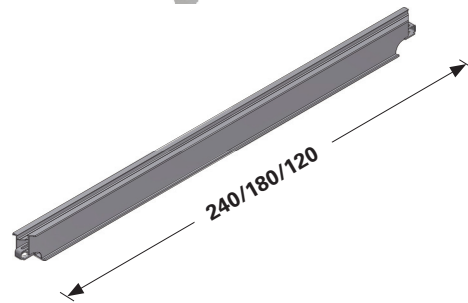
6.6

ALPHADECK Drophead, galv
Drophead ADH



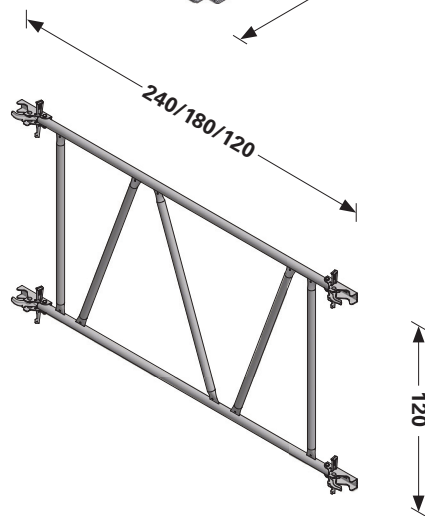
- 9.9
- 7.3
- 4.7

ALPHADECK Filler beam
Filler beam ADF 240
Filler beam ADF 180
Filler beam ADF 120



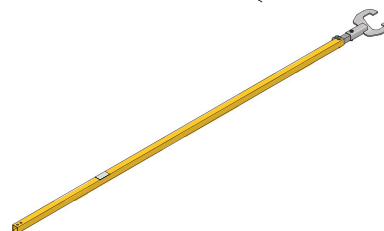
- 31.3
- 25.5
- 19.7

ALPHADECK Brace
Brace ADB 240
Brace ADB 180
Brace ADB 120



2.4

Shuttering aid



Cross-system

General

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:

- signs of damage,
- stability and
- function.

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

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

Components provided by the contractor must conform with the characteristics required in these Instructions for Assembly and Use as well as with all valid construction guidelines and standards. Unless otherwise indicated, this applies in particular:

- Timber components: Strength Class C24 for Solid Wood according to EN 338.
- Scaffold tubes: galvanised steel tubes with minimum dimensions of Ø 48.3 x 3.2 mm according to EN 12811-1:2003 4.2.1.2.
- Scaffold tube couplings according to EN 74.

Deviations from the standard configuration are only permitted after a further risk assessment has been carried out by the contractor. On the basis of this risk assessment, appropriate measures for working and operational safety as well as stability are to be determined.

Corresponding proof of stability can be provided by PERI on request if the risk assessment and resulting measures to be implemented are made available.

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

The personal protective equipment against falling to be used is determined by the contractor.

Before and after exceptional occurrences that may have an adverse effect regarding the safety of the formwork system, the contractor must immediately

- create another risk assessment, with appropriate measures for ensuring the stability of the formwork system being carried out based on the results,
- and arrange for an extraordinary inspection by a competent person. The aim of this inspection is to identify and rectify any damage in good time in order to guarantee the safe use of the formwork system.

Exceptional occurrences can include:

- accidents,
- longer periods of non-use,
- natural events, e.g. heavy rainfall, icing, heavy snowfall, storms or earthquakes.

Assembly, modification and dismantling work

Assembly, modification or dismantling of formwork systems may only be carried out by qualified persons and 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.

The contractor must ensure that the personal protective equipment required for the assembly, modification or dismantling of the system, e.g.

- safety helmet,
- safety shoes,
- safety gloves,
- safety glasses,

is available and used as intended.

The contractor must

- provide safe working areas for site personnel which are to be reached through the provision of safe access ways. Areas of risk must be cordoned off and clearly marked.
- ensure the stability during all stages of construction, in particular during assembly, modification and dismantling of the formwork.
- ensure and prove that all loads can be safely transferred.

During striking, do not tear off the formwork panels with the crane.

A qualified person shall prepare a shoring drawing in accordance with manufacture's recommended safe working loads and should be used on the job site at all times.

Plan shoring erection sequence in advance and obtain necessary access equipment to accomplish the work.

Inspect erected shoring:

- immediately prior to concrete placement,
- during concrete placement,
- while vibrating concrete,
- after concrete placement until concrete is set.

Erecting and dismantling of shoring requires good physical condition. Do not work on shoring if you feel dizzy, unsteady in any way or are impaired in any way by drugs or any other substance.

Deshuttering should be done once the concrete has sufficiently hardened and the person in charge has given the go-ahead for striking to take place.

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

The load-distributing support used, such as planking, must match the respective base. If several layers are required, planks are to be arranged crosswise.

Utilization

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

If the shuttering height is more than 3 m, then shuttering should be carried out by mobile scaffold.

The formwork surface area may only be accessed or loaded when the system is secured with bracing.

The forming area becomes slippery through the use of release agents!

- Be extremely careful when accessing forming areas after spraying!
- Weather conditions are to be taken into account!

If slab props with mounted dropheads fall over or are otherwise used improperly, this may result in damage to the drophead.

As a result, dropheads could fail during further use and cause serious injuries to site personnel.

- Dismantle dropheads after incorrect use and check for any signs of damage, e.g. cracked flyplate or wedge.
- Damaged components must not be used!

The bracing provides temporary stability for the ALPHADECK system during its erection and dismantling.

The stability of the total system relies upon the soffit being locked in to the permanent structure such as wall and columns.

Where the permanent works will not provide sufficient restraint to the system, additional bracing shall be introduced by tubes and fittings or ALPHADECK bracings.

Do not access the forming area before the formwork has been laterally secured!

Do not erect formwork or step on the panels at edges before the tension chains are securely fixed.

During concrete placement, raising or lowering of formwork shall not be made.

Single post shores more than one tier high shall not be used wherever greater shore heights are required, consult the shoring supplier.

Give special attention to temporary loading areas where re-bar material or equipment is to be stored temporarily – may need to be strengthened to meet these loads.

Use special precautions when shoring from or to sloped surfaces.

Do not remove the bracing until proper authority is given.

The horizontal fixed position of the slab formwork must be guaranteed. This is given with circumferential walls and pre-concreted beam walers. Otherwise, the transfer of the horizontal loads has to be guaranteed by means of other measures supplied by the contractor, e.g. bracing.

Load assumptions for horizontal loads in accordance with DIN EN 12812.

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.

With all-round enclosed structure geometries, panels are to be secured against uplift by wind.

For unfavourable structure geometries or larger wind speeds, additional securing measures are to be implemented, e.g.:

- ballast,
- bracing,
- dismantling the formwork etc.

Storage and transportation

Store and transport components ensuring 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.

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

During the moving procedure

- ensure that components are picked up and set down so that unintentional falling over, falling apart, sliding, falling down or rolling is avoided.
- no persons are allowed to remain under the suspended load.

Always guide pre-assembled scaffolding bays, scaffolding units or scaffolding sections with ropes when moving them by crane.

Dismantled components should be stacked in a planned manner and distributed to avoid concentrated loads on the partially cured concrete.

The access areas on the construction site must be free of obstacles and tripping hazards as well as being slip-resistant.

For transportation, the surface must have sufficient load-bearing capacity.

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

The optimal System
for every Project and
every Requirement



Wall Formwork



Column Formwork



Slab Formwork



Climbing Systems



Bridge Formwork



Tunnel Formwork



Shoring Systems



Construction Scaffold



Facade Scaffold



Industrial Scaffold



Access



Protection Scaffold



Safety Systems



System-Independent
Accessories



Services



PERI GmbH
Formwork Scaffolding Engineering
Rudolf-Diesel-Strasse 19
89264 Weissenhorn
Germany
Tel. +49 (0)7309.950-0
Fax +49 (0)7309.951-0
info@peri.com
www.peri.com

