

HorizontalAL

FORMWORK



PRODUCTIVITY

QUALITY

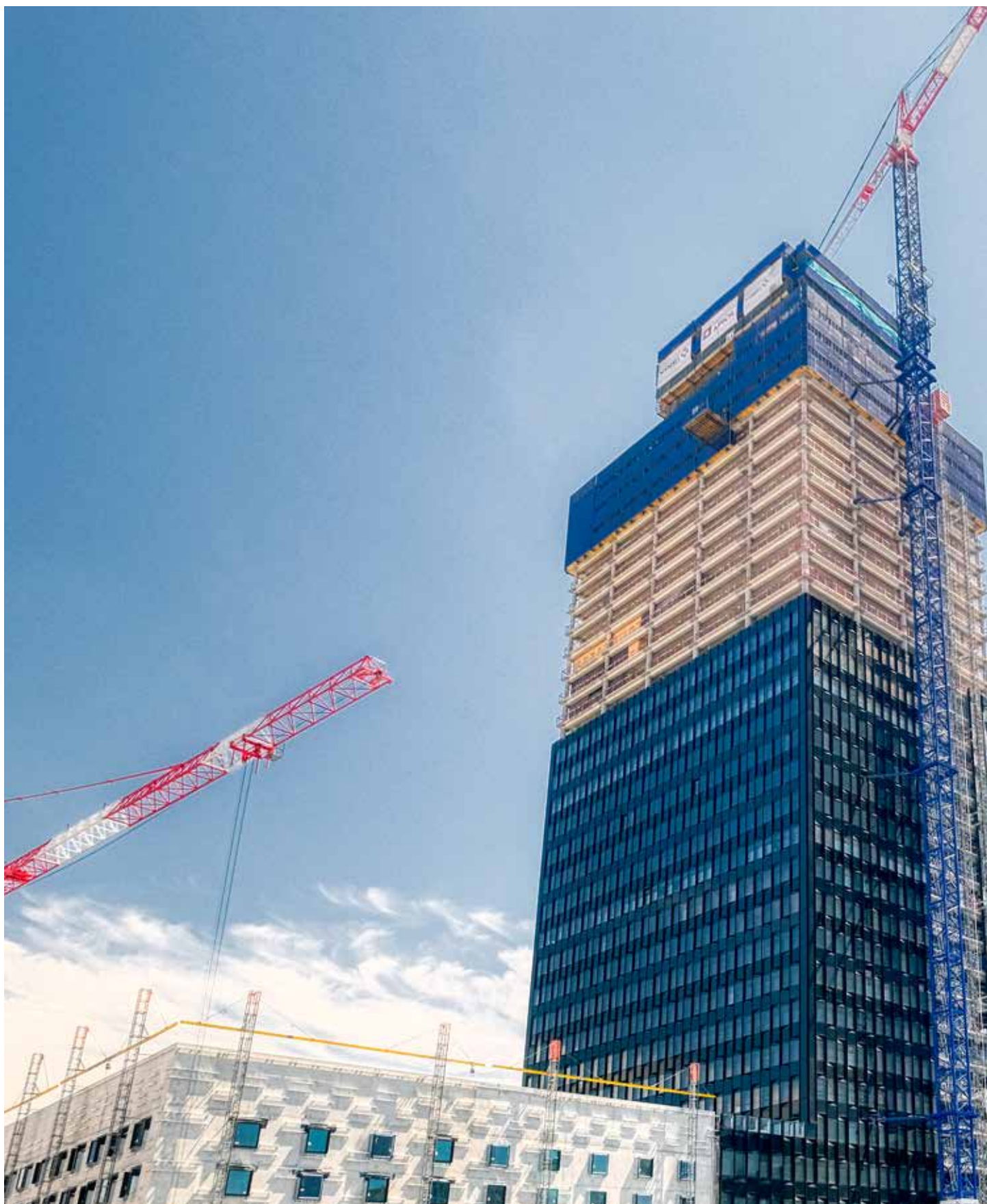
SAFETY

SIMPLICITY

THE EXTRA-LARGE
FORMWORK PANEL

Alphi
Formwork and solutions

HorizontalAL | The extra-large formwork panel

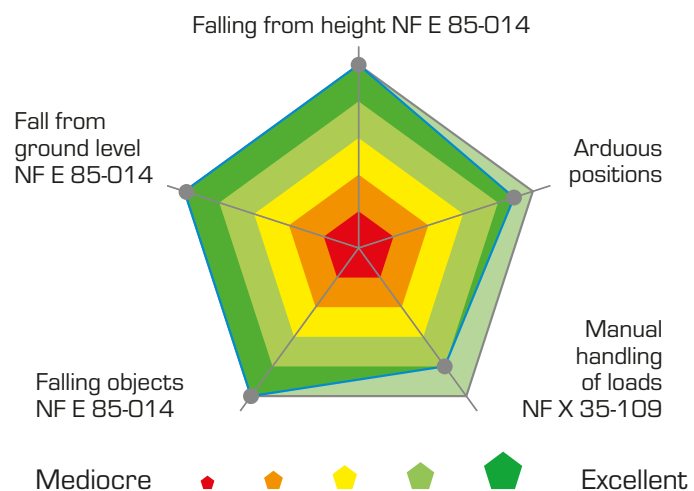


HorizontAL

The HorizontAL range of formwork panels is designed for **large cells**, making it the ideal system for the construction of commercial buildings.

The **high-performance** HorizontAL system provides **loading capacity** for a slab thickness of 30 cm for a deflection of $L/400$, 35 cm for a deflection of $L/350$, and up to 50 cm with reinforcement.

Simple: HorizontAL comprises a **single prop head** for all assembly configurations and a formwork panel that comes in four sizes.



SAFETY AND ARDUOUSNESS PERFORMANCE

HorizontAL is the best-performing panel formwork of its generation within the constraints of the NF E 85-014 and NF X 35-109 standards.

Site: To-Lyon
Client: Vinci
Location: Lyon

HorizontalAL | The extra-large formwork panel

PRODUCTIVITY

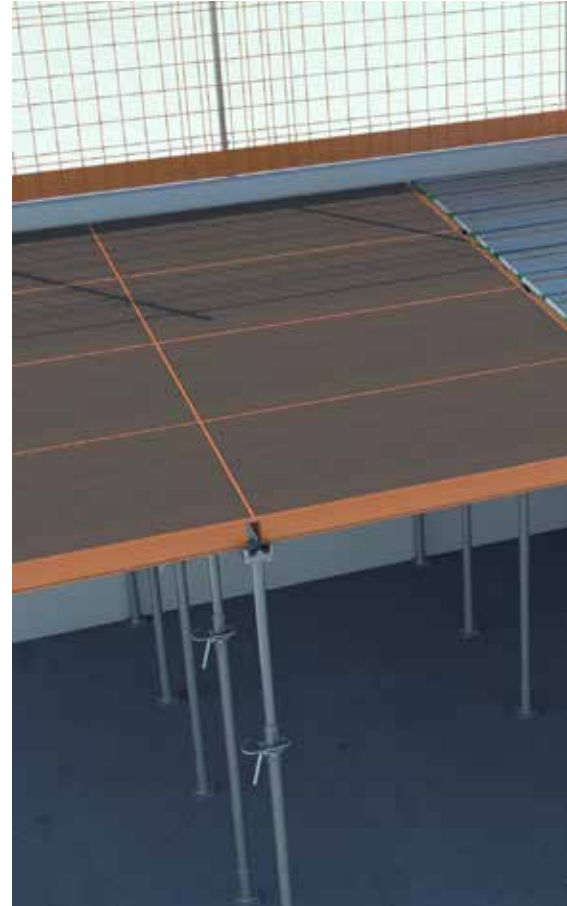
- High installation work rate.
- A single head for all assembly configurations.
- Integral plywood shuttering.
- The large panel sizes allow formwork of heights of up to 3.50 m without using a platform ladder.

SAFETY

- Ground-based installation and removal of panels and compensations when greater than 20 cm.
- The head allows for safe panel installation.
- The solid surface inherent to the system forms a proper working platform.
- AlphaSafe collective protection is incorporated in the panel through suitable adapters. This helps to prevent falls from height.

ADAPTABILITY

- Use with or without clip-on joints.
- Easy layout, with the logical panel size grid with 32-cm pitch.



Intermediate safety allowing formwork installation to continue

ERGONOMICS

- Lightweight panels: 27.9 kg for a panel 190 x 95 cm, i.e. 15.41 kg/m².
- Only two workers required to handle it in compliance with labour regulations.



Site: The Link (Île-de-France)
 Height: 3.60 m
 39 m²/person / day
 0,175 m²/h/person

SIMPLICITY

- Formwork assembly is simple, with the single head that can be used in corners, against a skin, or between panels.

LOADING CAPACITY




- Loading capacity for a slab thickness of 30 cm for a deflection of $L/400$, 35 cm for a deflection of $L/350$, and up to 50 cm with reinforcement.








Alphi can design and manufacture special elements to suit the specific needs of a project.

Here: a pole formwork

2 SIMPLE COMPONENTS






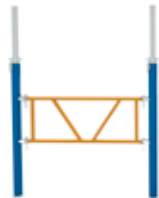




1	Quick-removal head	Product Code	Unit weight (kg)	Description	
	Heads		HAL TETE DECOF	4.5	<ul style="list-style-type: none"> A single head for all assembly configurations. Quick fastening using half-moon shaft locking pin or two M10 screws Hot-dip galvanised The formwork removal head is used with a seal and allows you to strike down the panel while leaving the prop pressing under the slab 
		Fixed head			
		HAL TETE FIX	1.4	<ul style="list-style-type: none"> A single head for all assembly configurations. Quick fastening using half-moon shaft locking pin or one M10 screw Hot-dip galvanised The fixed head is used with the panel without a seal 	

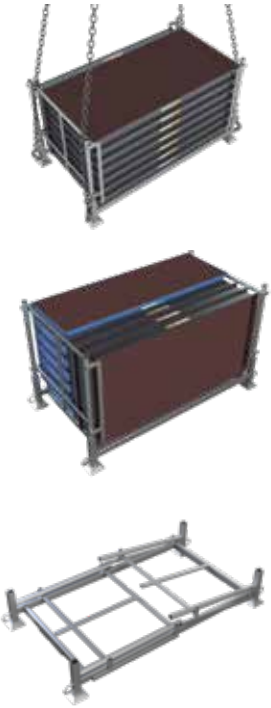

2	Formwork panels	Product Code	Colour	Dimensions w x l x h (cm)	Unit weight (kg)	Description	
	Panels		HorizontalAL 63 HAL 190X63		63 x 190 x 14	18	<ul style="list-style-type: none"> Aluminium panel Plastic-coated plywood or standard plywood
			HorizontalAL 95 HAL 190X95		95 x 190 x 14	27.9	
			HorizontalAL 63x95 HAL 95X63		63 x 95 x 14	9	
			HorizontalAL 95x95 HAL 95X95		95 x 95 x 14	13.5	

HORIZONTAL ACCESSORIES

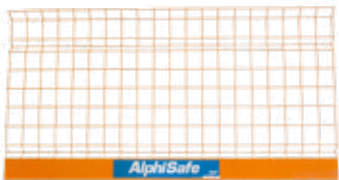





Joint	Horizontal seal (optional according to chosen configuration)	Product Code	Dimensions l x w (cm)	Unit weight (kg)	Description
		HAL PROFIL PVC190	190 x 8	1.2	<ul style="list-style-type: none"> ▪ Snap-on for quick assembly ▪ Reliable hold during the formwork and casting phases ▪ Reusable
Compensation	Compensating plate	Product Code	Dimensions l x w (cm)	Unit weight (kg)	Description
		HAL TOLE COMP 50	50 x 95	7.6	<ul style="list-style-type: none"> ▪ Reduces cutting and compensation wood offcuts ▪ Leaves a dished impression on the facing ▪ Lightweight and durable
	Compensation beams	Product Code	Dimensions w x l x h (cm)	Unit weight (kg)	Description
		HAL COMP 95	95 x 6 x 14	3.3	<ul style="list-style-type: none"> ▪ Beam providing compensation at the end of a frame ▪ The 95 compensation beam also lets you continue the formwork using the TopDalle system ▪ Compatible with 15-mm plywood
	HAL COMP 190	190 x 6 x 14	6.6		

STABILITY ACCESSORIES

Accessories	Lift prevention clamp	Product Code		Unit weight (kg)		Description
		HAL ANTI SOU		2		<ul style="list-style-type: none"> Secured to a push-pull prop to prevent panels from lifting in a high wind or for overhanging panels
	HorizontAL clamp	Product Code		Unit weight (kg)		Description
		HAL BR HORI		6		<ul style="list-style-type: none"> Secures a panel against a skin Provides the prop spacing and facilitates starting a cell
	Steel prop clamp	Product Code		Unit weight (kg)		Description
		BRIDE POUR ETAI		3		<ul style="list-style-type: none"> The rear plate slanted at 45° allows fastening with the prop in position Suitable for prop diameters Ø48 to 76
	Aluminium prop clamp	Product Code		Unit weight (kg)		Description
		ETAL CO PIV		3		<ul style="list-style-type: none"> Lets you use a Ø48 tube with aluminium props
	Girder clamp	Product Code		Unit weight (kg)		Description
		BRIDE POUTRE		3		<ul style="list-style-type: none"> The tube is inserted into the prop used to support the lintel
	Ø70 aluminium prop frame (orange)	Product Code	Sticker colours	Dimensions w x h (m)	Unit weight (kg)	Description
		CA 95 ETAL/70		0.95 x 0.50	9.5	<ul style="list-style-type: none"> Suitable for HorizontAL panels of width 95 without seal
CA 190 ETAL/70			1.90 x 0.50	15	<ul style="list-style-type: none"> Suitable for HorizontAL panels of length 190 with and without seal 	
Ø105 aluminium prop frame (galvanised)						
	CA 190 ETAL		1.90 x 0.50	14.8	<ul style="list-style-type: none"> Suitable for HorizontAL panels of length 190 with and without seal 	

Handling	Handling rack	Product Code	Dimensions w x l x h (cm)	Unit weight (kg)	Description
		HAL PAN	123 x 216 x 122	80	<ul style="list-style-type: none"> Suitable for all panel sizes Fold-down sides to save storage space
	Wheeled base	Product Code	Dimensions w x l x h (cm)	Unit weight (kg)	Description
		HAL BASE ROUL	78 x 210 x 110	85	<ul style="list-style-type: none"> Used to carry 8 wide panels and 12 thin panels standing upright

HORIZONTAL ACCESSORIES

Safety	AlphiSafe grid	Product Code	Dimensions w x h (m)		Weight (kg)	Description
		ALPHISAFE 1M25	1.25 x 1.30		7.60	<ul style="list-style-type: none"> The wire mesh is galvanised, with polyester powder coating
		ALPHISAFE 2M50	2.50 x 1.30		14.50	
	AlphiSafe post	Product Code	Section (cm ²)	Height (m)	Weight (kg)	Description
		POT ALPHISAFE	3.5 x 3.5	1.34	3.5	<ul style="list-style-type: none"> Hot-dip galvanised
	AlphiSafe adapter for HorizontalAL	Product Code	Weight (kg)		Description	
		HAL AD ALPHISAFE	7		<ul style="list-style-type: none"> Quick-fit Hot-dip galvanised Compatible with AlphiSafe 35x35 post 	
	AlphiSafe Ø25 mm post	Product Code	Weight (kg)		Description	
		POT ALPHISAFE D25	4.6		<ul style="list-style-type: none"> Hot-dip galvanised Height 1.38 m after insertion Built-in baseboard support 	
	AlphiSafe Ø25 adapter for HorizontalAL	Product Code	Weight (kg)		Description	
	HAL SUP SECU D25	5		<ul style="list-style-type: none"> Quick-fit Hot-dip galvanised Compatible with AlphiSafe Ø25 post 		
Ground-based installation	HorizontalAL pole	Product Code	Weight (kg)		Description	
		HAL PERCHE	6.5		<ul style="list-style-type: none"> Lets you erect formwork up to 3.60 m high from ground level 	

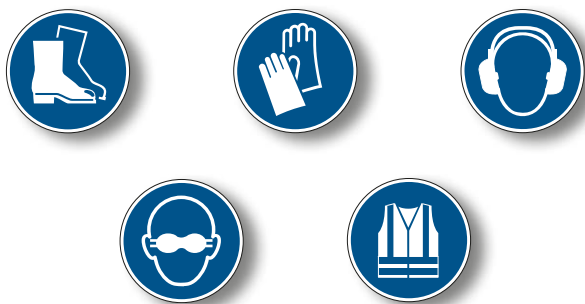
FOR YOUR SAFETY

WARNING

- To use our products safely, please observe the regulations in force in each country.
- The items and set-ups presented in this brochure match the characteristics of the equipment on the date of publication of the document. There may have been some changes since then.
- The use of our systems in combination with other manufacturers' systems may involve some risk and requires a specific inspection.
- Please contact the design office for all uses not covered by the following procedure.

Personal protection

- Use of PPE is mandatory.
- Operators setting up and removing equipment must be familiar with the relevant technical user documentation and have understood the steps.



Secure the working area

- Before starting assembly, remember to secure the area.
- Only authorised personnel are allowed to access the working area.
- Check that the collective slab edge protection has been installed.

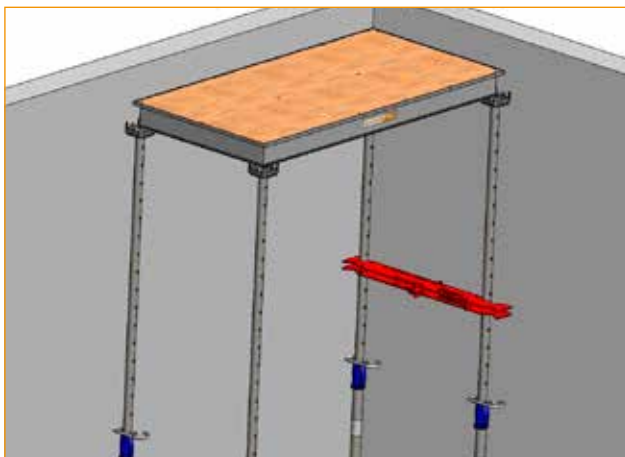


Installation of Alphi equipment

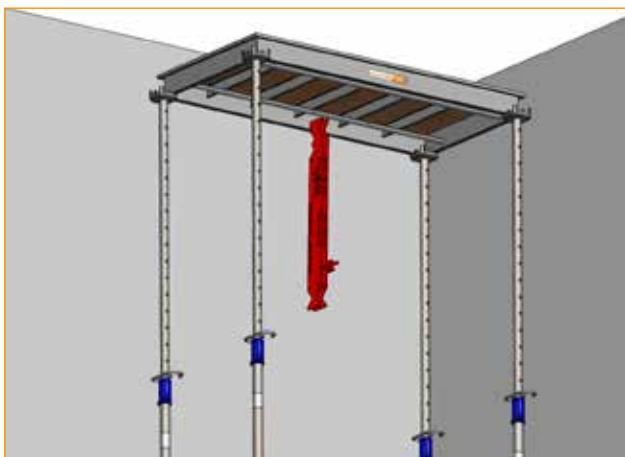
- Following the recommendations for using the equipment, safety instructions and load specifications is necessary for **a project to run smoothly**.
- The **layout drawings** provided by the Alphi design office enable optimum installation of the equipment. These layout drawings can be adapted according to the progress of the project, provided that the technical manual's recommendations for using the equipment are observed.
- The **stability** of formwork components must be checked at each stage of assembly.
- Use of the equipment must be appropriate for the **weather conditions**.
- The equipment must only be **maintained and repaired** by Alphi or by a user trained by Alphi.

STABILITY

START-UP RULES

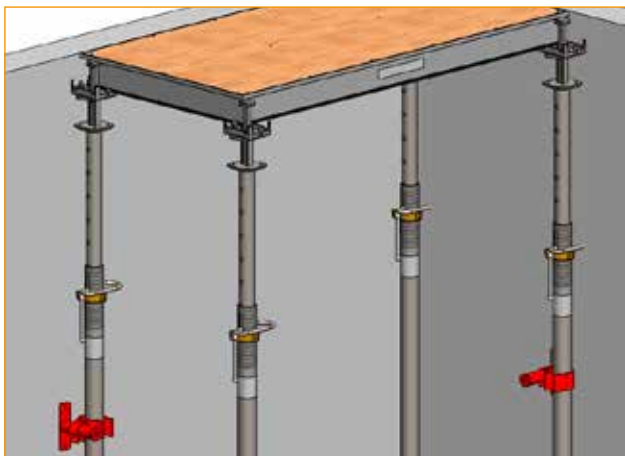


- The HorizontAL clamp is used to adjust the distance between the props and to secure them against the skin.



- The HorizontAL clamp also secures the panel against the skin, to support horizontal loads.

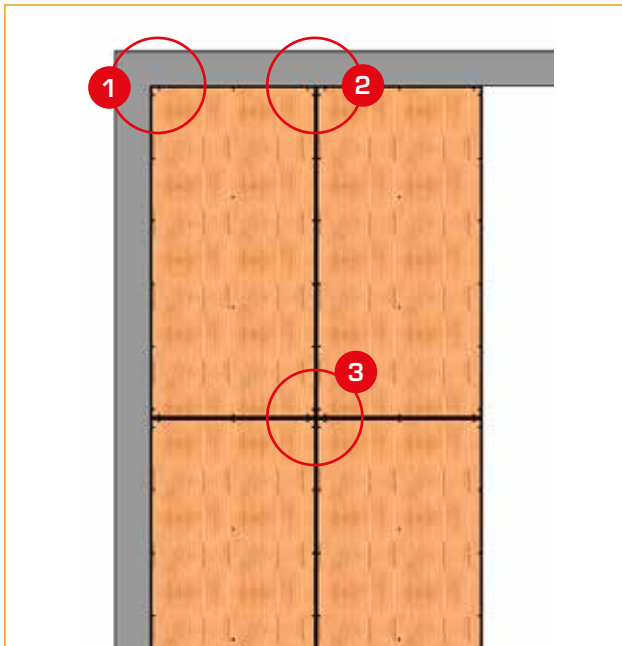
SKIN CLAMP



- The skin clamp secures the prop to the skin.

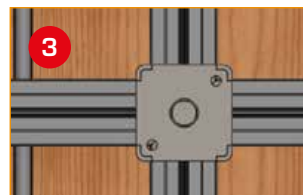
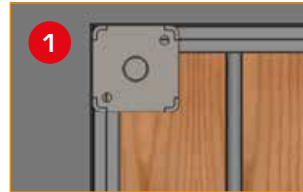
TWO OPERATING PROCEDURES

WITHOUT SEAL



- The **fixed head** defines the positioning of the panels.

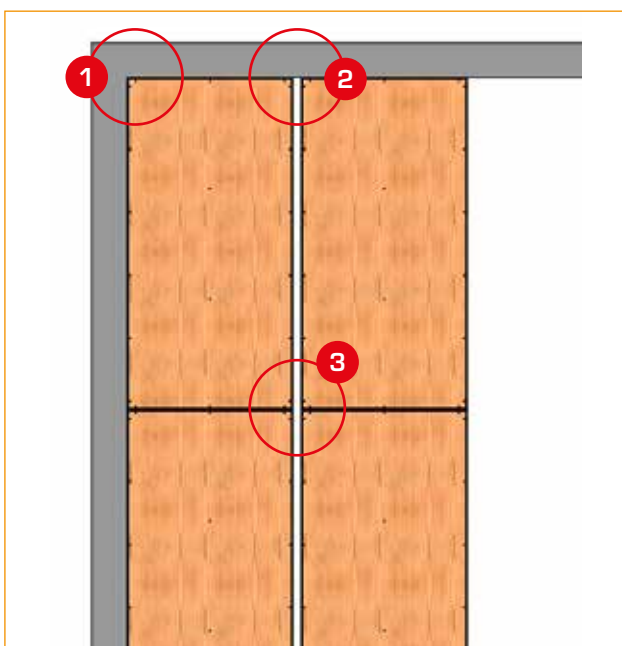
Positioning the heads



- A single head model satisfies the three most common situations:

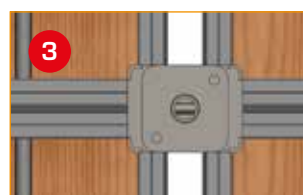
- 1 in a corner on start-up
- 2 against the skin
- 3 between four panels (standard position)

WITH SEALS



- The **quick-removal head** defines the positioning of the panels. Their spacing is 5 cm.

Positioning the heads



- A single head model satisfies the three most common situations:

- 1 in a corner on start-up
- 2 against the skin
- 3 between four panels (standard position)

PROCEDURE WITH / WITHOUT SEALS : FORMWORK



- Position and clamp the first two props.
→ Here, using the HorizontalAL steel prop clamp.



- Attach the first panel.



- Raise the panel using the HorizontalAL pole.



- The prop in the corner of the cell must be pressed perfectly flat against the skin.



- Repeat this procedure with the second panel.
- Secure the props using tripods.

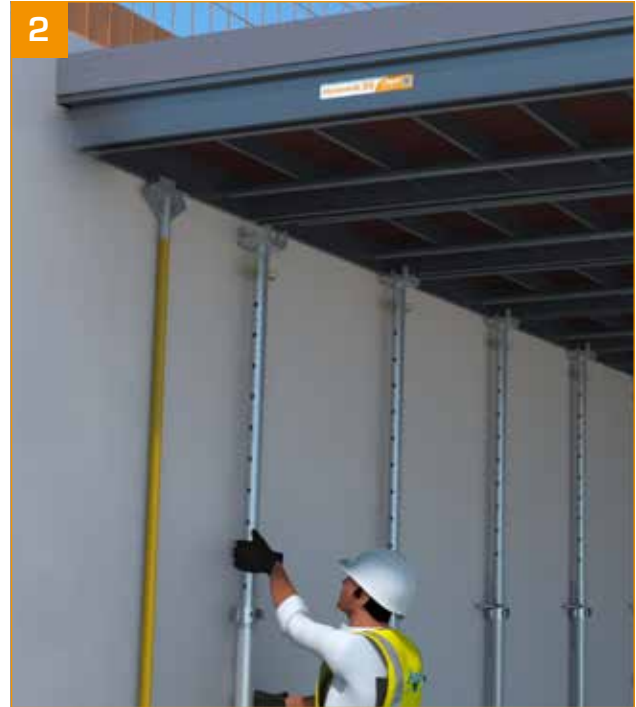


N.B.: You can also perform this assembly by attaching the panel via the long side.

PROCEDURE **WITHOUT SEAL** : FORMWORK REMOVAL



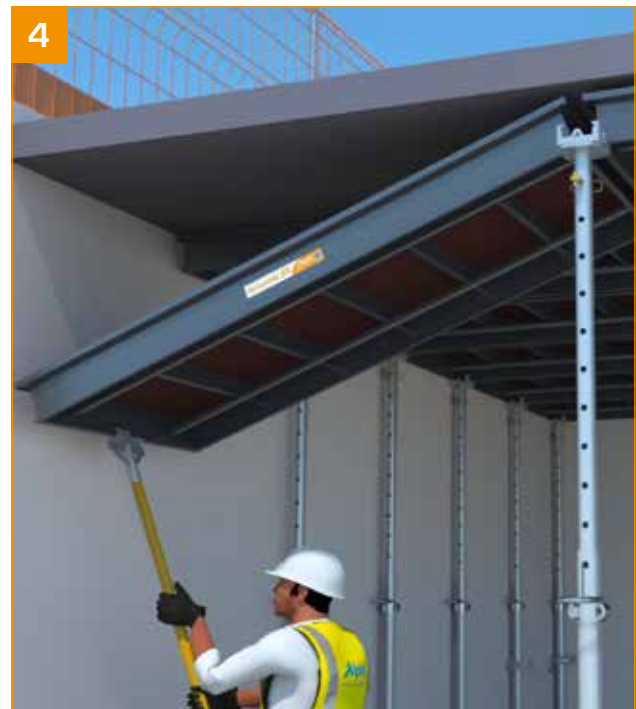
1 - At the start of a frame, position the HorizontalAL pole at the centre of the first panel.



2 - Remove the props against the skin to tilt the panel.



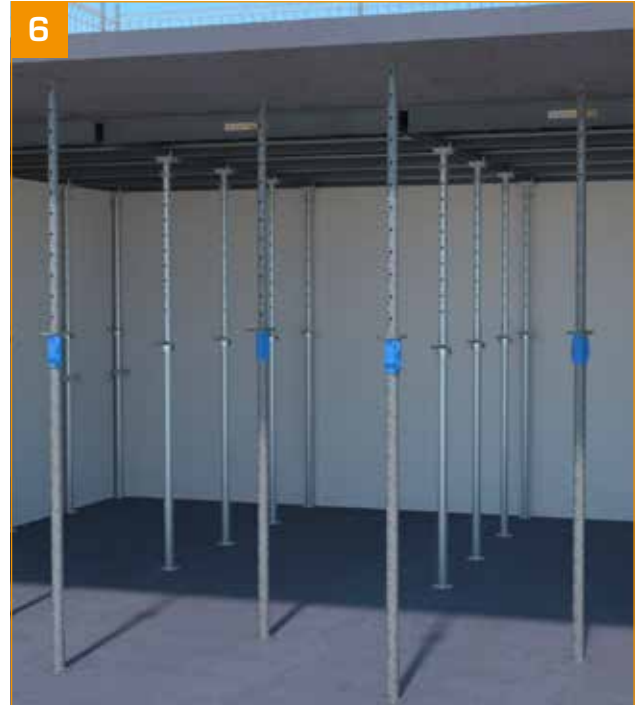
3 - Strike down the middle props by 2 cm to bring the panel down.



4 - Remove the panel using the HorizontalAL pole.

PROCEDURE WITHOUT SEAL : FORMWORK REMOVAL

- Repeat Steps 1 to 4 for the entire cell.

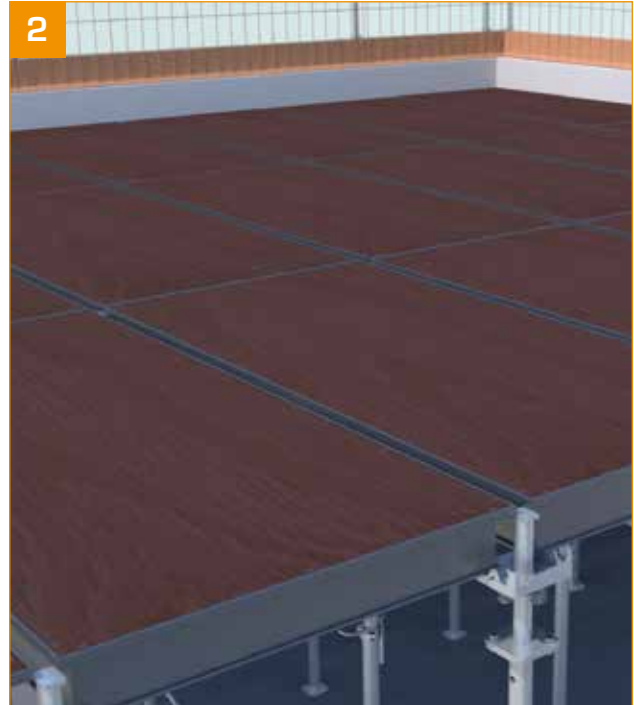


- Install drying props regularly in accordance with the recommendations.

PROCEDURE WITH SEALS : FORMWORK



1 - Insert an intermediate prop whilst leaving the last panel resting on the HorizontalAL pole.



2 - Repeat the operation for all the panels.



3 - Install the seal by clicking it in place between two panels.



PROCEDURE WITH SEALS : FORMWORK REMOVAL



- Strike down the quick-removal heads from the panels placed against the skin.



- Position the Horizontal pole and remove the props against the skin to tilt the panel.

PROCEDURE WITH SEALS : FORMWORK REMOVAL



3 - Store the panels on the wheeled base so they can be moved easily to the next cell.



4 - For the rest of the cell, strike down the quick-removal heads.
- Shift the panel horizontally so you can tilt it.



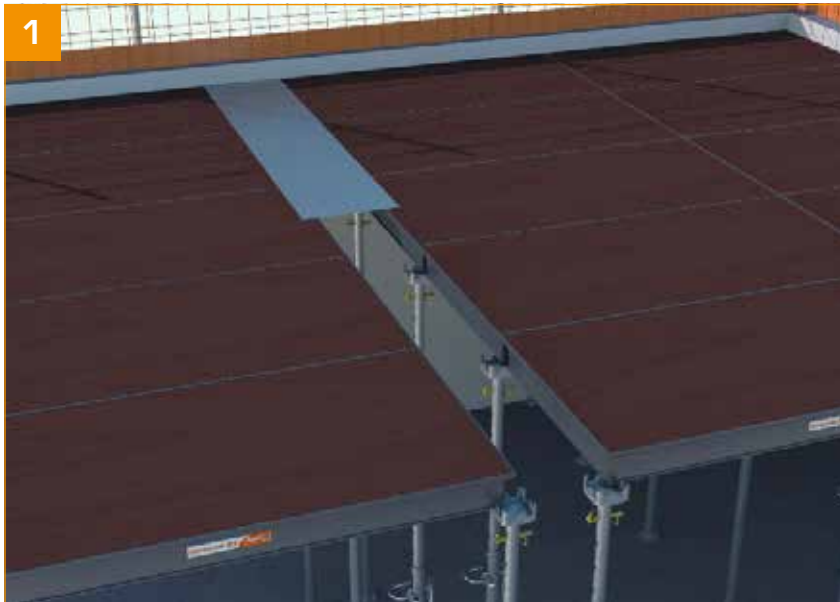
5 - Repeat this operation for the whole cell.



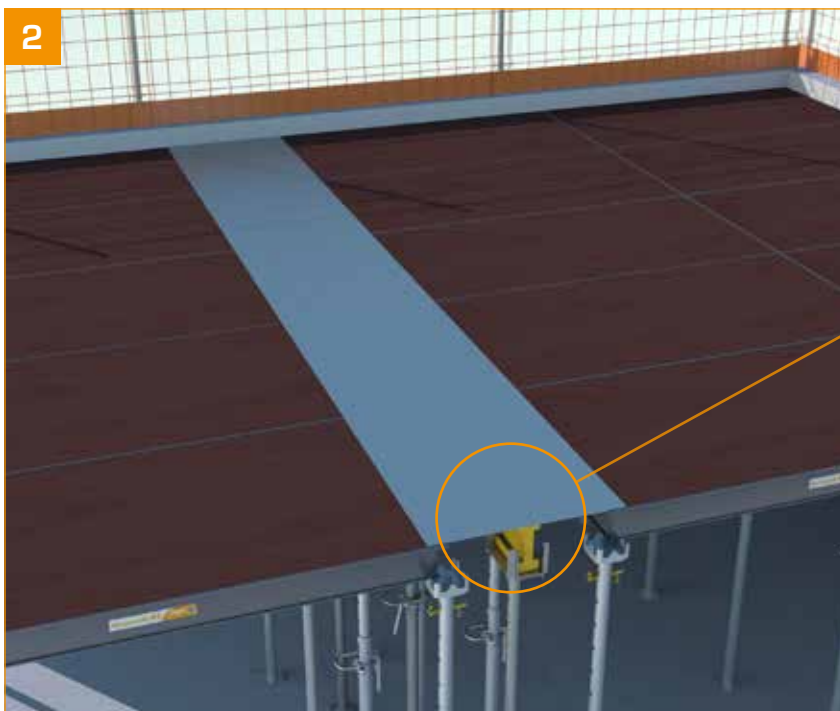
6 - After drying, remove the seals and props.

COMPENSATION MANAGEMENT

WITH COMPENSATING PLATE



- Minimise the gap by combining panels of different sizes.
- Up to a gap of 19 cm between panels, there is no risk of falls from height.
- Fit the plate over the gap.



- Fit the compensating plate from below.
- Nail the plate onto the Horizontal plywood.
- Between 20 and 32 cm, add a row of beams to reinforce the middle of the plate.
- The gap is thus less than 19 cm.

SAFETY

SAFETY AT THE END OF A FRAME



- The AlphaSafe system ensures collective safety on HorizontAL formwork.
- The HorizontAL system's adapters ensure safety around the edges of the panels.

SAFE PROGRESS | CONFIGURATION WITH SEALS



- Panel installation can proceed without removing the safety components.
- The Ø25 adapter is then inserted between panels.

LIFT PREVENTION



- A lift prevention clamp provides an easy way to connect panels to one another in case of strong gusts of wind.
- This same part provides the connection to the slab (configuration with or without seals).

OVERHANG MANAGEMENT

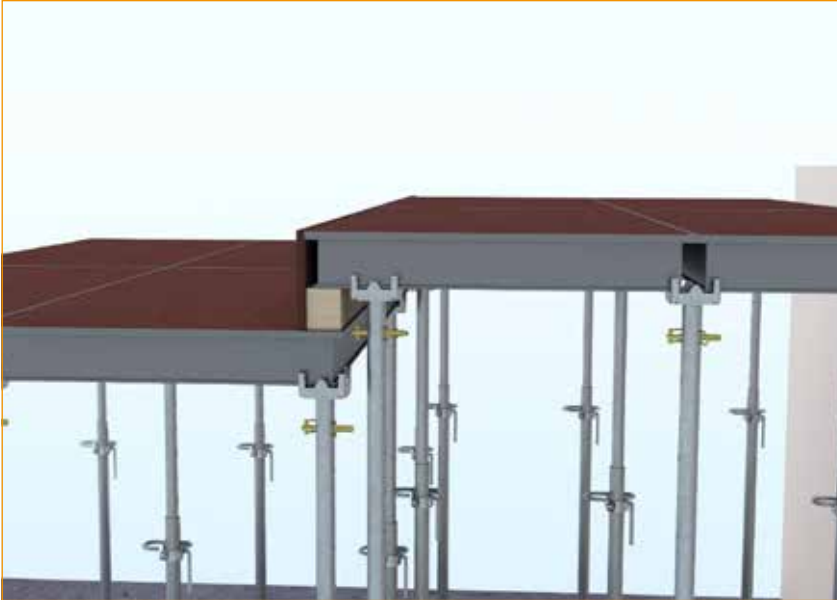


- To manage overhanging frontages, end props can be placed under the panels, set back from the edge.
- It is essential to clamp overhanging panels with a lift prevention clamp on a push-pull prop secured to the slab.



SPECIAL CASE

MANAGEMENT OF SLAB OFFSET



- When slabs are at different levels, bring the two panels together as close as possible to the offset.
- Provide formwork for the flange.

PACKING

HANDLING RACK



- Stores eight HorizontAL 95 panels (7+1 standing upright).



- Stores seven HorizontAL 63 panels + 3 standing upright HorizontAL 95 or 63 panels.



- The sides of the rack fold down to save storage space

WHEELED BASE



- The wheeled base can carry eight HorizontAL 95 panels standing upright, or four stacked panels.



- The wheeled base can carry 12 HorizontAL 63 panels.



- The size of the wheeled base was designed so that it can move around easily between the props and use lifts.

TRANSPORT

TRUCK LOADING (FOR A STANDARD HEIGHT OF 3.50 M)



Example of loading a truck with 230 m² of HorizontAL formwork including:

- 128 x HorizontAL 95 panels
- 192 x D35 props + HorizontAL heads
- Four racks of accessories (tripods, clamps, safety components, etc.)

ALPHI, THE LEADING FRENCH MANUFACTURER OF SLAB FORMWORK



The HorizontAL range is panel type formwork designed for large cells, which are especially suitable for the construction of commercial buildings. A single prop head simplifies assembly.

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Alphi
Formwork and solutions

Designed in France 

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