



FORMWORK



SAFETY



PRODUCTIVITY



ERGONOMICS



QUALITY

SLAB FORMWORK
COMBINING SAFETY
AND THE ENVIRONMENT



Alphi
Formwork and solutions

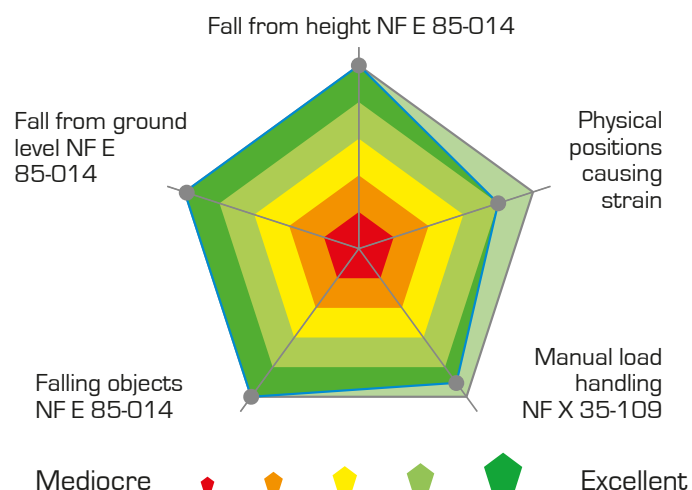




The versatile TopDalle Eco system suits every type of building: offices, housing, residential care homes, correctional facilities, etc.

Simple and quick to install, the TopDalle Eco systems offers productivity of 33 m²/person/day at a height of 2.50 m.

Developed by Alphi's R&D department, TopDalle Eco formwork is **compliant with the decree dated 2004 concerning falls from height and meets the requirements of the NF E 85-014 and NF X 35-109 standards** concerning the risks of tripping, slipping and falling objects, as well as manual load handling.



SAFETY AND ARDUOUSNESS PERFORMANCE CHARACTERISTICS

TopDalle Eco is the best-performing formwork of its generation in terms of the requirements of standards NF E 85-014 and NF X 35-109.

Site:
Housing
Client: Eiffage
Location: Paris,
20th district

TopDalle Eco | Slab formwork combining safety and the environment



**COMPLIANT
WITH THE DECREE
OF SEPTEMBER 2004
CONCERNING FALLS
FROM HEIGHT
AND WITH THE
NF E 85-014
AND NF X 35-109
STANDARDS.**

**ALL TOPDALLE ECO
COMPONENTS HAVE
BEEN TESTED BY
THE INDEPENDENT
LABORATORY LOCIE
AT THE UNIVERSITY OF
SAVOIE MONT BLANC.**



**TOPDALLE ECO:
SAFER, LESS
ARDUOUS, MORE
ENVIRONMENT-
FRIENDLY, MORE
USED.**

SAFETY

Worker safety

The work area is secured by full-surface Eco+ panels, preventing falls from height and the risk of tripping, slipping, or falling objects.

Ground-based Eco+ panel fitting and removal.

With TopPerche, formwork is installed and removed from ground level up to 3 m (no need for rolling platform, depending on heights).

Increased stability

The multi-support areas of the Eco+ panel, the continuous-support extendable primary beam combined with the extendable secondary corner beam, provide optimum stability.

Theft protection

The chemical process patented by Alphi is a protective measure against the fraudulent recycling of aluminium beams.



PRODUCTIVITY

30 m²/man/day at a height of 2.50 m

(formwork, adjustment, cladding and removal)

Practical use

- Simplified assembly thanks to adjacent Eco+ panels.
- The range needs fewer products thanks to the extendable primary beam.
- At the end of the span, the spacing of the Eco+ panel can be adjusted to the cell, leaving a gap of up to 10 cm between panels.

Easier identification

Coloured tips allow easy recognition of different Eco+ panel lengths.

Easy formwork removal

The drop-head for fast removal integrated in the technical support (Alphi patented system) keeps the slab supported during formwork removal: this speeds up the turnaround of the aluminium structure.

Adaptability to complex shapes

- Working on a full surface facilitates mobility above the formwork.
- The continual adjustment of the extendable primary beam and the extendable secondary corner beam lets you go near the edges of the cell.



SAVINGS

Strength and durability

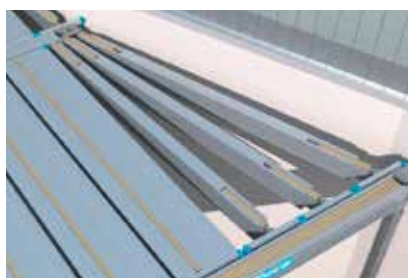
- Exclusive extrusion process to create wide, monobloc profiles.
- The plastic tips are shock-absorbent, limiting breakage.

Compatibility

TopDalle Eco is compatible with the entire aluminium beam formwork range.

Maintenance

Servicing is simplified because aluminium is easy to repair.



QUALITY

Concrete soffit quality

Superior quality as per DTU 21 guidelines for concrete floors.

Nailing on timber insert

- Plywood (15 mm authorised) secured using nails.
- The asymmetric insert can adapt to different configurations.

Regulations

The beams are designed in compliance with the formwork standard NF P 93-322.

Cleanliness

The shape of the Eco+ panel limits chalking on the vertical wall.

Concrete formwork thickness of up to 1.23 m, according to configuration.



The extendable beams let you go near the cell edges

ENVIRONMENT

100% "Green"

Designed to limit CO₂ emissions, the Eco+ panel is made of recycled and 100% recyclable aluminium.

Short distribution channels

- The production method implemented by Alphi favours short distribution channels and operators in French industry.
- Procurement-related transport covers distances of less than 460 km.

Fewer lorries

Optimum packing has been achieved by limiting the thickness of the Eco+ panel and designing its shape with a view to obtaining a more compact size.

Lorries can now carry 15 % more equipment.

ERGONOMICS

35% less weight

TopDalle Eco hand-portable elements are 35% lighter than conventional solutions.

Making work less arduous

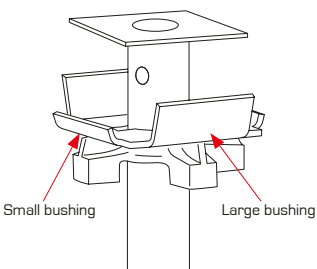





The system limits manual load handling.

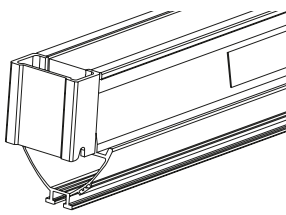




Less noise pollution

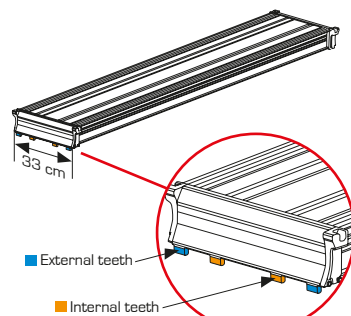



Eco+ panels have shock-absorbent plastic tips, which reduce noise.




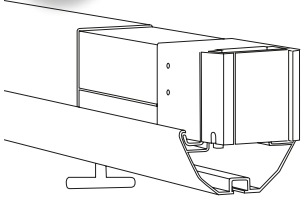

3 COMPONENTS FOR SIMPLE SHAPES


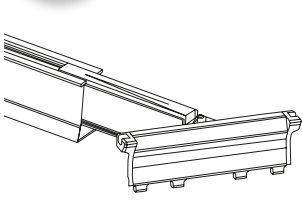



1	Technical support (ST) with integrated drop-head	Name	Colour	Height (cm)	Unit weight (kg)	Description
Technical supports		ST1		197-300	18.50	<ul style="list-style-type: none">Integrated drop-head for fast removal (patented system)Base webHot-dip galvanisedCast iron sleeve
		ST2		225-350	20.50	
		ST3		250-400	23.50	
	Aluminium props	Aluminium prop with insulated head				
		ST1 Alu		164-267 + 33 for the insulated head	15.00	<ul style="list-style-type: none">33 cm insulated head attached to the end of the propFull-height runner thread, self-cleaningEasy height adjustment by means of the gauge incorporated into the runner
		ST3 Alu		270-400 + 33 for the insulated head	19.40	

2	Primary beam	Name	Colour	Length (cm)	Unit weight (kg)	Description
Primary		PP 90		90	5.40	<ul style="list-style-type: none">Theft protectionCan be mounted in a drawer30 mm timber inserts, for nailing on plywood using 40 mm nails
		PP 110		110	6.60	
		PP 150		150	9.00	
		PP 180		180	10.80	

3	Eco+ panel	Name	Colour	Length (cm)	Unit weight (kg)	Description
Secondary		Eco+ 110		110	5.40	<ul style="list-style-type: none">Anti-tip safety33 cm widthTheft protectionTimer inserts for nailing on plywood using 40 mm nailsColoured tip for easy identification
		Eco+ 150		150	6.90	
		Eco+ 180		180	7.90	

2 COMPONENTS FOR COMPLEX SHAPES (OPTIONAL)

1	Extendable primary beam	Name	Colour	Length (cm)	Unit weight (kg)	Description
Primary	 	PPE 90-110		90-110	7.10	<ul style="list-style-type: none"> From 90 to 110 cm, to adapt to all cell sizes Can be mounted using drawer system Continuous resting of secondary beams on primary beam

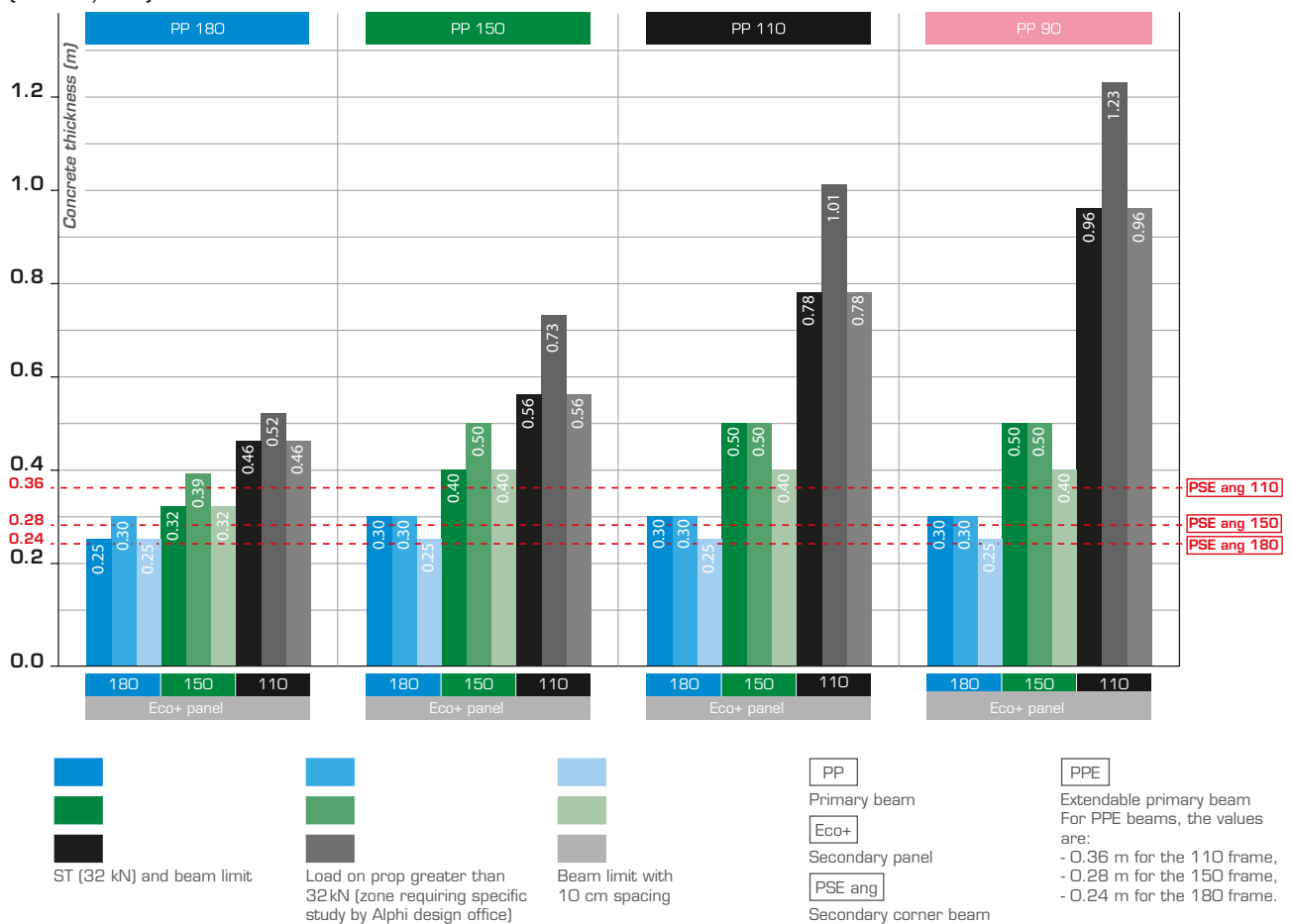
2	Extendable secondary corner beam	Name	Colour	Length (cm)	Unit weight (kg)	Description
Secondary	 	PSE ang 110		110-135	5.40	<ul style="list-style-type: none"> Each secondary corner beam must be associated with the secondary beam of the same size (e.g.: PSE ang 110 with PS 110)
		PSE ang 150		150-180	6.60	<ul style="list-style-type: none"> Adjustable length Timber inserts for nailing on plywood
		PSE ang 180		180-220	7.50	<ul style="list-style-type: none"> Modular orientation as close as possible to the concrete skin by rotating the tip Working angles of 0° to 35°

USE CALCULATION CHARTS






The values appearing in these charts must be complied with to ensure the safety of operators and compliance with the applicable standards (NFP 93-322 for beams and EN 1991 1-6 for all loads).

Beams

Value given for superior quality as per DTU 21 guidelines for concrete floors, accounting for the site load (2.5 kN/m²).

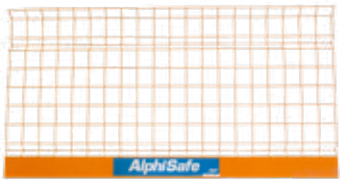










Technical supports ST with integral shuttering head / Alloy props with insulated head


Name	Colour	Height (cm)	Weight (kg)	Shored height (m) / Working load (kN)																											
		min-max		1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.3					
ST1 *		197-300	18.5	40	39	38	37	36	35	35	34	33	33	32	32																
ST2 *		225-350	20.5				40	39	39	38	37	36	36	35	35	34	34	33	32	32											
ST3 *		250-400	23.5							40	40	40	40	40	40	40	40	40	38	38	34	34	30	30	26						
ST1 Alu		164-267 + 33 for the insulated head	15			40	40	40	40	40	40	40	40	40	40																
ST3 Alu		270-400 + 33 for the insulated head	19.40									40	40	40	40	40	40	40	40	40	40	39	37	36	34						

* Hot-dip galvanised - Sleeve or nut colour coding
As per Eurocode safety coefficients 0 and 3.



TOPDALLE ECO ACCESSORIES

Safety	Mesh *		Dimensions w x h (m)	Weight (kg)	Description	
			1.25 x 1.30	7.60	<ul style="list-style-type: none"> The wire mesh is galvanised, with polyester powder coating 	
			2.50 x 1.30	14.50		
	Galvanised post *		Section (cm²)	Height (m)	Weight (kg)	
			3.5 x 3.5	1.34	3.50	
	Alphi formwork adapters		Weight (kg) Primary adapter	Weight (kg) ST adapter	Weight (kg) Corner adapter	
	Primary adapter*	ST adapter*				
				2.30	2.10	2.10
*Compliant with EN 13374 standard						
	AlphiSafe pole		Length (cm)	Unit weight (kg)	Description	
			1.94 to 3.50	2.73	<ul style="list-style-type: none"> Work from ground level Risk of falls from height eliminated 	

Additional	Electrogalvanised insulated head		Holes drilled (mm)	Height (cm)	Unit weight (kg)	Maximum allowable load (kN)	
			4 x Ø12 x 80	33	3.80	40	
	Bracket	Non-tilt safety fork (FSAB)	Unit weight diagonal strut (kg)	Maximum allowable load (kN)	Unit weight FSAB(kg)	Tube diameter (mm)	Description
			1.05	3.5	1.150	35	<ul style="list-style-type: none"> Bracket: butterfly fastening nut FSAB: hammer head screw

Installation from ground level	TopPerche		Length (cm)	Unit weight (kg)	Description	
			155	3.20	<ul style="list-style-type: none"> Work from ground level Risk of falls from height eliminated Compatible with Eco+ panels and primary beams 	

TOPDALLE ECO ACCESSORIES

Leborgne tools	Nanovib® range	Description
		<ul style="list-style-type: none"> Tools suitable for fitting and removing Alphi formwork: hammers, hammer holder, prop key Vibration and noise reduction  <p>Click here to view details of Leborgne Tools</p>

Handling	Racks	Ranges
		<ul style="list-style-type: none"> Vertical storage rack Galvanised rack on wheels Galvanised handling rack <p>Click here to view details of racks</p>
	TransÉtais Logement	Description
		<ul style="list-style-type: none"> Easier prop handling Makes it possible to pass through door openings <p>Click here to view details of TransÉtais Logement</p>

Aids for use	Plywood cutting support	Dimensions L x w x h (m)	Description
		1.40 x 2.06 x 0.86	<ul style="list-style-type: none"> For sale only Circular saw kit and electrical extension available as an option
	Rolling safety ladder	Working height (m)	Description
		2.50 to 4.33	<ul style="list-style-type: none"> For sale only

ALPHISAFE COLLECTIVE PROTECTION

AlphiSafe is a collective protection system for formwork and slab edges. The technical innovations in the system allow **safe installation** and **automatic locking**.

Robust AlphiSafe is certified by Ginger CEBTP, as per the **EN 13374 standard of July 2013**, as class A and B for some components.

AlphiSafe is distinguished by its **height of 1.30 m**, which is above the minimum height of 1.00 m set by the standard, and protects traditional slab formwork up to 30 cm thick.



The mesh is locked at the top by the anti-lifting pin and locked in rotation at the base.

Installation of AlphiSafe safety system in cantilever configuration



Installation of AlphiSafe safety system on technical support (progressive fitting)



CLAMPING

Depending on the configuration, stabilisation may be recommended.
Contact the Alpha Design department to validate the solution.
 See below for the various systems proposed.

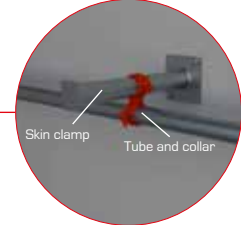
Skin clamp



- Skin clamp + tube system.



- Set up the stabilisation of the first components.
 - When stabilised, the tripods can be removed.



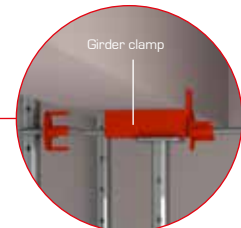
Girder clamp



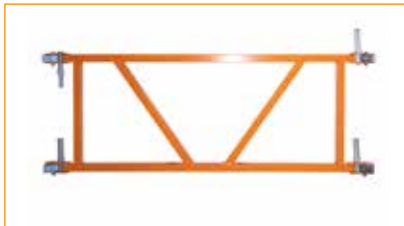
- Girder clamp + tube system.



- Set up the stabilisation of the first components.
 - When stabilised, the tripods can be removed.



Aluminium prop frame



- The prop frame can be used to join 4 props by means of a rigid connection.



- Position the 4 props as desired then fasten the prop frame.

Aluminium prop clamp



- When combined with the skin clamp, this component enables ST1 and ST3 aluminium props to be stabilised.

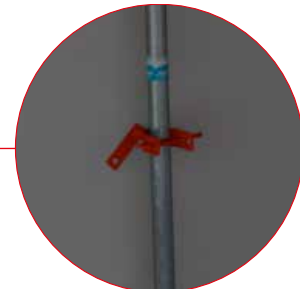
Prop clamp



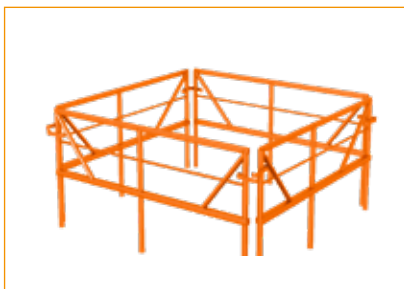
- Prop clamp to be driven into the wall with concrete screws.



- This clamp can be fitted before or after positioning the prop.



Prop frame



- The prop frame can be used to join 4 props by means of a rigid connection.



- Position the 4 props as desired then fasten the prop frame.



FOR YOUR SAFETY

WARNING

- To use our products safely, please observe the regulations in force in each country.
- The elements and set-ups presented in this brochure match the characteristics of the equipment on the date of publication of the document. There might have been some changes since then.
- The use of our systems in combination with systems from other manufacturers may involve some risk, and would require special 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 set-up, 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.



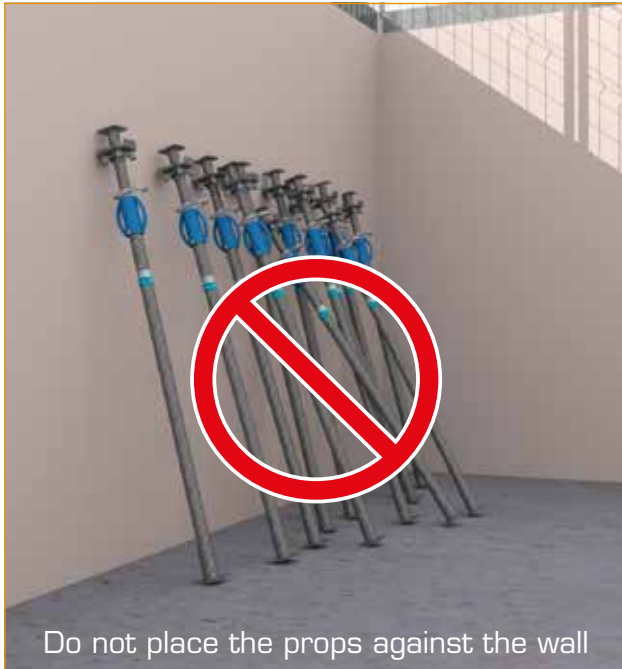
Installation of Alphi equipment

- Following the recommendations for using the equipment, safety instructions and load specifications ensures that a site functions **properly**.
- The layout drawings provided by the Alphi design office
 - not essential for a slab that is less than 24 cm thick
 - enable installation of the equipment to be optimised.
 Their adaptation for reasons relating to the progress of construction remains possible, by following the recommendations of the technical documentation for using the equipment.
- The stability of formwork components must be checked at each set-up stage.
- TopDalle Eco formwork system can be used up to a gradient of **5%**.
- 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.
- Alphi recommends that professional tools are used to install the equipment.



Click [here](#) or scan the QR code to view the video of the procedure.

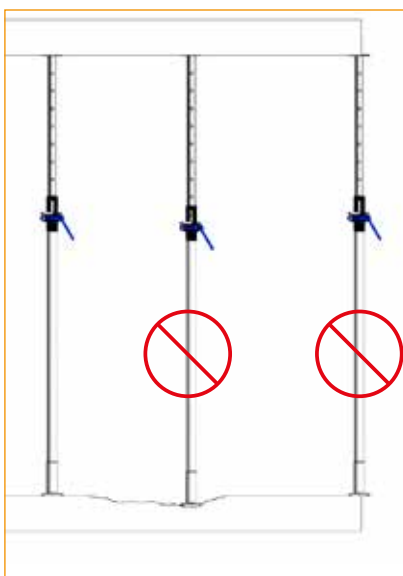
PREPARATORY STAGE



N.B.: even if they are not always shown in the image, TopDalle Eco is to be installed by 2 form fitters.

- Reception of equipment on the worksite: check quantities and validate delivery note.
- Precise distribution of the equipment according to the first phases of formwork defined by the layout drawing.
- Adjustment of prop height and positioning of formwork heads in formed position: locking with hammer.
- Adjust the props to the correct height by positioning them horizontally.
- Do not remove pins while the props are under load.

PROP INSTALLATION

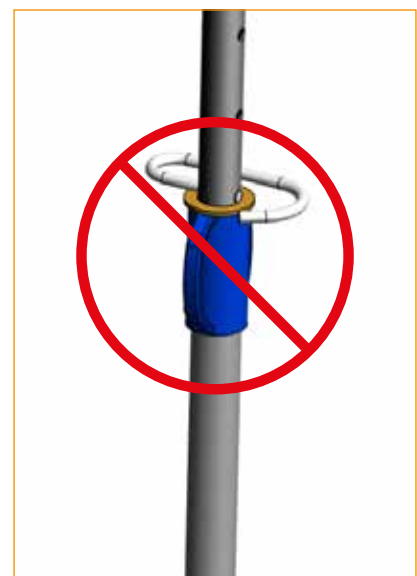


- Support surfaces must be plane and stable.



- Ensure that the prop is vertical.

Verticality tolerance $\leq 1^\circ$ Equivalents	
Allowable offset at the foot = d (cm)	For a height of... (m)
4	2.50
5	3.00
6	3.50



- The pin must be correctly inserted and must rest on the washer.

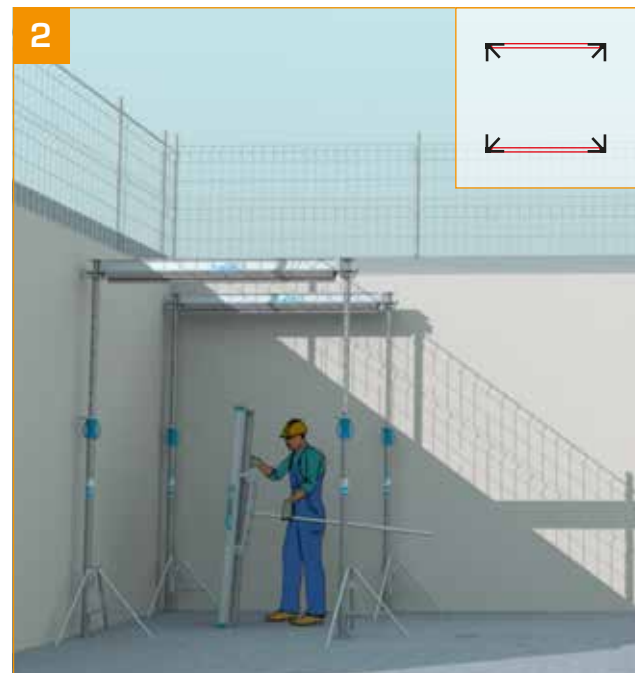
PROCEDURE: FORMWORK WITH STEEL PROPS



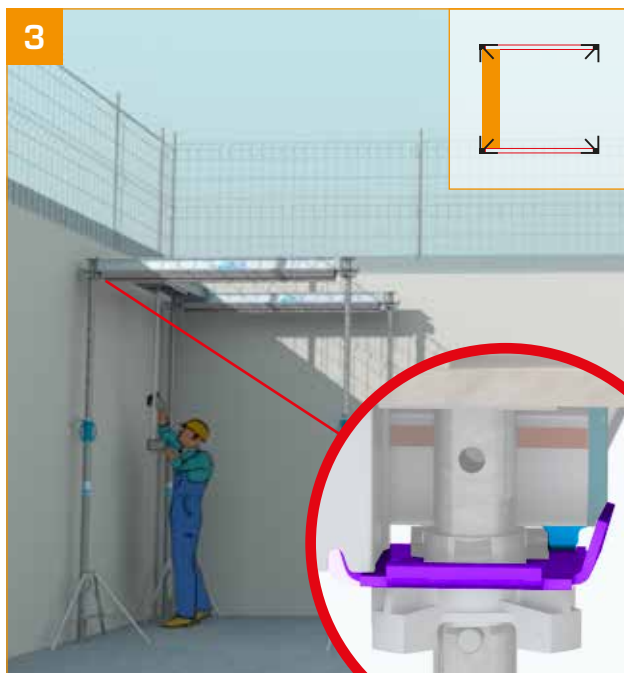
- Starting from one corner of the room, mount one primary beam on 2 technical supports (ST) stabilised by tripods.
- Mount a second primary beam on 2 STs stabilised by tripods.
- Use a rolling safety ladder in compliance with the regulations.

Caution: engage the primary beams on the large bushings of the technical support.

→ Refer to the layout plan.



- Mounting Eco+ panels using TopPerche Eco.
 - Position a panel on the pole, using the panel handles to prevent slipping.
- Refer to the layout plan.



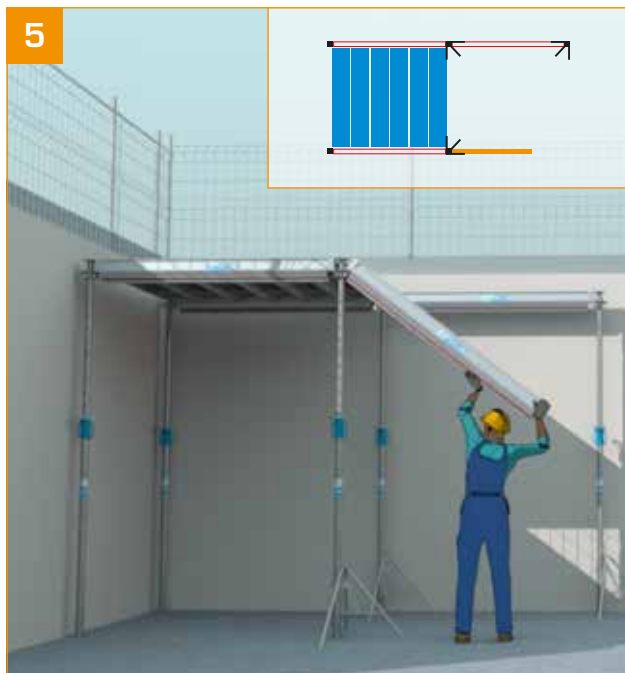
- Start mounting an Eco+ panel:
- The operator lifts the panel between the 2 primary beams then lowers the TopPerche ensuring that the panel tips are engaged on the primary beams or on the prop head.

Caution: the external teeth of the Eco+ panel must rest on a primary beam or on the prop head.

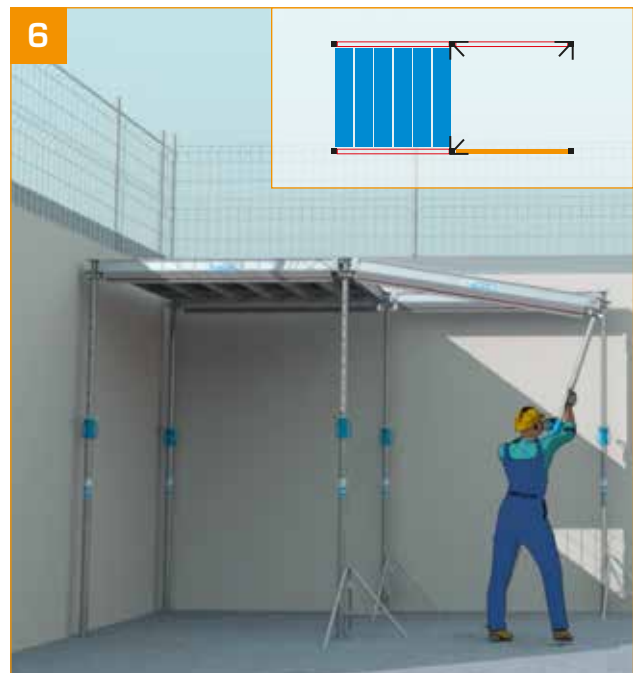


- Mount+ panels from one to the next using TopPerche Eco.
- Adjoin the panels.
- A 2 cm gap is retained.

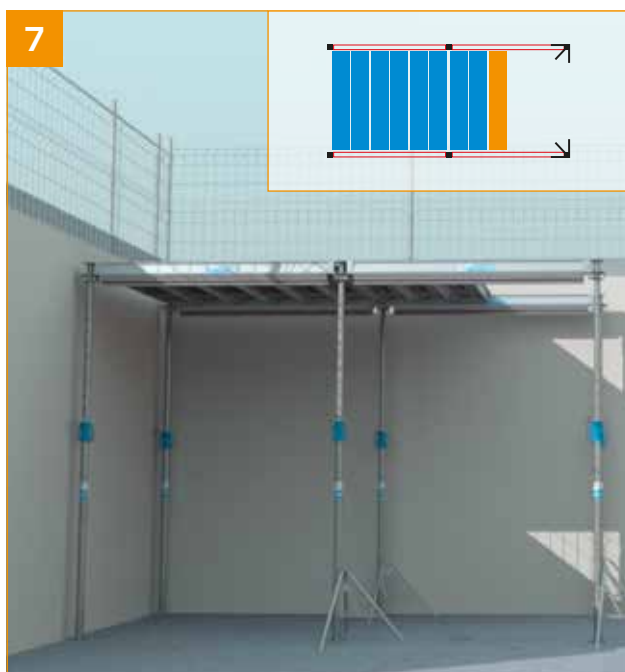
PROCEDURE: FORMWORK WITH STEEL PROPS



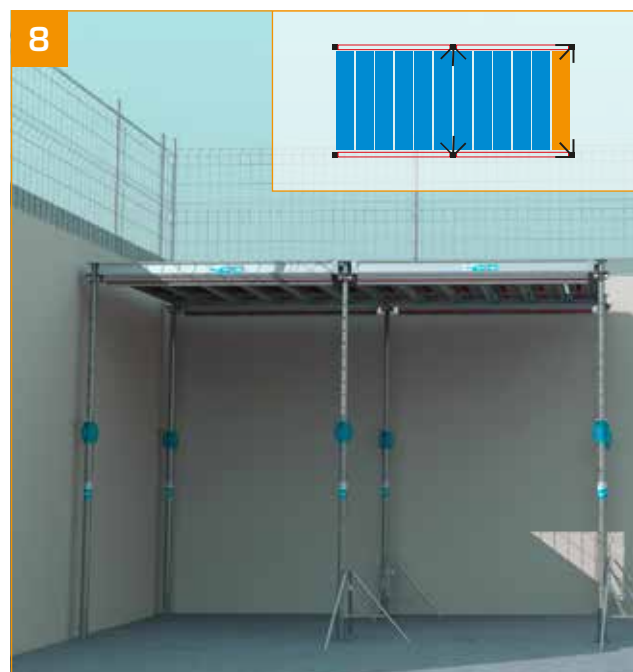
- Mounting a primary beam on ST stabilised by a tripod.



- The fitter uses the prop to position the primary beam.
- Stabilise temporarily with a tripod.



- Adjust the position of the Eco+ panels as shown from step 2 to step 4.

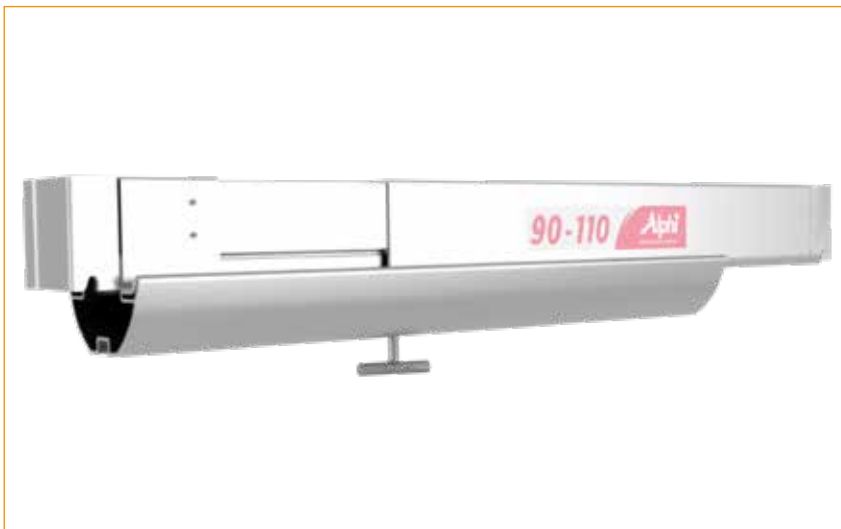


- Repeat steps 5 to 7 and finish installing the Eco+ closest to the wall.

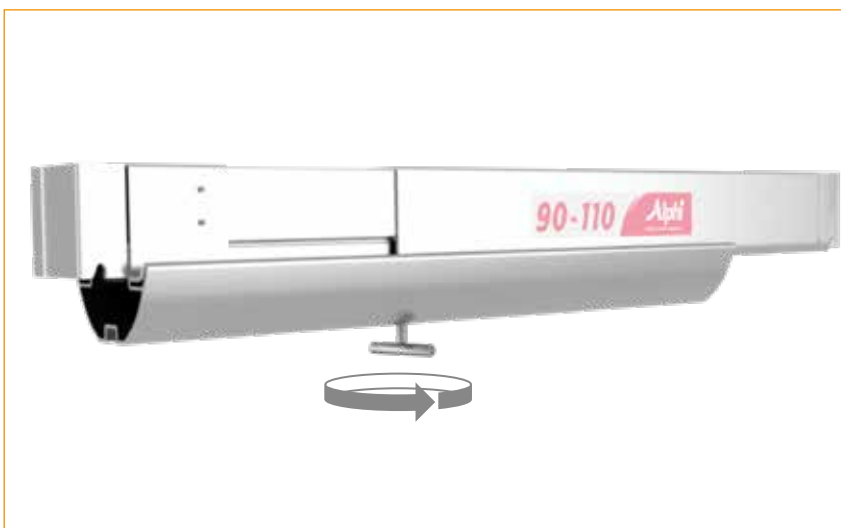
EXTENDABLE BEAM ADJUSTMENT



- Release the beam by unfastening the butterfly screw.



- Adjust the beam to the desired size.



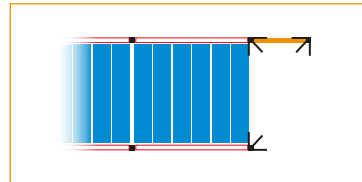
- Lock the beam by fastening the butterfly screw.

PROCEDURE: FORMWORK WITH STEEL PROPS

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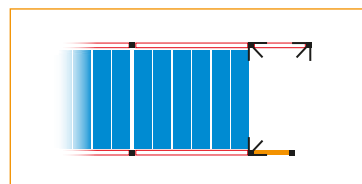
- Close to the wall, mount the extendable primary beam on stabilised props.
The extendable primary beam should be adjusted and locked prior to mounting.



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- The fitter uses the prop to position the second extendable primary beam.

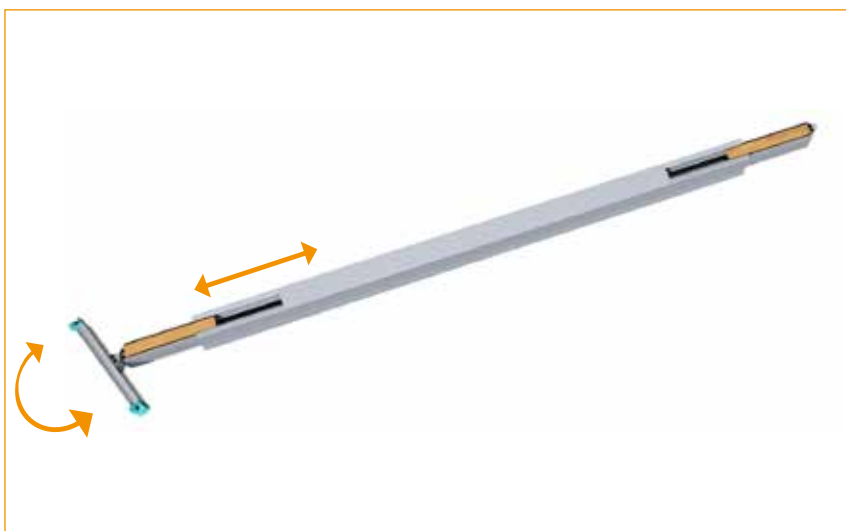


EXTENDABLE SECONDARY CORNER BEAM ADJUSTMENT

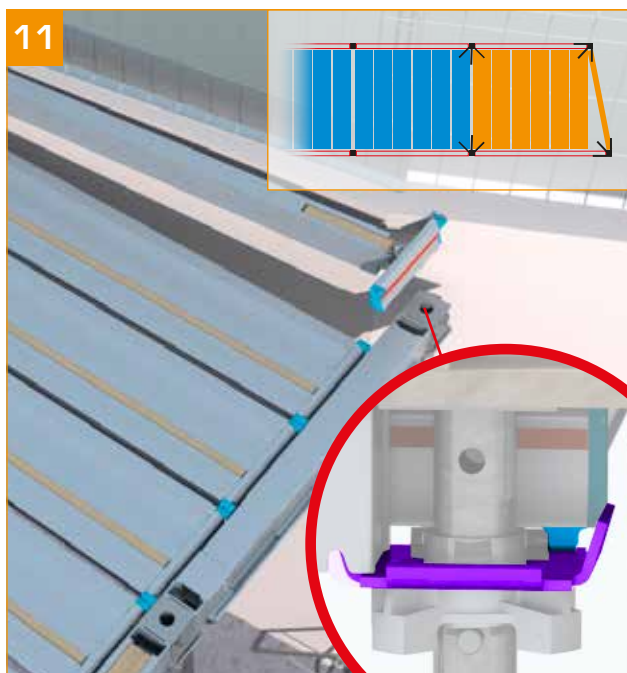


- An extendable secondary corner beam is used with an Eco+ panel type.
- The colour code of the extendable secondary corner beam matches that of the panel for easy identification.
- A symmetrical extension deployment length is preferable.
- The wide tip, including four bearing areas, promotes stability.
- The installation procedure involves joining the wide tips to apply a 19 cm gap.

Eco+ panels	Extendable secondary corner beams	Colour
110	PSE ang 110	
150	PSE ang 150	
180	PSE ang 180	



PROCEDURE: FORMWORK WITH STEEL PROPS



- Mount the extendable secondary corner beam.
Caution: the external teeth of the Eco+ panel must rest on a primary beam or on the prop head.



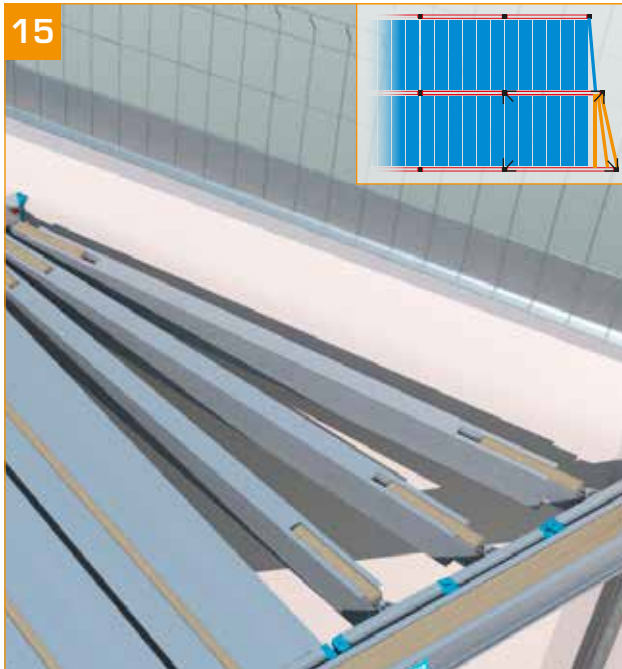
- The hinged heads of the extendable secondary corner beam can be adapted to all configurations.



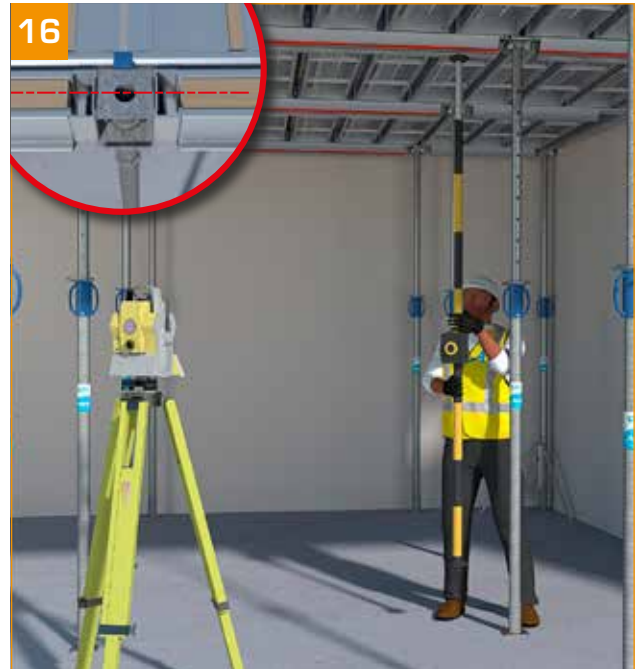
- Adjust the position of the Eco+ panels.



- Continue to mount panels+ progressively using the TopPerche, from one to the next.



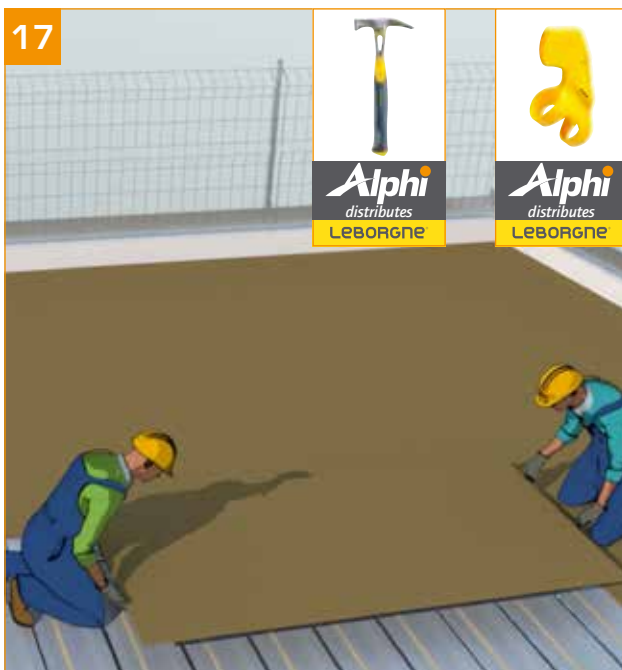
- Repeat steps 13 and 14 and finish installing TopDalle Eco using extendable secondary corner beams if required.



Conduct an inspection

- Conduct a general inspection of the verticality of the props, the locking of the heads, the correct mounting of the primary beams on the heads and of the secondary elements on the primary.
- Check the alignment of the beams and of the insulated head or the ST.
- Adjust the level using a laser level, ST by ST.
- A gauge stick hanging from the formwork allows laser level adjustment to be performed by one person.

→ Steps to be repeated for each prop.



- When the structure is finished and the height has been adjusted: laying the plywood.

- Peripheral safety (skin, girder, etc.) ensured beforehand.
- Use of the plywood cutting support.



- Nail.
- Ensure that a load-bearing member is present under the plywood sheet joins.
- Check the sealing of the formwork between plywood sheets and at the edges. It is prohibited to walk on the plywood panels, with the exception of trained personnel authorised to fit plywood panels.

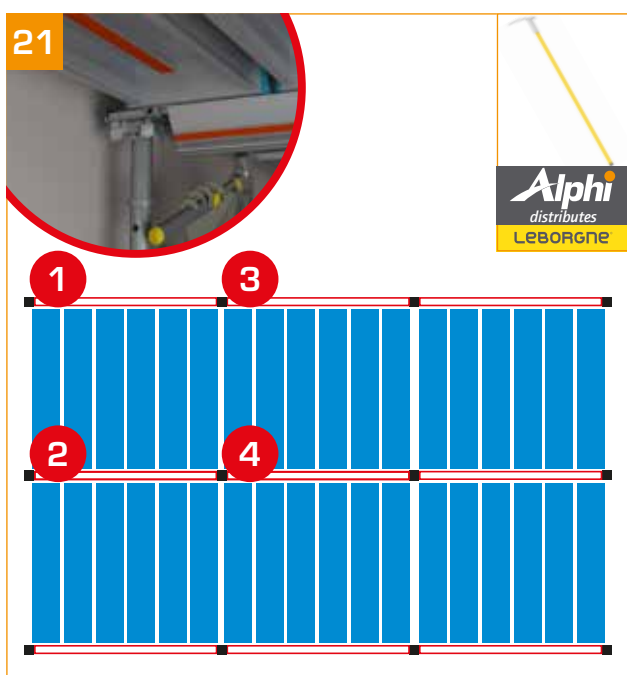
PROCEDURE: POURING, REMOVING WITH STEEL PROPS



- Concrete slab formation after reinforcement and incorporation inclusion.
- Spread the concrete on the formwork without overloading the beams and the technical supports.



- Removing formwork from the slab: remove the supports from the TSs as you progress.
- The primary beams and the Eco+ panels drop by 14 cm.
- The STs remain in position.



- Release the props in sequence 1, 2, 3 and 4.
- If the secondaries remain nailed to the plywood, we recommend the use of the Leborgne remover.



- Formwork removal from slab: remove the Eco+ panels as you progress, using the TopPerche.



- Then remove the primaries.



- Formwork removal from slab: remove the props placed at the edge of the cells.
- Leave the other props in place **for at least 3 days** (depending on the type of concrete and the external temperature).
- Use a panel elevator to remove the plywood.



- Repeat steps 23 and 24.



- Repeat the operations from Step 1 on a higher level.

PROCEDURE: FORMWORK WITH ALLOY PROPS



- Install the first 2 props with a frame for alloy props.
Caution: the formwork is started with a primary beam of 1.50 m and Eco+ panels of 1.50 m.



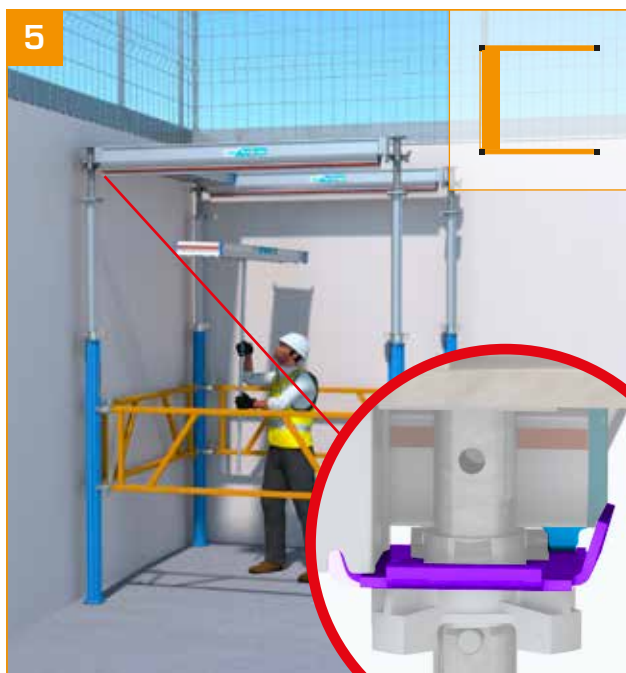
- Install the 2nd frame using a 3rd prop (self-stable system).



- Install a 3rd frame using a 4th prop (self-stable system). The 4th closing frame is only installed at the end of the grid to enable circulation.
 → Check the overall stability of the formwork zone by installing frames for alloy props (4) every 100 m².



- Install a primary beam on 2 props, using a platform.
Caution: engage the primary beams on the large prop lugs.



- Install Eco+ panels using TopPerche
- Caution: the external teeth of the Eco+ panel must rest on a primary beam or on the prop head.**



- Install the Eco+ panels from one to the next using TopPerche
- Adjoin the panels.
- A 2 cm gap is retained.



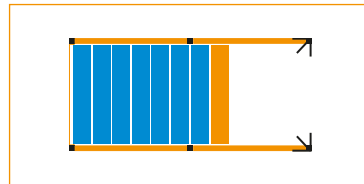
- Install a primary beam on a stabilised ST.



- The installer uses the prop to position the primary joist.

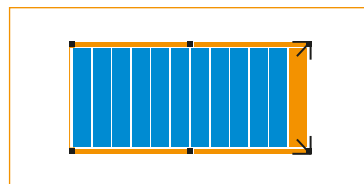
PROCEDURE: FORMWORK WITH ALLOY PROPS

9



- Adjust the position of the Eco+ panels as shown from step 5 to step 6.

10

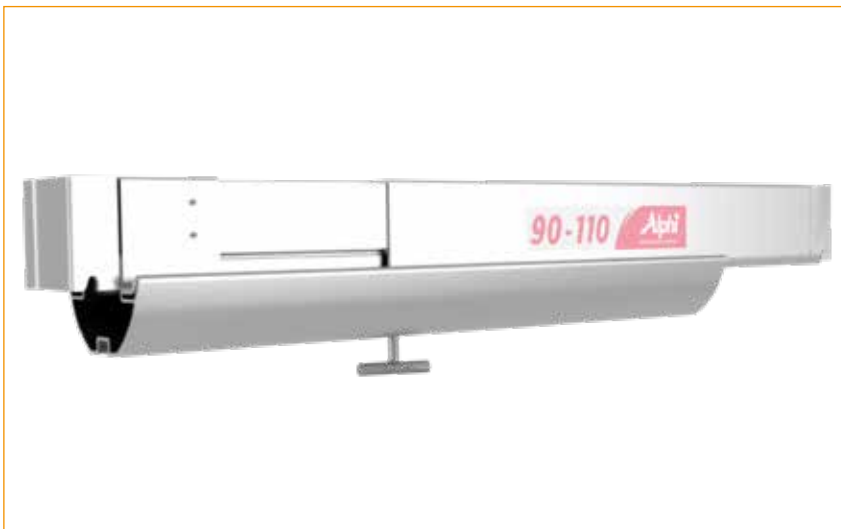


- Repeat steps 7 to 9 and finish installing the Eco+ closest to the wall.

EXTENDABLE BEAM ADJUSTMENT



- Release the beam by unfastening the butterfly screw.



- Adjust the beam to the desired size.

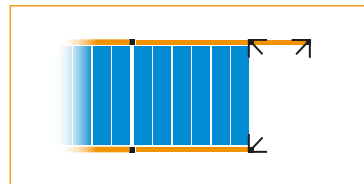


- Lock the beam by fastening the butterfly screw.

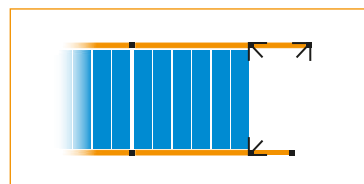
PROCEDURE: FORMWORK WITH ALLOY PROPS



- Close to the wall, mount the extendable primary beam on stabilised props.
The extendable primary beam should be adjusted and locked prior to mounting.






- The fitter uses the prop to position the second extendable primary beam.

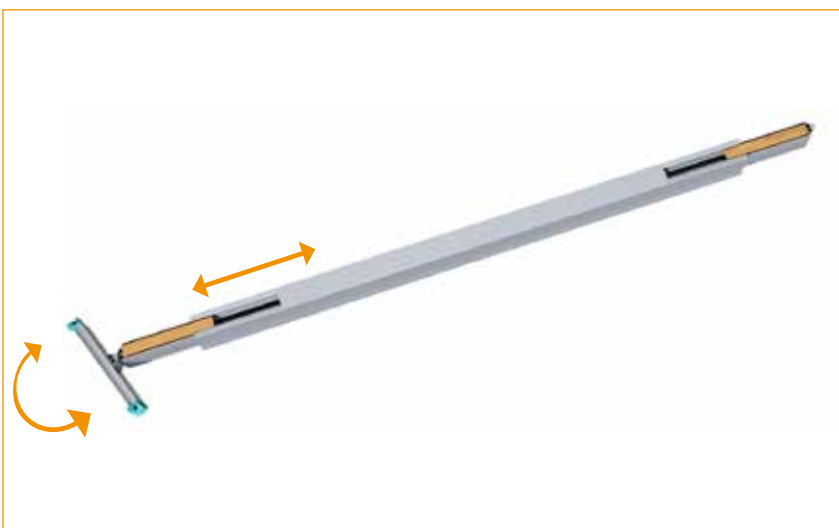


EXTENDABLE SECONDARY CORNER BEAM ADJUSTMENT

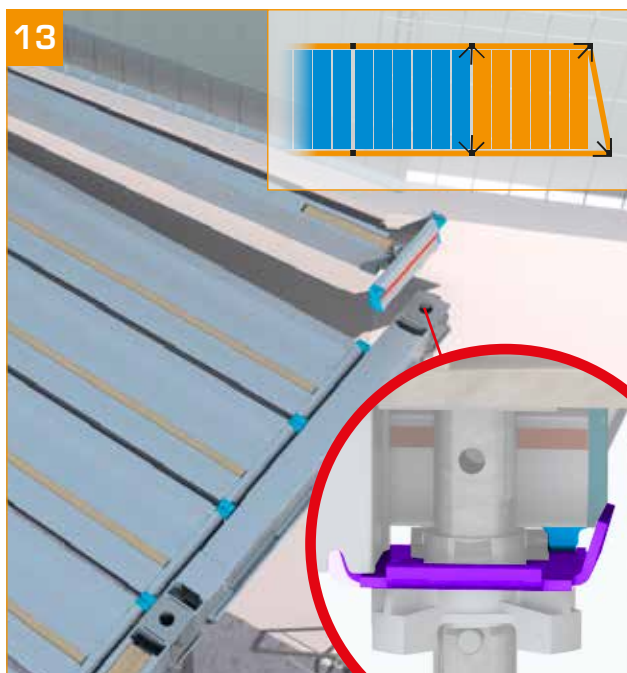


- An extendable secondary corner beam is used with an Eco+ panel type.
- The colour code of the extendable secondary corner beam matches that of the panel for easy identification.
- A symmetrical extension deployment length is preferable.
- The wide tip, including four bearing areas, promotes stability.
- The installation procedure involves joining the wide tips to apply a 19 cm gap.

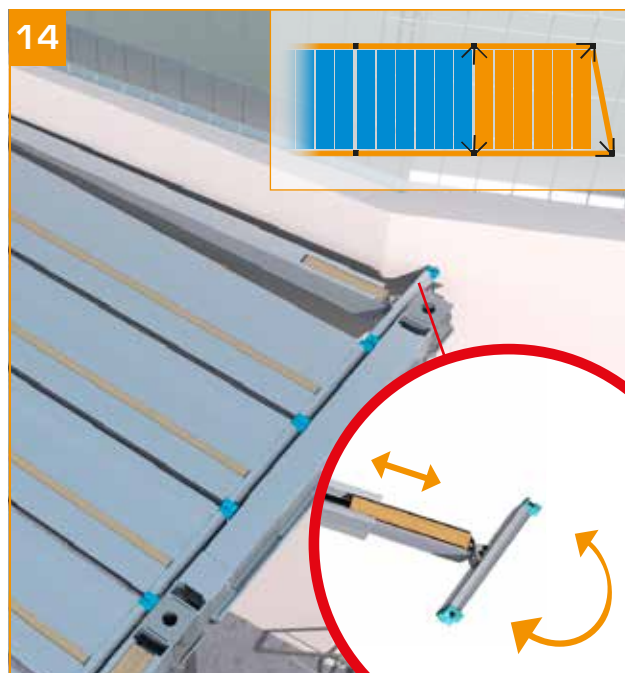
Eco+ panels	Extendable secondary corner beams	Colour
110	PSE ang 110	
150	PSE ang 150	
180	PSE ang 180	



PROCEDURE: FORMWORK, FINISHING WITH ALLOY PROPS



- Mount the extendable secondary corner beam.
Caution: the external teeth of the Eco+ panel must rest on a primary beam or on the prop head.



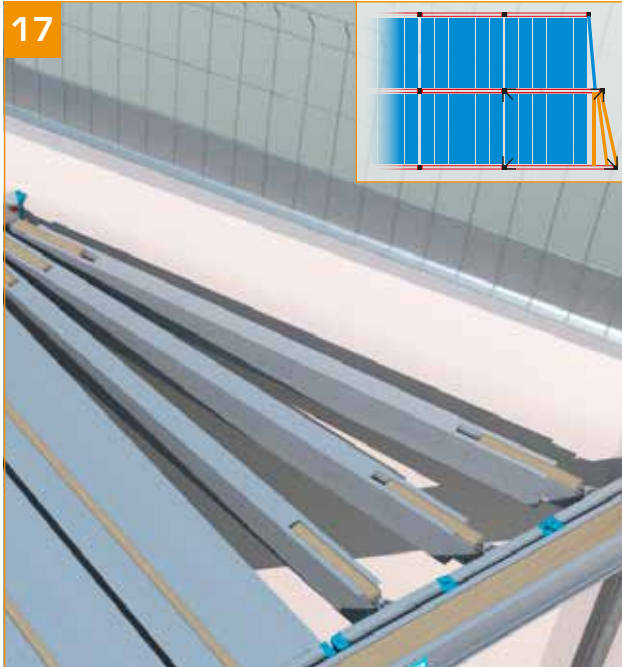
- The hinged heads of the extendable secondary corner beam can be adapted to all configurations.



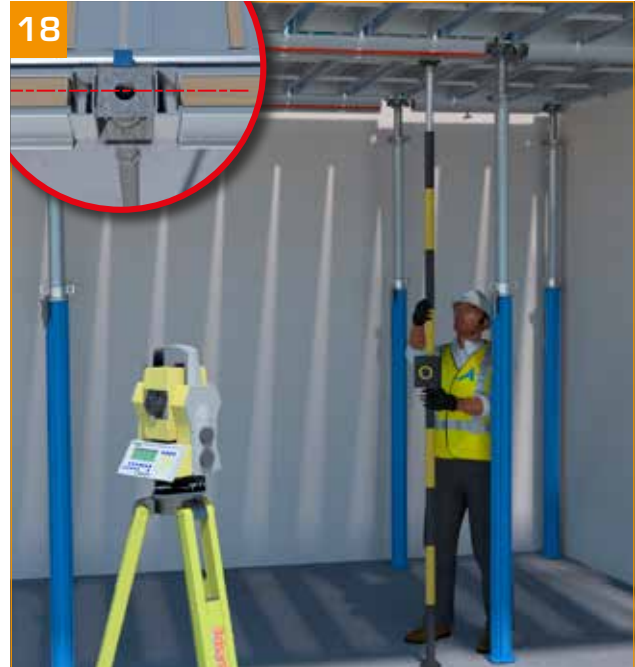
- Adjust the position of the Eco+ panels.



- Continue to mount panels+ progressively using the TopPerche, from one to the next.



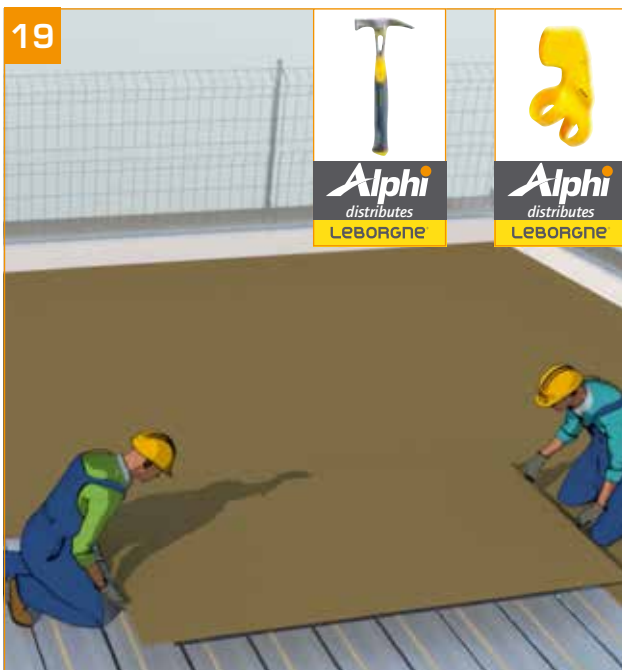
- Repeat steps 15 and 16 and finish installing TopDalle Eco using extendable secondary corner beams if required.



Conduct an inspection

- Conduct a general inspection of the verticality of the props, the locking of the heads, the correct mounting of the primary beams on the heads and of the secondary elements on the primary.
- Check the alignment of the beams and of the insulated head or the ST.
- Adjust the level using a laser level, ST by ST.
- A gauge stick hanging from the formwork allows laser level adjustment to be performed by one person.

→ Steps to be repeated for each prop.



- When the structure is finished and the height has been adjusted: laying the plywood.

- Peripheral safety (skin, girder, etc.) ensured beforehand.
- Use of the plywood cutting support.



- Nail.
- Ensure that a load-bearing member is present under the plywood sheet joins.
- Check the sealing of the formwork between plywood sheets and at the edges. It is prohibited to walk on the plywood panels, with the exception of trained personnel authorised to fit plywood panels.

PROCEDURE: FORMWORK, FINISHING WITH ALLOY PROPS



- Concrete slab formation after reinforcement and incorporation inclusion.
- Spread the concrete on the formwork without overloading the beams and the technical supports.



- Formwork removal from slab: release the formwork heads from the STs as you progress.
- The primary beams and the Eco+ panels drop by 14 cm.
- The STs remain in position.



- Formwork removal from slab: remove the Eco+ panels as you progress, using the TopPerche.



- Then remove the primaries.



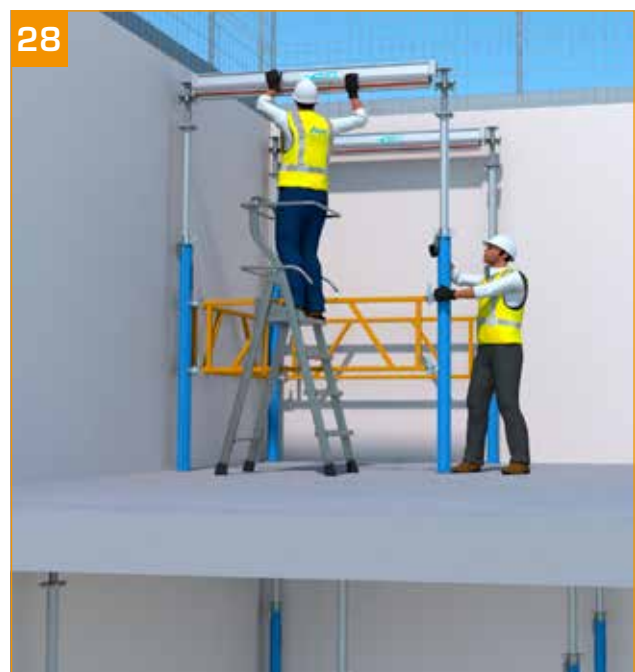
- Formwork removal from slab: remove the props placed at the edge of the cells.
- Leave the other props in place **for at least 3 days** (depending on the type of concrete and the external temperature).



- Use a panel elevator to remove the plywood.



- Repeat steps 25 and 26.



- Repeat the operations from Step 1 on a higher level.

TOPDALLE ECO FORMWORK INSTALLATION AT GREAT HEIGHTS



- Starting from one corner of the room, mount 4 technical supports (ST) stabilised by a prop frame.
 - Mount the first two primary beams.
 - Use the rolling safety ladder in compliance with regulations.
- Refer to the layout plan.



- Adjoin the panels. A 2 cm gap appears.
- Caution: the external teeth of the Eco+ panel must rest on a primary beam or on the prop head.**
- Refer to the layout plan.

3



- Finish setting up the Eco+ panels.

4



- As you progress, renew the installation of the primary beams and the Eco+ panels.

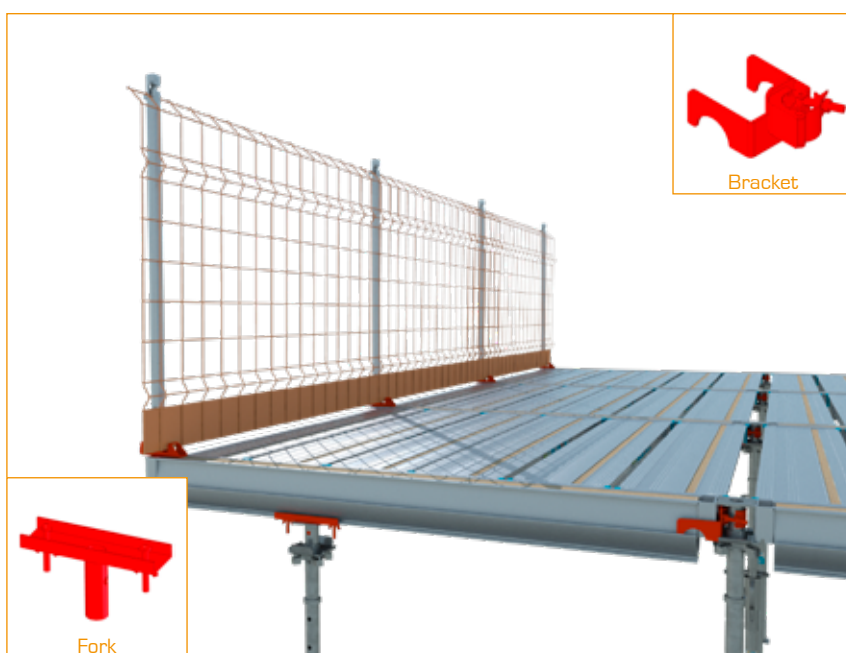
SPECIAL CASES

REDUCED GAP



- Use the fork under the primary beam (mounted without using fast formwork removal).
- The fork allows you to position the STs under the primary beams and not at the ends, thus offering additional adjustment.

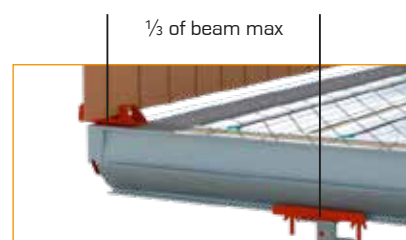
HANDLING FACE OVERHANGS



- Use in cantilever configuration with fork and bracket.

- Steps:

- 1 mount the bracket on the prop
- 2 install the prop
- 3 position the fork at the desired location
- 4 attach the primary beam to the prop, with the tip in the bracket
- 5 raise the beam, positioning a prop in the fork



BLANKING GAPS AT THE END OF THE GRID



For gaps of 11.5 cm or more, an H20 beam can be inserted on props equipped with forks.



For gaps of 12 cm or more, an AL100 beam can be inserted on props.



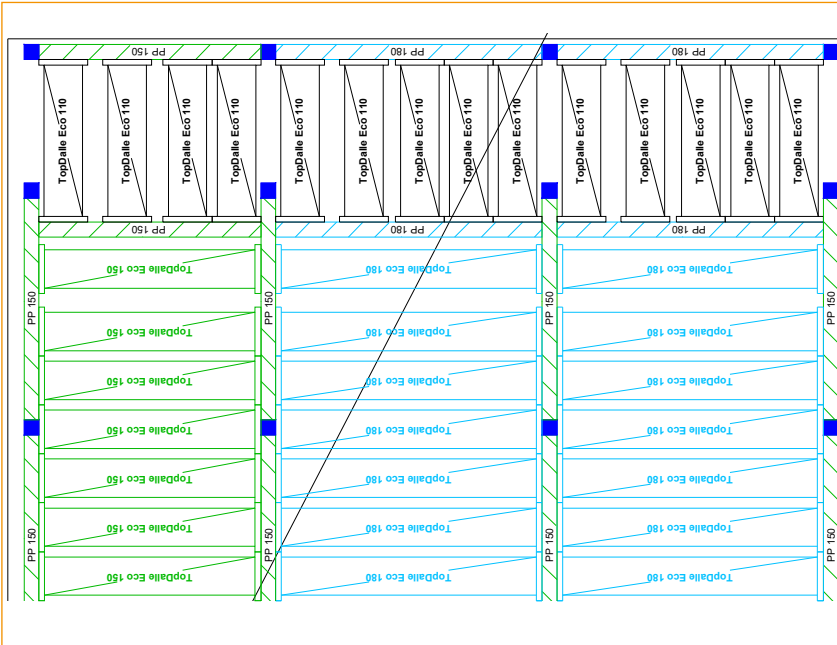
For gaps of 17 cm or more, a primary beam can be inserted on props.

Note

According to the decree of 2004 relating to falling from height, gaps are authorised up to 20 cm.

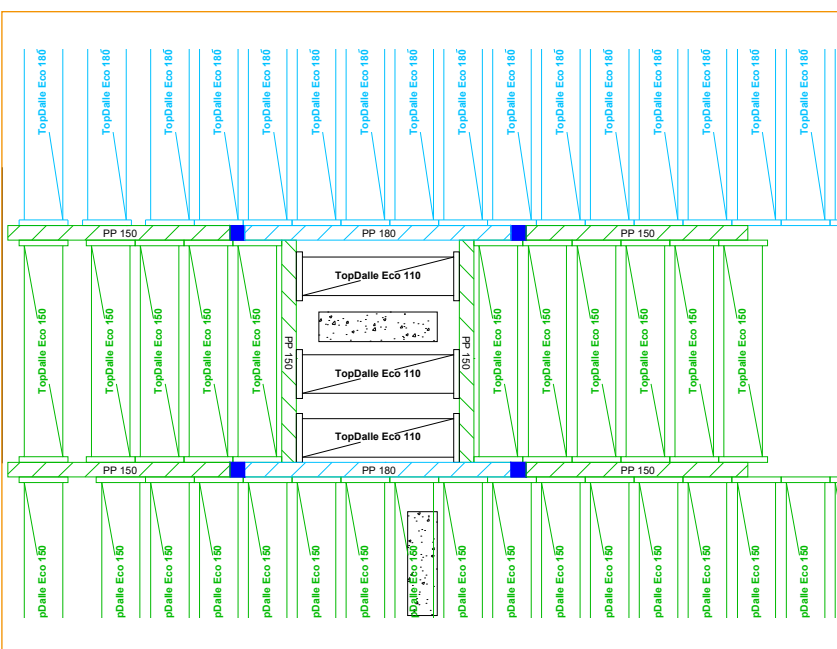
SPECIAL APPLICATIONS

PRIMARY ON PRIMARY IN-DRAWER SET-UP



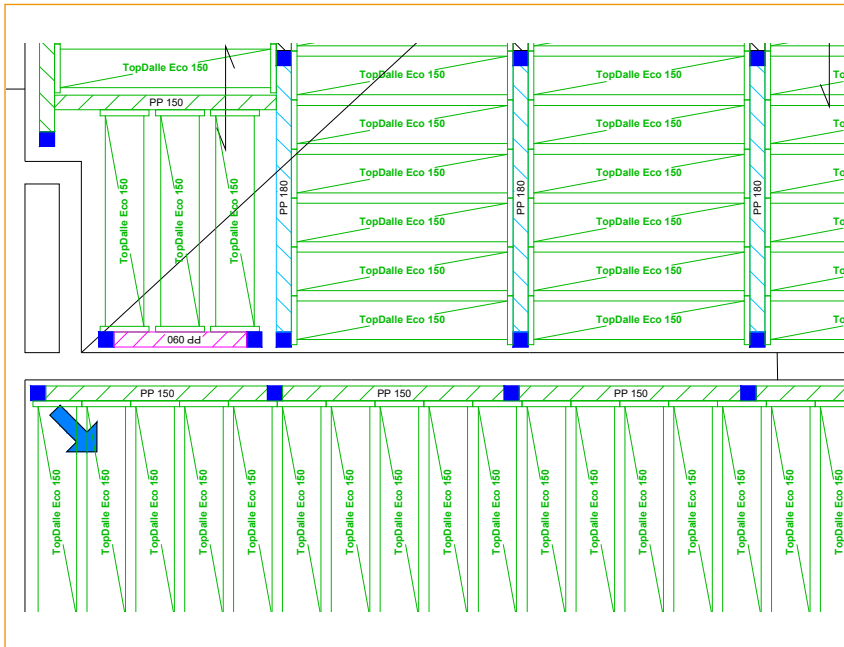
In-drawer set-up enables the formwork to be adjusted as closely as possible to the walls by means of a primary beam resting perpendicularly on two primary beams.

IN-DRAWER SET-UP FOR POSTS



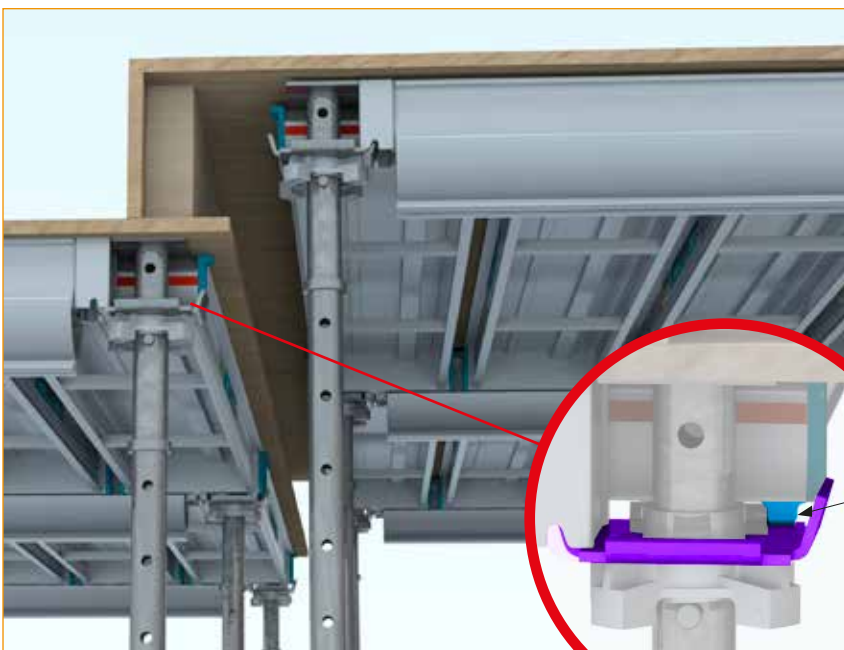
- Where a post is present, when the latter's longest length is parallel to the primary beam, an in-drawer set-up enables gaps to be minimised.
- Conversely, where the longest length is perpendicular to the primary beam, simply attach the secondary components to the post.

IN-DRAWER SET-UP FOR SERVICE DUCTS

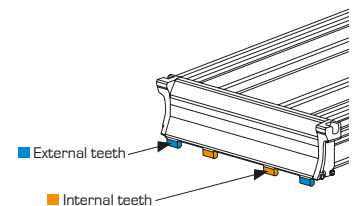


In order to get as close as possible to a recess, such as a service duct, it is possible to use an in-drawer set-up to minimise gaps.

RECESS ON THE UNDERSIDE OF THE SLAB



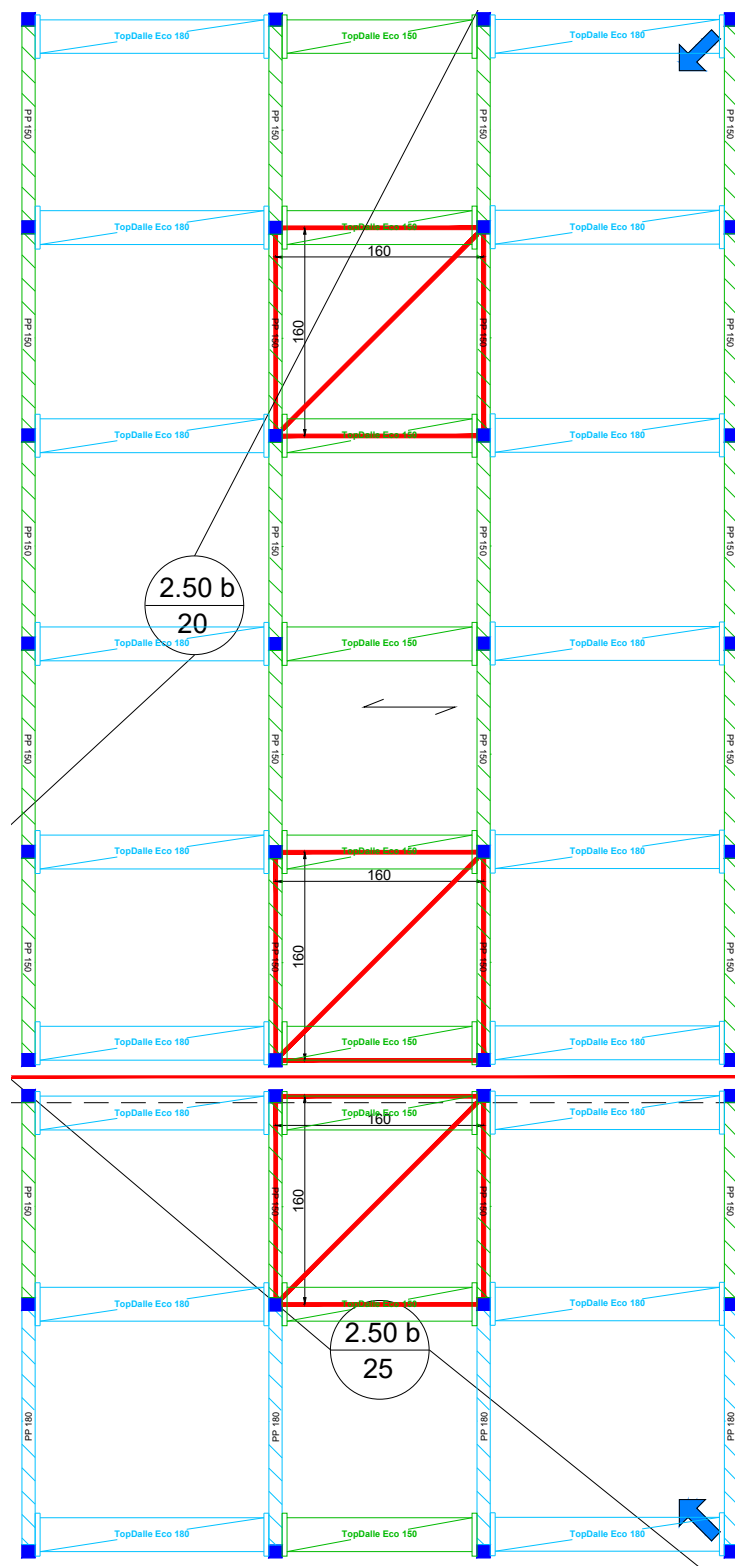
As the slab levels are different on the underside, it is advisable to install the 2 formwork sections as close as possible to the recess. In this way, the gap will be limited to 20 cm, in compliance with the decree of 2004 relating to falls from height.



In the case of a surface change on the underside of the slab or at the end of the grid, check that no external tooth is in the gap.

SPECIAL APPLICATIONS

PRE-SLAB SHORING



Caution: engage the primary beams on the technical support's large bushings.

PACKING

PRIMARY BEAMS

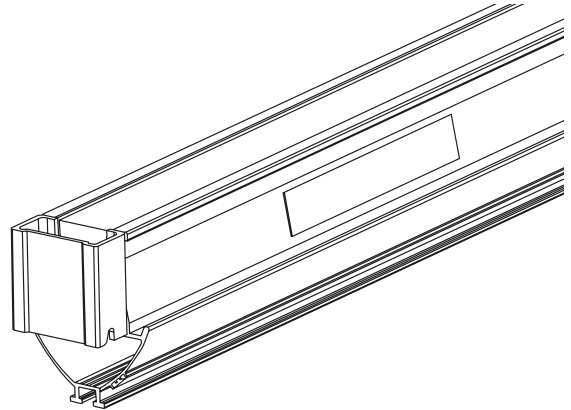
PP90	Quantity	Basket max. load PAN MAN 1T500	Basket galvanised or painted PAN MAN NO PAN MAN P NO
	Storage	5 rows x 8 beams	5 rows x 8 beams
	Weight (kg)	303	283
	Dimensions L x w x h (m)	1.23 x 1.10 x 1.21	1.16 x 1.03 x 1.04

PP110	Quantity	35 beams	35 beams
	Storage	5 rows x 7 beams	5 rows x 7 beams
	Weight (kg)	318	295
	Dimensions L x w x h (m)	1.15 x 1.10 x 1.21	1.15 x 1.03 x 1.04

PP150	Quantity	35 beams	35 beams
	Storage	5 rows x 7 beams	5 rows x 7 beams
	Weight (kg)	415	392
	Dimensions L x w x h (m)	1.55 x 1.10 x 1.21	1.55 x 1.03 x 1.04

PP180	Quantity	35 beams	35 beams
	Storage	5 rows x 7 beams	5 rows x 7 beams
	Weight (kg)	556	533
	Dimensions L x w x h (m)	1.85 x 1.10 x 1.21	1.85 x 1.03 x 1.04

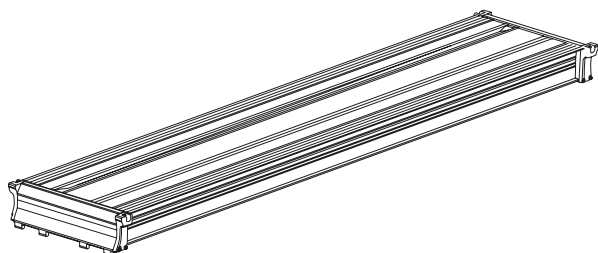
PPE90-110	Quantity	22 beams	22 beams
	Storage	1 row x 6 beams 1 row x 5 beams 1 row x 6 beams 1 row x 5 beams	1 row x 6 beams 1 row x 5 beams 1 row x 6 beams 1 row x 5 beams
	Weight (kg)	206	183
	Dimensions L x w x h (m)	1.23 x 1.10 x 1.21	1.16 x 1.03 x 1.04



In order to ensure optimum safety and stability, equipment handled using racks must be tethered and the weight distributed.

PACKING

ECO+ SECONDARY PANELS



ECO+110		Basket max. load PAN MAN 1T500	Basket galvanised or painted PAN MAN NO PAN MAN P NO
	Quantity	33 panels	30 panels
	Storage	11 rows x 3 panels	10 rows x 3 panels
	Weight (kg)	264	202
	Dimensions L x w x h (m)	1.23 x 1.10 x 1.21	1.16 x 1.03 x 1.04

ECO+150		33 panels	30 panels
	Quantity	33 panels	30 panels
	Storage	11 rows x 3 panels	10 rows x 3 panels
	Weight (kg)	283	239
	Dimensions L x w x h (m)	1.55 x 1.10 x 1.21	1.55 x 1.03 x 1.04

ECO+180		33 panels	30 panels
	Quantity	33 panels	30 panels
	Storage	11 rows x 3 panels	10 rows x 3 panels
	Weight (kg)	313	270
	Dimensions L x w x h (m)	1.85 x 1.10 x 1.21	1.85 x 1.03 x 1.04



In order to ensure optimum safety and stability, equipment handled using racks must be tethered and the weight distributed.

TECHNICAL SUPPORT (ST) PROPS

		Prop basket PAN ETAI	Basket max. load PAN MAIN 1T500
ST1	Quantity	48 props	72 props
	Storage	6 rows x 8 props	9 rows x 8 props
	Weight (kg)	997	1 043
	Dimensions L x w x h (m)	1.95 x 1.05 x 0.95	1.95 x 1.10 x 1.21

ST2	Quantity	48 props	64 props
	Storage	6 rows x 8 props	8 rows x 8 props
	Weight (kg)	1 035	1 371
	Dimensions L x w x h (m)	2.25 x 1.05 x 0.95	2.25 x 1.10 x 1.21

ST2N	Quantity	48 props	64 props
	Storage	6 rows x 8 props	8 rows x 8 props
	Weight (kg)	1 099	1 456
	Dimensions L x w x h (m)	2.25 x 1.05 x 0.95	2.25 x 1.10 x 1.21

ST3	Quantity	48 props	56 props
	Storage	6 rows x 8 props	7 rows x 8 props
	Weight (kg)	1 235	1 440
	Dimensions L x w x h (m)	2.50 x 1.05 x 0.95	2.50 x 1.10 x 1.21

ST3N	Quantity	48 props	64 props
	Storage	6 rows x 8 props	8 rows x 8 props
	Weight (kg)	1 213	1 414
	Dimensions L x w x h (m)	2.50 x 1.05 x 0.95	2.50 x 1.10 x 1.21



In order to ensure optimum safety and stability, equipment handled using racks must be tethered and the weight distributed.

PRIMARY BEAM GRID

Grid for primary beams from 0 to 10 m				
P180	P150	P110	P90	Distance between walls (cm)
0	0	0	1	120
0	0	1	0	140
0	1	0	0	180
1	0	0	0	210
0	0	0	2	220
0	0	1	1	240
0	0	2	0	260
0	1	0	1	280
0	1	1	0	300
1	0	0	1	310
0	0	0	3	320
1	0	1	0	330
0	2	0	0	340
0	0	1	2	340
0	0	2	1	360
1	1	0	0	370
0	1	0	2	380
0	0	3	0	380
2	0	0	0	400
0	1	1	1	400
1	0	0	2	410
0	1	2	0	420
0	0	0	4	420
1	0	1	1	430
0	2	0	1	440
0	0	1	3	440
1	0	2	0	450
0	2	1	0	460
0	0	2	2	460
1	1	0	1	470
0	1	0	3	480
0	0	3	1	480
1	1	1	0	490
2	0	0	1	500
0	3	0	0	500
0	1	1	2	500
0	0	4	0	500
1	0	0	3	510
2	0	1	0	520
0	1	2	1	520
0	0	0	5	520
1	2	0	0	530
1	0	1	2	530
0	2	0	2	540
0	1	3	0	540
0	0	1	4	540
1	0	2	1	550
2	1	0	0	560
0	2	1	1	560
0	0	2	3	560

P180	P150	P110	P90	Distance between walls (cm)
1	1	0	2	570
1	0	3	0	570
0	2	2	0	580
0	1	0	4	580
0	0	3	2	580
3	0	0	0	590
1	1	1	1	590
2	0	0	2	600
0	3	0	1	600
0	1	1	3	600
0	0	4	1	600
1	1	2	0	610
1	0	0	4	610
2	0	1	1	620
0	3	1	0	620
0	1	2	2	620
0	0	5	0	620
0	0	0	6	620
1	2	0	1	630
1	0	1	3	630
2	0	2	0	640
0	2	0	3	640
0	1	3	1	640
0	0	1	5	640
1	2	1	0	650
1	0	2	2	650
2	1	0	1	660
0	4	0	0	660
0	2	1	2	660
0	1	4	0	660
0	0	2	4	660
1	1	0	3	670
1	0	3	1	670
2	1	1	0	680
0	2	2	1	680
0	1	0	5	680
0	0	3	3	680
3	0	0	1	690
1	3	0	0	690
1	1	1	2	690
1	0	4	0	690
2	0	0	3	700
0	3	0	2	700
0	2	3	0	700
0	1	1	4	700
0	0	4	2	700
3	0	1	0	710
1	1	2	1	710
1	0	0	5	710
2	2	0	0	720
2	0	1	2	720
0	3	1	1	720
0	1	2	3	720

Using the non-tilt safety fork provides an additional adjustment allowance of 20 cm [see page 36].

P180	P150	P110	P90	Distance between walls (cm)
0	0	5	1	720
0	0	0	7	720
1	2	0	2	730
1	1	3	0	730
1	0	1	4	730
2	0	2	1	740
0	3	2	0	740
0	2	0	4	740
0	1	3	2	740
0	0	6	0	740
0	0	1	6	740
3	1	0	0	750
1	2	1	1	750
1	0	2	3	750
2	1	0	2	760
2	0	3	0	760
0	4	0	1	760
0	2	1	3	760
0	1	4	1	760
0	0	2	5	760
1	2	2	0	770
1	1	0	4	770
1	0	3	2	770
4	0	0	0	780
2	1	1	1	780
0	4	1	0	780
0	2	2	2	780
0	1	5	0	780
0	1	0	6	780
0	0	3	4	780
3	0	0	2	790
1	3	0	1	790
1	1	1	3	790
1	0	4	1	790
2	1	2	0	800
2	0	0	4	800
0	3	0	3	800
0	2	3	1	800
0	1	1	5	800
0	0	4	3	800
3	0	1	1	810
1	3	1	0	810
1	1	2	2	810
1	0	5	0	810
1	0	0	6	810
2	2	0	1	820
2	0	1	3	820
0	5	0	0	820
0	3	1	2	820
0	2	4	0	820
0	1	2	4	820
0	0	5	2	820
0	0	0	8	820

P180	P150	P110	P90	Distance between walls (cm)
3	0	2	0	830
1	2	0	3	830
1	1	3	1	830
1	0	1	5	830
2	2	1	0	840
2	0	2	2	840
0	3	2	1	840
0	2	0	5	840
0	1	3	3	840
0	0	6	1	840
0	0	1	7	840
3	1	0	1	850
1	4	0	0	850
1	2	1	2	850
1	1	4	0	850
1	0	2	4	850
2	1	0	3	860
2	0	3	1	860
0	4	0	2	860
0	3	3	0	860
0	2	1	4	860
0	1	4	2	860
0	0	7	0	860
0	0	2	6	860
3	1	1	0	870
1	2	2	1	870
1	1	0	5	870
1	0	3	3	870
4	0	0	1	880
2	3	0	0	880
2	1	1	2	880
2	0	4	0	880
0	4	1	1	880
0	2	2	3	880
0	1	5	1	880
0	1	0	7	880
0	0	3	5	880
3	0	0	3	890
1	3	0	2	890
1	2	3	0	890
1	1	1	4	890
1	0	4	2	890
4	0	1	0	900
2	1	2	1	900
2	0	0	5	900
0	4	2	0	900
0	3	0	4	900
0	2	3	2	900
0	1	6	0	900
0	1	1	6	900
0	0	4	4	900
3	2	0	0	910
3	0	1	2	910

PRIMARY BEAM GRID

P180	P150	P110	P90	Distance between walls (cm)
1	3	1	1	910
1	1	2	3	910
1	0	5	1	910
1	0	0	7	910
2	2	0	2	920
2	1	3	0	920
2	0	1	4	920
0	5	0	1	920
0	3	1	3	920
0	2	4	1	920
0	1	2	5	920
0	0	5	3	920
0	0	0	9	920
3	0	2	1	930
1	3	2	0	930
1	2	0	4	930
1	1	3	2	930
1	0	6	0	930
1	0	1	6	930
4	1	0	0	940
2	2	1	1	940
2	0	2	3	940
0	5	1	0	940
0	3	2	2	940
0	2	5	0	940
0	2	0	6	940
0	1	3	4	940
0	0	6	2	940
0	0	1	8	940
3	1	0	2	950
3	0	3	0	950
1	4	0	1	950
1	2	1	3	950
1	1	4	1	950
1	0	2	5	950
2	2	2	0	960
2	1	0	4	960
2	0	3	2	960
0	4	0	3	960
0	3	3	1	960
0	2	1	5	960
0	1	4	3	960
0	0	7	1	960
0	0	2	7	960
5	0	0	0	970
3	1	1	1	970
1	4	1	0	970
1	2	2	2	970
1	1	5	0	970
1	1	0	6	970
1	0	3	4	970
4	0	0	2	980
2	3	0	1	980

P180	P150	P110	P90	Distance between walls (cm)
2	1	1	3	980
2	0	4	1	980
0	6	0	0	980
0	4	1	2	980
0	3	4	0	980
0	2	2	4	980
0	1	5	2	980
0	1	0	8	980
0	0	8	0	980
0	0	3	6	980
3	1	2	0	990
3	0	0	4	990
1	3	0	3	990
1	2	3	1	990
1	1	1	5	990
1	0	4	3	990
4	0	1	1	1000
2	3	1	0	1000
2	1	2	2	1000
2	0	5	0	1000
2	0	0	6	1000

ECO+ PANEL GRID

Grid for ECO+ panels from 0 to 10 m			
ECO+ 180	ÉECO+ 150	ECO+ 110	Distance between walls (cm)
0	0	1	140
0	1	0	180
1	0	0	210
0	0	2	260
0	1	1	300
1	0	1	330
0	2	0	340
1	1	0	370
0	0	3	380
2	0	0	400
0	1	2	420
1	0	2	450
0	2	1	460
1	1	1	490
0	3	0	500
0	0	4	500
2	0	1	520
1	2	0	530
0	1	3	540
2	1	0	560
1	0	3	570
0	2	2	580
3	0	0	590
1	1	2	610
0	3	1	620
0	0	5	620
2	0	2	640
1	2	1	650
0	4	0	660
0	1	4	660
2	1	1	680
1	3	0	690
1	0	4	690
0	2	3	700
3	0	1	710
2	2	0	720
1	1	3	730
0	3	2	740
0	0	6	740
3	1	0	750
2	0	3	760
1	2	2	770
4	0	0	780
0	4	1	780
0	1	5	780
2	1	2	800
1	3	1	810

ECO+ 180	ECO+ 150	ECO+ 110	Distance between walls (cm)
1	0	5	810
0	5	0	820
0	2	4	820
3	0	2	830
2	2	1	840
1	4	0	850
1	1	4	850
0	3	3	860
0	0	7	860
3	1	1	870
2	3	0	880
2	0	4	880
1	2	3	890
4	0	1	900
0	4	2	900
0	1	6	900
3	2	0	910
2	1	3	920
1	3	2	930
1	0	6	930
4	1	0	940
0	5	1	940
0	2	5	940
3	0	3	950
2	2	2	960
5	0	0	970
1	4	1	970
1	1	5	970
0	6	0	980
0	3	4	980
0	0	8	980
3	1	2	990
2	3	1	1,000
2	0	5	1,000

ALPHI, THE LEADING FRENCH MANUFACTURER OF SLAB FORMWORK



Alphi's latest innovation for formwork for residential construction, TopDalle Eco is unrivalled in terms of safety and productivity. Its full-surface panels provide a proper stable and secure working platform. Workers can work safely, productivity is increased.

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