

MODALU / MODACIER

Assembly and use instructions guide

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CONDITION OF USE AND MAINTENANCE

PAGE 43:

Fields of application

Implementation and use of modular formwork panels.

This is an assembly of subsets of different classes (formwork parts, bonding, security, shoring, etc.)

For what purpose

This form assembly is operable to perform straight walls or concrete veneers, stringers, etc ...

For who

The installation and use of this material will require the presence of qualified, competent and accustomed to this kind of work and having the right tools and individual protective equipment such as helmets with chin strap, safety shoes, gloves, etc

Where and How

The location of such assembly is defined in the ground and climatic conditions. Indeed, if the ground too soft, does not take the vertical forces, that is to say the weight of the panels, scaffolding, etc., or if the environment is not favorable (strong winds, heavy snow, too cold temperatures ...), installation of modular formwork panels can be realized.

For further information, please contact the technical service SAFECHAF SARL

Fields of application

This guide aims to help you climb your modular formwork panels manuportables Modalu step by step with maximum ease.

Before starting the installation or use of this equipment, any person will see instructions outlined in this manual and specifically warnings marked with the logo:



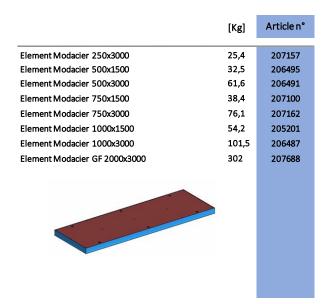
The modular formwork panels must be mounted manuportables Modalu by qualified, competent and accustomed to this kind of work.

A minimum of two people are required to perform this installation.

People participating in the assembly of modular formwork panels manuportables Modalu must have read the pattern layout plans provided.

Tools required: level, hammer, wrench 30, etc ...

	[Kg]	Article n°
Element Modalu 200x1500	9,9	101065
Element Modalu 200x3000	19,5	104590
Element Modalu 250x1000	7,7	100296
Element Modalu 250x1500	11,2	100297
Element Modalu 250x2000	14,8	100298
Element Modalu 250x2700	19,1	104935
Element Modalu 250x3000	22,0	100299
Element Modalu 300x2700	20,1	104647
Element Modalu 450x2700	27,0	104694
Element Modalu 500x1000	12,8	100300
Element Modalu 500x1500	18,4	100301
Element Modalu 500x2000	24,0	100302
Element Modalu 500x2700	30,5	104644
Element Modalu 500x3000	35,2	100303
Element Modalu 600x2700	33,2	104641
Element Modalu 750x1000	17,3	100304
Element Modalu 750x1500	24,8	100305
Element Modalu 750x2000	32,5	100306
Element Modalu 750x2700	41,0	104726
Element Modalu 750x3000	47,7	100307
Element Modalu 900x2700	48,2	104611
Element Modalu 1000x1000	22,4	100308
Element Modalu 1000x1500	32,0	100309
Element Modalu 1000x2000	41,6	100310
Element Modalu 1000x3000	60,8	100311
Element Modalu GF 2000x3000	235,0	104647

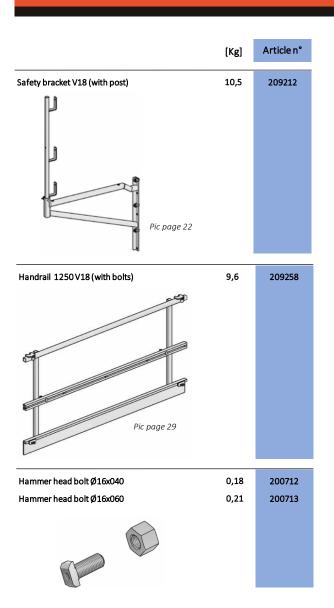


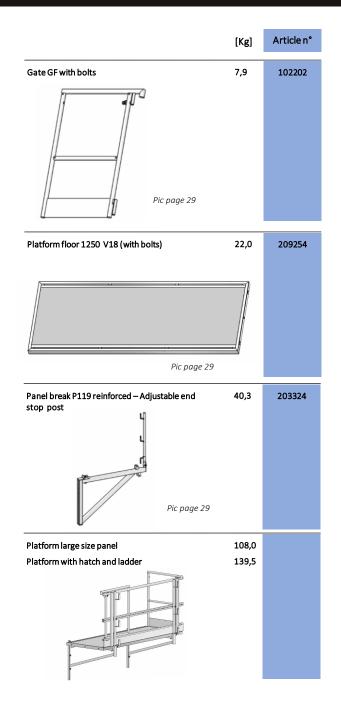
	[Kg]	Article n°
Assembly clamp (nut lock)	1,0	208236
pic page 14		
Alignment clamp F 0-100 nut	4,9	104635
Pic page 15	5	
Angle/sheet clamp. 0-100 nut	3,7	204518
pic page 27		
S/E Pillar clamp from 200 to 400 Sp-	9,1	203931
S/E Pillar clamp from 200 to 650 Sp-	15,2	204154
Pillar clamp from 200 to 400 Sp-	11,5	203942
Pillar clamp from 200 to 650 Sp-	17,6	204155
S/E Rod for pillar clamp	1,4	104652
pic page 33		
Adjustable spacer (16-18-20-22-24-25-30)	14,4	103851
pic page 29		
Shift clamp for waling	6,0	205144
pic Page 29		
Adaptation wedge Lg.110mm	0,2	209749
Pic page 30		

		[Kg]	Article n°
Assembly clamp to hit		1,2	207852
Shift clamp 0 to 6cm pitch of 1cm Shift clamp 0 to 20cm pitch of1cm		2,6 3,0	205136 205136
Waling1000 Waling 600	pic page 16	13,2 9,0	104652 103999
Floor attachment clamp	pic page 29	0,8	102633
Body of waling clamp	pic page 16	0,8	103997
Safety post bracket	pic page 29	1,8	205181
Upper rod bracket	pic page 29	0,5	104721

	[Kg]	Article n°
Internal polygon 0125x3000	21,6	100005
Internal polygon 0125x2700	19,4	104688
Internal polygon 0125x1500	10,7	100384
	-	
Pic page 24		
Adjustable angle 015-0150x3000	62,0	104589
Adjustable angle 015-0150x2700	55,2	104683
Adjustable angle 015-0150x1500	31,2	103730
Pic page 25		
External angle 0x0x3000	26,1	104287
External angle 0x0x2700	23,2	104679
External angle 0x0x1500	13,1	101090
Pic page 27		
Int. Round corner 300x300x1500 (radius 150) Pic page 32	39,6	209587
Set of extension sheet spacer Pic page 32	12,1	208897
Support 1750 Galvanized (Upn de 60) Pic page 29	18,6	103809
Trestles extension 1390 Form/1 side (Modul ht1500) V/1.50 (with bolts)	53,6	208792
Base Trestles 2450 Form/1 suide (GF ht2750) V/1.50	60,4	208792
Pic page 30		

External polygon 0150x2700 20,6 104689 100381 Pic page 24 Internal angle 300x300x3000 36,8 104589 11,3 104683 104589 103730 18,8 103730 Extension sheet 200x3000 33,4 104680 16,7 102118 Extension sheet 200x1500 16,7 102118 Fic page 27 Extension sheet 200x1500 5p-Support Trestles (with bolts) 65,1 205068 RAIL Ht3000 Sp-Support Trestles (with bolts) 39,1 208769 Double floor attachment clamp 2,8 209262			
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Extension sheet 200x3000 33,4 104363 Extension sheet 200x2700 30,0 104680 Extension sheet 200x1500 16,7 102118 Support bracket U 60 A-CL 0,3 205068 RAIL Ht3000 Sp-Support trestles (with bolts) 65,1 208769 Double floor attachment clamp 2,8 209262 Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668	Internal angle 300x300x1500	18,8	103730
Extension sheet 200x3000 33,4 104363 Extension sheet 200x2700 30,0 104680 Extension sheet 200x1500 16,7 102118 Pic page 26 Support bracket U 60 A-CL 0,3 205068 RAIL Ht3000 Sp-Support trestles (with bolts) 65,1 208769 Double floor attachment clamp 2,8 209262 Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668			
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Extension sheet 200x1500 Pic page 26 Support bracket U 60 A-CL O,3 205068 RAIL Ht3000 Sp-Support trestles (with bolts) 65,1 208769 Double floor attachment clamp 2,8 209262 Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668	Extension sheet 200x2700	30,0	104680
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Support bracket U 60 A-CL			
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Pic page 29 RAIL Ht3000 Sp-Support trestles (with bolts) 65,1 205068 RAIL Ht1500 Sp-Support Trestles (with bolts) 39,1 208769 Double floor attachment clamp 2,8 209262 Pic page 30 Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668	The page 25		
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RAIL Ht1500 Sp-Support Trestles (with bolts) 39,1 208769 Double floor attachment clamp 2,8 209262 Steel stake A60 Ø30 Lg 1m 5,3 205673 Reinforcment beam for large panel 59,5 207668			
pic page 30 Double floor attachment clamp 2,8 209262 pic page 30 Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668	RAIL Ht3000 Sp-Support trestles (with bolts)	65,1	205068
Double floor attachment clamp 2,8 209262 pic page 30 Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668	RAIL Ht1500 Sp-Support Trestles (with bolts)	39,1	208769
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Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668	Double floor attachment clamp	2,8	209262
Steel stake A60 Ø30 Lg 1m 5,3 205673 Pic page 30 Reinforcment beam for large panel 59,5 207668			
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Reinforcment beam for large panel 59,5 207668	Steel stake A60 Ø30 Lg 1m	5,3	205673
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Pic page 13		59,5	207668
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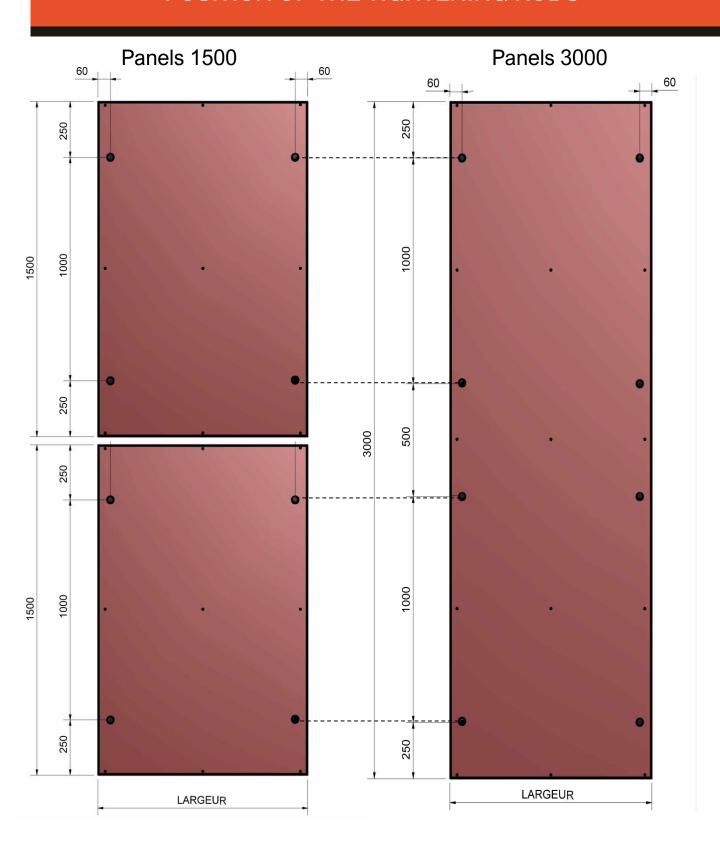




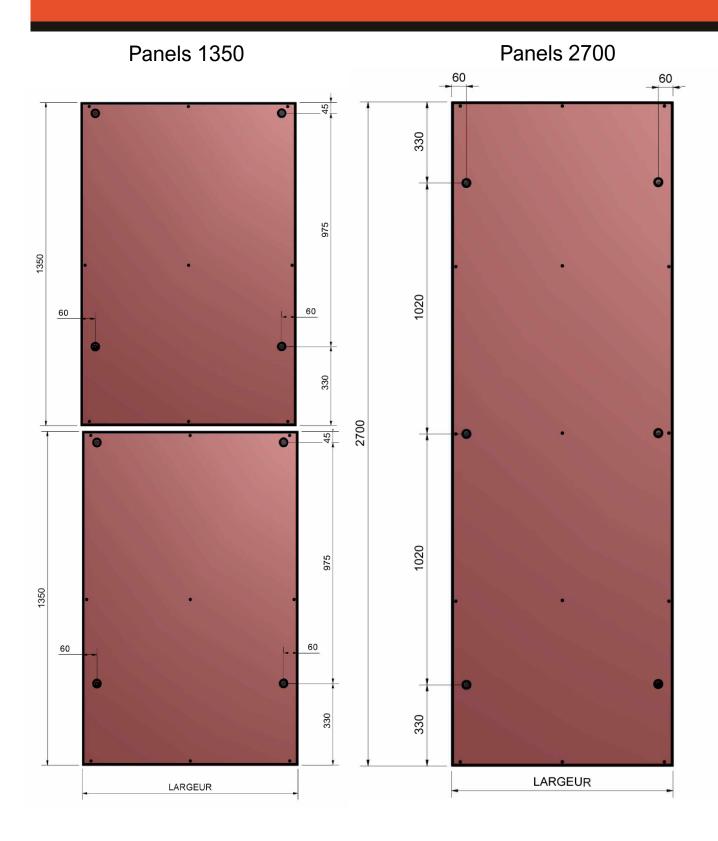
[к	g] Article n°	[Kg]	Article n°
Pallet ring A-CL 1,3	204937	Transport buffer (ht100) Gf-Modacier 4,2	209007
Foot jack Modacier (ht080) (with bolt) 8,9 Lifting ring A-CL-RES 3,4		Container Comegal 0700x1545x0475 79 Other dimensions on request	200680
Pic page 20		Wing nut 3L VM3.65 Ø17 0,6	100117
Panel Comegal 1000x2700 11	6,8 205767 8,1 206008 6,7 205766	Wing nut arteon 2L Ø17 bichromaté 0,3	104374
Height of 2 container: 2680r Nut artéon 6P Ø17X25 zinc plated 0,:		Wing nut arteon 3L Ø17 base 110 zinc plated 0,9	105155
		Counter plate for 1 side tightening 1,3	хххх
Counter plate 0,5	101107	pic page 38	
Plastic cap 0,0	105142		

	[Kg]	Article n°
Fixed prep (tube \$40/40 Lg 0074)	2.7	104076
Fixed prop (tube Ø40/49 Lg 0974)	3,2	104976
Fixed prop (tube Ø40/49 Lg 1195)	4,3	101605
0		
62		
0		
Foot plate with axle included	3,8	102989
	•	
Axle Ø14 x 85 bent 100°	0,2	100029
Axle Ø14 x 70 PM (angle 90°)	0,2	100038
*		
S/E prop reducer 400/700	1,5	101340
(a)		
Propreducer 400/700 PM	1 2	101242
Prop reducer 400/700 PM	1,3	101342
0 0		
Axle Ø24 Lg 0160	0,6	101751
Axie Ø16 Lg 0070	0,0	101731
Axle Ø24 Lg 0163 (prop 6-10m)	0,6	103045
Prop RAS-TP 400/705 Galva With reducer	48,0	102080
(• • 1 4.3)		
The state of the s		
S/E Ext. Tube Ø57x1650 prop (1800-2840)	7,3	102783
S/E Ext. Tube .Ø101.6x4.0x5600 (prop 6 – 10m)	53,9	103038
S/E int. Tube Ø48.3x650 prop (1800-2840)	5,0	102784
S/E int. Tube Ø48.3x1050 (prop 1800-2840)	6,0	102784
S/E int. Tube Ø88.9x3.0x2900 prop 6-10m	18,8	102784
S/E int. Tube Ø88.9x3.0x2900 G prop 6-10m	18,8	103031
	-	
Mounting lever for prop 6-10m	2,3	103048
Morning level for brob o-rolli	د,ے	103046

POSITION OF THE TIGHTENING RODS



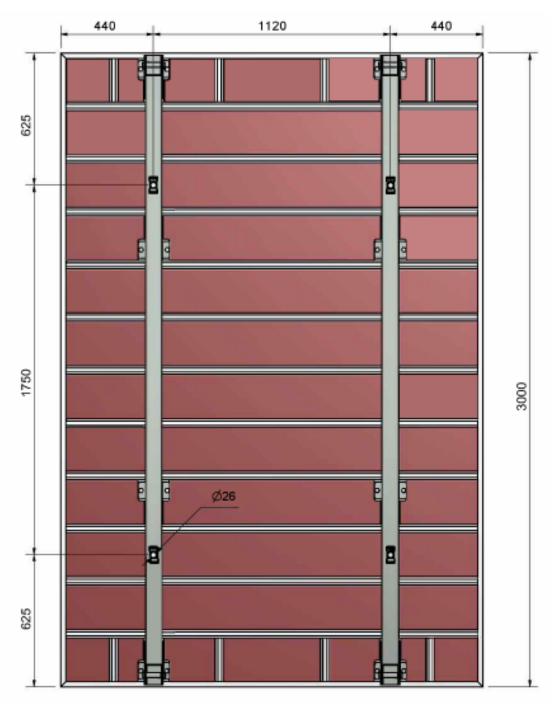
POSITION OF THE TIGHTENING RODS



POSITION OF THE TIGHTENING RODS

Large panels 2000x3000

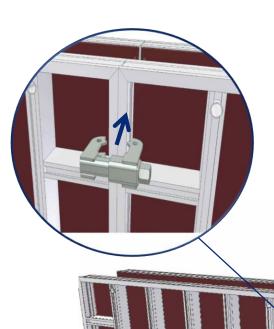
Possibility to work with rod Ø23mm for more resistance



dimensions of the beam



Mounting of the assembly clamps

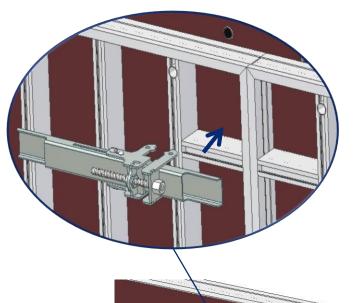


When the panels are in place and aligned, install the assembly pliers and tighten the nut with the key 30

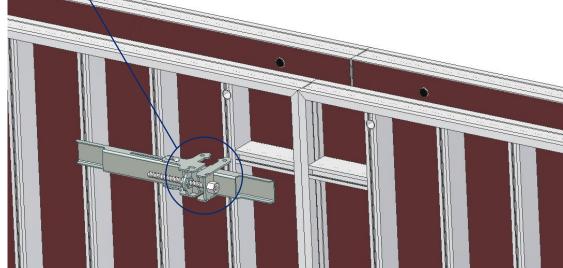


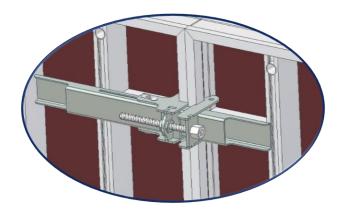
IMPORTANT: The assembly pliers can accept compensation of 3cm maximum thickness.

Mounting of the alignment clamp



In case you need a reinforcment or an extension install the alignment clamp.



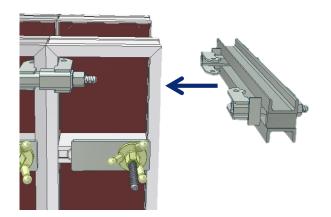


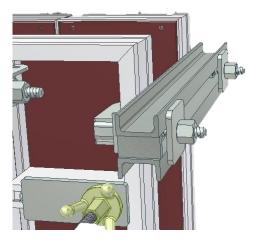
IMPORTANT:

The alignment clamps can accept compensations maximum thickness of 10cm.

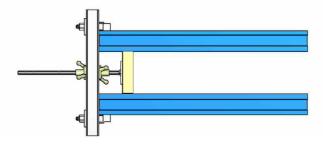
Mouting of the waling set

When the panels are in place and aligned, remove the 2 clamps outwards of all Spacer, set up by plating all the spacer on the profile of the panels and then put up a clamp and then the other and blocking at the desired height.





Height of the panel	Quantity of waling
250	1
500	2
750	2
1000	2
1500	2
2700	3
3000	4



Adjustable version

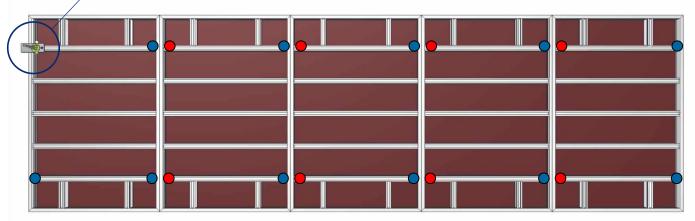
Tightening detail of the panels

1) Standing panels

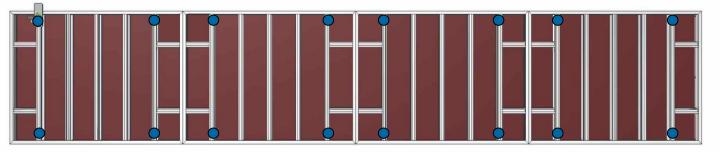
Example with panels1500mm



Screw the two wing nuts. Carefully check the holes without rods include plugs on the forming face side.



2) Laying panels

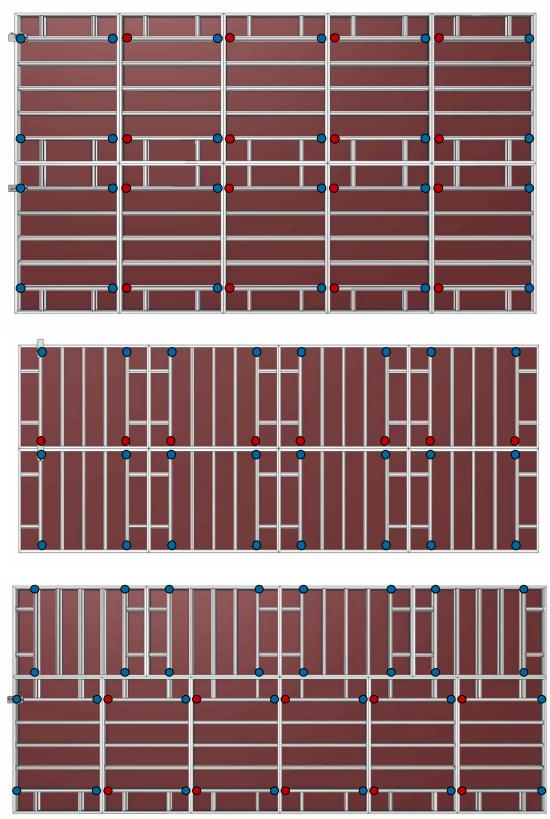


- Tightening rod
- No tightening rod

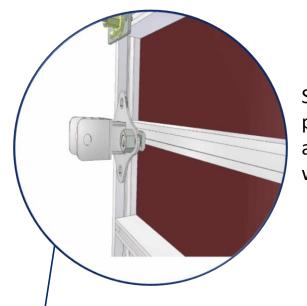
Tightening detail of the panels

3) Superposition

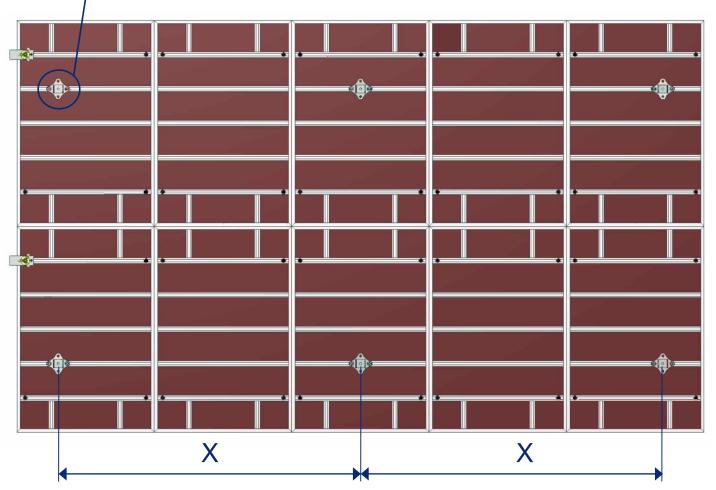
Example with panels1500mm



Mouting of the prop clamp

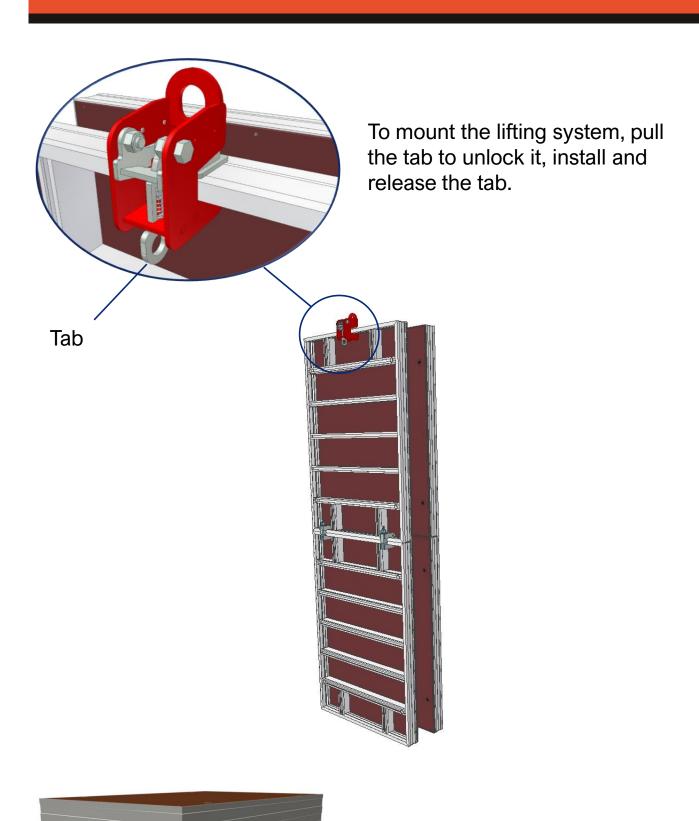


Slide the screws T in the groove of the panel, turn of ¼ turn to stop the screws and then screw the nuts using the wrench 30 to block the prop clamp.



2 meters ≤ X ≤ 3 meters

Mouting of the lifting ring



Pallet rings

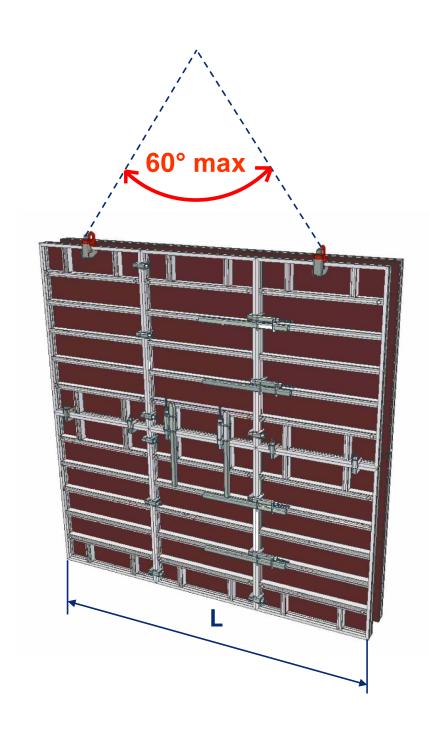
Lifting instructions



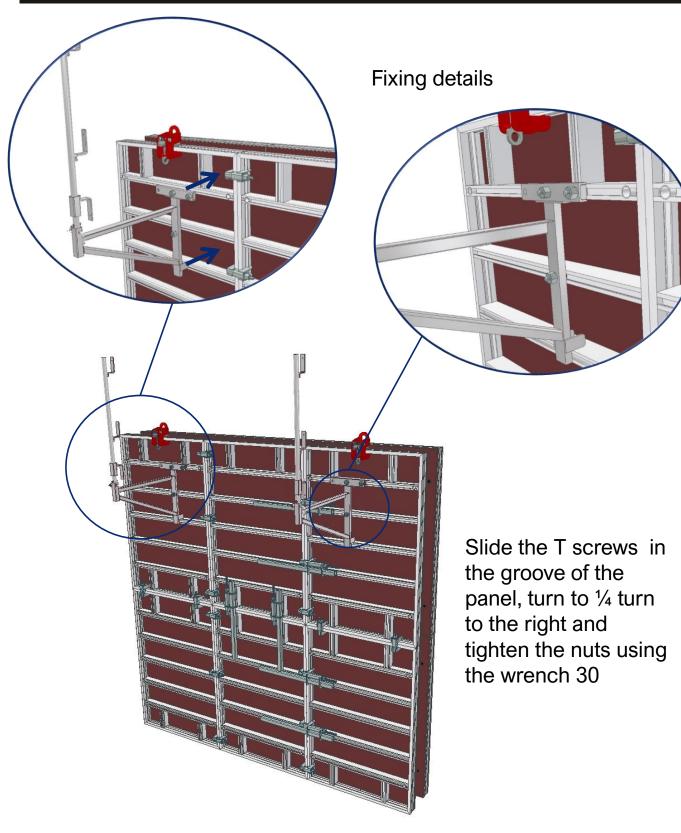
While complying with Modalu pliers assembly instructions.

Lifting of 2 strands balanced with 2 lifting rings.

Liftable maximum area = 16m² with L max = 5 meters Maximum weight = 400 kg.



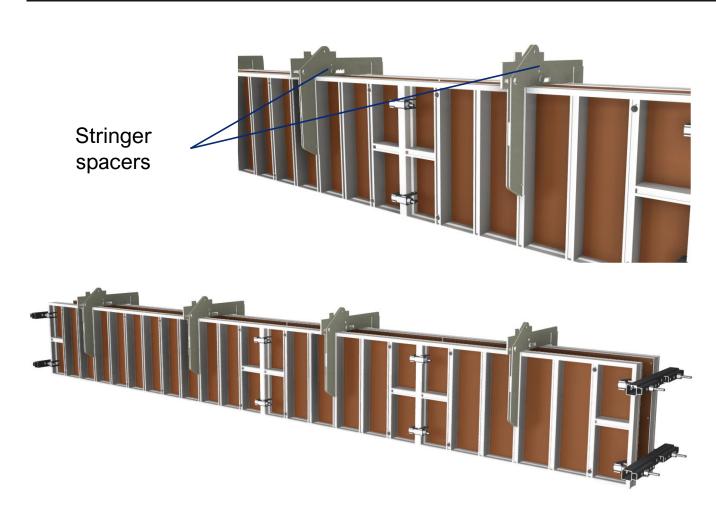
Mounting of the safety bracket



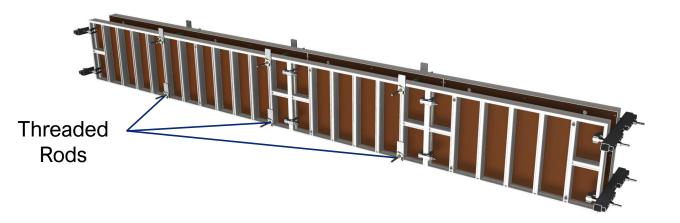




Formwork configuration stringers

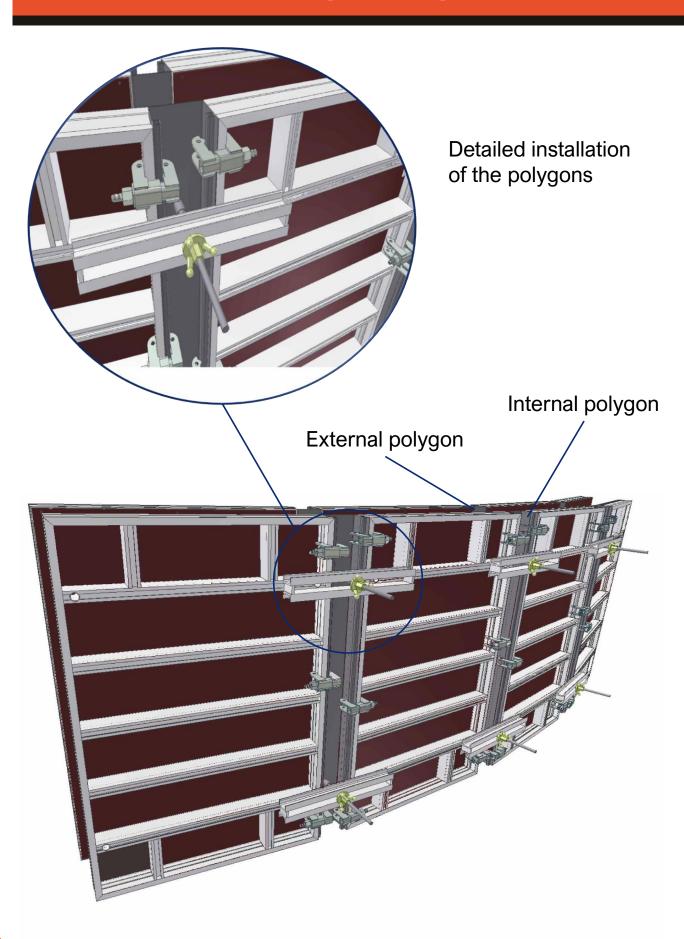


Install the spacers in the middle of the panels 1.5m long and evenly distribute 2 spacers on the panels 3m long. Available on panels from 0,5m to 1m.

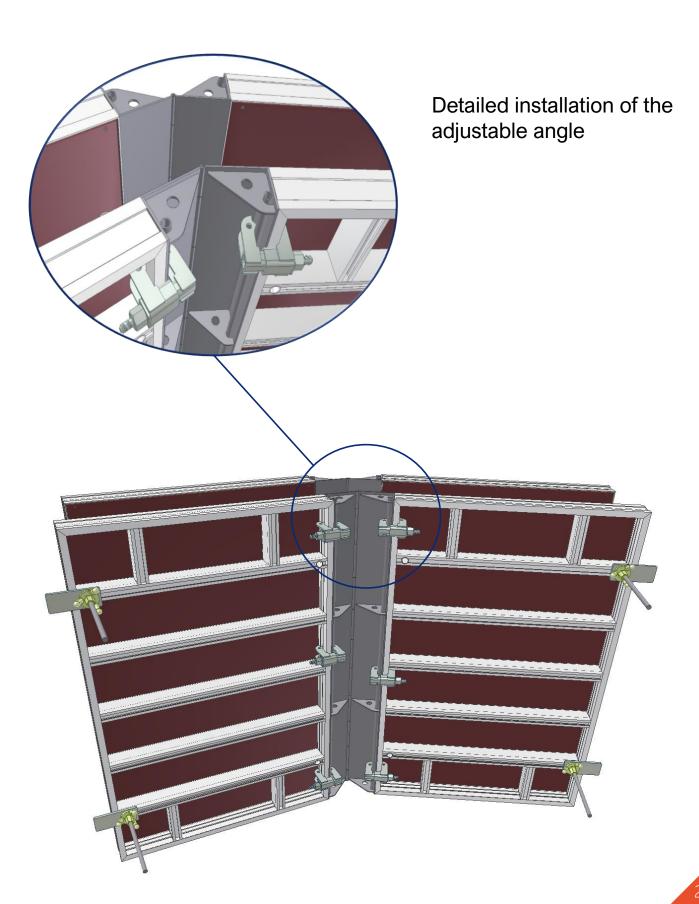


Sill configuration through pins positioned all around 1500mm.

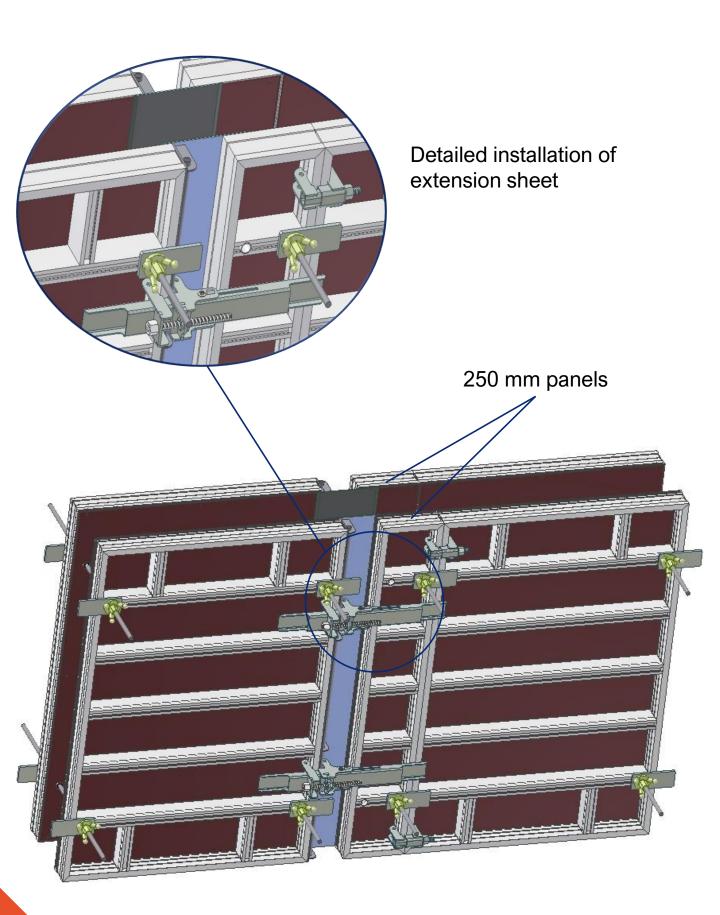
Mounting of polygons



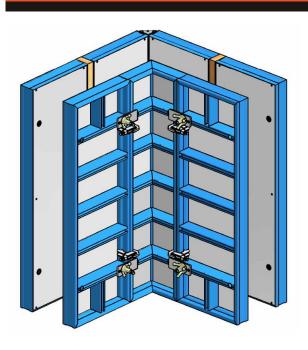
Mouting of the Adjustable angle



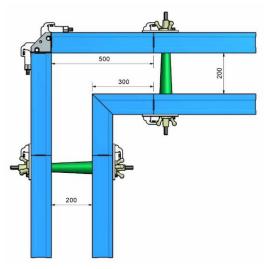
Mouting of the extension sheets



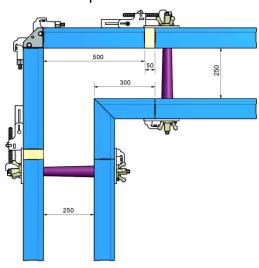
Use of the angle 90°



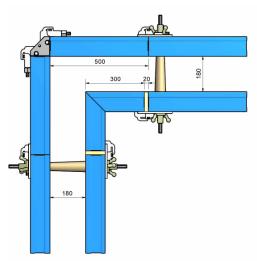
Voile épaisseur 200



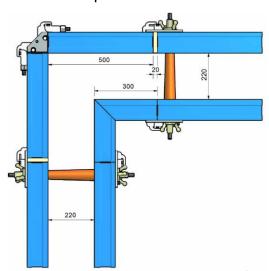
Voile épaisseur 250



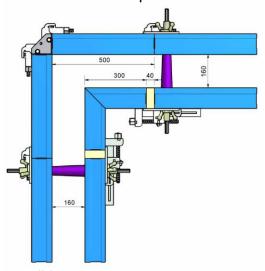
Voile épaisseur 180



Voile épaisseur 220

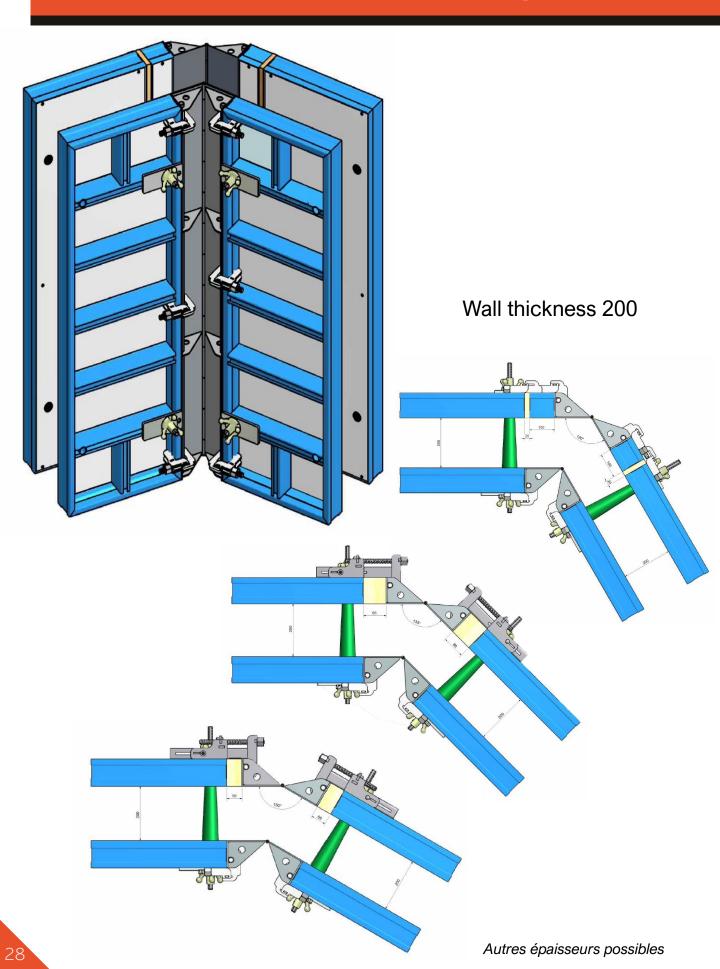


Voile épaisseur 160

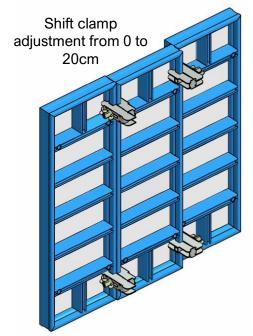


Autres épaisseurs possibles

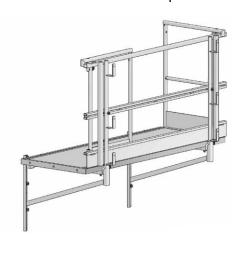
Use of the adjustable angle

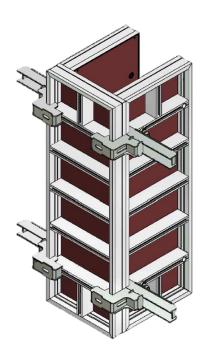


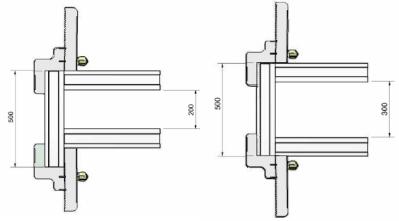
Example of use of the accessories



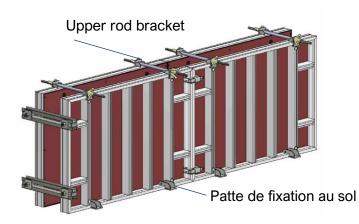
Complete platform including : gate, floor and bracket.
Suitable with modular panels



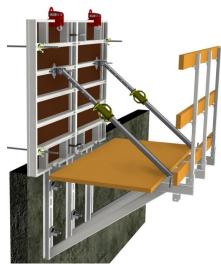




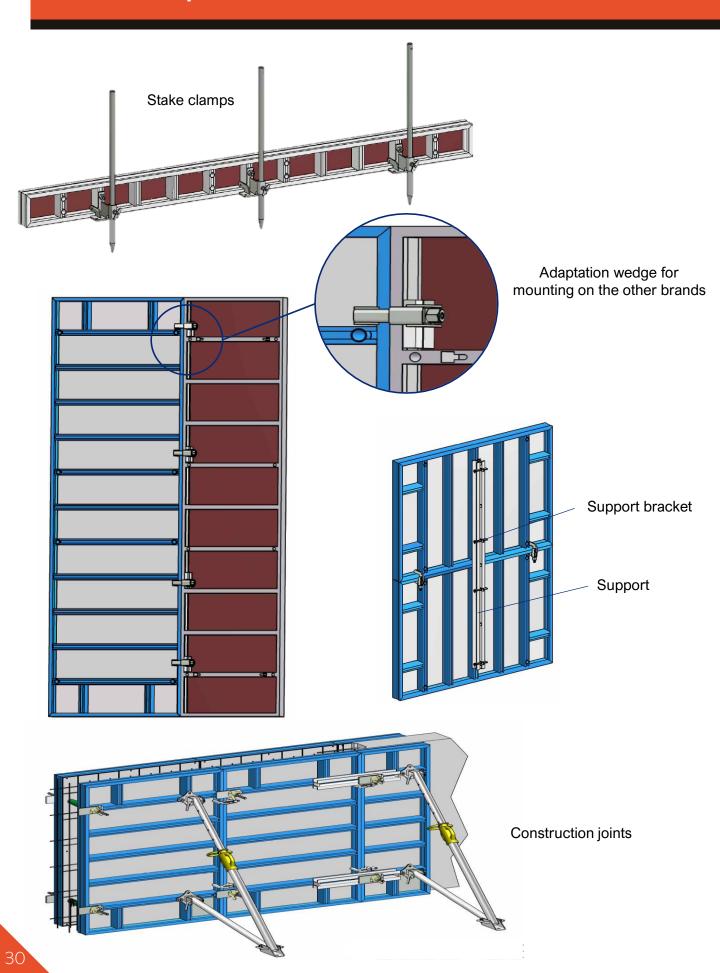
Shift clamp for waling



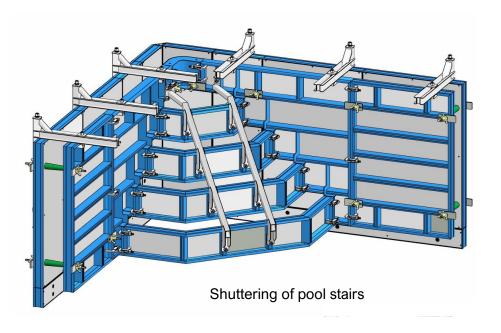
Panel support platform

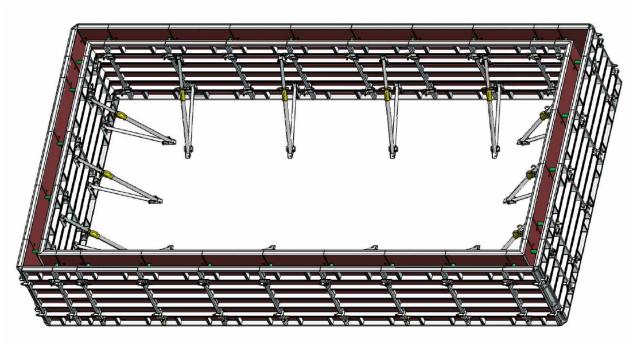


Exemples d'utilisation des accessoires



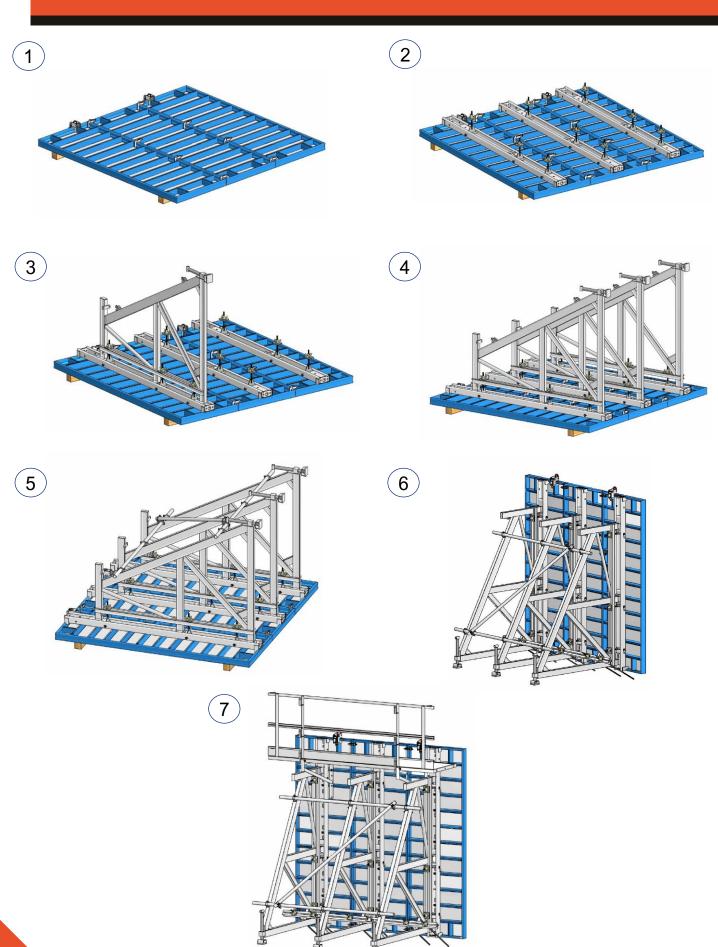
Special configuration for pools



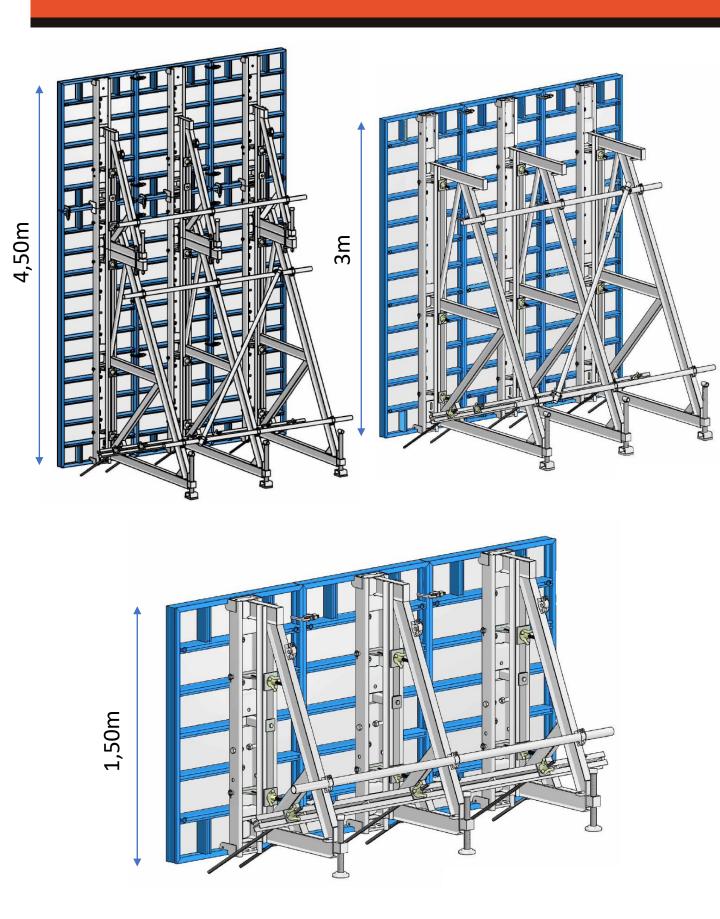


Pool 8m x 4m

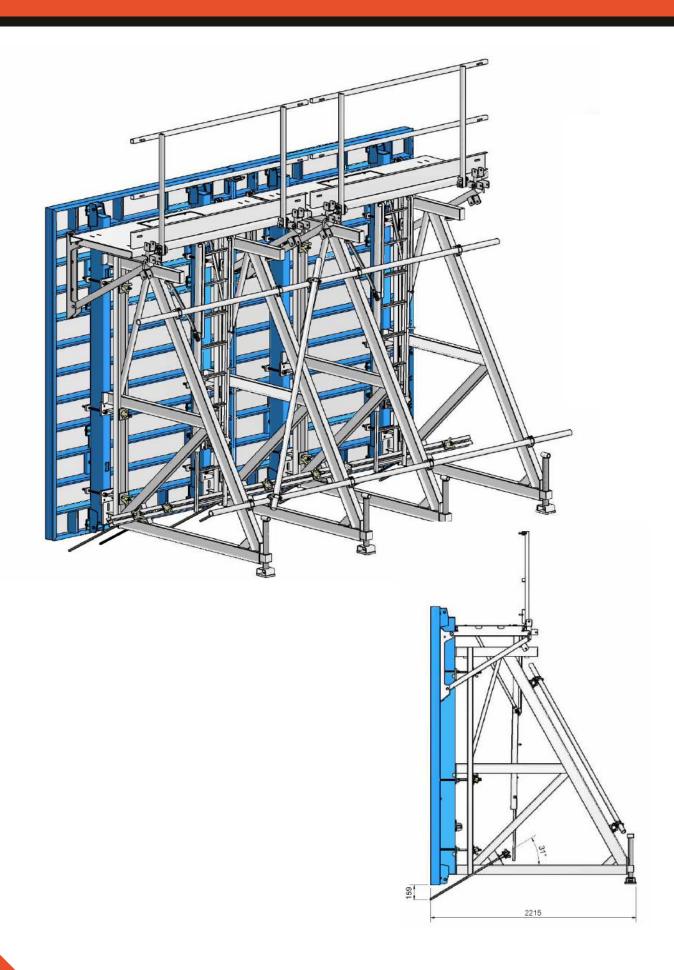
Configuration with trestles



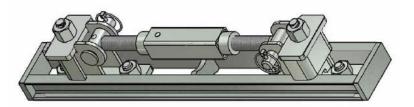
Configuration with trestles



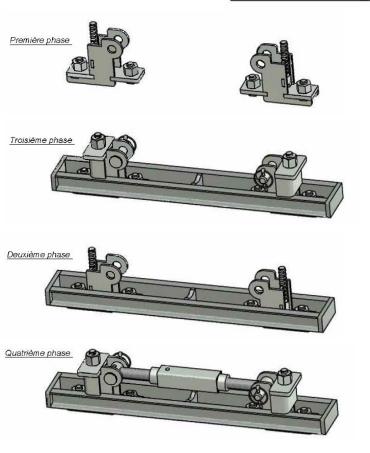
Configuration with trestles large size

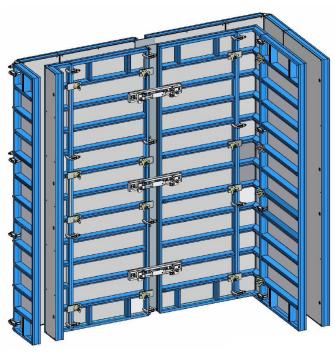


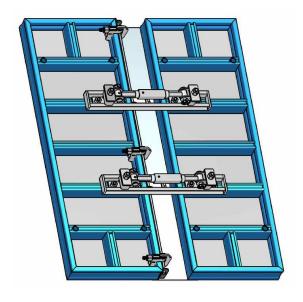
Configuration cage d'escalier



Phase de montage sur Modalu

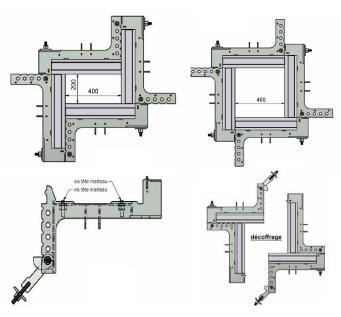




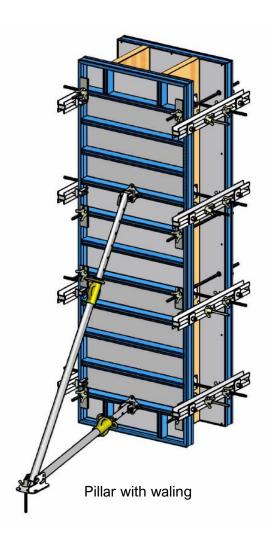


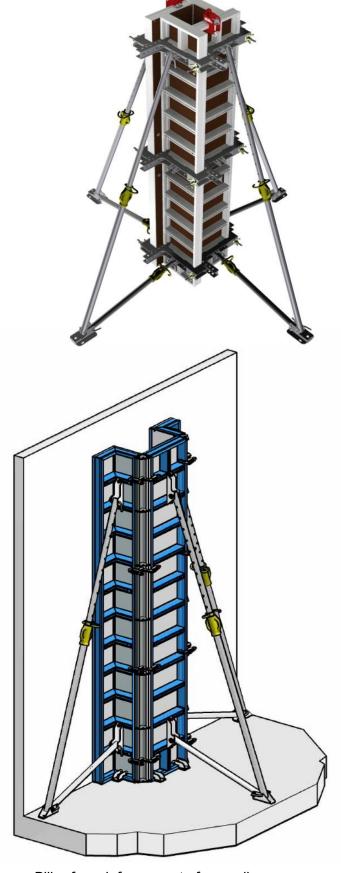
Extension sheet spacer:
Ideal for staircase configuration
Unforming without pressure thanks to the jack (see page 37)

Pillar configuration



Pillar with special pillar clamps





Pillar for reinforcement of prewall

Delivery - Storage - Lifting

Instructions strictly made for the large size

1) Delivery



2) Lifting during loading And unloading

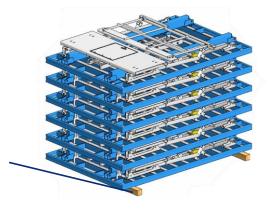
⚠ 3 Panels on 4 points max



3) Storage

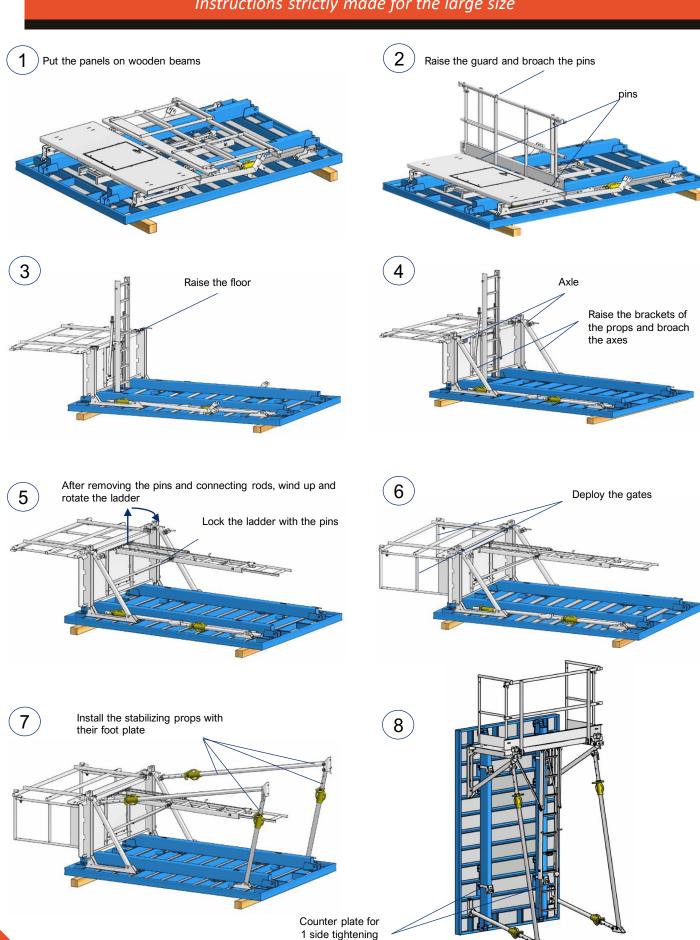
6 stacked panels maximum

The panels must at 40 cm from the floor



Mouting of the panel

Instructions strictly made for the large size



(option)

Mouting of the panel

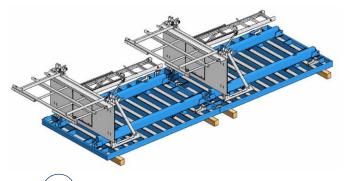
Instructions strictly made for the large size

In the case of overlay, prepare the panel as follows: safety deployed and remove the props of the panel

10

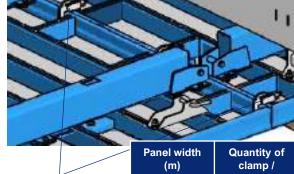
Approach the panels until they are in contact





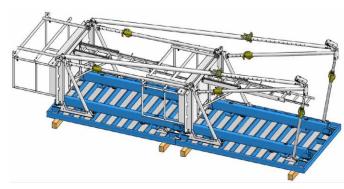
11

Mout the props and their foot plates



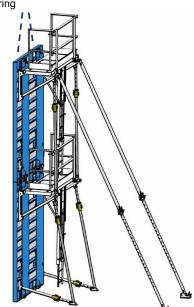
When the profiles are
aligned, block the
assembly clamps

Panel width (m)	Quantity of clamp / panel
2	3
1,5	2
1	2



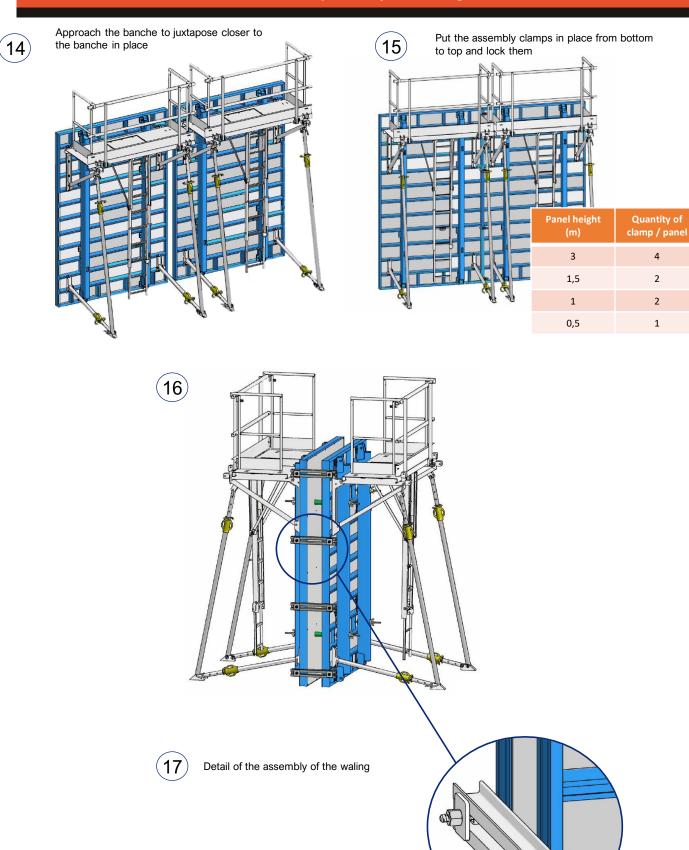
13

raise the panels by the lifting ring



Mouting of the panel

Instructions strictly made for the large size



Installation instructions and safety

Domain of use:

Modular formwork is intended for construction site personnel only.

Usage by the general public is prohibited.

Unloading and storage area:

Unloading operation are done under the supervision of an authorized person.

Prévoir une zone pour le déchargement et le stockage du matériel, proche de la zone de travail.

Provide an area for unloading and storage of materials near the working area.

Avoid any person under the load when using the crane.

Recommendations when using lifting equipment:

Any lifting operation performed using a crane is in the presence of an operating manager. The use of forklifts is reserved to persons holding a driving license.

<u>Checking and maintenance of equipment:</u>

Documents shall be examined before each restart. If parts are damaged type: permanent deformation, holes, notches, oxidation, etc., they should be disposed and replaced. Between each casting, the shuttering panels must be oiled on the molding face and the four sides to prevent the fouling by the concrete.

Before each casting to ensure the presence of plugs in unused drill holes. Insert the plugs in the panels with a mallet (no hammer, to avoid any breakage)

Mounting precaution and use:

The modular formwork can be delivered with stabilizing props, they must be fixed to the ground or concrete blocks, see the recommendations attached cuts.

Ensure that the casting pressure during use does not exceed the allowed pressure of 5 tons / m2 of formwork.

Check that the clamping elements used (rods and nuts) resist efforts of 3.75 tonnes / rod.

Do not approach energized electrical cables.

Use reliable lifting elements, appropriate and fitted with safety hooks to ensure good fixation.

Support Capabilities:

The formwork panels platforms spaced by less than 2 m are able of receiving two men and their tools whether 200kg. The customer must ensure the resistance of decks being used.

Weather:

The assembly of the modular formwork becomes dangerous and can justify stopping the construction site in the case of atmospheric conditions such as:

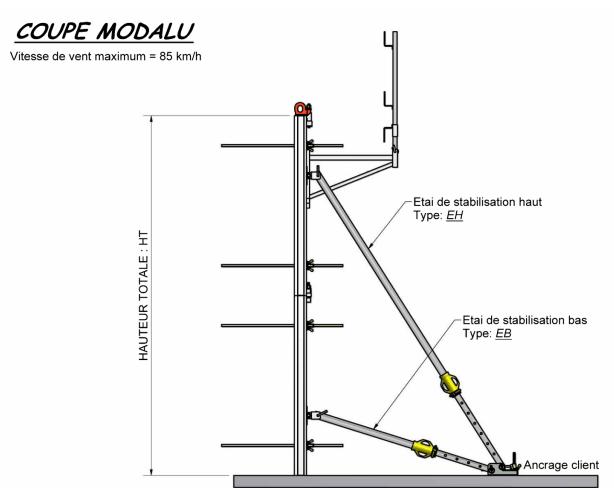
Frost / abundant rain / snow / ice storm Wind (beyond 85km / h)

Stabilization of the panels



CONSULT THE LAYOUT PLAN





HT(m)	Panel detail	ЕН	EB
1.0	1 x 1m	TPE 100/175	Ø
1.5	1 x 1.5m	TPE 170/300	Ø
2.0	2 x 1m	TPE 170/300	TPE 100/175
2.0	1 x 0.5m + 1 x 1.5m	TPE 170/300	TPE 100/175
2.5	1 x 1m + 1 x 1.5m	TPE 220/400	TPE 100/175
2.5	1 x 0.5m + 2 x 1m	TPE 220/400	TPE 100/175
3.0	2 x 1.5m	TPE 220/400	TPE 100/175
3.0	3 x 1m	TPE 220/400	TPE 100/175
3.0	1 x 0.5m + 1 x 1m + 1 x 1.5m	TPE 220/400	TPE 100/175

Condition of use and maintenance

Instructions for use and maintenance (for rental only):

It is for the user to keep the same state of conformity and unchanged since receiving the modular formwork panels it uses. He is the guardian of modular formwork panels, so the responsible for damages that the hardware can generate.

Like any hardware, modular formwork panel requires continuous maintenance. Periodic checks of this panel are necessary to ensure compliance and effectiveness.

Additional checks are required after any failure of the system, any abnormal pressure casting, or when the modular formwork panel sustained damage.

Therefore, it is important to regularly inspect the modular formwork panels with the aim to check:

The state of the shuttering skin

Maintaining the shuttering skin on the aluminum frame.

The presence of the silicone seal around the periphery of the shuttering skin.

- The absence of concrete on the frames of the panel

This audit is the responsibility of the user: After weathering after construction stopped, before the commissioning of modular formwork panels at least every month.

The results and dates of these audits, as well as the names and competent persons who have carried out, must be recorded on the site of the security register.

Condition of use and maintenance

<u> Alkus repair :</u>

Scratch repair

Frequent site use inevitably leads to damage to the facing. The alkus "long-life repair" provides for a repair with identical material and without any loss of quality.

The damaged areas are prepaired for repair by removing soilings and formwork oil residues with a paint scraper.

Protrusions of nail holes and minor soilings can also be removed quickly and easily with the paint scraper.

By use of the extruder (or alternatively hot air welder) the melted polypropylene is applied to the damaged area.

Protruding material is planed with a paint remover











Repair of holes

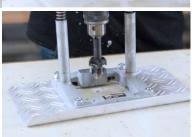
Holes with a diameter of up to 30 mm can be repaired with a plug.

Therefore the hole is drilled out wit h a step drill. Important: Adjust drilling depth to 6 mm.

Insert repair plug and...

... drive it into the hole with a plastic hammer

The remaining protrusion is removed easily with a paint remover and paint scraper. The plugs are made of polypropylene, just like the panel itself. Therefore future damage in the area of the plug can also be repaired easily using the extruder







Condition of use and maintenance

Repair patch D35

Drill hole at damaged area by using the drill stand and a cylinder head drill \varnothing 35. Check drilling depth (6 mm) with depth gauge.

Insert repair patch D 35 (thickness 6,5 mm) with chamfer faceup.

Important: Repair patch is protrudes slightly.

Weld by using extruder (alternatively hot air welder).

Plane surface at damaged area by using the paint remover.







Tie hole repair

As the core and surface of the panel are the same material, tie hole damage can be repaired successfully using identical welding material.

The aluminium repair cone is inserted into the tie hole as a shaper ...

...and afterwards the damaged area is filled by using the extruder (alternatively hot air welder).

After the repair cone is removed, the repaired area is smoothened with a paint remover and paint scraper.

The result: a fully operative tie hole!







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