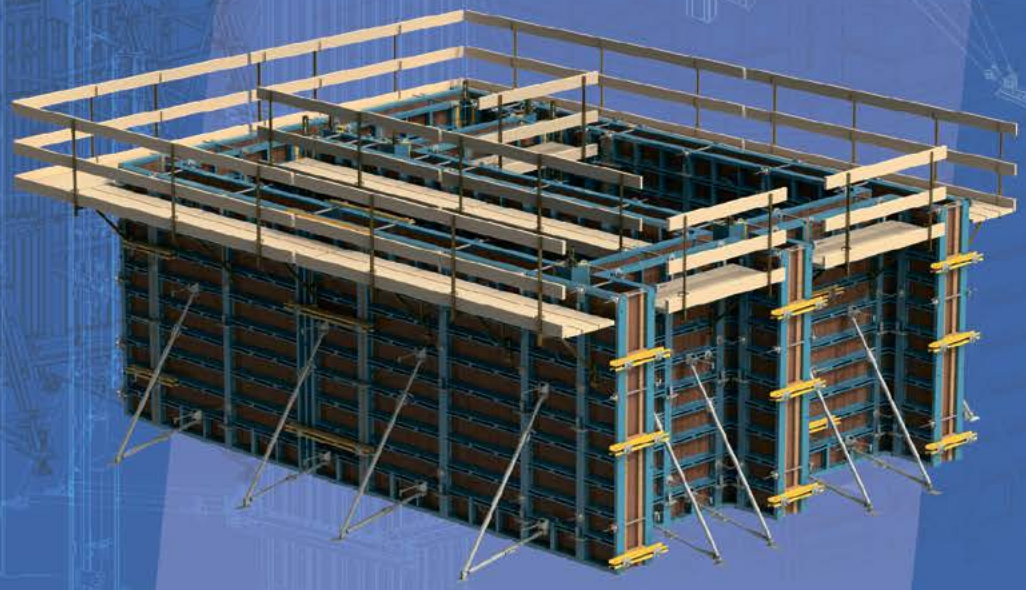
Framed formwork system VARIMAX

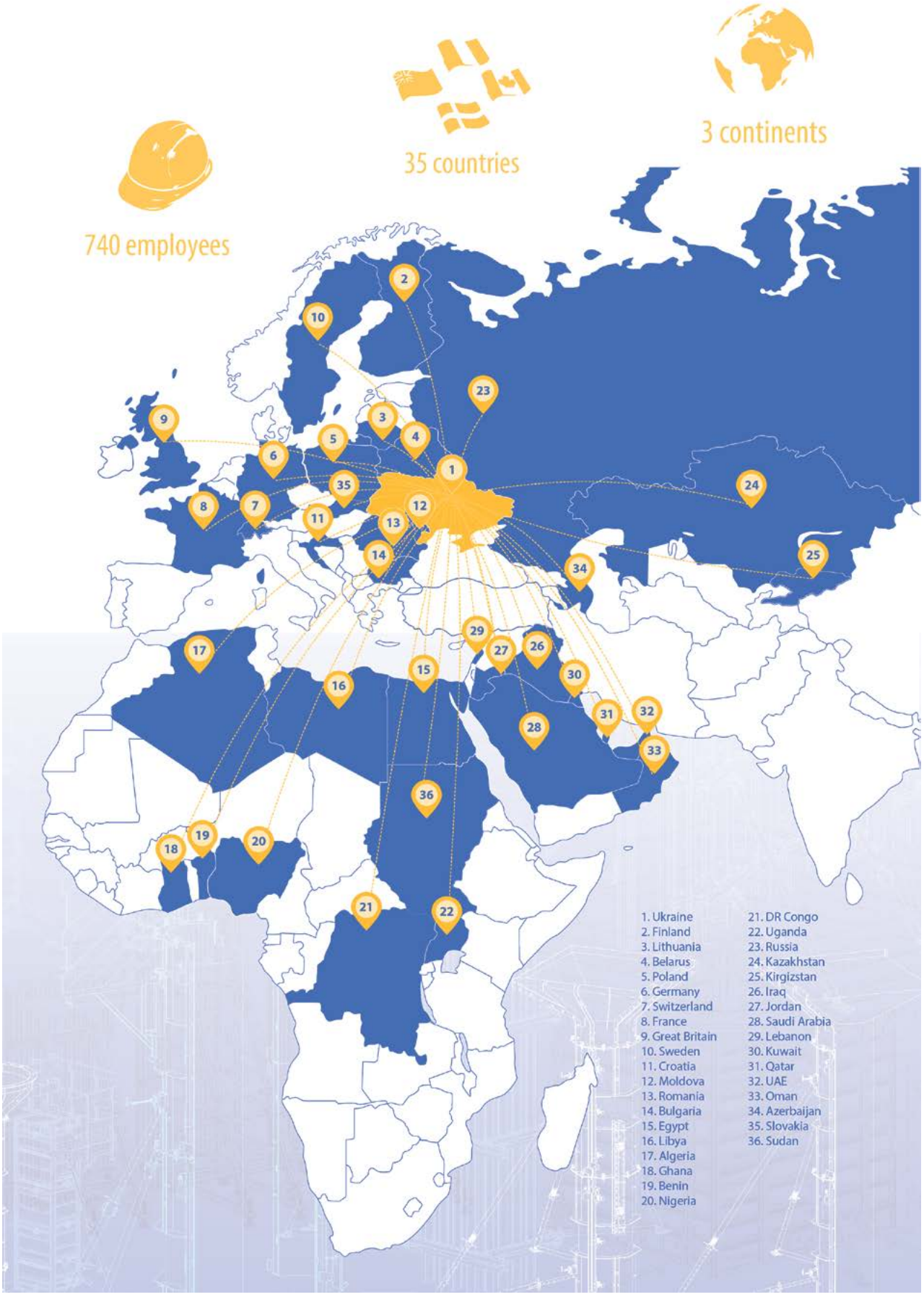


VARIANT

USER MANUAL

www.variant-factory.eu

ISO 9001
BUREAU VERITAS
Certification
N° 00000


740 employees
35 countries
3 continents
1. Ukraine
2. Finland
3. Lithuania
4. Belarus
5. Poland
6. Germany
7. Switzerland
8. France
9. Great Britain
10. Sweden
11. Croatia
12. Moldova
13. Romania
14. Bulgaria
15. Egypt
16. Libya
17. Algeria
18. Ghana
19. Benin
20. Nigeria
21. DR Congo
22. Uganda
23. Russia
24. Kazakhstan
25. Kirgizstan
26. Iraq
27. Jordan
28. Saudi Arabia
29. Lebanon
30. Kuwait
31. Qatar
32. UAE
33. Oman
34. Azerbaijan
35. Slovakia
36. Sudan

Contents

GENERAL INSTRUCTIONS

This user manual (method statement) is aimed at everyone who will be working with the «VARIANT» product or system it describes. It contains information on how to set up this system, and proper use it.

All persons working with the product described herein must be familiar with the contents of this manual and with all the safety instructions it contains.

The customer is to ensure that the information materials provided by «VARIANT»are available to all users, and that they have been made aware of them and have easy access to them at the usage location.

Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.

Always observe all construction safety regulations and other safety rules applying to the application and using of our products in the country and/or region in which you are operating.

In the relevant technical documentation and formwork usage plans, «VARIANT» shows the workplace safety precautions that are necessary in order to use the «VARIANT» products safely in the usage situations shown. In all cases, users are obliged to ensure compliance with national laws, Standards and rules throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment on every construction site. This document serves as the basis for the site-specific hazard assessment, and for the instructions given to users on how to prepare and use the system. It does not substitute for these, however.

This manual can also be used as a generic method statement or incorporated with a site-specific method statement.

The equipment/system must be inspected by the customer before use, to ensure that it is in suitable condition. Steps must be taken to rule out the use of any components that are damaged, deformed, or weakened due to wear, corrosion or rot.

The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose under the direction and supervision of suitably skilled persons with the authority to issue instructions. These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.

The equipment/system must be assembled and erected in accordance with the applicable laws, Standards and rules by suitably skilled personnel of the customer's, having regard to any and all required safety inspections.

Many of the illustrations in this user manual show the situation during formwork assembly and are therefore not always complete from the safety point of view.

Combining our formwork systems with those of other manufacturers could be, but needs to be checked by customer compatibility «VARIANT» product/system with other independently under its responsibility.

It is not permitted to modify«VARIANT» products because of a safety risk.

Only original «VARIANT» components may be used as spare parts. Repairs may only be carried out by the manufacturer or authorized facilities.

We reserve the right to make alterations in the interests of technical progress.

WARNING NOTES

«VARIANT» products and systems must be set up in such a way that all loads acting upon them are safely transferred.

Do not exceed the permitted fresh-concrete pressures. Excessively high pouring rates lead to formwork overload, cause greater deflection and risk causing breakage.

The stability of all components and units must be ensured during all phases of the construction work.

All connections must be checked regularly to ensure that they still fit properly and are functioning correctly. It is very important to check all screw-type connections and wedge-clamped joins whenever the construction operations require (particularly after exceptional events such as storms), and to tighten them if necessary.

Remove any loose parts or fix them in place so that they cannot be dislodged or fall free.

It is strictly forbidden to weld «VARIANT» products – in particular anchoring/tying components, suspension components, connector components and castings etc. – or otherwise subject them to heating. Welding causes serious change in the microstructure of the materials from which these components are made. This leads to a dramatic drop in the failure load, representing a very great risk to safety. The only articles which are allowed to be welded are those for which the «VARIANT» literature expressly points out that welding is permitted.

If a person or object falls against, or into, the side-guard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.

Provide safe workplaces for those using the formwork (e.g. for when it is being erected/dismantled, modified or repositioned etc.). It must be possible to get to and from these workplaces via safe access routes.

Fire-sources are not permitted anywhere near the formwork. Heating appliances are only allowed if properly and expertly used, and set up a safe distance away from the formwork.

The work must take account of the weather conditions (e.g. risk of slippage). In extreme weather, steps must be taken in good time to safeguard the equipment, and the immediate vicinity of the equipment, and to protect employees.

Do not strike the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be struck.

When striking the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as «VARIANT» stripping corners.

When striking the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place.

Observe all regulations applying to the handling of formwork and scaffolding.

SYSTEM OVERVIEW

The framed formwork Varimax by Variant is a complete system, including accessories, designed for heavy-duty use. The Varimax system ensures fast, safe and cost efficient concreting process and provides you with an opportunity to make any concrete surface possible.

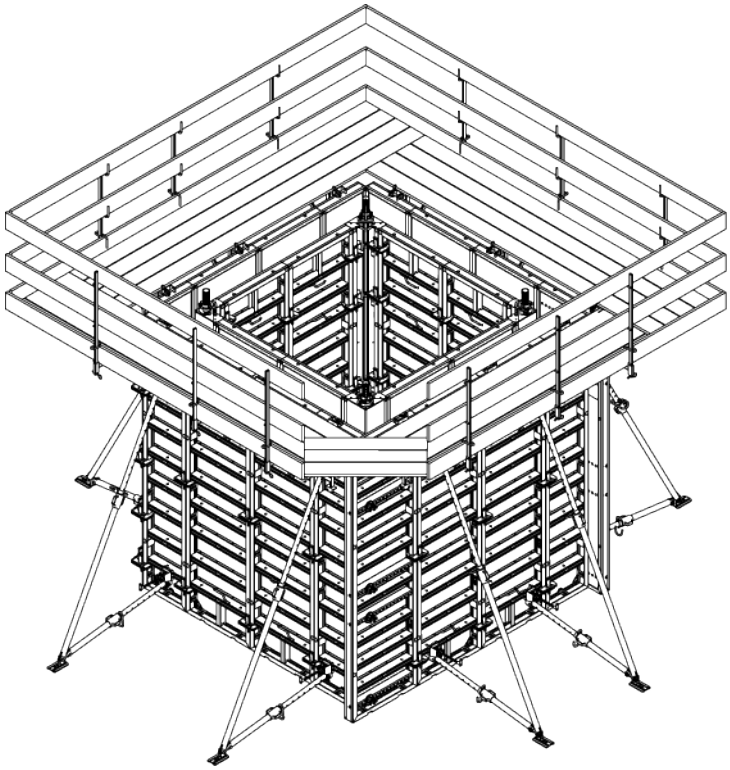
The Varimax system is applicable to forming:

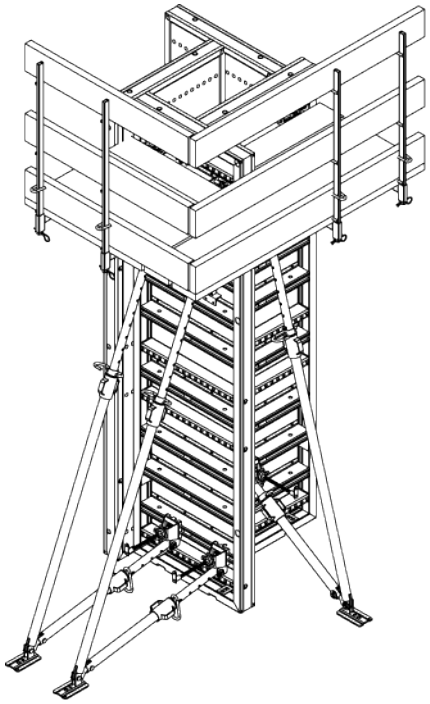
- Ensure high level of efficiency and quality of concrete surface;
- Guarantees reduction of expenses by means of restoration and cleaning possibilities;
- Substantially simplifies lifting shafts and stair walls incasing through easy-to-use and reliable stripping elements.

The Varimax system is suitable to incase:

- walls of big and small sizes;
- foundations;
- columns and pillars.

Permitted fresh concrete pressure up to 80 kN/m^2



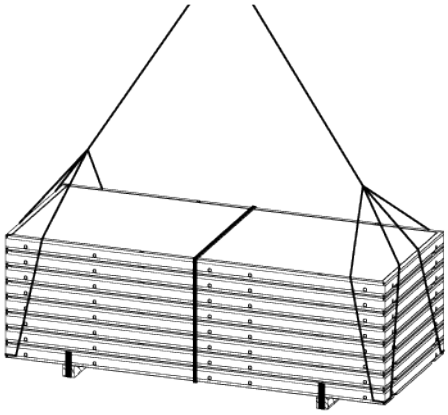


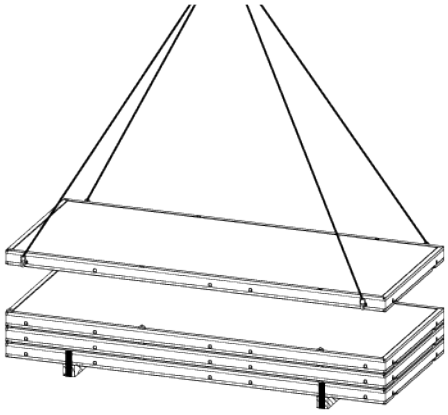
INSTRUCTIONS FOR ASSEMBLY AND USE

The assembly sequence shown herein is based on forming a straight part of the wall. However, you should always start forming from the outer corner.

Panel transportation and handling

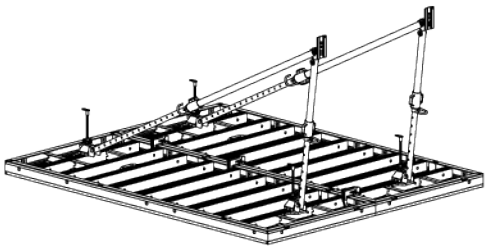
• When unloading of the panels from a truck or shifting them on construction site in one stack, use the transport gear.
• For separate shifting of the panels, use transport bolts 5 kN and the 4-part chain 3.20 m

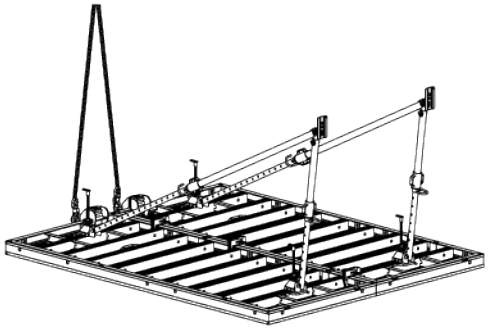




Pre-assembly

• To form a pre-assembled gang-form , lay panels of the gang-form with facing surface down on an assembly bench, see «Inter-panel connection».
• With the gang-form still flat, mount support braces to it, see «Plumbing accessories»

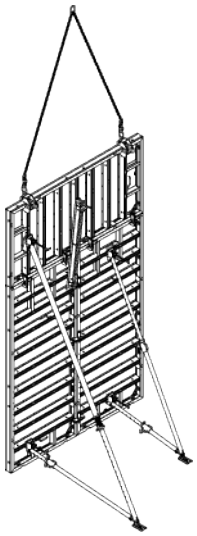




Max. load: 1000 kg per lifting hook

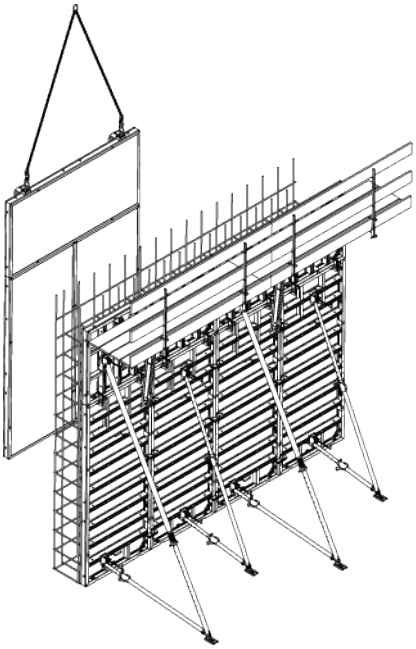
Sledgehammer mustn't be used for panel connection and plumbing! This would damage the profiles of the panels. Use only proper plumbing tools (e.g. a special pry-bar) that cannot cause any damage!

Erecting the formwork

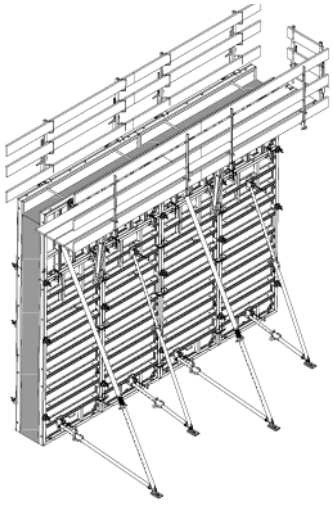


- Attach the crane suspension tackle to the lifting hook, see «Resetting by crane».
- Spray the plywood with release agent.
- Shift the element to its new location.
- Fix the support braces firmly to the ground.
- The element is now stable and can be plumbed and aligned exactly, with no need for the crane.
- Detach the element from the crane.
- Continue lining up elements in this way, and linking them together.

Once the reinforcement has been placed, the formwork can be closed.



- Pick up the element by crane.
- Spray the plywood with release agent.
- Lift the opposite formwork by crane to its next location.
- Working from the ground, insert the bottom rows of tie-rods. If there are no support braces on the opposite formwork, do not disconnect the element from the crane until a large enough number of tie-rods have been installed to keep it safely in the upright.
- Detach the element from the crane.
- Insert the remaining tie-rods. These tie-rod locations can be reached from the platforms or mobile scaffolding.
- Continue lining up elements in this way, and linking them together.



Pouring

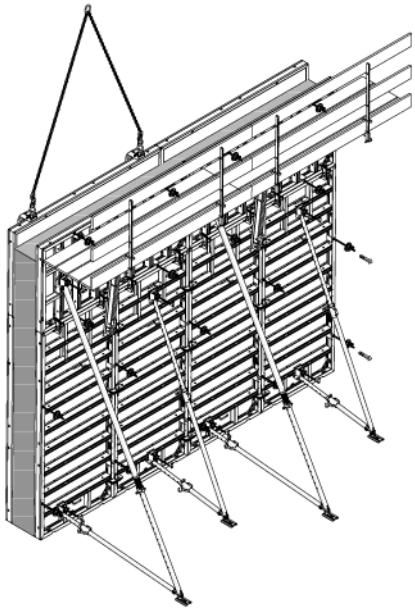
- Do not exceed the maximum permissible rate of placing (the average rate of rise in form). See Attachment A «Pressure of fresh concrete on vertical form work» DIN 18 218

• Pour the concrete.
• Make only moderate use of vibrators, carefully co-ordinating the times and locations of vibrator use.
• To prolong the lifespan of the formwork elements, clean the backside of the formwork immediately after pouring.

Striking

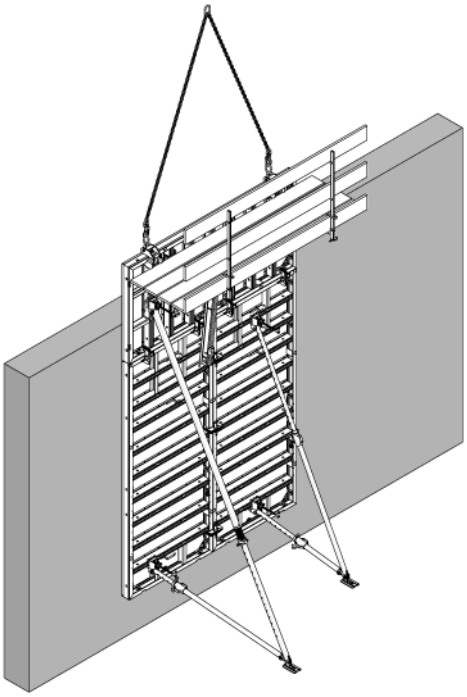
• Check required time for striking.
• Remove any loose items from the formwork and platforms, or secure them firmly.

Begin work on striking the formwork on the opposite formwork.



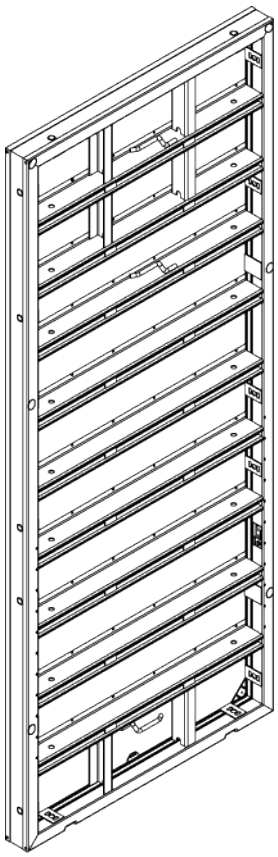
• Undo the connectors to the adjacent elements
• Take out the tie-rods from the top rows of ties. These tie-rods locations can be reached from the platforms or mobile scaffolding. There must be at least as many tie-rods left in place as are needed to keep the element safely in the upright.
• Attach the element (incl. platforms) to the crane.
• Working from the ground, take out the bottom rows of tie-rods.

When stripping the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges or a pinch bar.



• Lift the element away and to its next location, or place it face-down for intermediate storage.
• Clean off the plywood face from concrete.
• Where the element or the gang-form has support braces attached to it, first attach this element or gang-form to the crane, and only then detach the floor anchorages of the support braces.

SYSTEM IN DETAIL



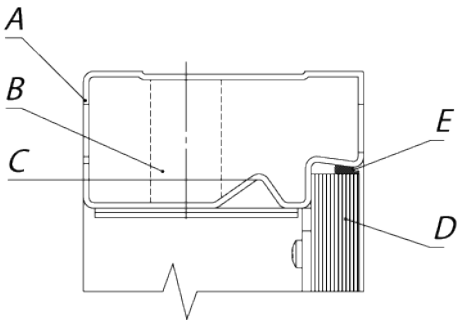
High load-bearing capacity

Owing to reinforced steel profiles, which is used for Varimax panel production, high load-bearing capacity of the panels is guaranteed.

- 60 kN/m^2 pressure of fresh concrete acting on whole area for tie-rod system 15.0
- 80 kN/m^2 pressure of fresh concrete acting on whole area with tie-rod system 20.0 (preferable to use)

Dimensionally stable, powder-coated or galvanized steel frame

- Specially developed panel profile is not only more load resistant in the process of concreting but also makes the replacement of formwork plywood at the end of its useful life substantially easier as compared with elements of other manufacturers.
- Flat sheets requiring no special cutouts for anchor holes are used.

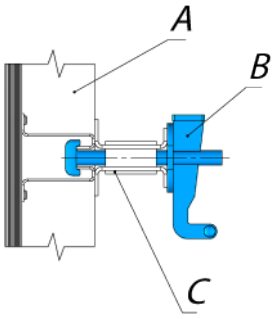


a = 123 mm

(A) Frame profile
(B) Cross borehole
(C) Continuous slot for inter-panel connection
(D) Plywood sheet 21mm
(E) Silicone sealing strip

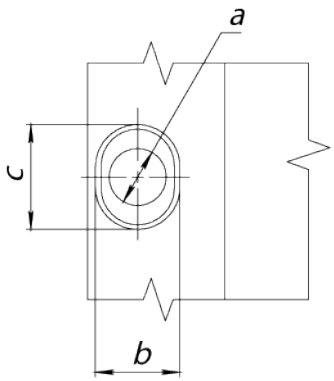
- Filmfaced plywood of 21 mm thickness is used in panels.
- Edges of formwork sheet are protected by frame profile
- Plywood is fastened with self-threading screws to the external side of panels providing smoothness of the surface contacting the concrete.
- Plywood replacing is easy and efficient.

Accessories are easy to fasten, in the integrated waling system



(A) Varimax panel
(B) Contact device
(C) Guide plate

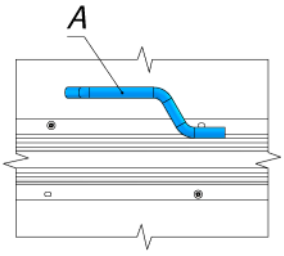
Form-tie sleeves



- Tie-rods are very easy to insert through the large, conical form-tie sleeves.
- Tie-rods 15.0 mm are used for maximum permissible pressure of fresh concrete up to 60 kN/m^2.
- Tie-rods 20.0 mm are used for maximum permissible pressure of fresh concrete up to 80.
- 4 form-ties are needed for tying a Varimax panel up to 2.85 m and 6 form-ties for a panel up to 3.30 m.

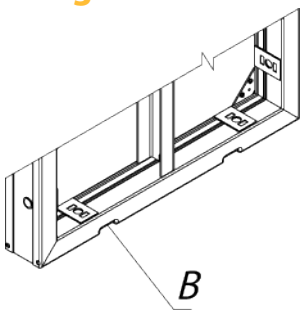
a = ø25 mm
b ... 32 mm
c ... 42 mm

Handles



- The integrated handles (A) make the formwork easier to handle

Setting recess



- Handy setting recess (B) (insertion point for a pry bar)

THE LOGICAL SYSTEM GRID

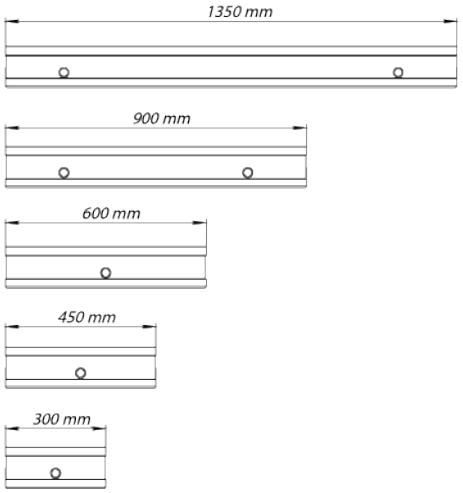
Logical panel size-grid in 15 cm increments

- Easy planning and forming
- Height and width can be adjusted in 15 cm increments
- Very few closures needed
- Clear joint pattern

The heights and widths of the Varimax panels together result in a logical, advantageous increment-grid that makes this formwork highly flexible and economical.

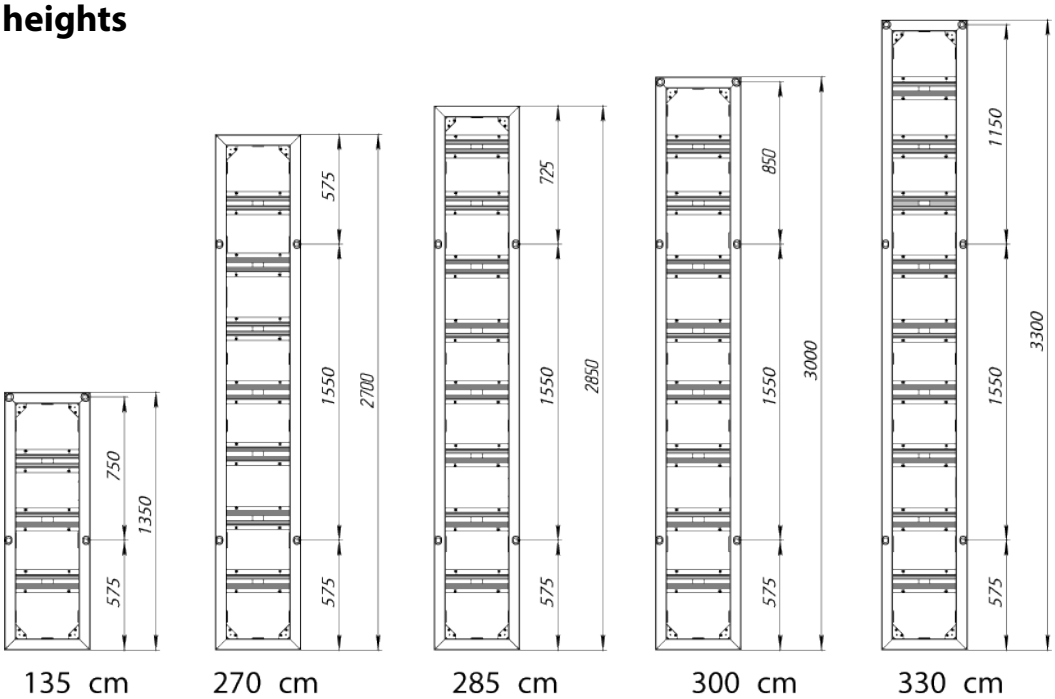
Varimax panels

Panel widths

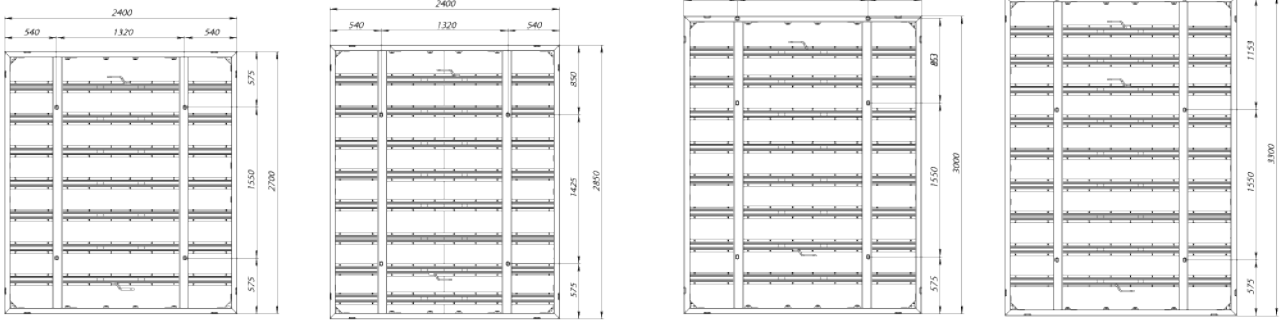


For maximum adjustment of the framed formwokr to any construction site, Variant produces panels custom sizes on inquire, with dimension different from foregoing (standard).

Panel heights



Extra-large panels

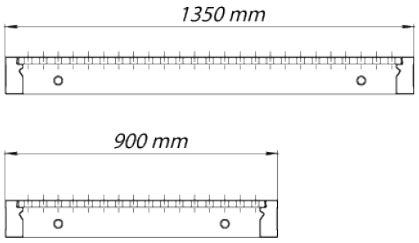


270 cm 285 cm 300 cm 330 cm

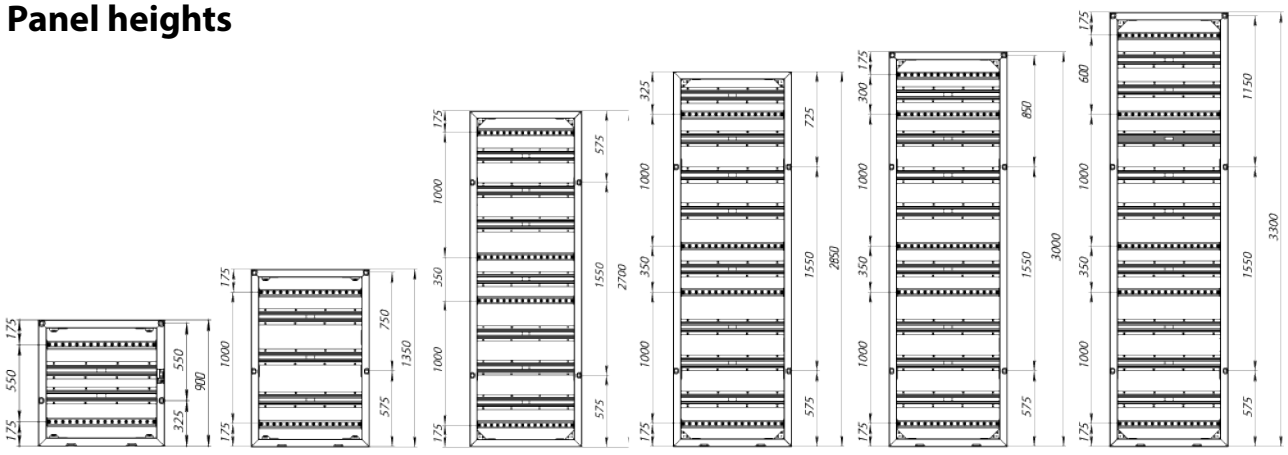
Varimax versatile panels

Panel widths

For maximum adjustment of the framed formwork to any construction site, Variant produces versatile panels with custom sizes on inquire, with dimension different from foregoing (standard).



Panel heights

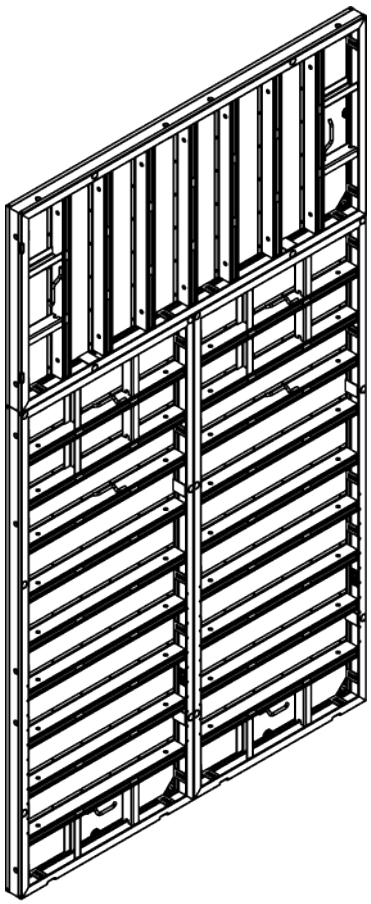


90 cm 135 cm 270 cm 285 cm 300 cm 330 cm

The special hole pattern makes these panels particularly suitable for efficient forming of:

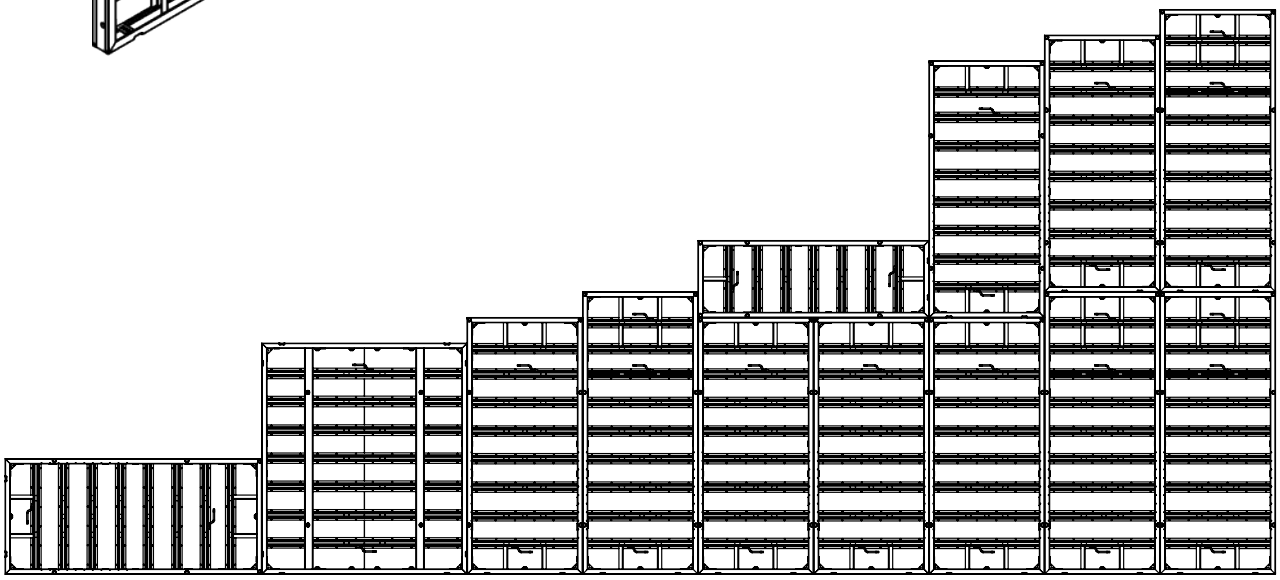
- corners
- wall junctions
- stop-ends
- columns

ADAPTABILITY



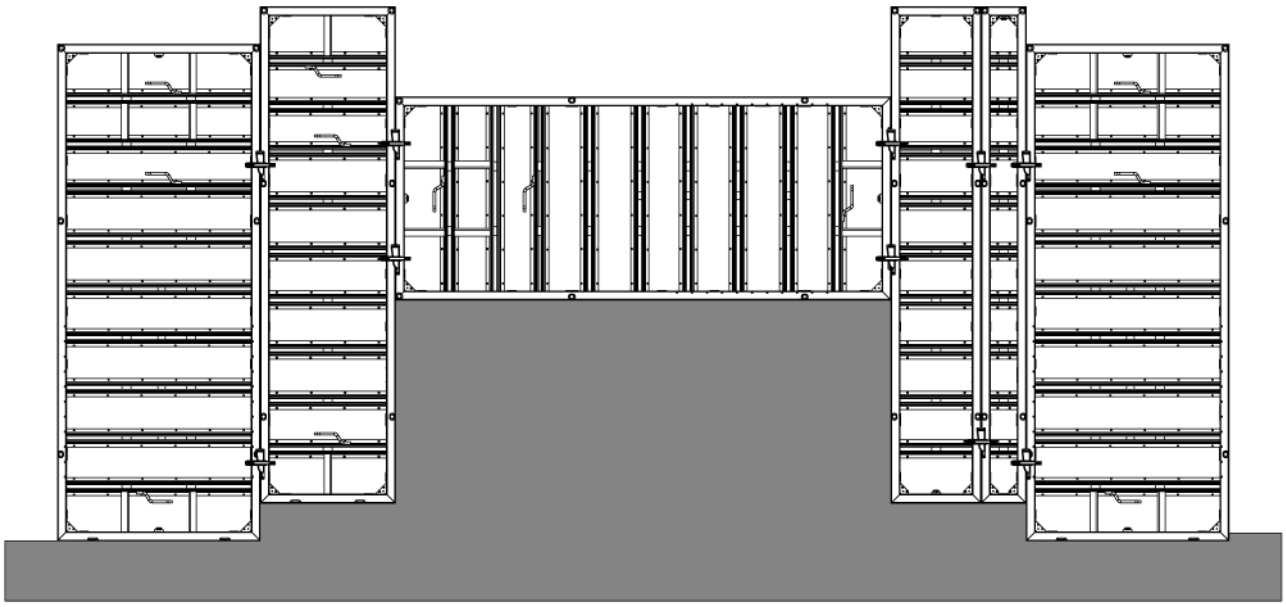
Possible combinations

The perfect panel size-grid gives you innumerable combinations, in both width and height. You can use the panels either upright or horizontal, and the 15 cm increment-grid gives you optimum adaptability of the formwork to the dimensions of the structure, at all times.



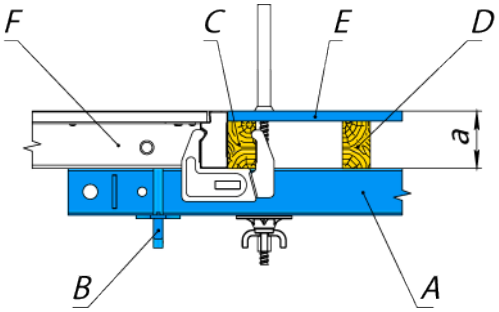
Stepless height offset

The continuous slot, located all along the edge profile of Varimax panel, enables the connector components to be fastened anywhere on the frame. This allows any adjacent panels to be steplessly staggered in height, i.e. without being confined to any fixed grid. This means that the formwork can easily be accommodated to e.g. steps, slopes and uneven ground, with no extra work.



Carry on forming with in-situ timber

The framed formwork Varimax also gives you easy connections when you need to «make up» with site build timber formwork. The universal waling and wedge clamp make it easy for you to join the panels to squared timbers and ply sheets.



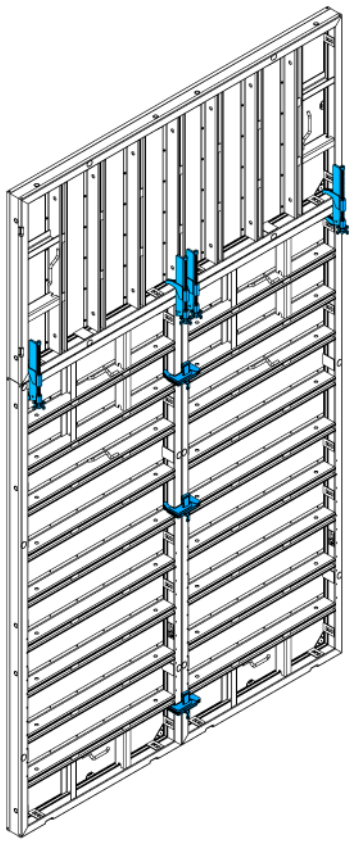
a = 123mm

(A) Guide plate 1.50
(B) Contact device
(C) Moulded timber
(D) Squared timber
(E) Plywood
(F) Varimax panel

INTER-PANEL CONNECTIONS

The Varimax Clamp device and Adjustable clamp

- create fast, self-aligning and tension-proof joints
- have no loose parts which might get lost
- are hard-wearing and dirt-resistant for site use
- should only be fixed using a formwork hammer (max. 800 g)



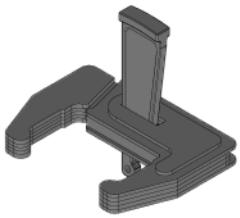
Upright panels:	
Height of panel	Number of clamps
1.35 m	2
2.70 m	2
2.85 m	2
3.00 m	3
3.30 m	3

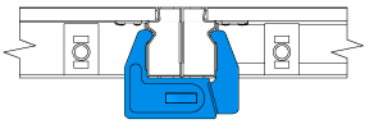
Horizontal panels:	
Width of panel	Number of clamps
0.30 m	1
0.45 m	1
0.60 m	2
0.90 m	2
1.35 m	2

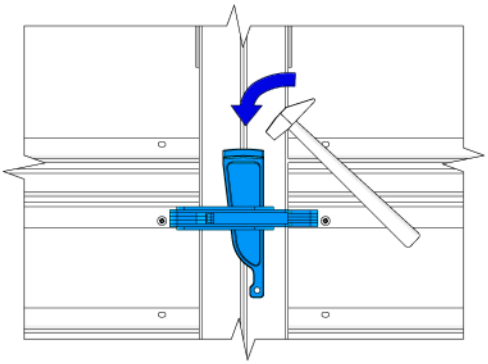
For details regarding extra inter-panel connections for outside corners and stop-end formwork (for increased tensile loads) see «Inter-panel connections for increased tensile loads».
See «Vertical stacking of panels» for details of the positions of the Varimax Clamp devices and Adjustable clamps that are needed when vertically extending.

Simple inter-panel connections with Clamp device

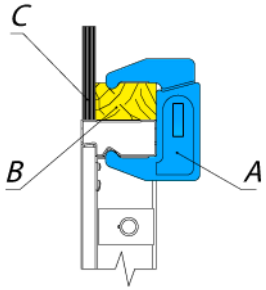
The continuous slot, located all along the edge profile of Varimax panel, means that panels can be fastened together at any point desired. This allows adjacent panels to be staggered in height, steplessly.







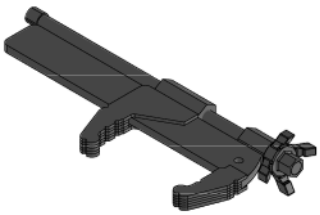
Vertical st[illegible]ded timber

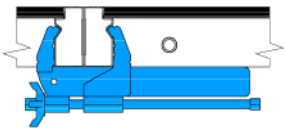


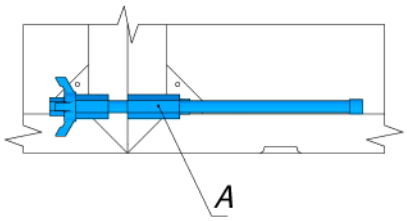
(A) Clamp device Varimax
(B) Moulded timber
(C) Plywood

Simple inter-panel connections with Adjustable clamp

Instead of Clamp device, Adjustable clamp can be used.



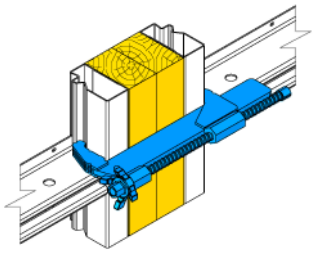




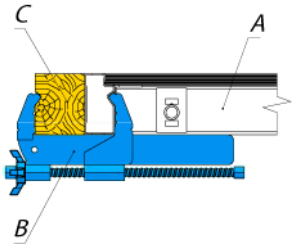
Joining the panels using the Adjustable clamp provides additional bracing of the gang-form (as the clamp fixed directly onto the profile).

Adjusting of inter-panel connections with Adjustable clamp

With its 20 cm clamping range, the Adjustable clamp exactly matches the panel size-grid.
For more information, see «Length adjustment using closures».

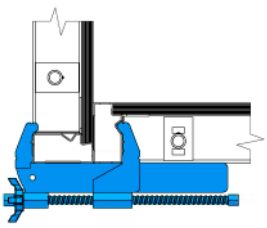


Squared-timber joints up to 25 cm



(A) Varimax panel
(B) Adjustable clamp Varimax
(C) Squared timber

Corner joints on foundations



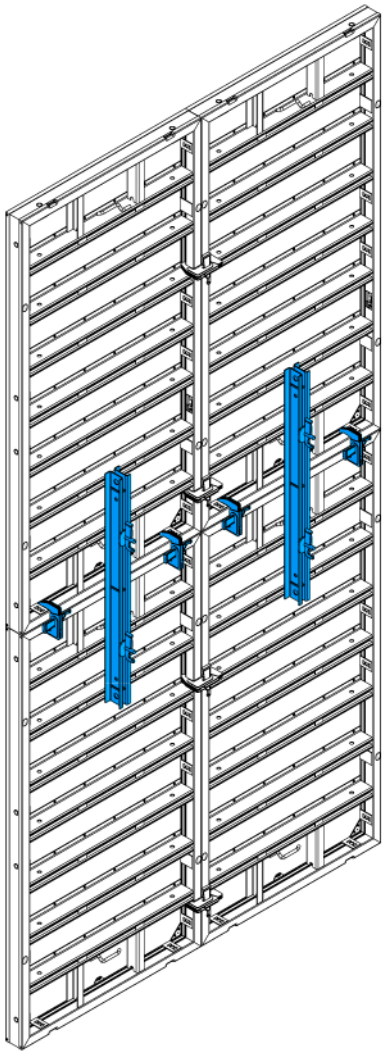
BRACING THE PANELS WITH GUIDE PLATE

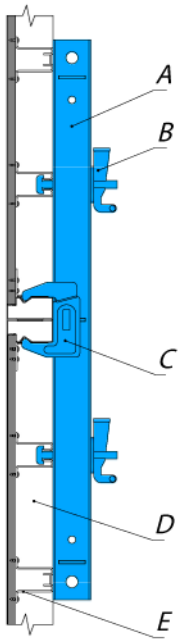
Using for closures

The Guide plates bring the gang-forms firmly into alignment and transfer the tie-rod forces to the framed panels.

Using for vertical stacking

Using additional Guide plates gives gang-forms better rigidity, especially in higher vertically stacked configurations. This makes it possible to pick up and set down large gang-forms by crane without any problems.



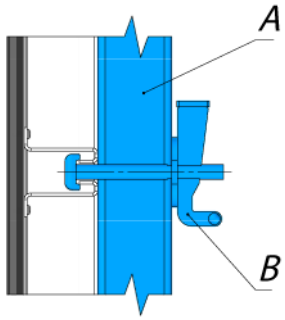


(A) Guide plate 1.50
(B) Contact device
(C) Clamp device Varimax
(D) Varimax panel
(E) Framed panel profile

The additional Guide plates are also useful for transferring the loads from working platforms (wall brackets).

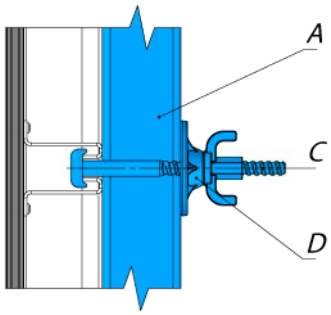
Attaching the guide plate to Varimax panel

Using the Contact device



(A) Guide plate 1.50
(B) Contact device Varimax

Using the Connection screw and Superplate



(A) Guide plate 1.50
(C) Connection screw
(D) Superplate

Instead of the universal waling, it is also possible to use a Waling 12 with Connection srew.

VERTICAL STACKING OF PANELS

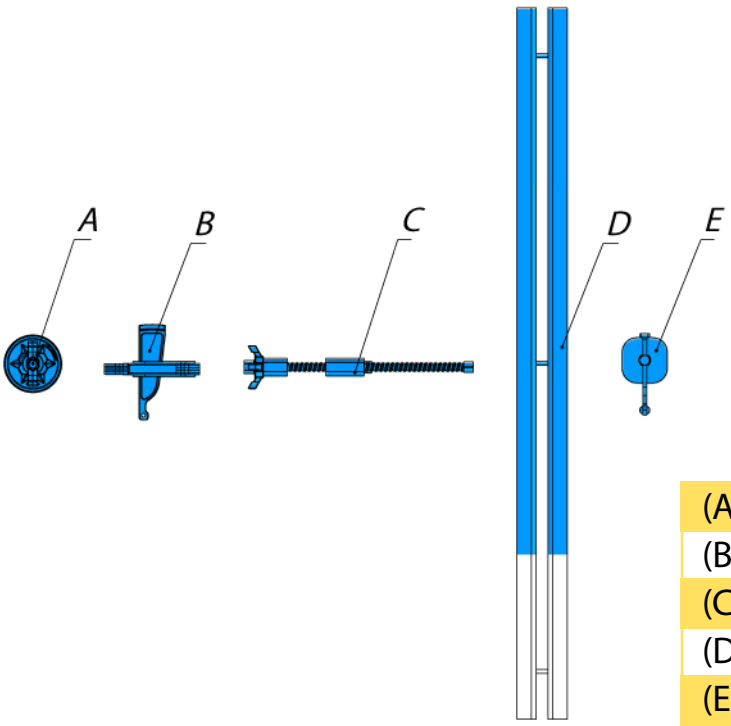
Positions of the interconnecting and tie-rod components and accessories needed for:

- Lifting and setting down
- Crane-handling
- Platform loads
- Pouring

Rules for vertical stacking of panels

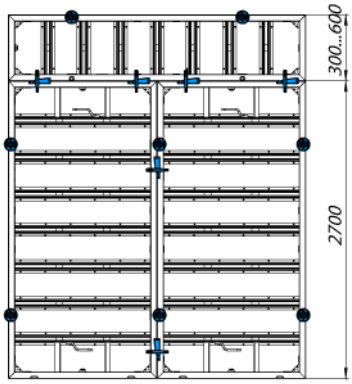
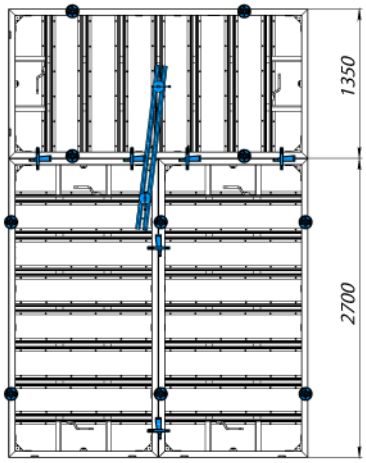
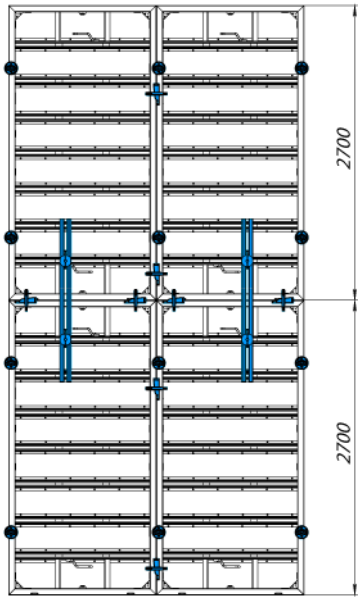
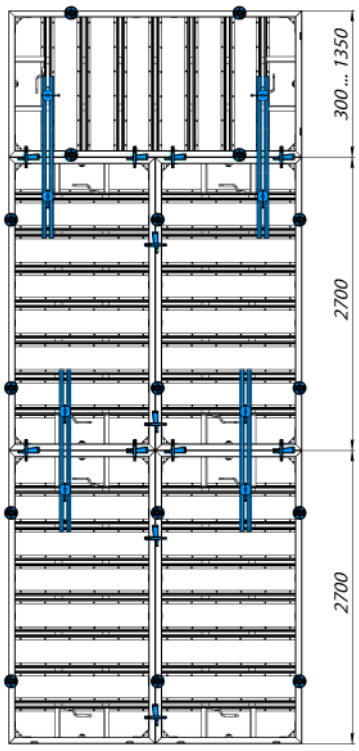
- On each inter-panel joint, 1 Guide plate 1.50 & 2 Clamp devices or Adjustable clamps are attached for each panel (max. 1.35 m width)
- If top panel has height 0.60 m or less, on each inter-panel joint, 2 Clamp devices or Adjustable clamps are attached for each panel (max. 1.35 m width)

Symbols

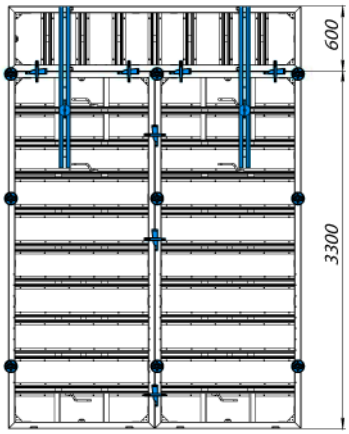
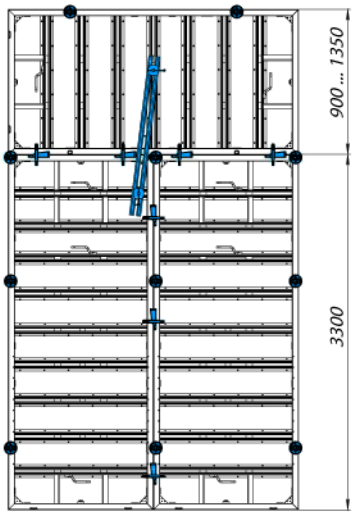
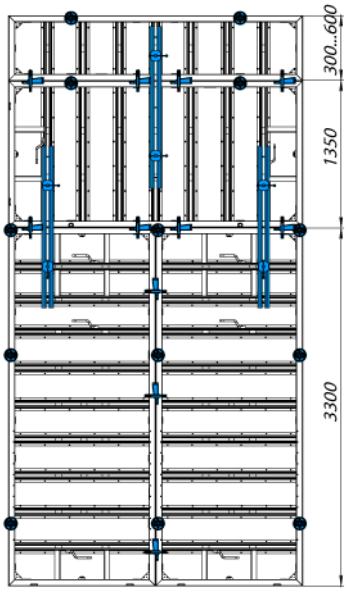
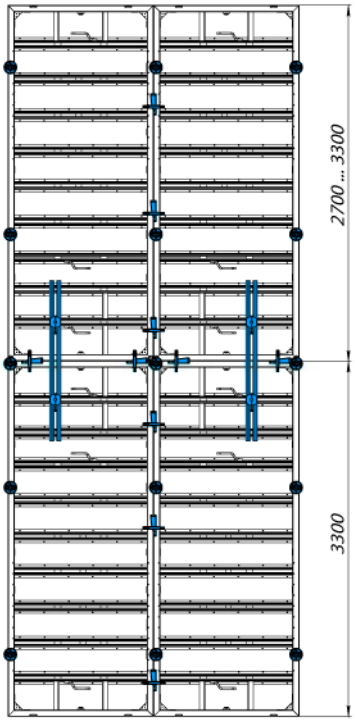


(A) Tie-rod & Superplate
(B) Clamp device Varimax
(C) Adjustable clamp Varimax
(D) Guide plate 1.50
(E) Contact device

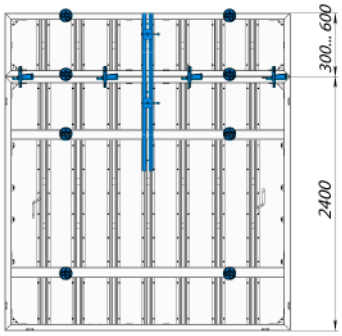
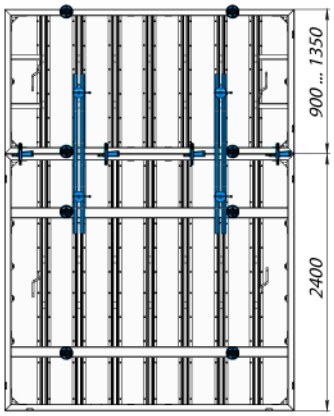
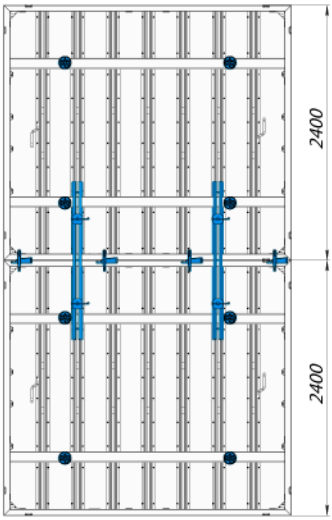
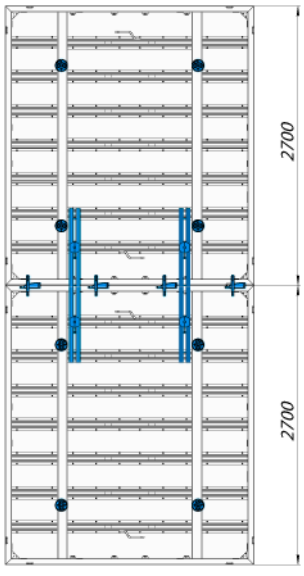
Panel 2.70 m (Panel 2.85 m)

Formwork height: 300, 315, 330 cm	Formwork height: 405 cm
	
Formwork height: 540 cm	**Formwork height: 675 cm**
	

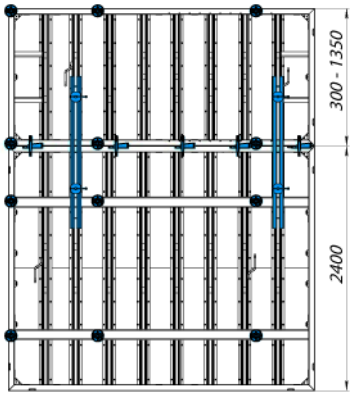
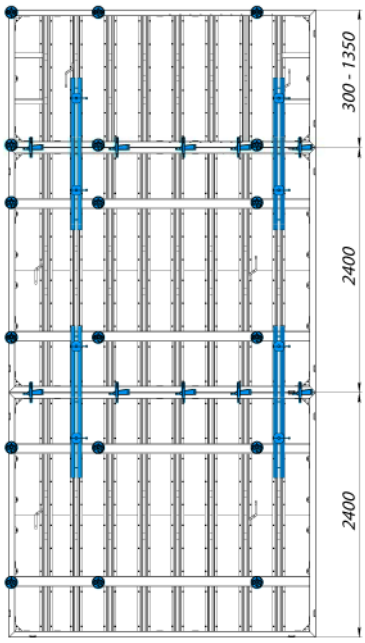
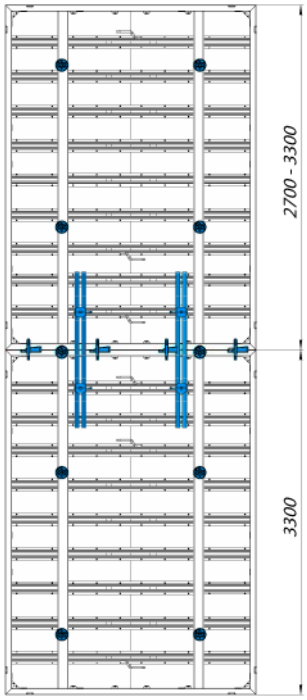
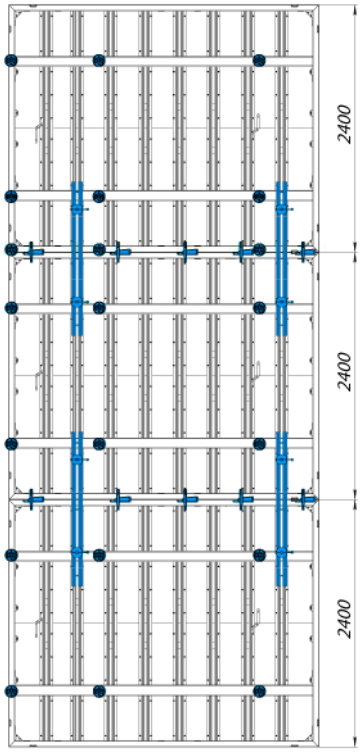
Panel 3.30 m (Panel 3.00 m)

Formwork height: 390 cm	Formwork height: 420, 465 cm
 Where tie-rods are fitted at the top edge of the formwork, no Guide plate are necessary.	
Formwork height: 495, 510, 525 cm	**Formwork height: 600, 660 cm**
	

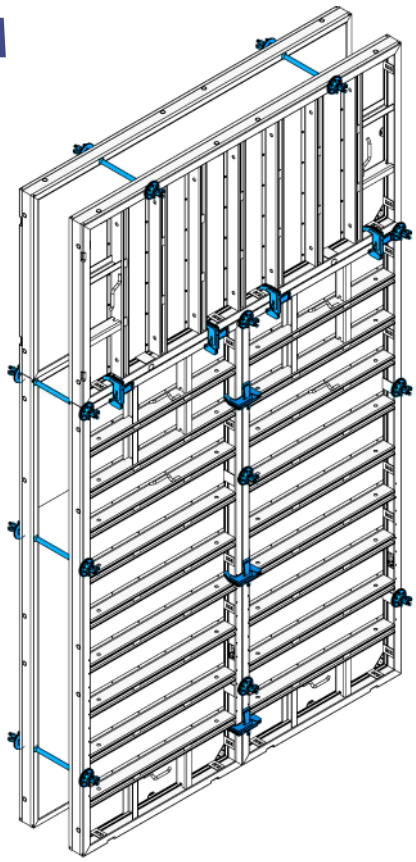
Panel 2.40x2.70 m (Panel 2.40x2.85 m)

Formwork height: 270, 285, 300	Formwork height: 330, 375 cm
 An uppermost horizontal panel with a width of up to 45 cm does need only 1 Guide plate at the inter-panel join	
Formwork height 480 cm	**Formwork height: 540 cm**
	

Panel 2.40x3.30 m (Panel 2.40x3.00 m)

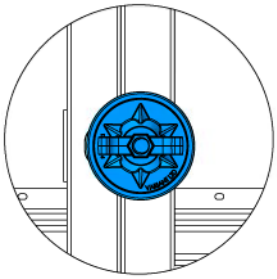
Formwork height: 270, 285, 300, 330, 375 cm	Formwork height: 510, 525, 540, 570, 615 cm
 An uppermost horizontal panel with a width of up to 45 cm does need only 1 Guide plate at the inter-panel join	
Formwork height: 600, 660 cm	**Formwork height: 720 cm**
	

TIE-ROD SYSTEM



Placing form-ties in the frame profile in general

• Fix a tie-rod in every tie-rod sleeve that is not covered over by a superplate.

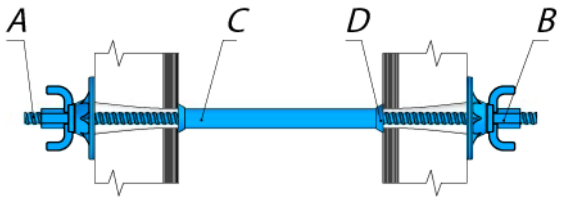


• Always tie in the bigger (wider) of the two panels.
• For exceptions, see the sections headed «Length adjustment using closures» and «Vertical stacking of panels».

Only use approved tie-rods
Never weld or heat tie-rods

Seal off unneeded form-tie sleeves with Plugs R20/25.

The tie-rod system 15.0

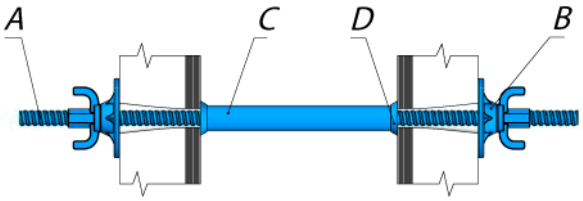


(A) Tie-rod 15.0 mm
(B) Superplate
(C) Plastic tube 22 mm
(D) Universal cone 22 mm

Tie-rod 15.0 mm:
Permitted load with safety factor of 1.6: 120 kN
Permitted load to DIN 18216: 90 kN

The «Plastic tubes 22mm» left behind in the concrete are sealed off with Plugs 22mm.

The tie-rod system 20.0

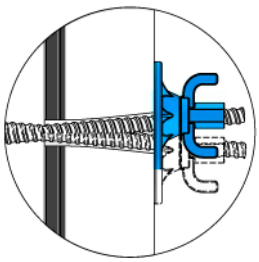


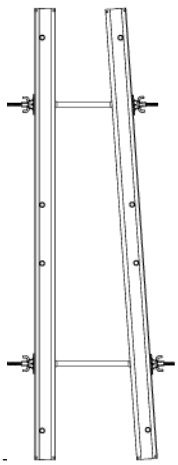
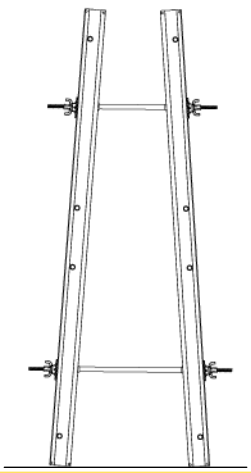
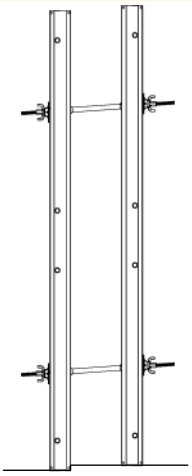
(A) Tie-rod 20.0 mm
(B) Superplate 20.0
(C) Plastic tube 32 mm
(D) Universal cone 22 mm

Tie-rod 20.0 mm:
Permitted load, allowing a 1.6 : 1 factor of safety: 220 kN
Permitted load to DIN 18216: 150 kN

Inclined and height-mismatched positioning

Thanks to their large, conical tie-rod sleeves, the panels can be inclined on one or both sides, and/or height-mismatched. The superplate readily copes with all these situations.

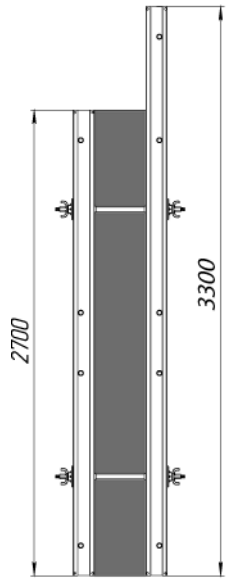
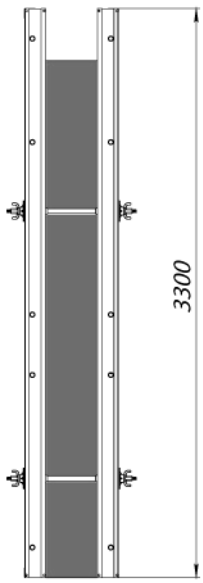
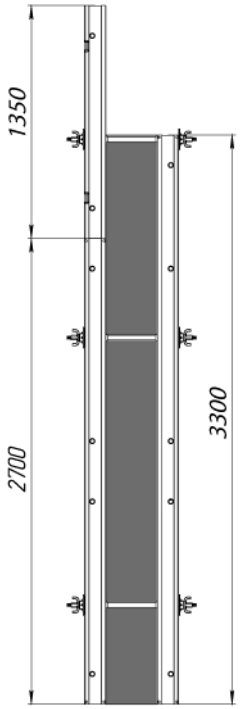
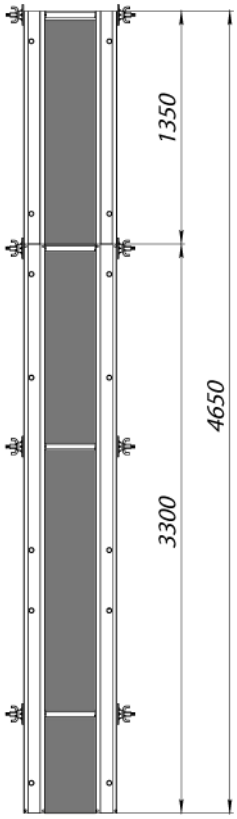


Conical on 1 side	Conical on both sides	Conical on 1 side
max. 4°	**max. 2 x 4.5°**	Form-tie system 15.0: **max. 1.9 cm** per 10 cm of wall thickness Form-tie system 20.0: **max. 1.0 cm** per 10 cm of wall thickness
		

Secure all inclined panels against uplift.
Inclined and mismatched positioning are not possible with panels that have been placed on their sides.

Tie-rod situations on the 3.30 m panel

The positions of the tie-holes on the 3.30 m panels match those on the 2.70 m and 1.35 m high panels. This means that combinations of these 3 panel heights are possible in both the inside and outside formwork.

Pour height up to 2.70 m; 2.85 m	Pour height up to 3.00 m	Pour height up to 3.30 m	Pour height up to 4.65 m
			

- Wall heights of up to 3.30 m with no vertical stacking of panels
- Up to a pour height of 3.00 m, only 2 form-ties are needed
- Vertical stacking with horizontal panels possible using 2.70 m panels
- Vertical stacking with upright panels possible using all 3 heights of panel

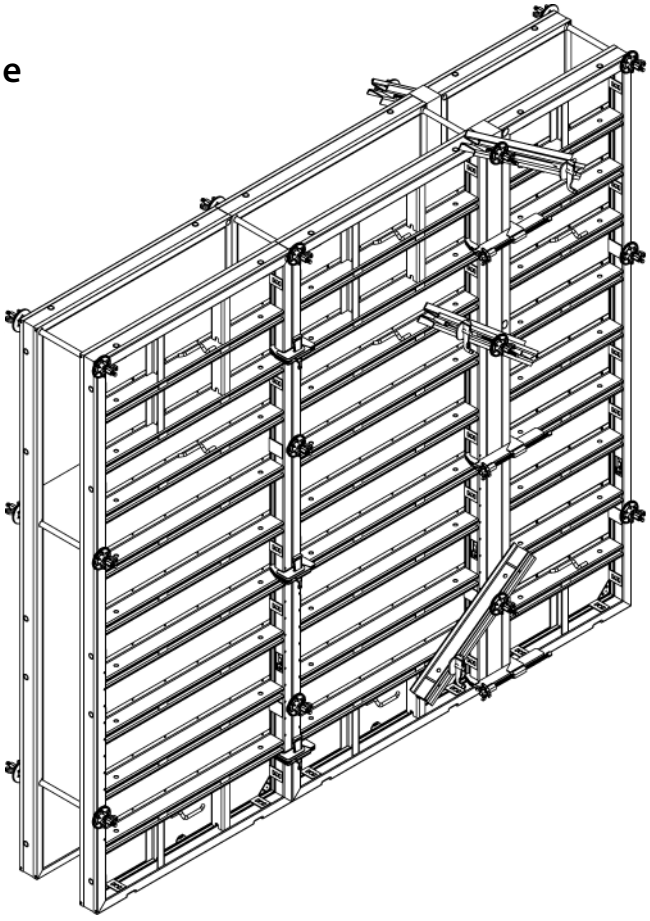
LENGTH ADJUSTMENT USING CLOSURES

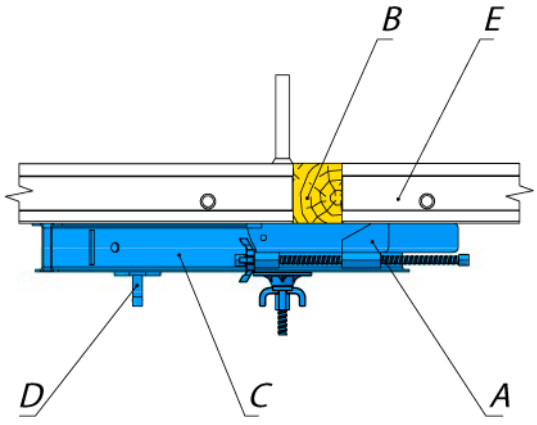
Closures: 0-20 cm

with fitting timber and Adjustable clamp Varimax

By combining the fitting timber widths of 2, 3, 5, and 10 cm in various ways, the closures can be made in 1 cm increments.

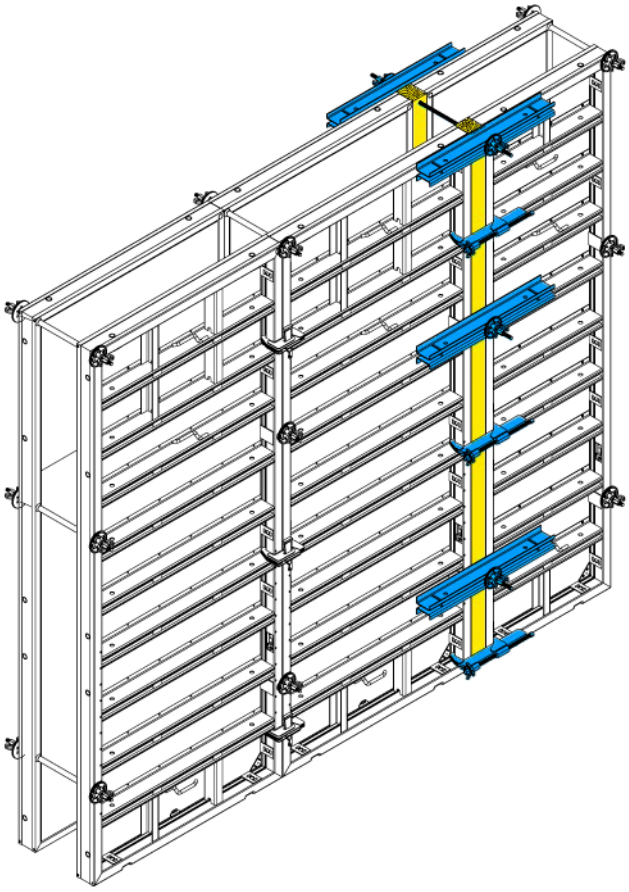
Tie through framed profile

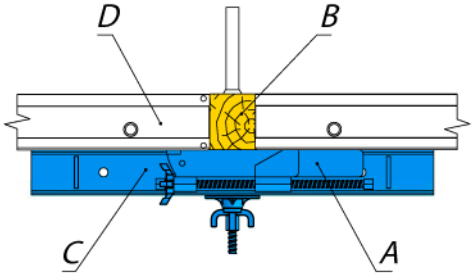




(A) Adjustable clamp Varimax
(B) Fitting timber
(C) Guide plate
(D) Contact device
(E) Varimax panel

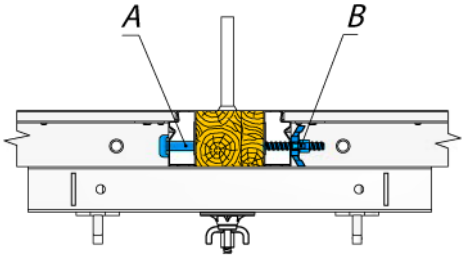
Ties through fitting timber





(A) Adjustable clamp
(B) Fitting timber
(C) Guide plate
(D) Frame panel

Using fitting timber and Connection screw

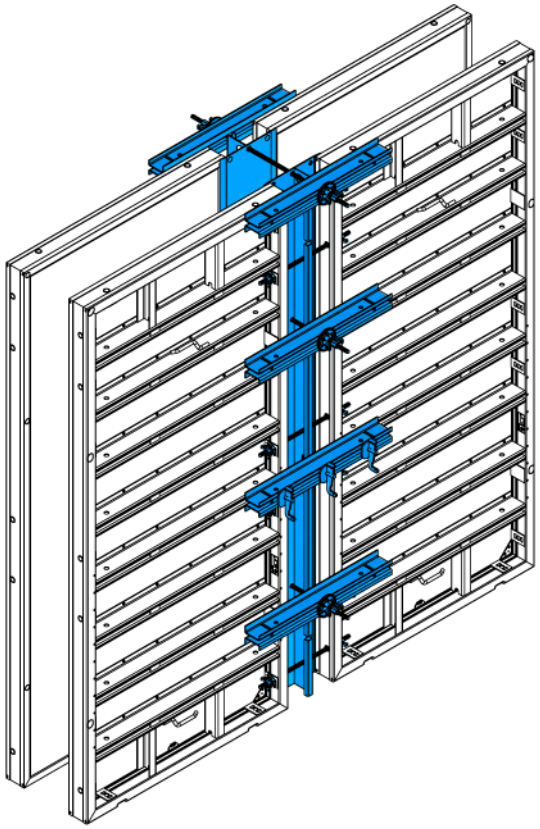


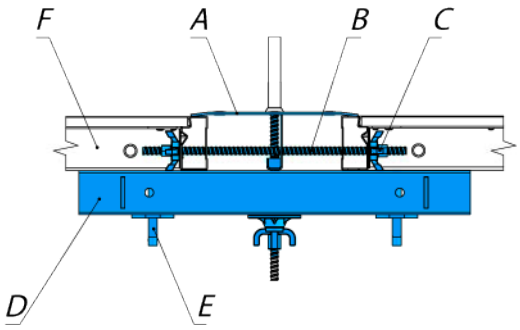
(A) Connection screw
(B) Star-shaped nut

3 Connection screws are needed for every 2.70 m of panel height.

	Closure range
Connection screw 10-16	0-6 cm
Connection screw 10-25	0-15 cm

Closures: 4-30 cm
with Expansion block



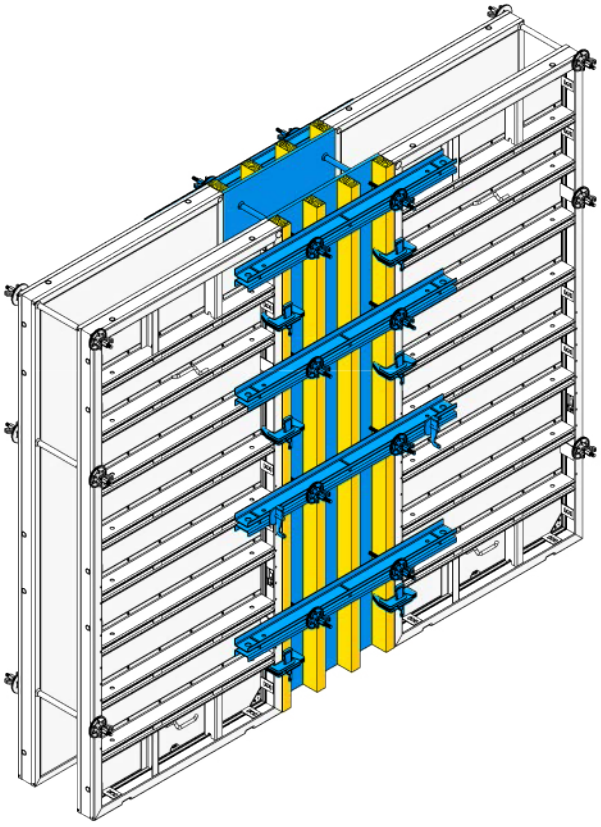


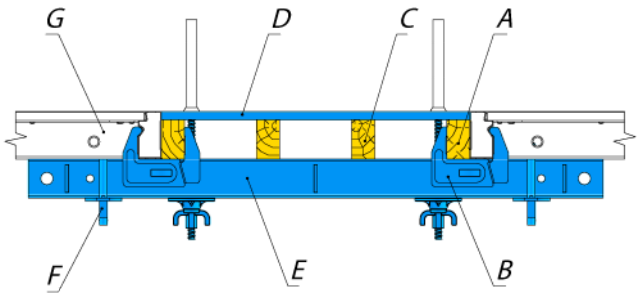
(A) Expansion block Varimax
(B) Tie-rod 15.0 mm
(C) Star-shaped nut
(D) Guide plate
(E) Contact device
(F) Varimax panel

Unneeded tie-holes in the Expansion block can be sealed with Plugs R25

Closures: 0-80 cm

with moulded timber & plywood

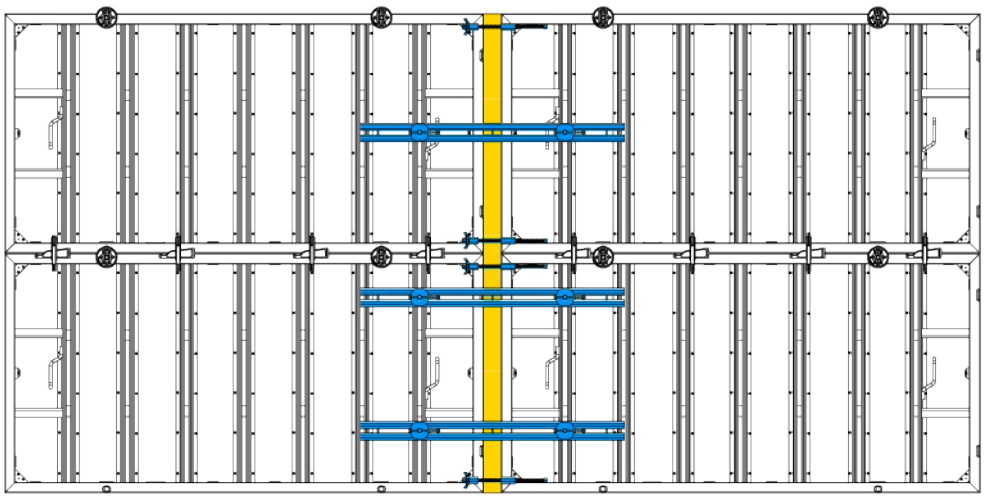




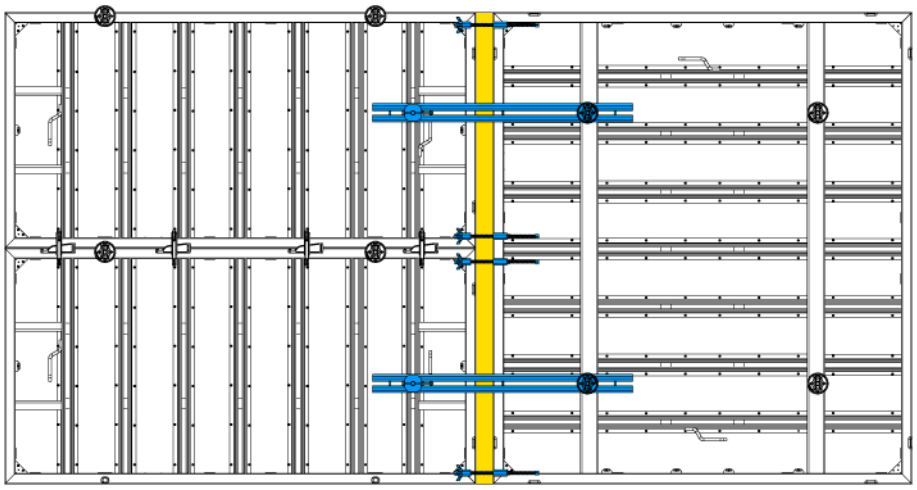
(A) Moulded timber
(B) Clamp device Varimax
(C) Squared timber
(D) Plywood
(E) Guide plate
(F) Contact device
(G) Varimax panel

	Closure range
Guide plate 0.90 m	0-30 cm
Guide plate 1.50 m	0-80 cm

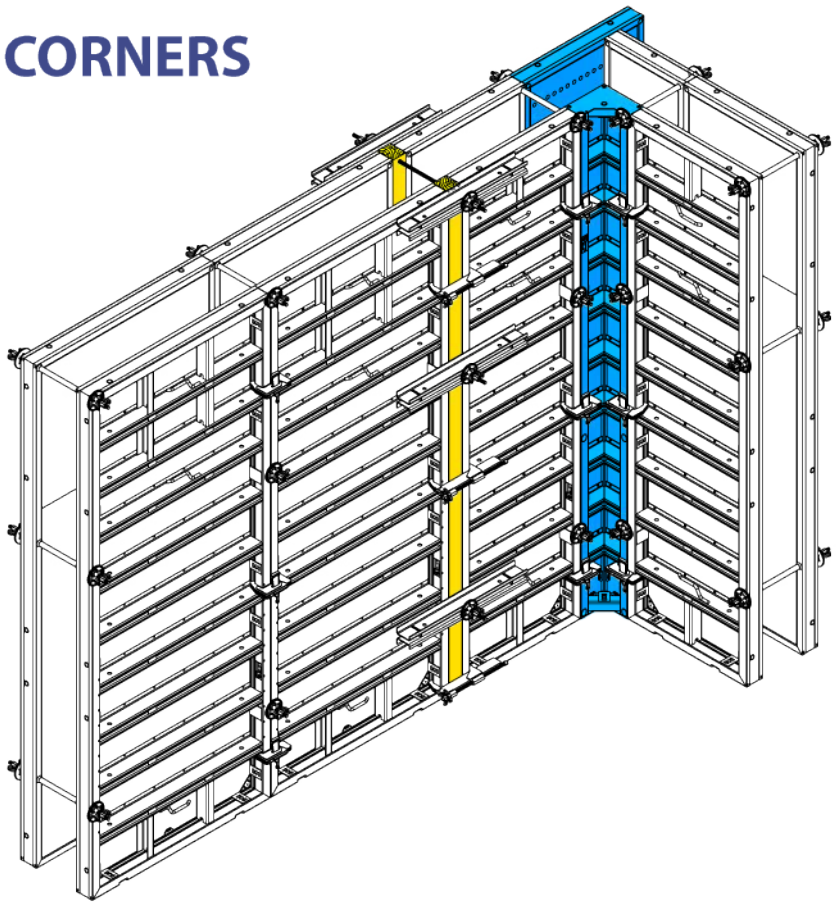
Closures on horizontal panels



Closures on 2.40X2.70 m panel

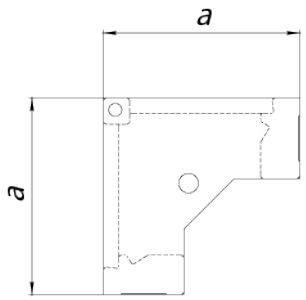


90 DEGREE CORNERS



The corner solutions are based on the strong, torsion-proof Internal angle

Internal angel Varimax



a... 30 cm

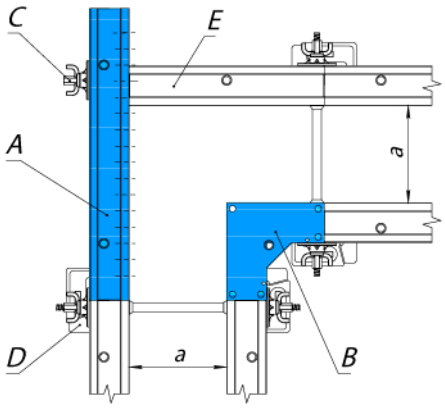
The prefabricated hole in the Internal angle enables a vertical stacking connection to be made using Connection screws + Superplates.

There are 2 ways of forming right-angled outside corners:

- with a Versatile panel
- with an External angle

For details regarding extra inter-panel connections on outside corners (for increased tensile loads), see the section headed «Inter-panel connections for increased tensile loads».

With a versatile panel



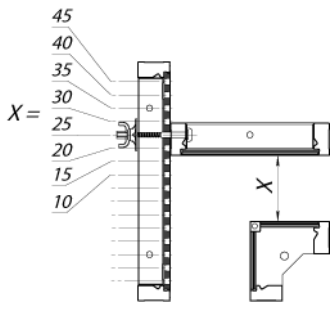
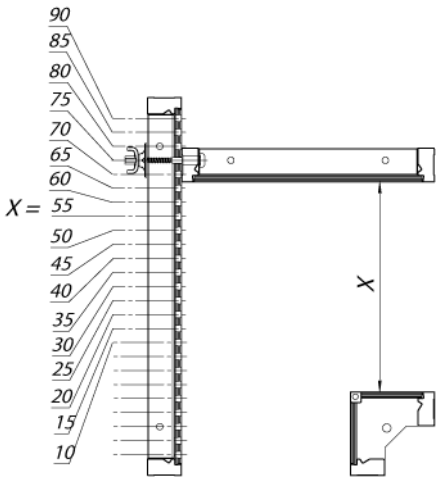
(A) Versatile panel Varimax
(B) Internal angle Varimax
(C) Connection screw & Superplate
(D) Clamp deviceVarimax
(E) Varimax panel

a=30 cm

Required numbers of Connection screws & Superplates

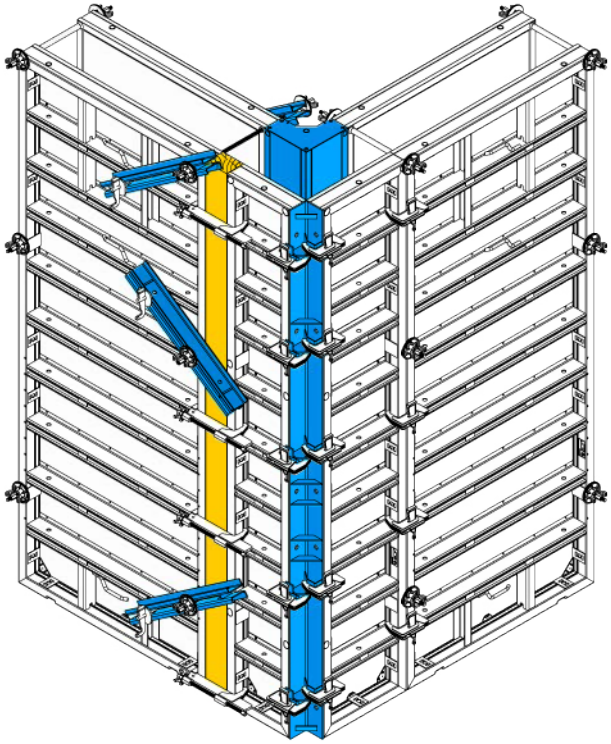
Versatile panel 0.90 m height	2 of each
Versatile panel 1.35 m height	2 of each
Versatile panel 2.70 m height	4 of each
Versatile panel 2.85 m height	4 of each
Versatile panel 3.00 m height	5 of each
Versatile panel 3.30 m height	5 of each

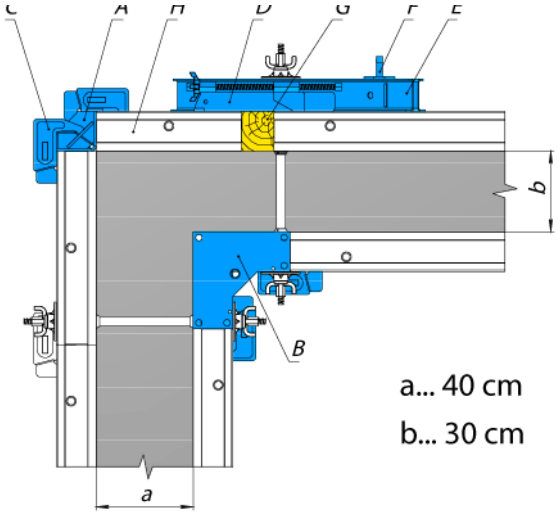
Versatile panel width

0.90 m	1.35 m
	

Various different wall-thickness in a 5 cm grid

With an external angle





The External angle is an easy way of forming corners in narrow trench situations or where large wall thicknesses are called for.

For concrete pressures up to 60 kN/m² or wall thicknesses up to 40 cm, External angle with Clamp devices can be used.

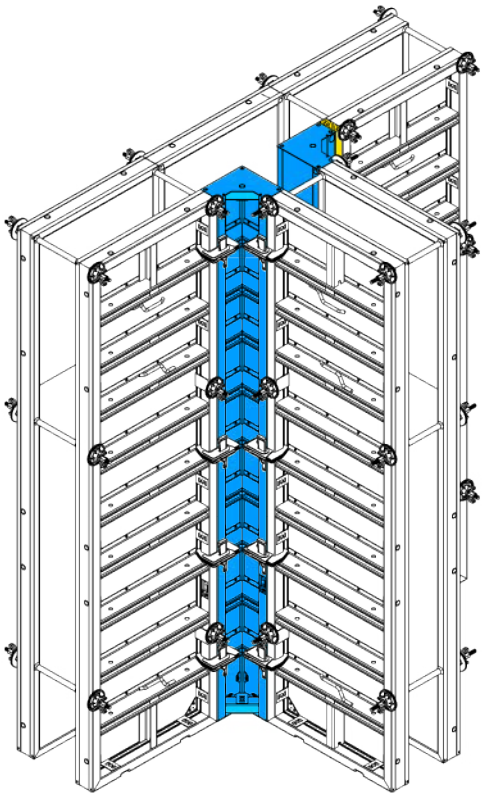
(A) External angle Varimax
(B) Internal angle Varimax
(C) Clamp device Varimax
(D) Adjustable clamp Varimax
(E) Guide plate
(F) Contact device
(G) Fitting timber
(H) Framed panel 0.45 m

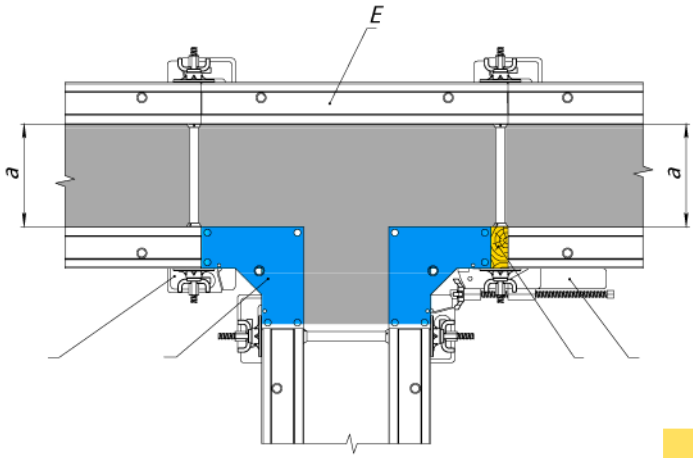
When there is a closure on both sides of the Internal angle, bracing can be achieved economically with the Corner guide plate.

Number of Clamp devices needed:

Height of External angle	Number of clamps
1.35 m	4
2.70 m	8
2.85 m	8
3.00 m	10
3.30 m	10

T-junction





a... 25 cm

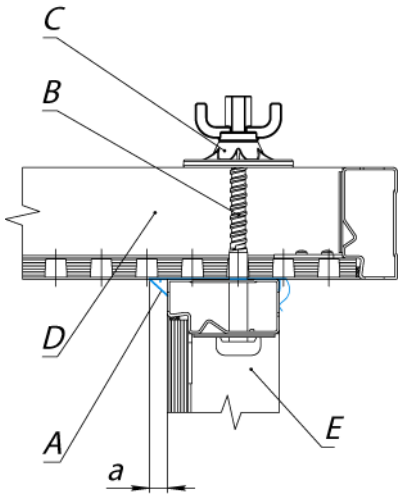
b... 30 cm

(A) Internal angle Varimax
(B) Clamp device Varimax
(C) Fitting timber
(D) Adjustable clamp Varimax

Edges

with frontal triangular ledge

The frontal triangular ledge can be pushed over the end face of the panel (no nails needed). For forming outside corners, it is used with the versatile panel.

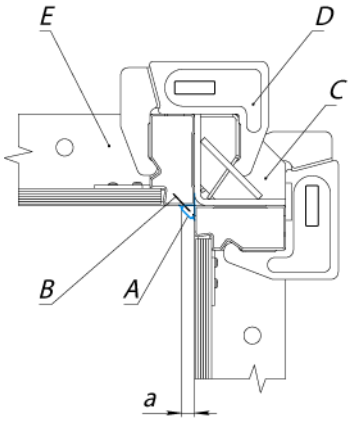


(A) Frontal triangular ledge
(B) Connection screw
(C) Superplate
(D) Versatile panel Varimax
(E) Framев panel 0.90 m

a... 20 mm

with the triangular ledge

Where outside corners are formed using the External angle, the Clamp devices used for the interconnection mean that the triangular ledge has to be used.



(A) Triangular ledge
(B) Wire nail 22x40
(C) External angle Varimax
(D) Clamp device Varimax
(E) Varimax panel

a... 20 mm

It is possible to form edges & outside corners using the triangular ledge with versatile panels

INTER-PANEL CONNECTIONS FOR INCREASED TENSILE LOADS

As a rule, only 2 clamps are needed per 2.85 m and 3 clamps per 3.30 m formwork height as a tension link between the panels. However, where increased tensile loads are encountered, especially in outside-corner and stop-end configurations, extra clamps are needed.

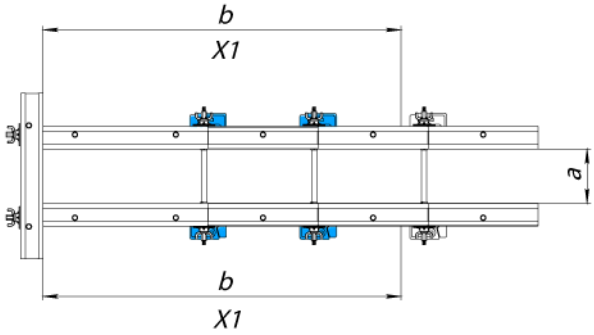
Wall thicknesses up to 40 cm:

For each inter-panel join up to 1.95 m away from outside corner / end of wall:

- 1 extra clamp

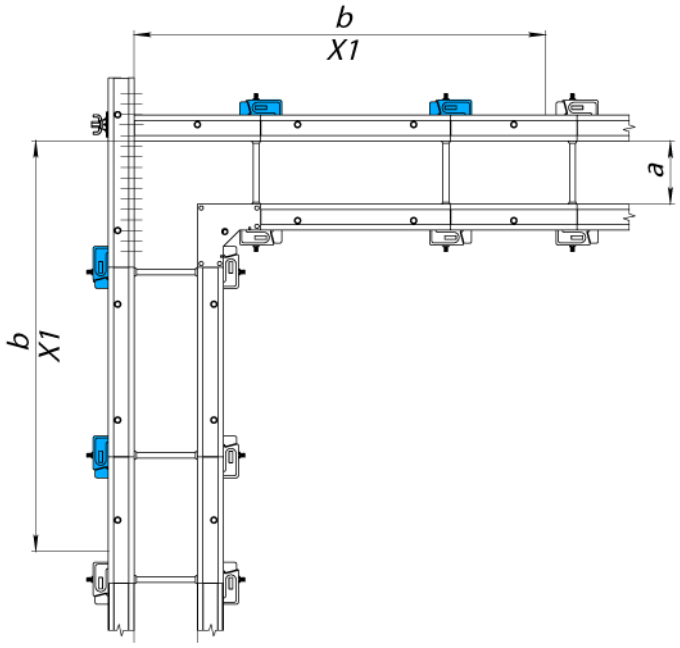
Near stop-ends

a... up to 40 cm
b... up to 1.95 m
X1... 1 extra clamp



Near outside corners

a... up to 40 cm
b... up to 1.95 m
X1... 1 extra clamp

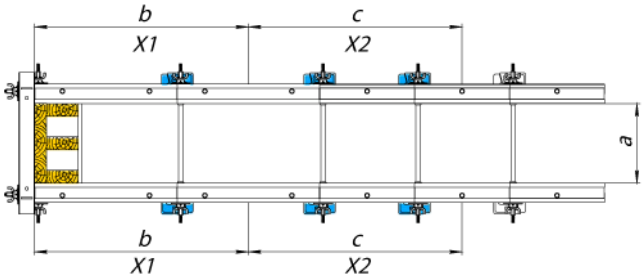


Wall thicknesses up to 60 cm:

For each inter-panel join up to 1.35 m away from outside corner / end of wall:
• 2 extra clamps
For each inter-panel join between 1.35 m and 2.70 m away from outside corner / end of wall:
• 1 extra clamp

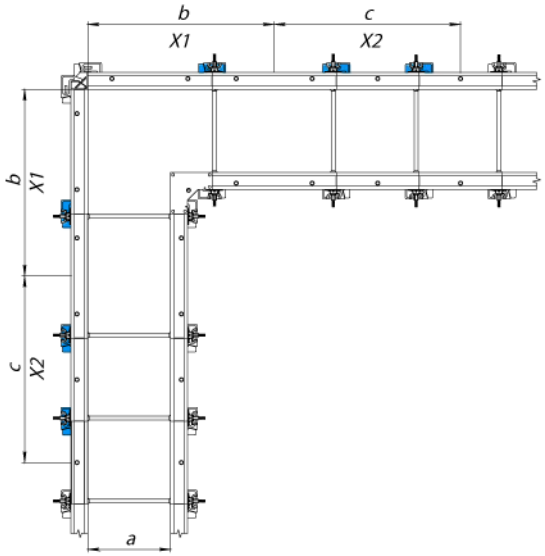
Near stop-ends

a... up to 60 cm
b... up to 1.35 cm
c... from 1.35 m to 2.70 m
X1... 2 extra clamp
X2... 1 extra clamp



Near outside corners

a... up to 60 cm
b... up to 1.35 cm
c... from 1.35 m to 2.70 m
X1... 2 extra clamp
X2... 1 extra clamp

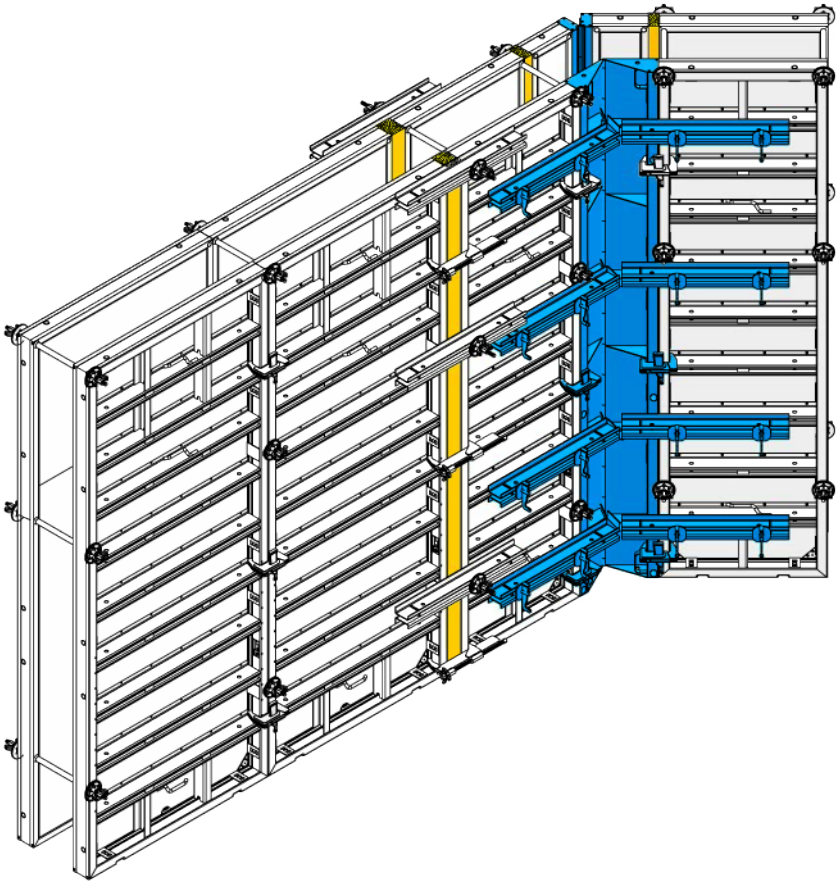


Wall thicknesses up to 75 cm:

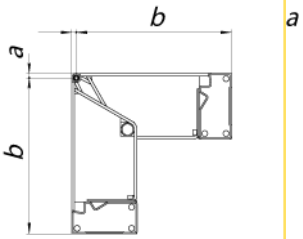
For each inter-panel join up to 1.35 m away from outside corner / end of wall:
• 3 extra clamps
For each inter-panel join between 1.35 m and 2.70 m away from outside corner / end of wall:
• 2 extra clamps
For each inter-panel join between 2.70 m and 4.05 m away from outside corner / end of wall:
• 1 extra clamp

ACUTE & OBTUSE-ANGLED CORNERS

Acute and obtuse angles are solved using the Joint angle internal and Joint angle external.

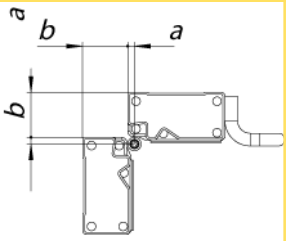


Joint angle internal



a... 0.8 cm
b... 29.2 cm

Joint angle external



a... 0.8 cm
b... 5.5 cm

• From angles of 120° and upwards, Guide plates must be used on the inside corner.
• On outside corners, Guide plates must be used on the outside corner.
• Where there are closures, provide extra Guide plates as shown in the section headed «Length adjustment using closures».
• For details regarding extra inter-panel connections on outside corners (for increased tensile loads), see the section headed «Inter-panel connections for increased tensile loads».

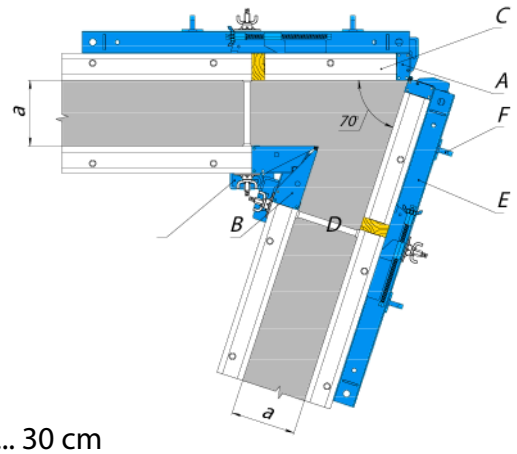
Number of Guide plates needed in the height:

Height of Joint angle	Number of Guide plates
1.35 m	4
2.70 m	6
2.85 m	6
3.00 m	8
3.30 m	8

Number of clamps needed in the Joint angle external:

Height of Joint angle external	Number of clamps
1.35 m	4
2.70 m	6
2.85 m	8
3.00 m	8
3.30 m	10
3.30 m	10

70° (60°) - 135° angles, with Joint angles

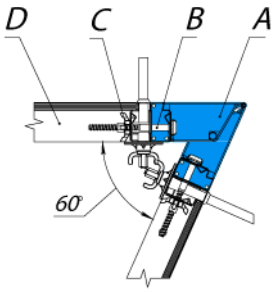


a... 30 cm

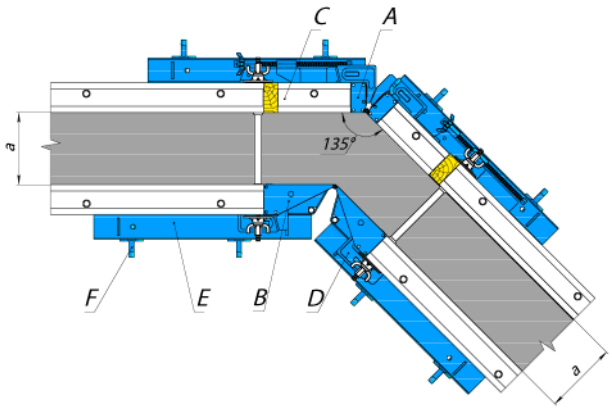
(A) Joint angle external Varimax
(B) Joint angle internal Varimax
(C) Framed panel 0.60 m
(D) Clamp device Varimax
(E) Guide plate
(F) Contact device

Pressure of fresh concrete	Max. width of panel next to Joint angle external
60 kN/m^2	90 cm
80 kN/m^2	60 cm
In addition, closures of up to max. 15 cm are allowed.	

Where Connection screws are used instead of the Clamp devices in the Joint angle internal, an angle of 60° is also possible.

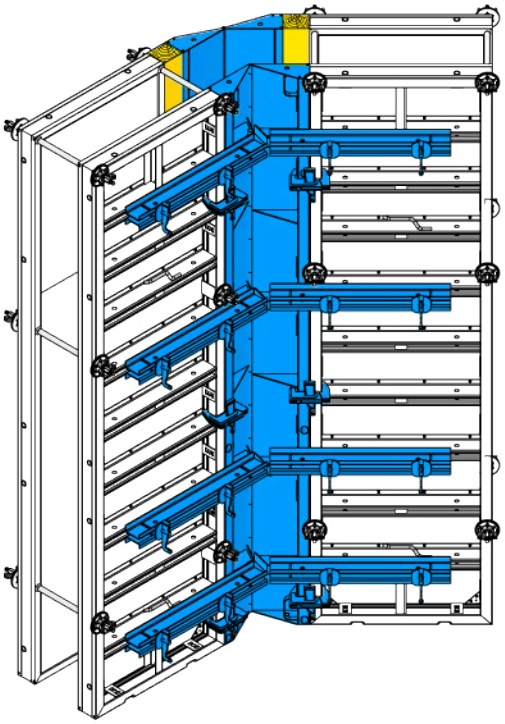


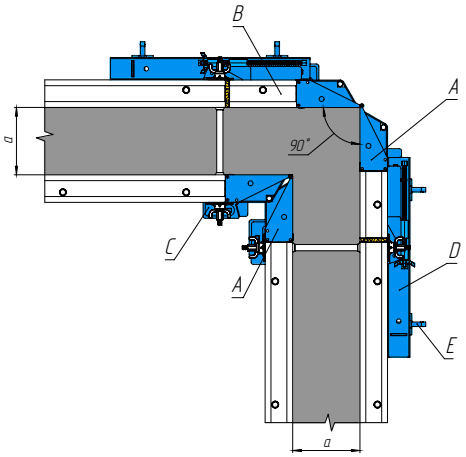
(A) Joint angle internal Varimax
(B) Connection screw
(C) Star--shaped nut
(D) VArimax panel



(A) Joint angle external Varimax
(B) Joint angle internal Varimax
(C) Framed panel 0.30 m
(D) Clamp device Varimax
(E) Guide plate
(F) Contact device

90° - 180° angles, with Joint angles internal only

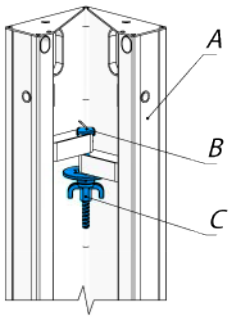




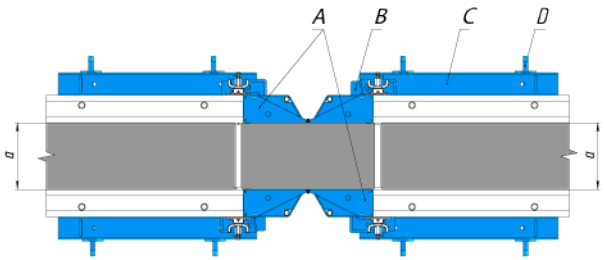
a... 30 cm

(A) Joint angle internal Varimax
(B) Framed panel 0.30 m
(C) Clamp device Varimax
(D) Guide plate
(E) Contact device

The Joint angle internal can be fixed at a 90° angle using a Connection screw and Superplate.



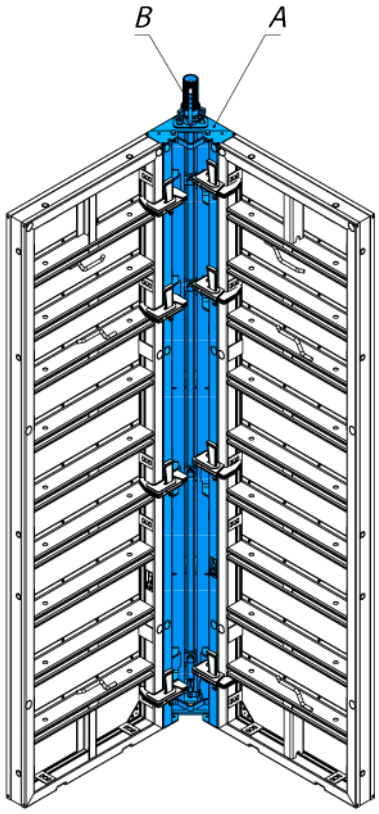
(A) Joint angle internal Varimax
(B) Connection screw
(C) Superplate



a... 30 cm

(A) Joint angle internal Varimax
(B) Clamp device Varimax
(C) Guide plate
(D) Contact device

SHAFT FORMWORK / STRIPPING AID



(A) Stripping corner Varimax
(B) Stripping spindle Varimax

In order to obtain the full available stripping-play, make sure that the Clamp devices are mounted not opposite one another.

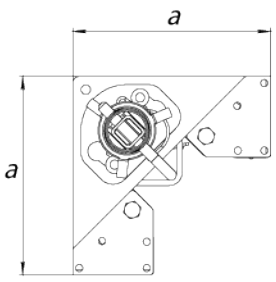
Shaft formwork with Stripping corner

The Stripping corner was designed specifically for use with shaft formwork. With the Stripping corner, the entire formwork unit is detached from the wall, in one piece, and repositioned with the aid of a Lifting hook and a four-part lifting tackle.

Product features:

- No negative impression in the concrete
- Formwork erection and stripping function integrated in the inside corner using the Stripping spindle
- The entire shaft formwork is repositioned in one piece

Stripping corner Varimax



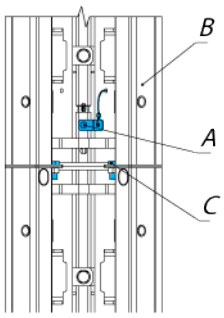
a=30 cm

Number of clamps needed:

Height of Stripping corner	Number of clamps
1.35 m	4
2.70 m	6
2.85 m	6
3.00 m	8
3.30 m	8

Vertically stacking the Stripping corner:

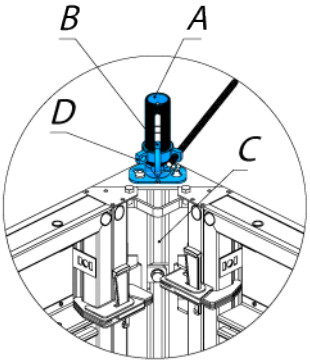
- Pull out the coupling bolt.
- Manoeuvre the Stripping corner into place so that it is flush with the one below it.
- Push the coupling bolt back in.
- Bolt the Stripping corners together with 2 hexagonal bolts M16x45 .



(A) Coupling bolt
(B) Stripping corner Varimax
(C) Hexagonal bolt M16x45

Mounting the Stripping spindle:

- Place the spindle on the push-rod.
- Position the nut between the holes in the push-rod and bolt in place with the fastening clamp.

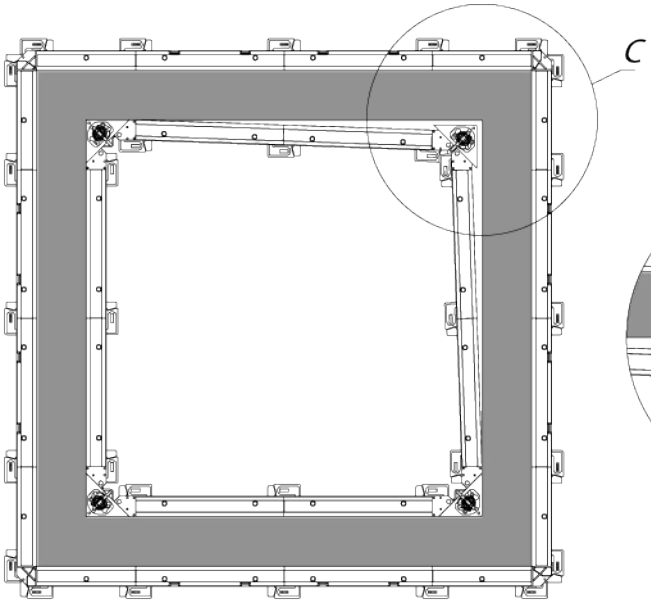


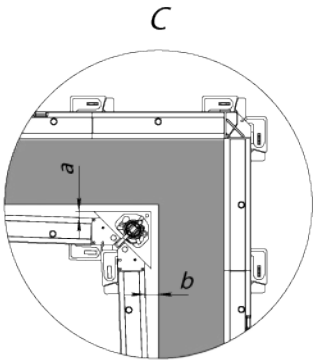
(A) Stripping spindle Varimax
(B) Fastening clamp
(C) Push-rod
(D) Nut

Operating the spindle:

- Stripping = Turn the nut anti-clockwise
- Erecting = Turn the nut clockwise

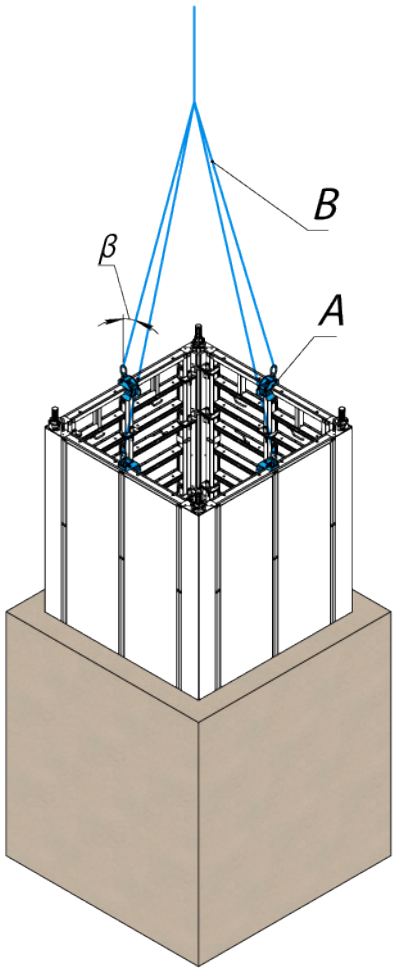
Stripping play:





a... 3.0 cm

b... 6.0 cm

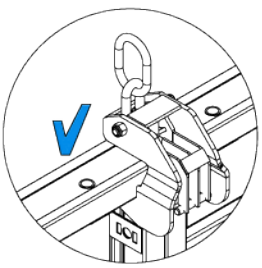


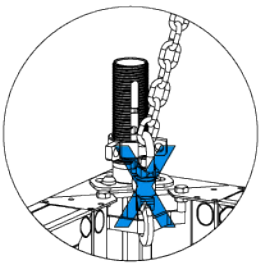
Lifting by crane:

(B) Four-part lifting tackle

The shaft formwork may only be reset using Lifting hooks. The crane hook on the Stripping corner is not allowed to be used for lifting the shaft formwork.

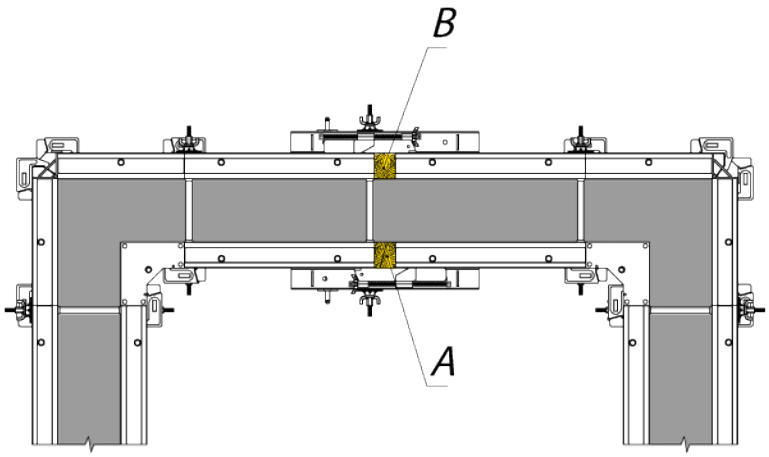
Permitted weight of the shaft formwork:
4000 kg with 4 Lifting hooks

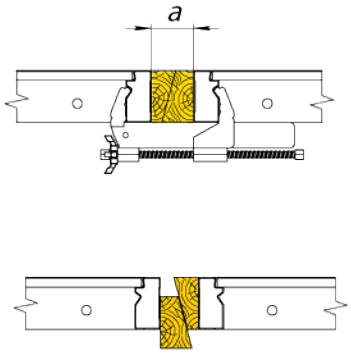




Facilitating stripping with the stripping timber

The diagonally cut stripping timber makes quick work of striking inside-formwork in narrow cross-sections such as lift-shafts or stair-wells.





(A) Inside - stripping timber
(B) Outside - fitting timber

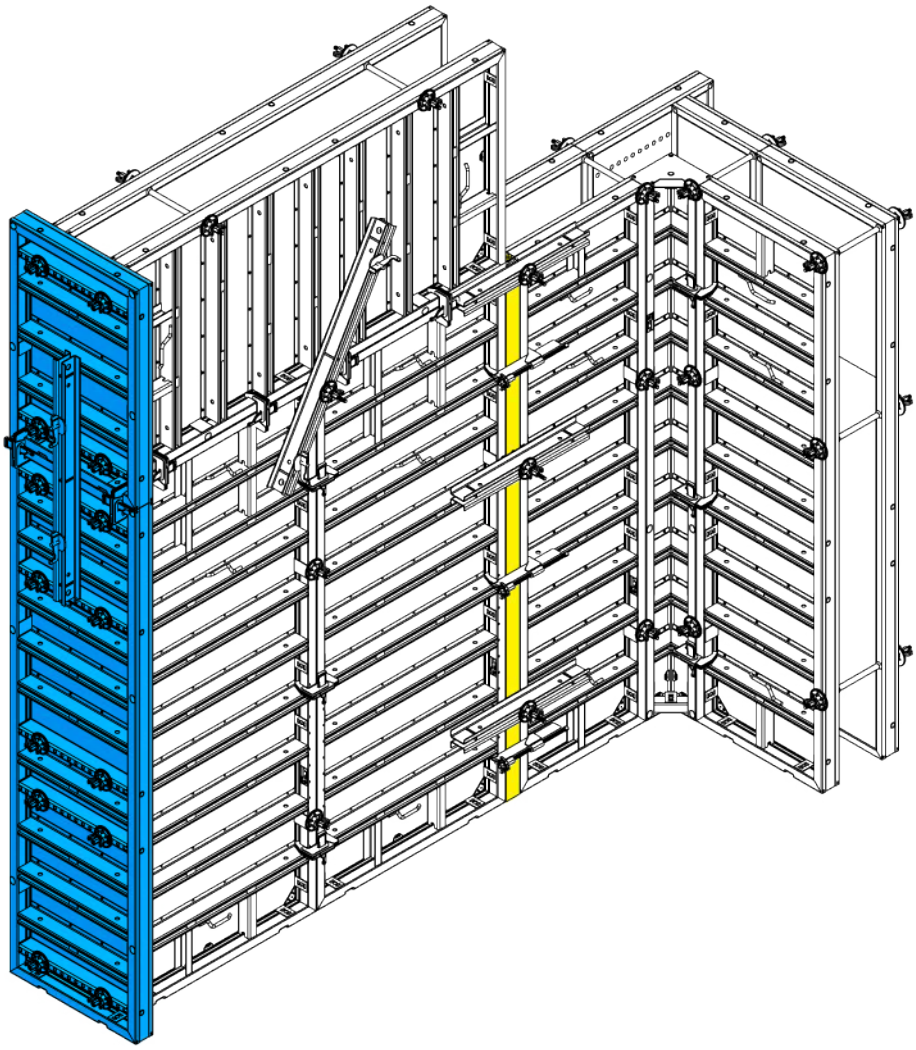
a... 10 cm

STOP-END FORMWORK

There are 2 possible ways of forming stop-ends:
- with Versatile panels
- with Guide plates

For details regarding inter-panel connections near stop-ends (for increased tensile loads), see «Inter-panel connections for increased tensile loads».

With Versatile panels



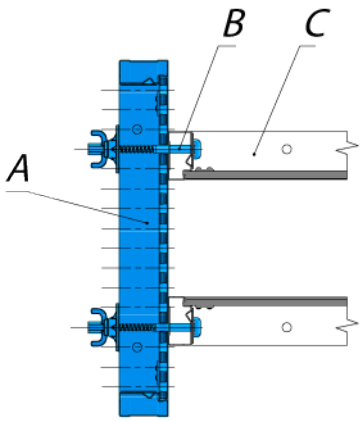
The Versatile panels are mounted using Connection screws and Superplates.

Required numbers of Connection screws and Superplates:

Height of panel	Number of screws
0.90 m	4
1.35 m	4
2.70 m	8
2.85 m	8
3.00 m	10
3.30 m	10

Versatile panel 90 cm

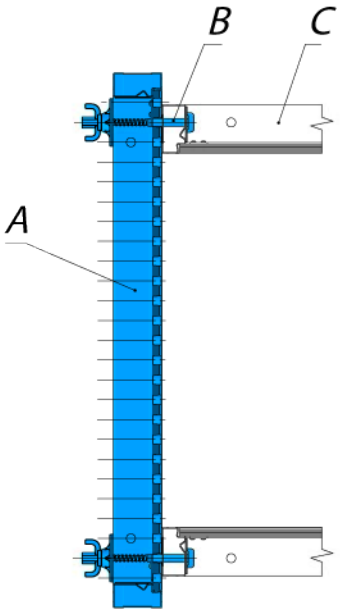
The continuous 5 cm hole-grid makes it possible to form stop-ends on walls of:
• up to 60 cm thick



(A) Versatile panel 90 cm
(B) Connection screw & Superplate
(C) Frame panel 90 cm width or less

Versatile panel 135 cm

The continuous 5 cm hole-grid makes it possible to form stop-ends on walls of:
• up to 75 cm thick
• up to 105 cm thick, if the concrete pressure is reduced



(A) Versatile panel 135 cm
(B) Connection screw & Superplate
(C) Frame panel 90 cm width or less

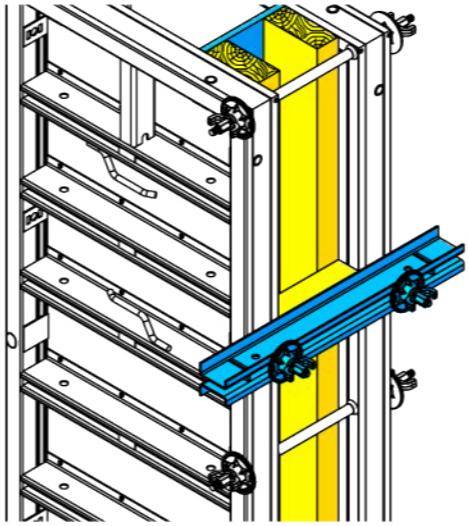
With Guide plates

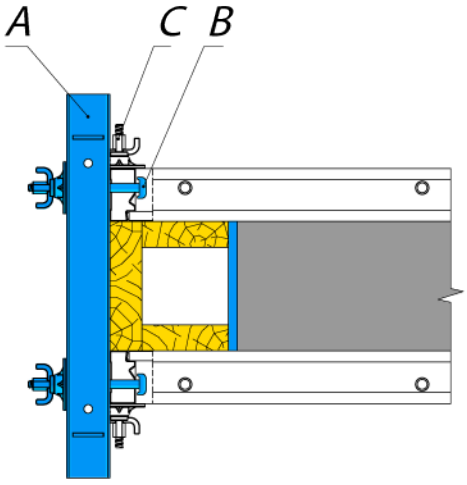
Guide plates make it possible to form stop-ends continuously across any thickness of wall.

There are 2 possible ways of fastening the Guide plates:
- with connection screws
- with stop-end ties

Connection screws

The Guide plates are mounted using Connection screws and Superplates fixed through the cross boreholes in the panels.

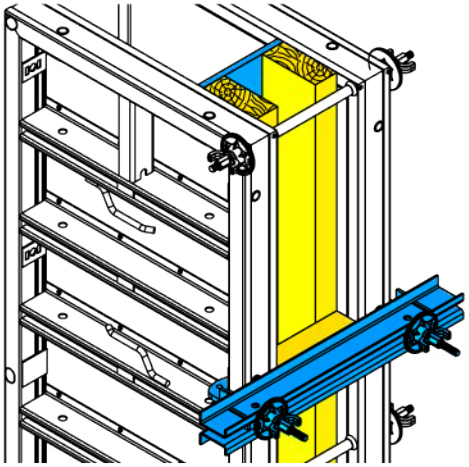


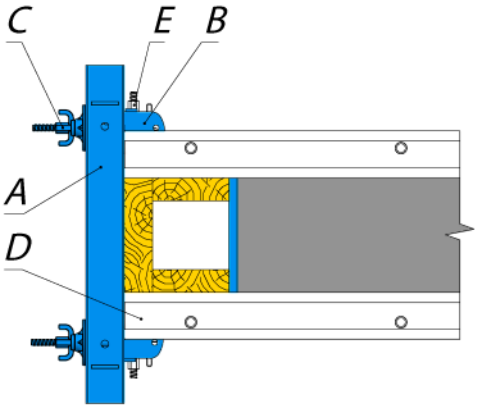


(A) Guide plate
(B) Connection screw & Superplate
(C) Tie-rod 15.0 mm

Stop-end ties

The Guide plates or Walings 12 are fastened using Stop-end ties and Superplates. This enables you to form stop-ends continuously, even across large thicknesses of wall.





(A) Guide plate or Waling 12
(B) Stop-end tie
(C) Superplate
(D) Varimax panel
(E) Tie-rod 15.0 mm

In order to ensure uniform load transfer, the Stop-end ties should be fitted in the middle (between 2 cross-profiles) wherever possible.

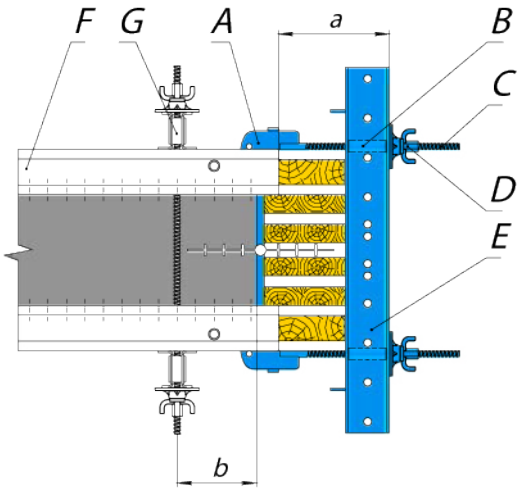
Required numbers of Guide plates for upright panels:

Height of panel: 2.70 m			
Pressure of fresh concrete 60 kN/m^2		Pressure of fresh concrete 80 kN/m^2	
Wall thickness	Guide plate	Wall thickness	Guide plate
up to 40 cm	2	up to 30 cm	2
up to 50 cm	3	up to 35 cm	3
up to 60 cm	4	up to 45 cm	4
		up to 60 cm	5

Required numbers of Guide plates for horizontal panels:

Horizontal panels		
Width of panel	Wall thickness	Guide plate
up to 45 cm	up to 60 cm	1
over 45 cm		2

Stop-ends with joint-sealing tapes



b ... max 20.0 cm

- (A) Stop-end tie
- (B) Rod connector 15.0
- (C) Tie-rod 15.0 mm
- (D) Superplate
- (E) Guide plate or Waling 12
- (F) Versatile panel
- (G) Guide plate

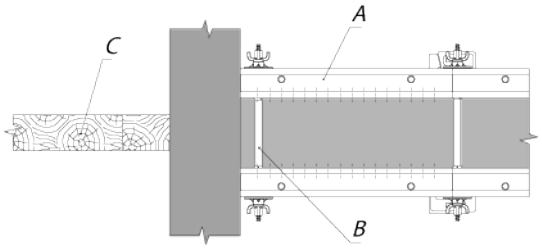
	Dimension «a»
Waling 12	min. 25 cm
Guide plate	min. 36 cm

WALL JUNCTIONS, OFFSETS AND STEPS

Connecting to existing walls

Right-angled connections

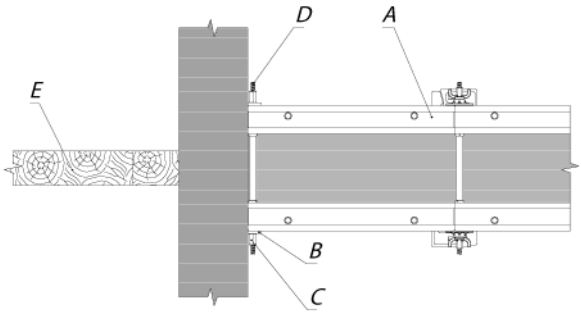
with a Versatile panel



(A) Versatile panel Varimax
(B) Tie-rod 15.0 mm
(C) Shoring

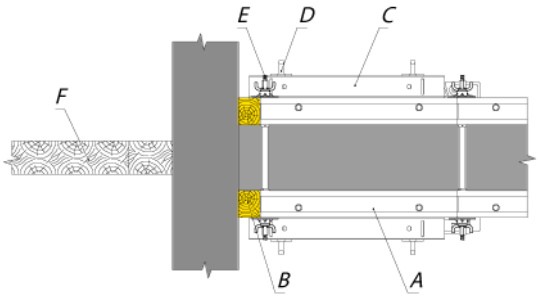
Versatile panel 2.70 m: 3 form-ties are required, in the first hole of each perforated profile
Versatile panel 3.30 m: 4 form-ties are required, in the first hole of each perforated profile

with Framed panel and Pressure plate



(A) Framed panel Varimax
(B) Pressure plate
(C) Hexagon nut
(D) Tie-rod 15.0 mm
(E) Shoring

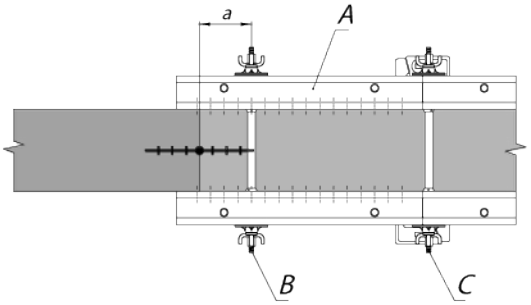
with Framed panel and squared timber



(A) Framed panel Varimax
(B) Squared timber (max. 15 cm)
(C) Guide plate
(D) Contact device
(E) Tie-rod 15.0 mm
(F) Shoring

In-line connections

with a Versatile panel

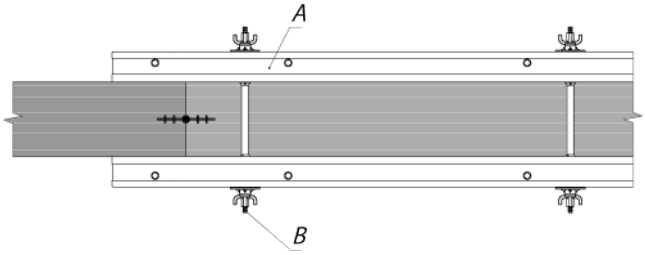


a ... max. 20 cm

(A) Versatile panel Varimax
(B) Tie-rod 15.0 mm
(C) Tie-rod 15.0 mm

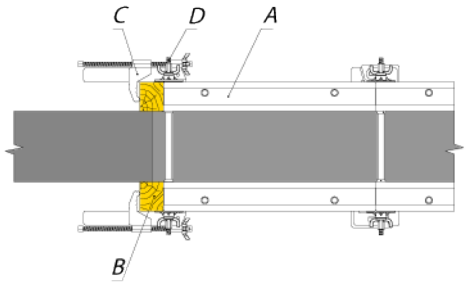
Versatile panel 2.70 m: 3 form-ties are required, in the first hole of each perforated profile
Versatile panel 3.30 m: 4 form-ties are required, in the first hole of each perforated profile

with Framed panel 2.40



(A) Framed panel 2.40x2.70 m (2.85; 3.00; 3.30)
(B) Tie-rod 15.0 mm

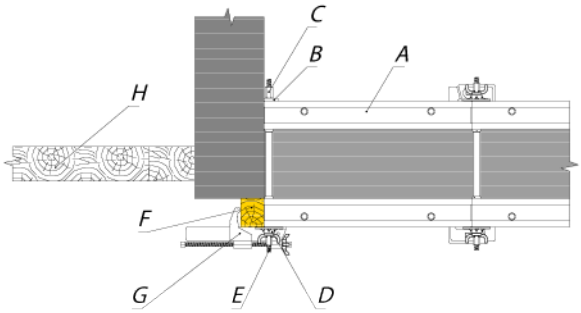
with Framed panel and squared timbers



(A) Framed panel varimax
(B) Squared timber
(C) Adjustable clamp Varimax
(D) Tie-rod 15.0 mm

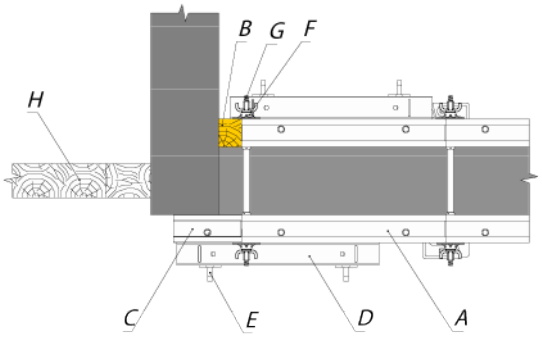
Corner connections

without closure



(A) Framed panel Varimax
(B) Pressure plate
(C) Hexagon nut
(D) Superplate
(E) Tie-rod 15.0 mm
(F) Squared timber
(G) Adjustable clamp Varimax
(H) Shoring

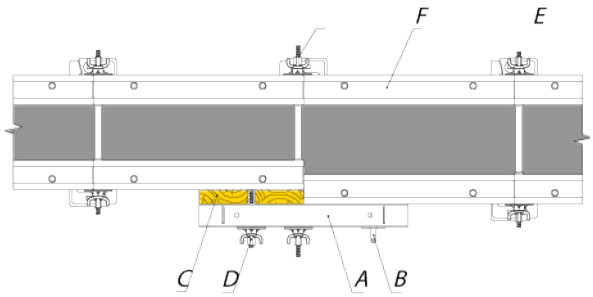
with closure



(A) Framed panel Varimax
(B) Squared timber (min 4 cm up to max 15 cm)
(C) Framed panel 0.30 m Varimax
(D) Guide plate
(E) Contact device
(F) Superplate
(G) Tie-rod 15.0 mm
(H) Shoring

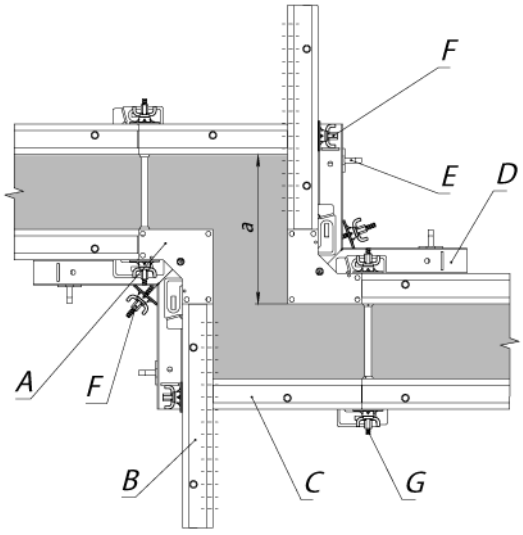
Wall offsets

one-sided wall offset up to max. 12 cm



(A) Guide plate
(B) Contact device
(C) Squared timber
(D) Superplate & Connection screw 10-25
(E) Tie-rod 15.0 mm
(F) Framed panel Varimax

Wall steps

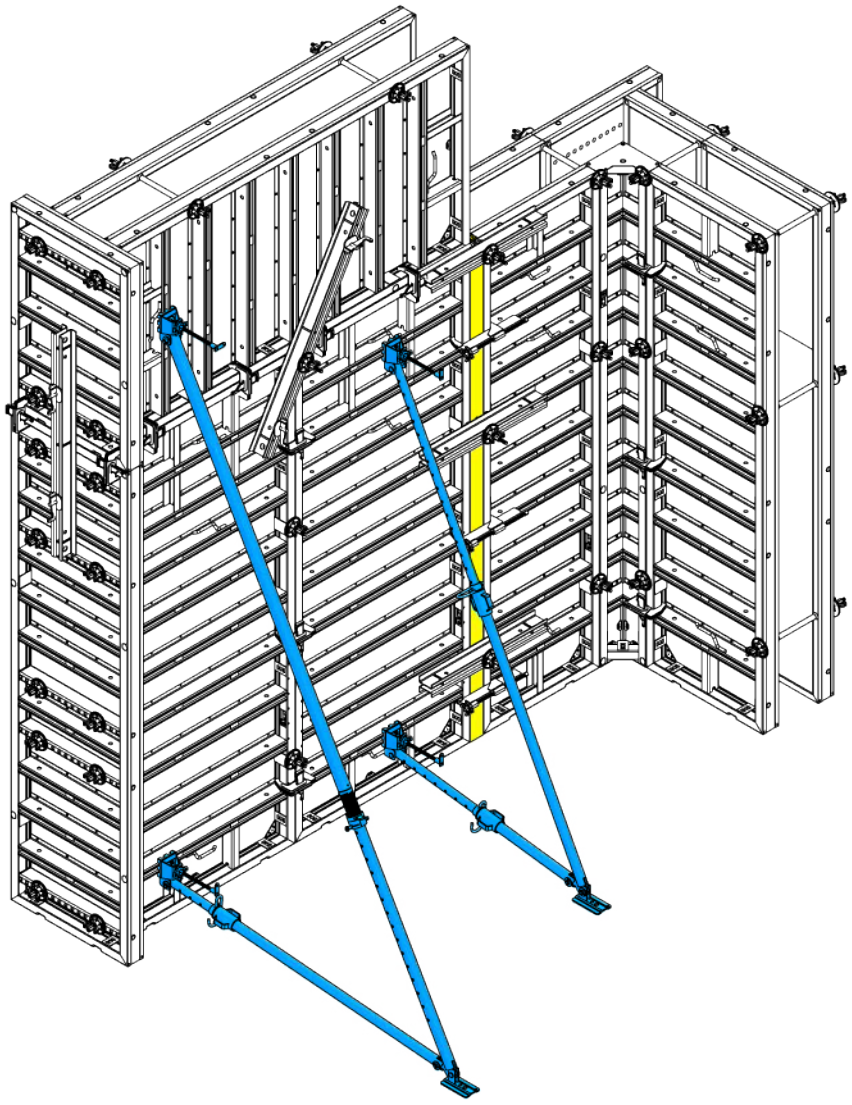


a ... 35 to 90 cm

(A) Internal angle Varimax
(B) Versatile panel Varimax
(C) Framed panel Varimax
(D) Corner guide plate
(E) Contact device
(F) Superplate & Connection screw
(G) Tie-rod 15.0 mm

PLUMBING ACCESSORIES

Supporting struts 340, Supporting struts 540 and Adjustable plumbing struts secure the elements against wind loads, and make it easier to plumb and align the formwork.



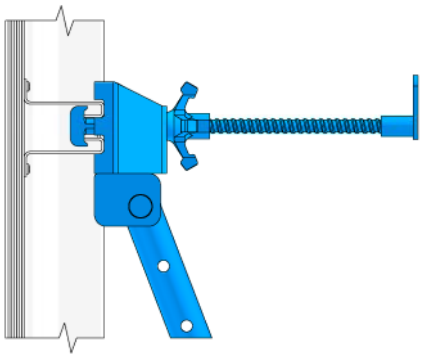
The formwork elements must be held stable in every phase of the construction work.

Number of struts per 2.50 m width of gang-form:

Formwork height	Supporting strut		Adjustable plumbing strut
	340	540	
3.30 m	1		
4.80 m		1	
5.40 m	1	1	
6.00 m	1	2	
6.75 m	2	2	
8.10 m	1	2	1

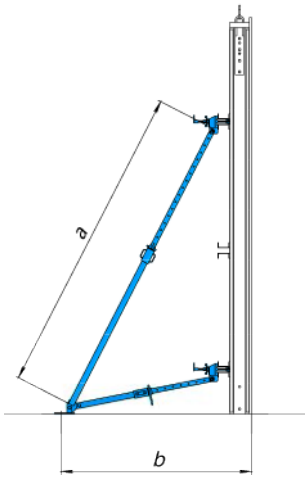
The values apply up to a height of 20 m. For heights over 20 m, the correct spacing of the supports must be calculated as required by the higher wind loads.

Connection to the waling profile



Supporting strut 340

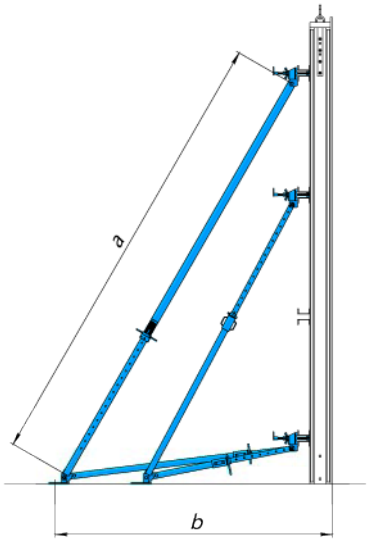
Retractable brace length, m	Allowable load	
	Pressure, kN	Stretching, kN
2,00	22,0	15,0
2,20	21,0	
2,40	17,5	
2,60	14,5	
2,80	12,5	
3,00	11,0	
3,20	9,5	
3,40	8,0	



a ... 193.0 - 340.9 cm
b ... 128.3 - 181.6 cm

Supporting strut 540

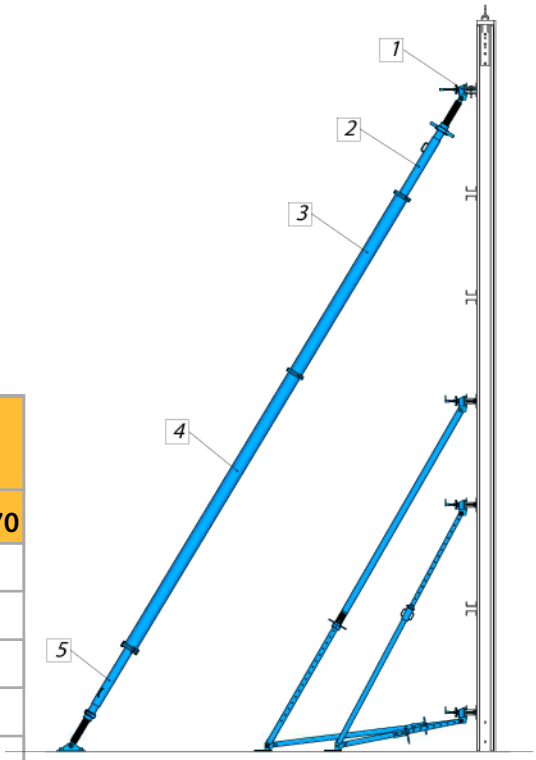
Retractable brace length, m	Allowable load	
	Pressure, kN	Stretching, kN
3,20	30,0	30,0
3,40	29,0	
3,60	27,0	
3,80	25,0	
4,00	21,5	
4,20	19,0	
4,40	16,5	
4,60	15,0	
4,80	13,5	
5,00	12,0	
5,20	11,0	
5,40	9,0	
5,50	7,0	



a ... 309.0 - 550.0 cm
b ... 224.2 - 281.6 cm

Adjustable plumbing strut

Consist of:
1 - Spindle head
2 - Spindle element without end-hinge
3 - Extension strut 2,40 m
4 - Extension strut 3,70 m
5 - Spindle element with end-hinge



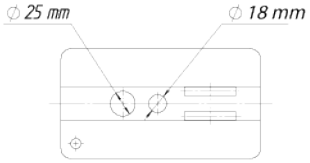
Length L, m	Allowable axis load on pressure, kN			Intermediate parts	
	min. L	half L	max. L	short 2,40	long 3,70
6,0-7,4	40,0	40,0	27,8	-	1
7,1-8,5	40,0	38,2	24,3	2	-
8,4-9,8	40,0	35,6	21,7	1	1
9,7-11,1	40,0	31,7	19,0	-	2
10,8-12,2	40,0	27,8	16,1	2	1
12,1-13,5	34,2	24,1	13,4	1	2
13,4-14,8	27,1	21,5	12,2	-	3
14,5-15,9	20,8	17,5	9,5	2	2
	Allowable axis load on tention – 40 kN				

The spindle head must be secured to the waling with a connecting pin and spring cotter. The length of the adjustable plumbing strut should be the same as the height of the formwork to be supported.

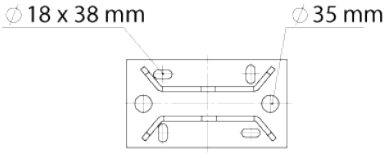
Footplate and anchorage

- Drilled holes in the footplates
- Anchor the plumbing accessories in such a way as to resist tensile and compressive forces.
- Required load-bearing capacity of anchor bolt is min. 13.5 kN
- Required concrete strength is 25 N/mm^2 (concrete C20/25)
- The anchoring bolt can be re-used few times over.

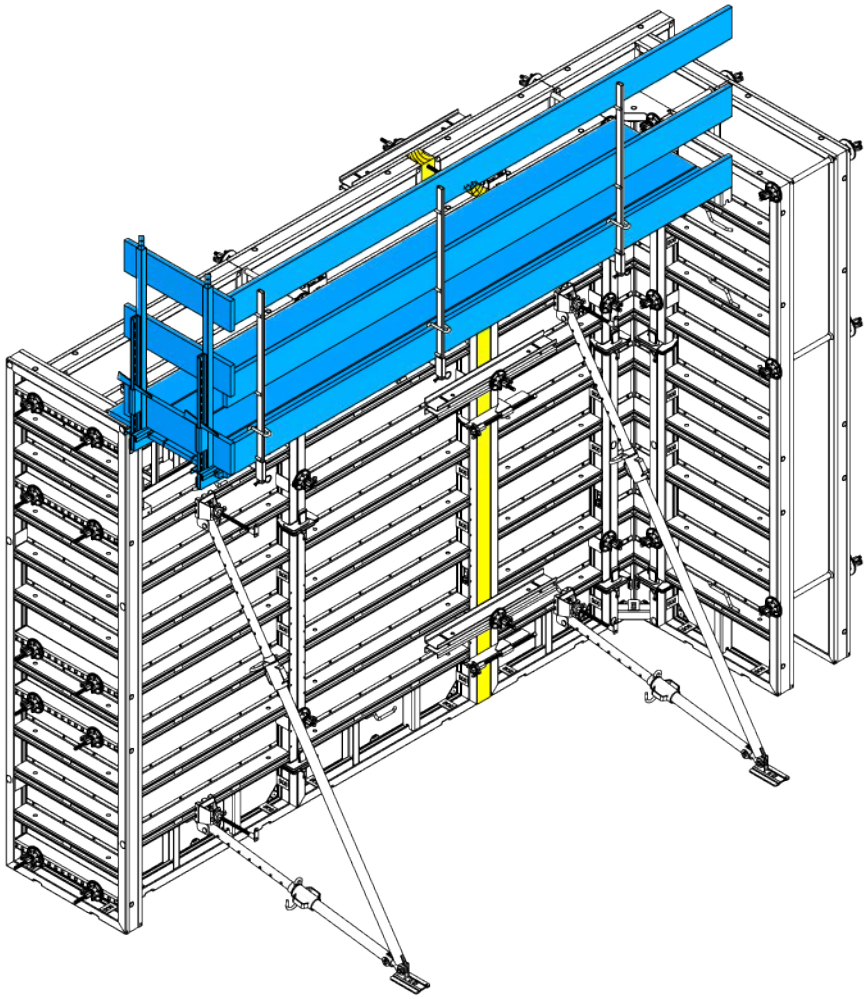
Supporting strut 340; 540



Adjustable plumbing strut



POURING PLATFORMS



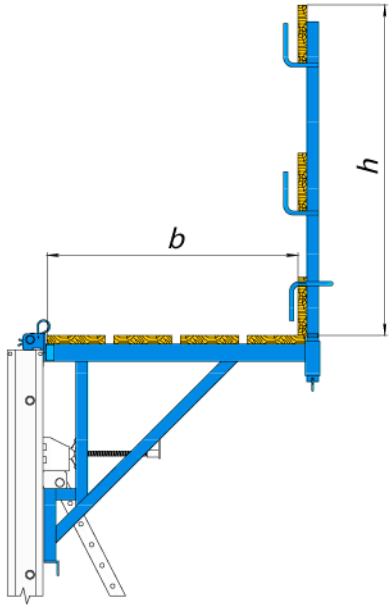
Preconditions for use:

• Only fix the pouring platform onto formwork constructions that are sufficiently stable to transfer the expected loads.

• Shore the formwork in a windproof manner when erecting it and when it is temporarily placed in the standing position.

• Ensure that the formwork gang has sufficient stiffness.

Wall bracket Varimax



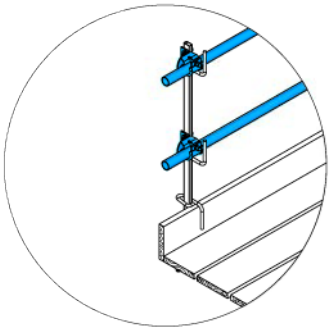
b ... 87 cm
h ... 103 cm

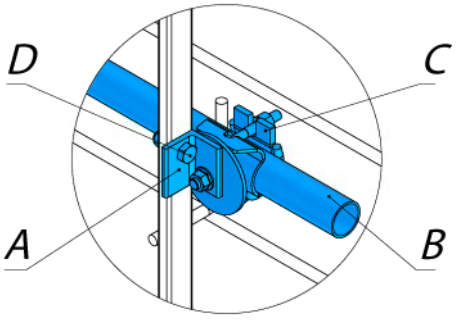
- Wall bracket as a part of pouring platforms has working width of 90 cm. These pouring platforms can easily be mounted by hand.
- Max. influence width: 2.00 m
- Permitted live load: 1.5 kN/m^2

Floor decking

- Deck-boards min. 20x5 cm
- Guard-rail boards min. 20x3 cm

Using scaffolding tubes

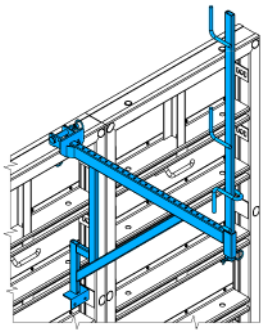




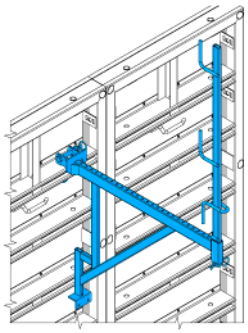
(A) Scaffold tube connector
(B) Scaffolding tube 48.3 mm
(C) Screw-on couplers 48 mm 50
(D) Hexagon screw M14x40 + hexagon nut M14

Fixing to the panel

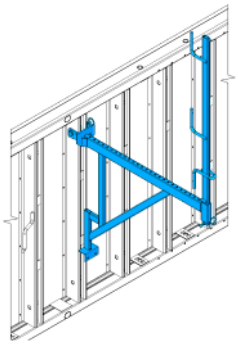
In the frame profile

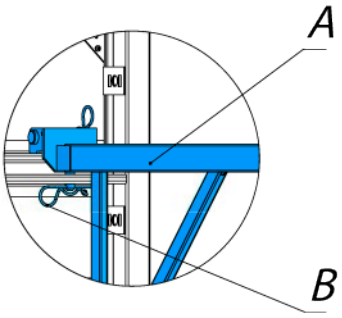


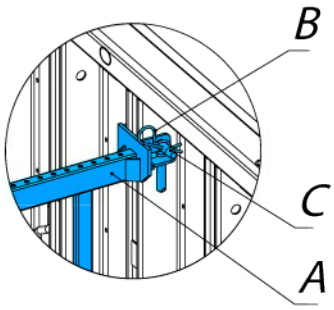
In the cross profile



In the cross profile on horizontal panels

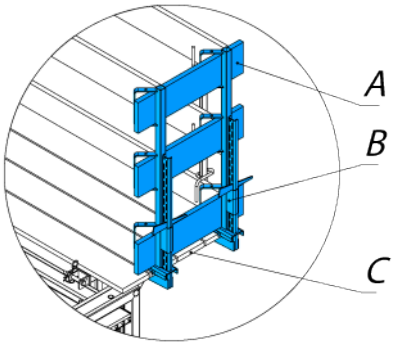






(A) Wall bracket Varimax
(B) Spring cotter
(C) Bolt

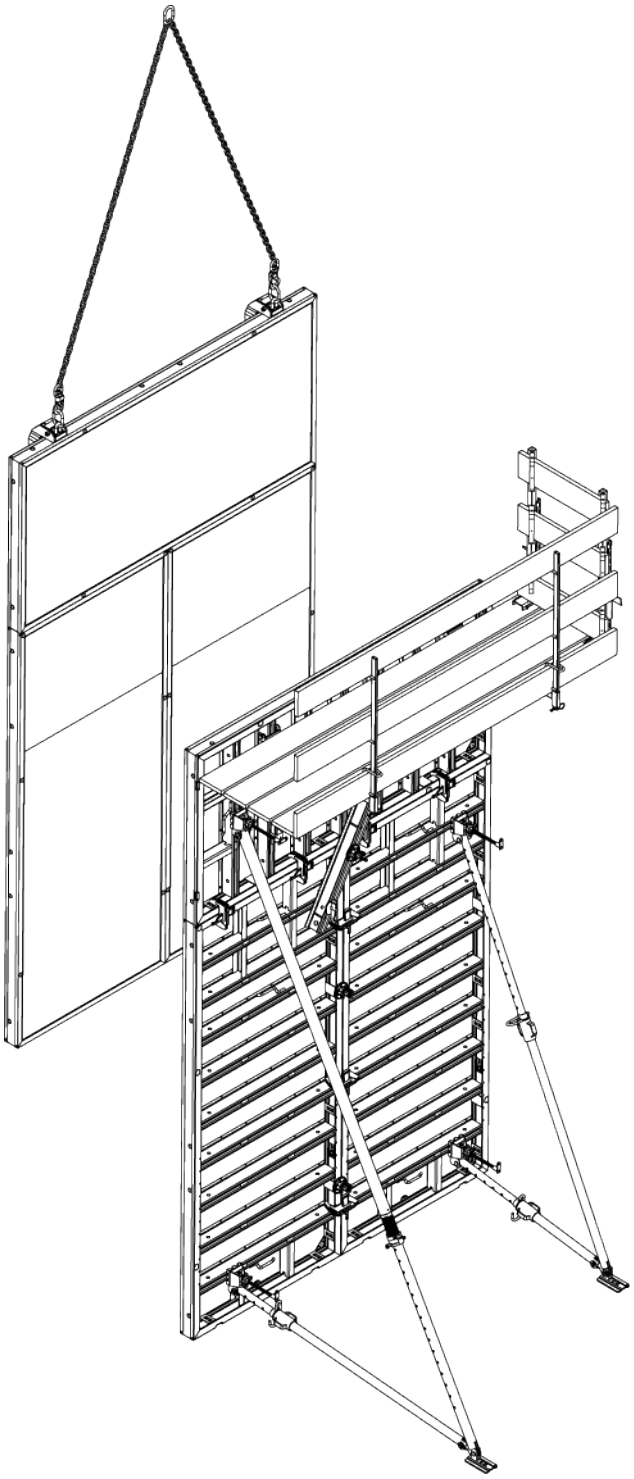
Guide rail clamp

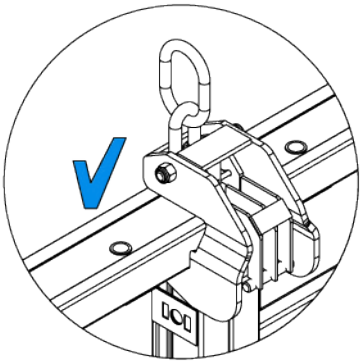


(A) Guard-rail board min. 15x3 cm
(B) Guide rail clamp
(C) Pouring platform

RESETTING BY CRANE

Safe crane-handling of Frame panel is possible using the Lifting hook. The Lifting hook locks automatically after being hung into place.



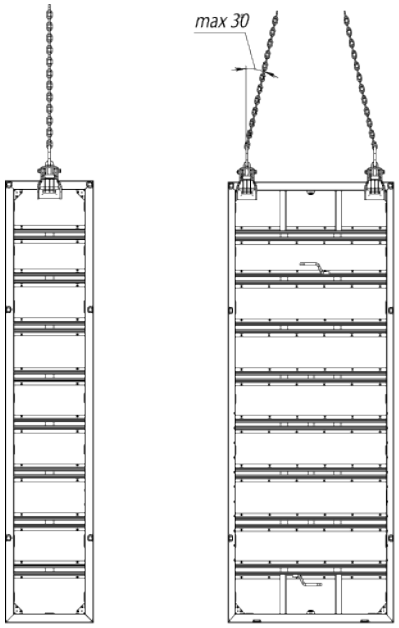


Max. capacity: 1000 kg per Lifting hook

Positioning the Lifting hooks

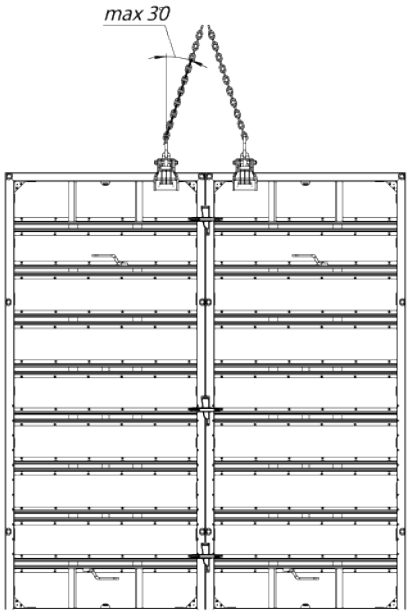
Single panels

Always place the Lifting hook over one of the welded-on metal plates, to prevent it from sliding from side to side.



Two upright panels

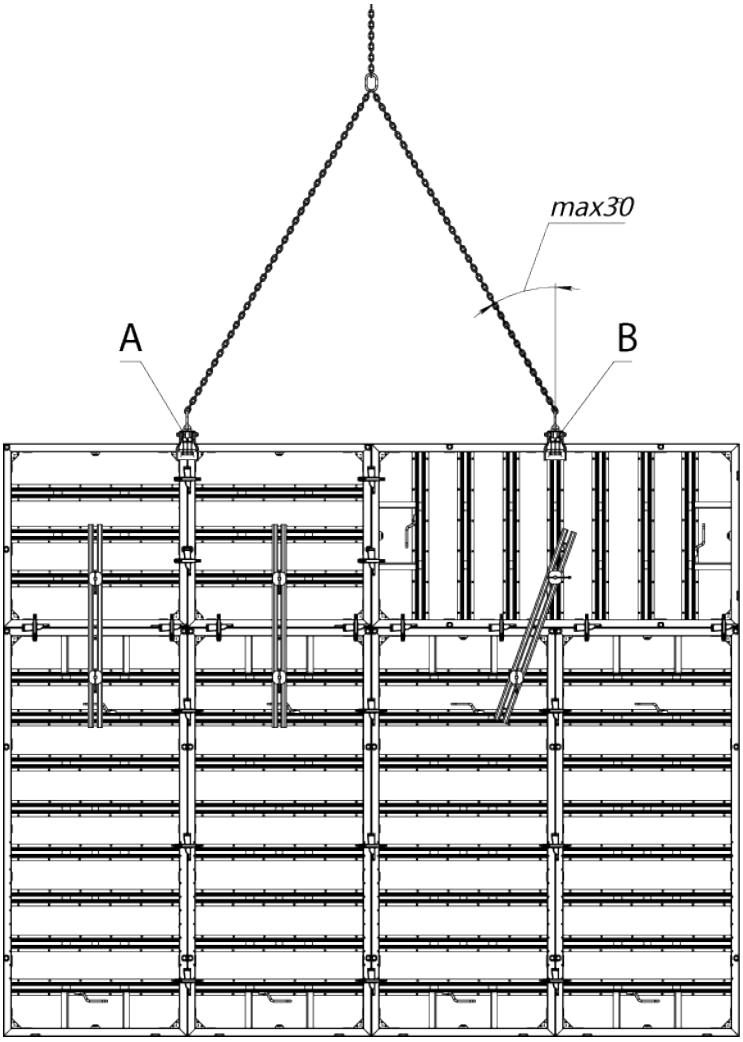
Always place the Lifting hook over one of the welded-on metal plates, to prevent it from sliding from side to side.



Gang-form

Always position the Lifting hook over the inter-panel join (A) , to prevent the hook sliding from side to side.

Exception: On single panels incorporated in the horizontal, the Lifting hook must be placed over a cross profile (B).

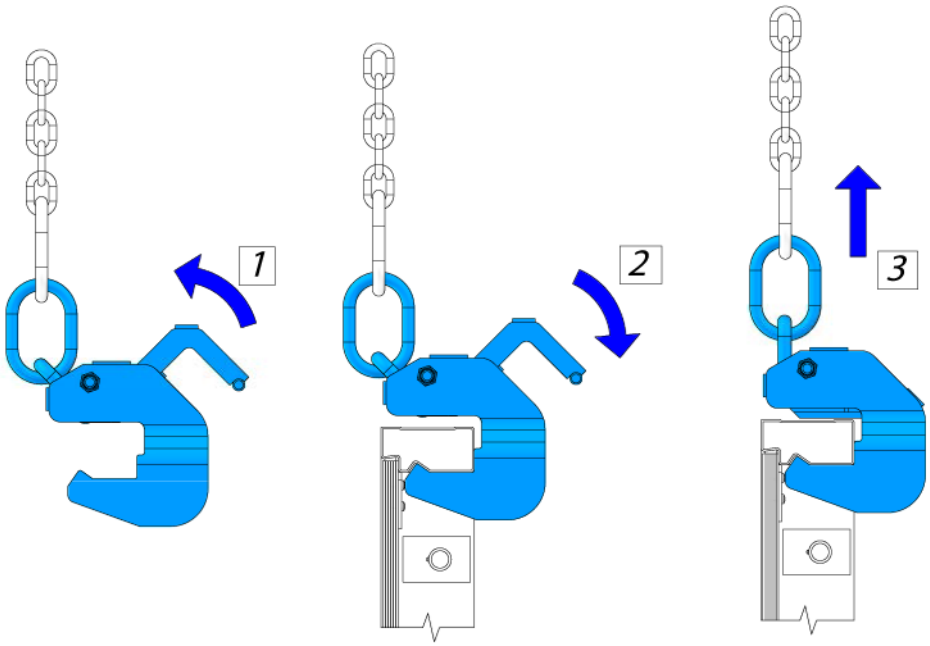


(A) As used on upright panels
(B) As used on horizontal panels

- Suspend the gang-form symmetrically (centre-of-gravity position).
- Spread-angle max. 30°
- Before lifting, remove any loose items from the formwork and platforms, or secure them firmly.

Operation with Lifting hook

- Raise the handle (locking lever) as far as it will go.
- Push the Lifting hook onto the frame profile as far as the rear stop, and close the handle (spring-loaded).
-When the panels are lifted by the crane, a load-dependent locking mechanism is activated.
- Lift the gang-form to its new location.

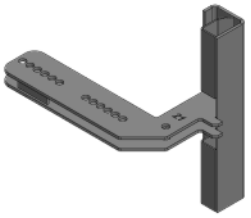


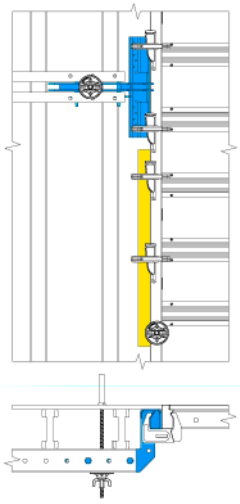
Do a sight-check to make sure that there is a secure form-fit between the Lifting hook and the frame profile!
The handle must be closed!

Risk of crane overload!
When stripping the formwork, never use the crane to break concrete cohesion!

FRAMED FORMWORK VARIMAX WITH LARGE-AREA FORMWORK VERTEX 60

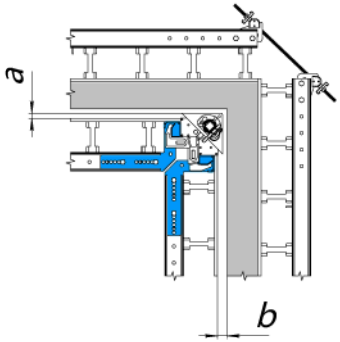
- The «Varimax» frame formwork panels are easily arranged with the large-area formwork Vertex 60 by the use of **transition plate**.





- Transition plate available for plywood 21 mm and 18 mm.

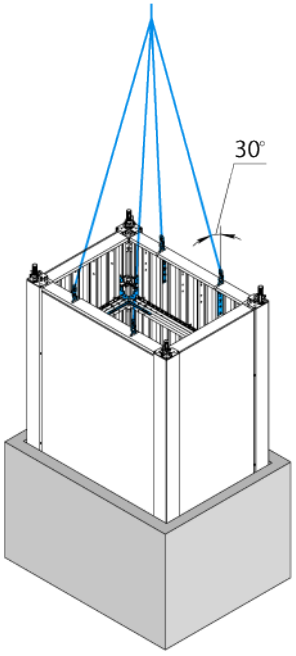
Frame panels, angles, incl. stripping angles, can be used with large-area formwork via transition plate.



a = 30 mm
b = 60 mm

- To make right internal angles and simplify the lift shafts stripping.

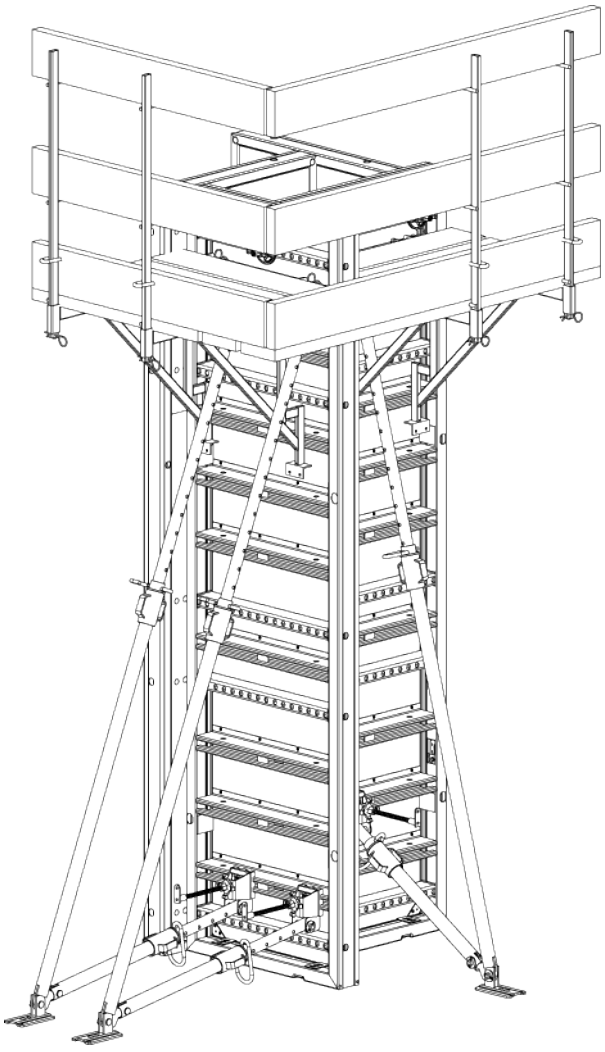
- Frame internal angles can be used for making right internal angles as well.



COLUMN FORMWORK VARIMAX

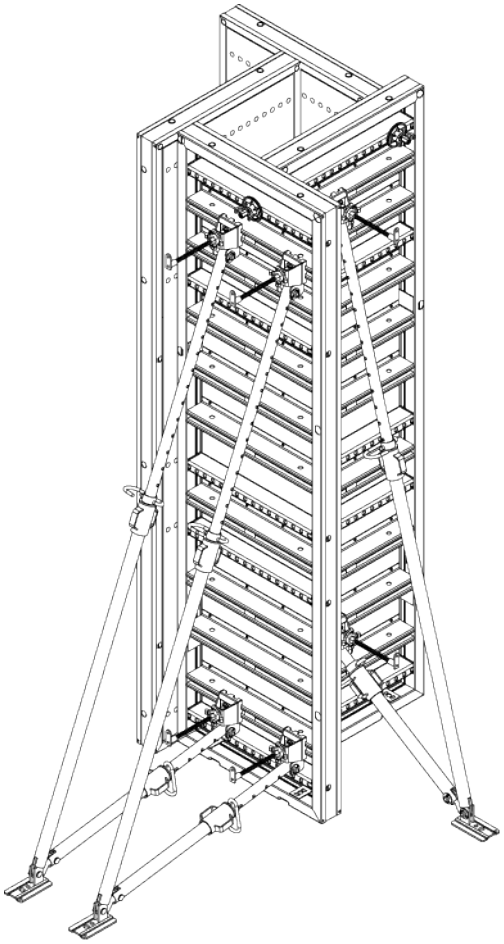
The Varimax versatile panels permit flexible accommodation to column cross-sections of up to 120 cm x 120 cm in 5 cm increments.

Permitted concrete pressure: 80 kN/m²



However, dimensions of 30 cm, 45 cm and 60 cm can also be formed using ordinary Frame panels and External angle (permitted fresh-concrete pressure: 60 kN/m²)

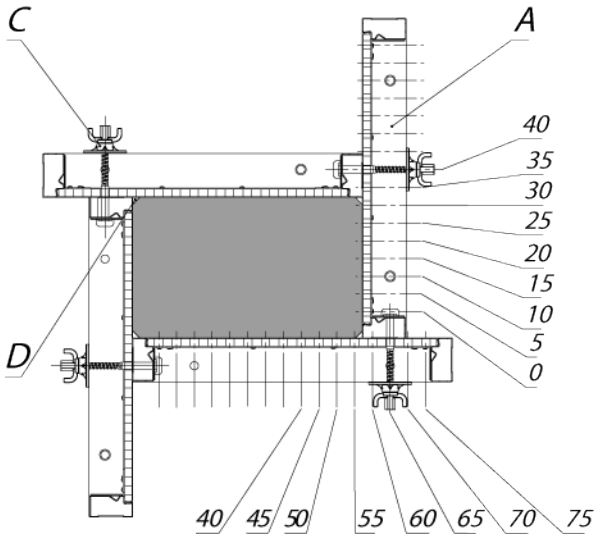
with Versatile panels



- The practical 5 cm hole-grid is ideal for forming columns.
- Cross-section up to 120 x 120 cm.
- By combining panels with heights of 3.30 m, 3.00 m; 2.85 m; 2.70 m, 1.35 m and 0.90 m, a height grid of 30 cm is possible.

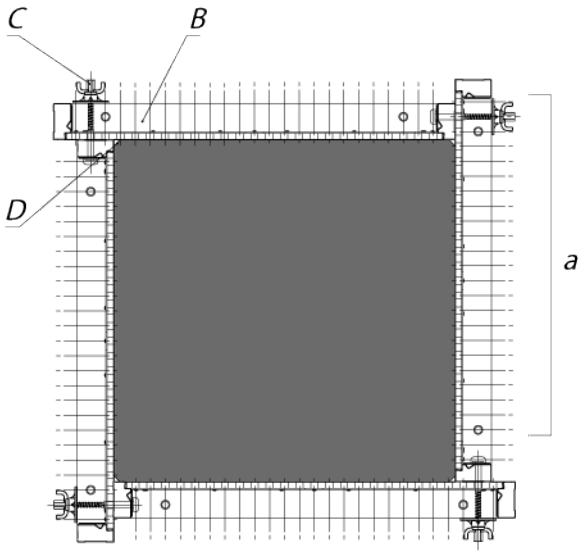
Seal off the unused holes in the form-facing of the Versatile panels with plugs R24.5.

Large rectangular cross-sections can be economically formed by combining the two widths of panel.



Versatile panel 0.90 m

(A) Versatile panel 0.90 m
(C) Superplate & Connection screw
(D) Frontal triangular ledge



Versatile panel 1.35 m

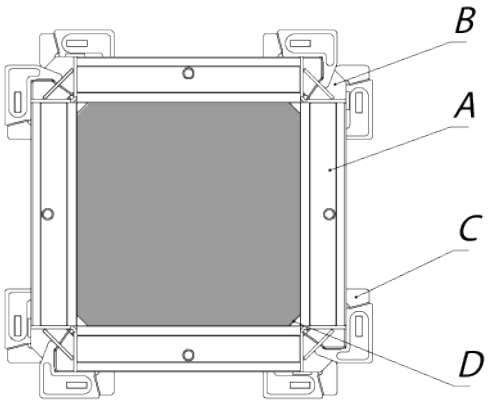
(A) Versatile panel 1.35 m
(B) Supperplate & Connection screw
(D) Frontal triangular ledge

a ... 10 cm to 120 cm (in 5 cm grid)

with External angles and ordinary Framed panels

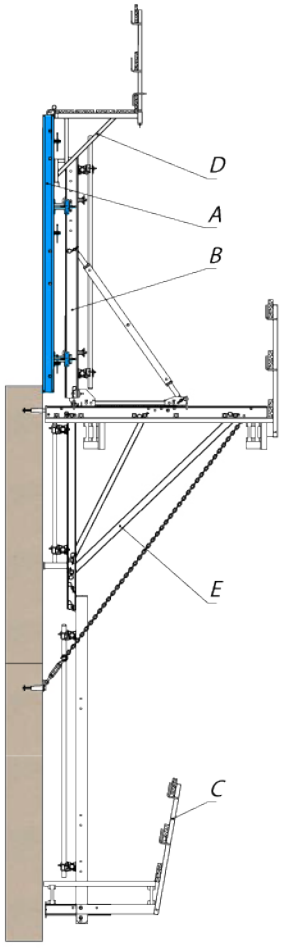
Dimensions of 30 cm, 45 cm and 60 cm can also be formed using External angles and ordinary Framed panels.

Permitted fresh-concrete pressure: 60 kN/m^2



(A) Framed panel Varimax
(B) External angle Varimax
(C) Clamp device Varimax
(D) Frontal triangular ledge

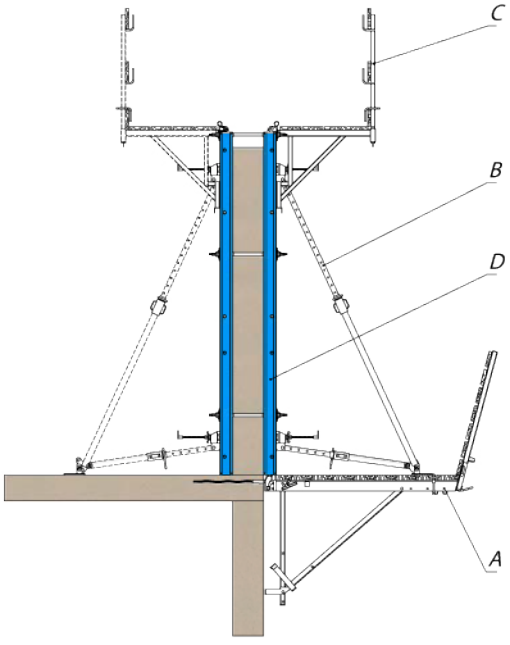
VARIMAX IN CONJUNCTION WITH . . .



Climbing formwork MF

The Climbing formwork MF proves its versatility on all tall structures. The formwork and climbing scaffold are linked together as a single unit which can be repositioned in one single crane cycle.

(A) Varimax panel
(B) Vertical waling 3.00 m
(C) Screw-on-access bracket
(D) Wall bracket Varimax
(E) Climbing bracket



Folding platforms K

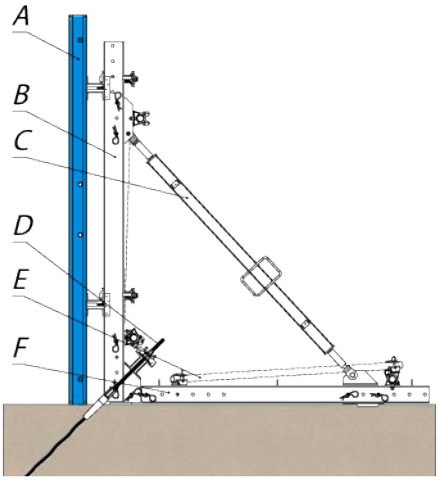
The high capacity of these working and safety scaffolds means that the formwork can safely be stood on the folding platforms.

(A) Folding bracket K
(B) Supporting strut
(C) Wall bracket Varimax
(D) Frame panel

Single sided formwork systems

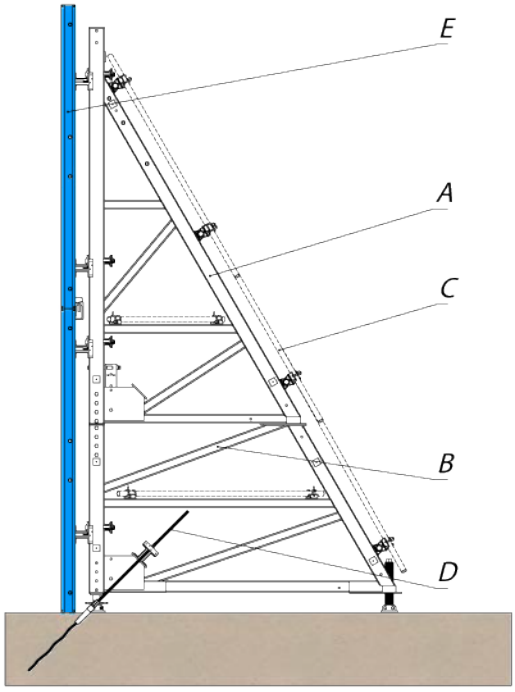
The Adjustable single-side system or Single-side frame system also enable the sturdy Varimax Frame panels to be used as single-sided wall formwork.

Adjustable supporting frames



(A) Varimax panel
(B)Steel section
(C) Spindle strut T12 3.00 m
(D) Tension anchoring
(E) Bracing
(F) Walling 12

Modular supporting frames



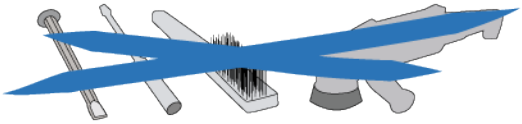
(A) Supporting frame 4.50 m
(B) Attachable frame 1.50 m
(C) Bracing
(D) Tension anchoring
(E) Varimax panel

CLEANING AND CARE OF FORMWORK EQUIPMENT

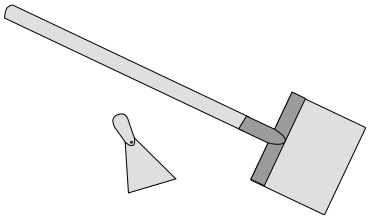
Cleaning

The powder-coating of the frame and the filmfaced sheet greatly reduce the amount of cleaning needed.
In order to keep formwork cleaning costs as low as possible, please observe the following points:

- Do not use any pointed or sharp objects, wire brushes, rotating grinding discs or pan scourers.

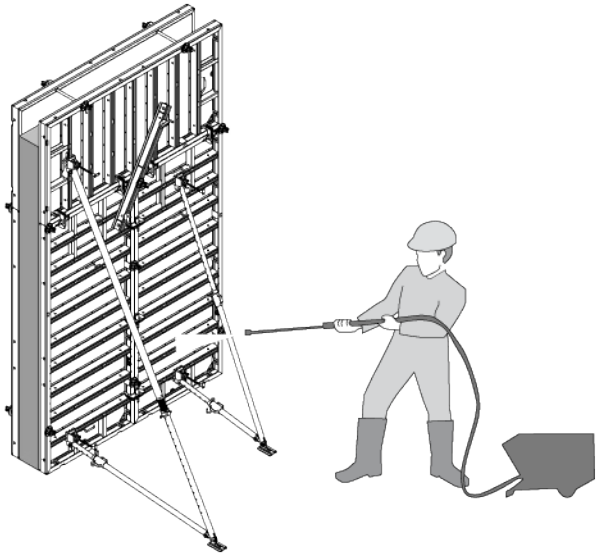


- For removing any concrete remnants, we recommend using a spatula and a concrete scraper.



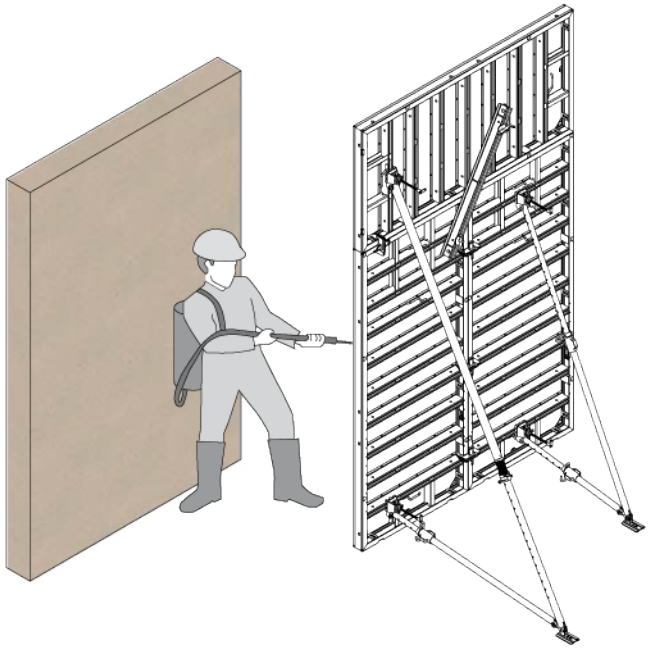
After pouring:

- Immediately remove any blobs of concrete from the back of the formwork, using water (without any added sand).



Immediately after the formwork is struck, or before every pouring operation:

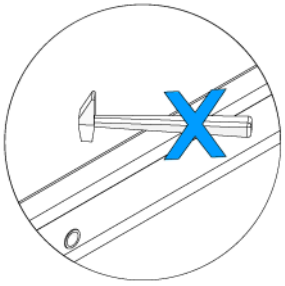
- Apply release agent to the form-facing and the end faces extremely thinly, evenly and in a continuous layer (make sure there are no traces of release-agent running down the form-facing). Applying too much release agent will impair the quality of the concrete surface.



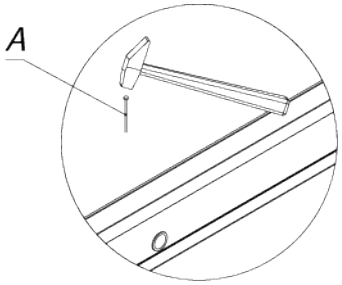
To determine the right dosage and to make sure that you are using the agent correctly, test it on less important parts of the structure first.

Care

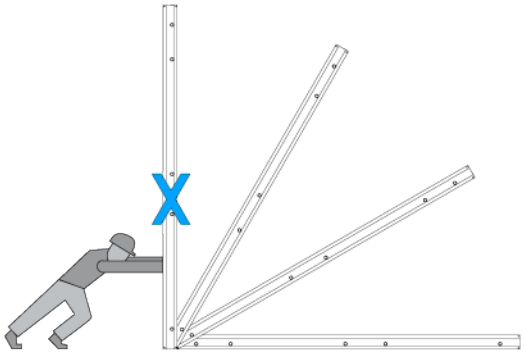
- No hammer-blows to the frame profiles



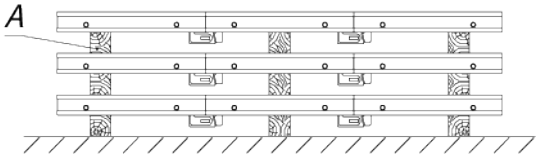
- Do not use nails on the formwork that are longer than 60 mm



- Never push over panels or allow them to fall



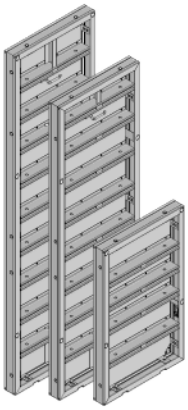
- Only stack panel gangs on top of one another with timber battens (A) between each layer.



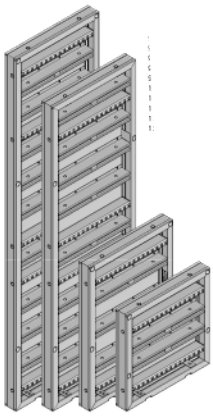
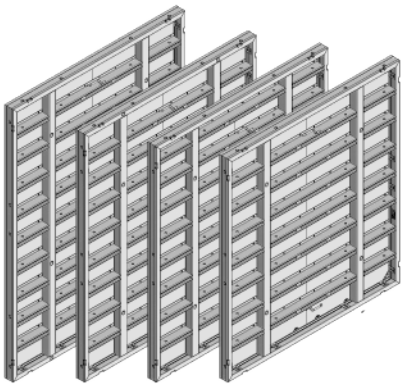
This prevents the formwork sheets from being damaged by the connector components.

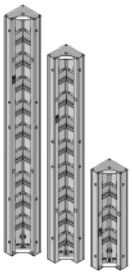
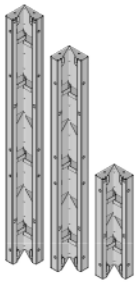
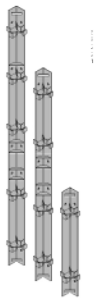
COMPONENT OVERVIEW

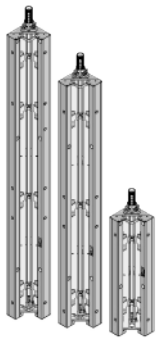
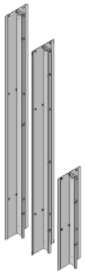
Item		[kg]	Article nº
Standard panel Varimax	1.35x3.30 m	260,40	11 104 000
	0.90x3.30 m	183,33	11 108 000
	0.60x3.30 m	127,05	11 110 000
	0.45x3.30 m	101,85	11 112 000
	0.30x3.30 m	80,85	11 114 000
	1.35x3.00 m	236,25	11 204 000
	0.90x3.00 m	166,70	11 208 000
	0.60x3.00 m	114,45	11 210 000
	0.45x3.00 m	97,65	11 212 000
	0.30x3.00 m	76,65	11 214 000
	1.35x2.85 m	231,00	11 304 000
	0.90x2.85 m	161,70	11 308 000
	0.60x2.85 m	123,59	11 310 000
	0.45x2.85 m	95,78	11 312 000
	0.30x2.85 m	74,26	11 314 000
	1.35x2.70 m	200,76	11 404 000
	0.90x2.70 m	143,82	11 408 000
	0.60x2.70 m	105,63	11 410 000
	0.45x2.70 m	86,42	11 412 000
	0.30x2.70 m	63,19	11 414 000
	1.35x1.35 m	108,36	11 504 000
	0.90x1.35 m	88,04	11 508 000
	0.60x1.35 m	56,62	11 510 000
	0.45x1.35 m	46,40	11 512 000
	0.30x1.35 m	36,24	11 514 000
	1.35x0.90 m	0,00	11 604 000
	0.90x0.90 m	43,87	11 608 000
	0.60x0.90 m	0,00	11 610 000
	0.45x0.90 m	0,00	11 612 000
	0.30x0.90 m	0,00	11 614 000

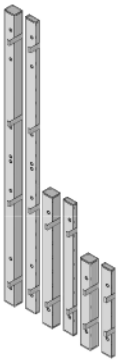
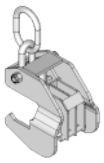
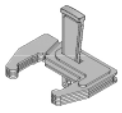
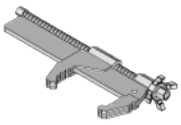


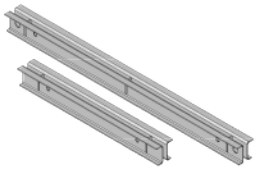
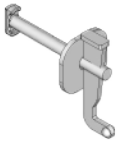
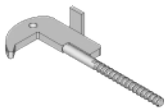
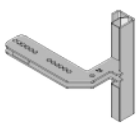
Options available:
xx xxx 000 - Powder coated;
xx xxx 100 - Galvanized;
xx xxx 200 - Hot dip galvanized;
Custom size on inquiry

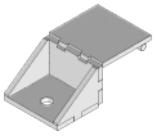
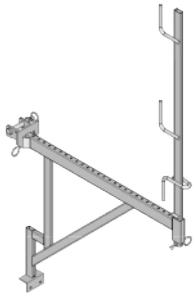
Item		[kg]	Article nº
Versatile panel Varimax	1.35x3.30 m	298,20	11 102 000
	1.35x3.00 m	281,40	11 202 000
	1.35x2.85 m	268,28	11 302 000
	1.35x2.70 m	196,35	11 402 000
	1.35x1.35 m	128,63	11 502 000
	1.35x0.90 m	0,00	11 602 000
	0.90x3.30 m	218,40	11 106 000
	0.90x3.00 m	178,50	11 206 000
	0.90x2.85 m	166,95	11 306 000
	0.90x2.70 m	184,12	11 406 000
	0.90x1.35 m	90,36	11 506 000
	0.90x0.90 m	67,20	11 606 000
 Options available: xx xxx 000 - Powder coated; xx xxx 100 - Galvanized; xx xxx 200 - Hot dip galvanized; Custom size on inquiry			
Extra-large panel Varimax	2.40x3.30 m	500,85	11 100 000
	2.40x3.00 m	435,60	11 200 000
	2.40x2.85 m	472,95	11 300 000
	2.40x2.70 m	407,40	11 400 000
	2.40x1.35 m	212,32	11 500 000
 Options available: xx xxx 000 - Powder coated; xx xxx 100 - Galvanized; xx xxx 200 - Hot dip galvanized; Custom size on inquiry			

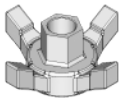
Item		[kg]	Article nº
Internal angle Varimax	0.30x3.30 m	121,80	11 710 000
	0.30x3.00 m	114,17	11 720 000
	0.30x2.85 m	108,47	11 730 000
	0.30x2.70 m	103,49	11 740 000
	0.30x1.35 m	51,90	11 750 000
 Options available: xx xxx 000 - Powder coated; xx xxx 200 - Hot dip galvanized; Custom size on inquiry			
Joint angle internal Varimax	0.30x3.30 m	141,23	11 712 000
	0.30x3.00 m	129,15	11 722 000
	0.30x2.85 m	120,44	11 732 000
	0.30x2.70 m	116,55	11 742 000
	0.30x1.35 m	61,36	11 752 000
 Options available: xx xxx 000 - Powder coated; xx xxx 200 - Hot dip galvanized; Custom size on inquiry			
External angle Varimax	3.30 m	60,69	11 714 000
	3.00 m	54,50	11 724 000
	2.85 m	51,98	11 734 000
	2.70 m	49,35	11 744 000
	1.35 m	24,26	11 754 000
 Options available: xx xxx 000 - Powder coated; xx xxx 200 - Hot dip galvanized; Custom size on inquiry			

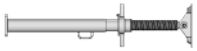
Item		[kg]	Article nº
Joint angle external Varimax	3.30 m	64,68	11 716 000
	3.00 m	58,83	11 726 000
	2.85 m	54,08	11 736 000
	2.70 m	52,88	11 746 000
	1.35 m	27,25	11 756 000
			
Options available: xx xxx 000 - Powder coated; xx xxx 200 - Hot dip galvanized; Custom size on inquiry			
Stripping corner Varimax	0.30x3.30 m	207,90	11 718 000
	0.30x3.00 m	189,00	11 728 000
	0.30x2.85 m	145,95	11 738 000
	0.30x2.70 m	0,00	11 748 000
	0.30x1.35 m	97,65	11 758 000
			
Options available: xx xxx 000 - Powder coated; xx xxx 200 - Hot dip galvanized; Custom size on inquir			
Expansion block Varimax	3.30 m	68,69	11 810 000
	3.00 m	62,30	11 820 000
	2.85 m	59,33	11 830 000
	2.70 m	57,77	11 840 000
	1.35 m	28,10	11 850 000
			
Options available: xx xxx 000 - Powder coated; xx xxx 200 - Hot dip galvanized; Custom size on inquir			

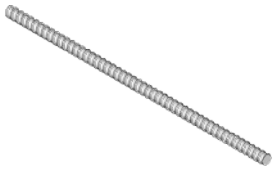
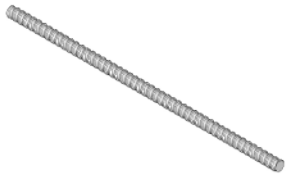
Item		[kg]	Article nº
Steel closure plate Varimax	0.10x3.30 m	0,00	11 812 000
	0.10x3.00 m	36,45	11 822 000
	0.10x2.85 m	0,00	11 832 000
	0.10x2.70 m	0,00	11 842 000
	0.10x1.35 m	16,40	11 852 000
	0.10x0.90 m	11,39	11 862 000
	0.05x3.30 m	0,00	11 814 000
	0.05x3.00 m	27,12	11 824 000
	0.05x2.85 m	0,00	11 834 000
	0.05x2.70 m	0,00	11 844 000
	0.05x1.35 m	12,23	11 854 000
	0.05x0.90 m	8,40	11 864 000
Options avaliable: xx xxx 000 - Powder coated xx xxx 200 - Hot dip galvanized Custom size on inquiry			
Stripping spindle Varimax		3,71	11 942 100
			
Lifting hook LH-H-1t Varimax		10,34	11 924 000
			
Clamp device Varimax		3,90	11 902 100
			
Adjustable clamp Varimax		0,60	11 904 100
			

Item		[kg]	Article nº
Guide plate 	0.90 m 1.50 m	11,35 18,85	11 912 000 11 914 000
Corner guide plate 	0.60x0.60 m	14,04	11 916 000
Contact device 		1,49	11 918 100
Stop-end tie Varimax 		1,76	11 906 100
Connection screw 	10-16 10-25	0,63 0,79	11 908 100 11 910 100
Transition plate 	12/18 12/21 10/18 10/21	18,70 19,05 17,90 0,00	23 500 100 23 502 100 23 504 100 23 506 100

Panel holder Varimax 	1,84	11 922 000
Wall bracket Varimax 	13,28	11 926 100
Guide rail clamp 	12,40	52 400 100
Supporting strut 340 	37,38	11 928 100

Item		[kg]	Article nº
Supporting strut 540 		56,91	11 930 100
Star-shaped nut 	15	0,40	95 206 100
Superplate 	15 20	1,22 2,10	95 200 100 95 202 100
Hexagon nut 	15	0,37	95 208 100
Pressure plate 		0,86	95 210 100
Tie holder Varimax 		1,30	11 920 000

Item		[kg]	Article nº
Adjustable plumbing strut 			
Spindle head 		3,48	11 932 100
Spindle element without end-hinge 		36,62	11 934 000
Extension strut 3.70 m		78,75	11 936 000
Extension strut 2.40 m 		54,13	11 938 000
Spindle element with end-hinge 		43,81	11 940 000
Plastic tube 22mm 	2.00 m	0,36	99 100 400
Plastic cone 22 mm 		0,005	99 102 400

Item		[kg]	Article nº
Plug for anchoring holes Varimax 		0,08	11 990 400
Plug for versatile holes Varimax 		0,03	11 992 400
Tie rod 15.0 mm 	0.50 m 0.75 m 1.00 m 1.25 m 1.50 m 1.75 m 2.00 m 2.25 m 2.50 m 2.75 m 3.00 m 6.00 m	0,80 1,20 1,60 2,00 2,40 2,80 3,20 3,60 4,00 4,40 4,80 9,60	92 050 300 92 075 300 92 100 300 92 125 300 92 150 300 92 175 300 92 200 300 92 225 300 92 250 300 92 275 300 92 300 300 92 600 300
Tie rod 20.0 mm 	0.50 m 0.75 m 1.00 m 1.25 m 1.50 m 1.75 m 2.00 m 2.25 m 2.50 m 2.75 m 3.00 m	1,20 1,80 2,40 3,00 3,60 4,20 4,80 5,40 6,00 6,60 7,20	93 050 300 93 075 300 93 100 300 93 125 300 93 150 300 93 175 300 93 200 300 93 225 300 93 250 300 93 275 300 93 300 300

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