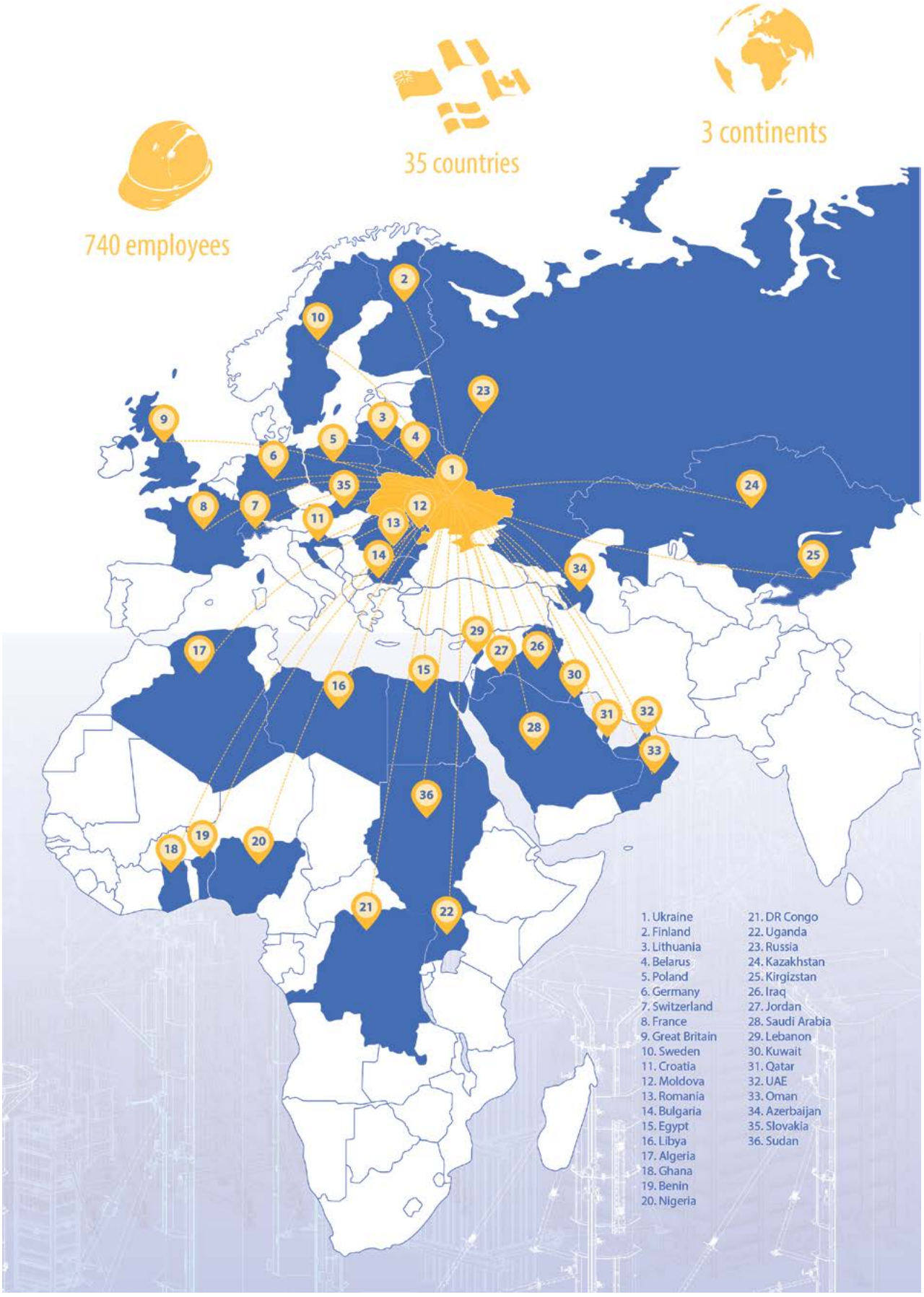
Mediumweight framed formwork system VARIMID

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
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16. Libya
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26. Iraq
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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, con-nector 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.

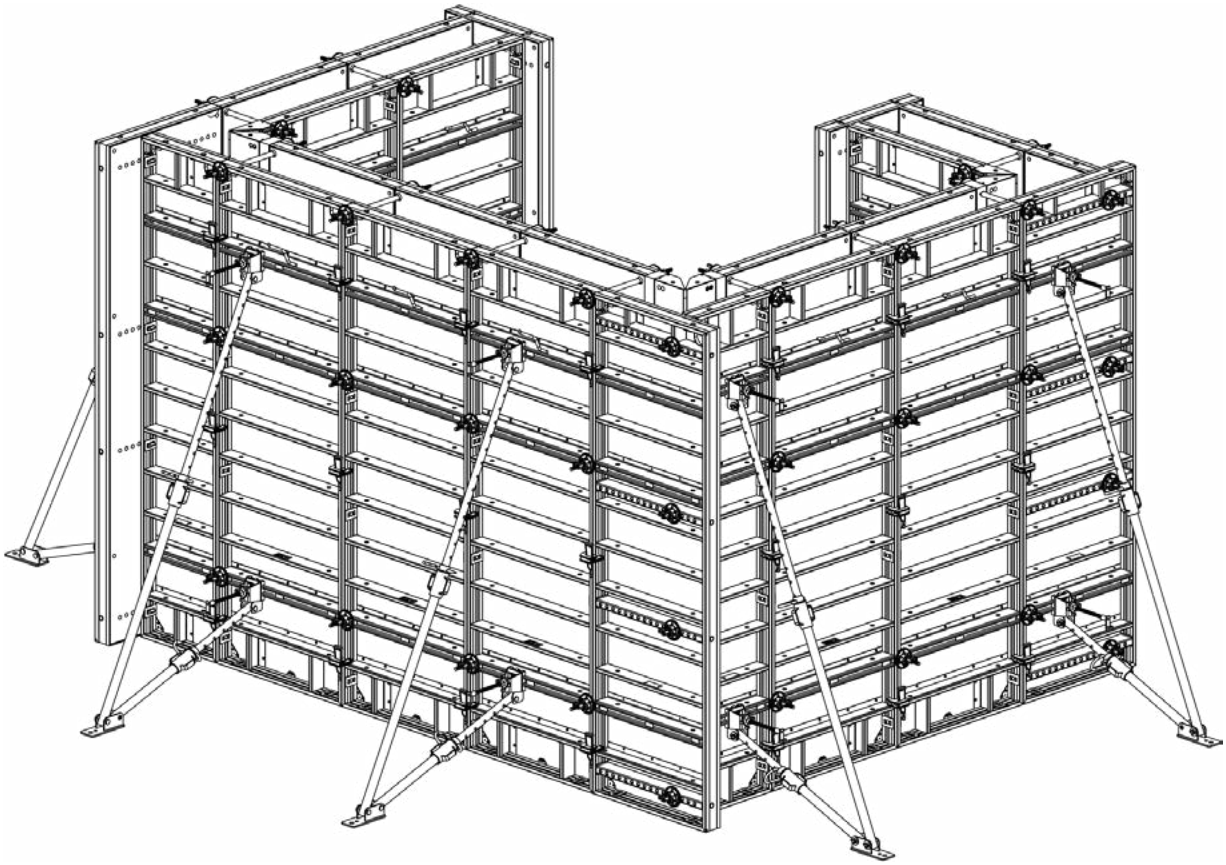
When striking the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as «VARIANT» stripping corners.

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 «VARIANT» medium frame formwork Varimid is a complete system that includes accessories ensuring operation and safety and offering the opportunity to meet any challenges promptly, cost effective and efficiently; can be installed without the use of a crane.
«VARIANT» frame formwork system Varimid
1. Ensure high level of efficiency and quality of concrete surface.
2. Guarantees reduction of expenses by means of restoration and cleaning possibilities.
3. Gives two ways of shifting: separately panels by hands and/or assembled in blocks by crane.
The Varimid system is suitable to incase:
- walls;
- foundations;
- columns.



The maximum concrete pressure for the Varimid frame panels is 60 kN/m^2

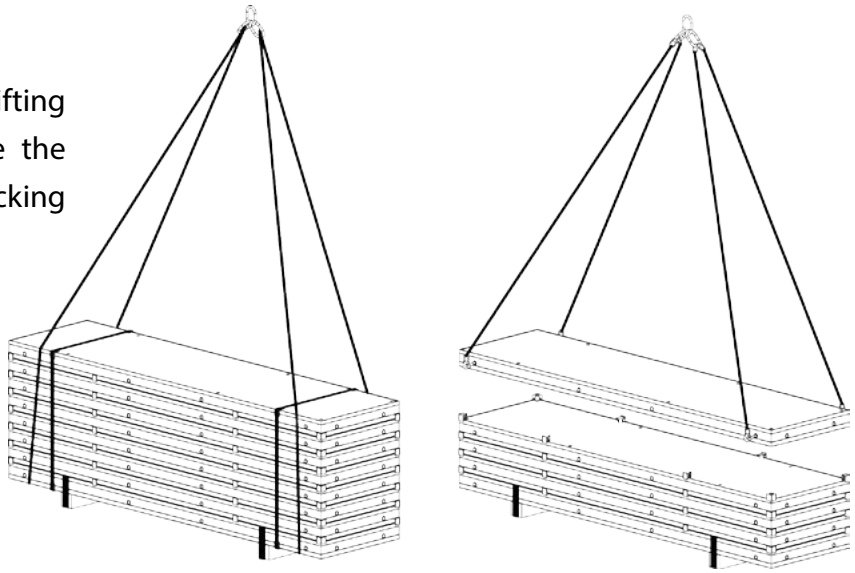
INSTRUCTIONS FOR ASSEMBLY AND USE

The sequence shown here is based on a straight wall. However, you should always start to form from the corner outwards.

Manual assembling

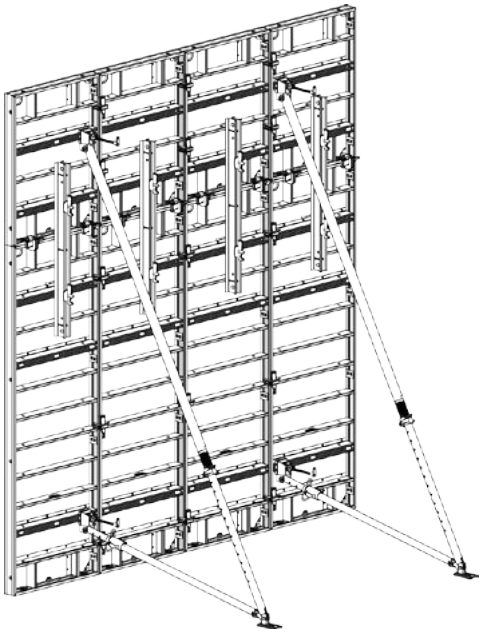
Transporting / handling the panels

For offloading panels from a truck, or lifting them on-site a stack at a time, use the lifting strap (see «Transporting, stacking and storing»).

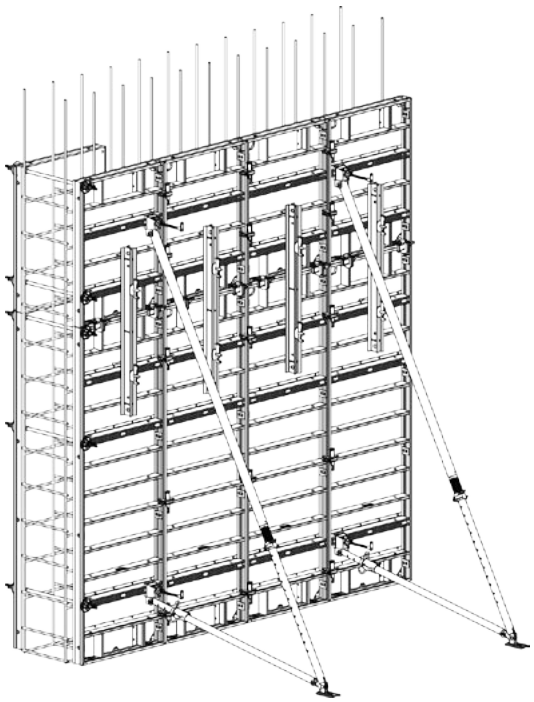


Closing the formwork

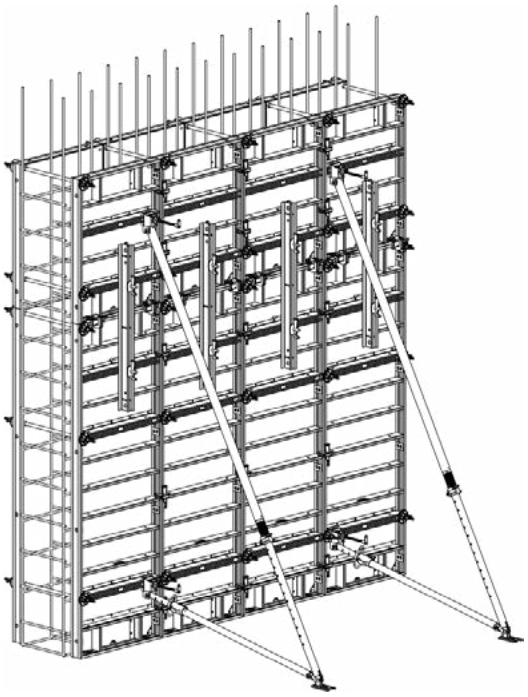
- Spray the ply with release agent.
- Fix the first panel to the ground with a panel strut (see the section headed «Support brace»). This stabilizes the panel so that it cannot fall over.
- Continue lining up panels in this way, clamp them together (see «Connections») and attach panel struts.
- The panel assembly can now be exactly plumbed and aligned.



Erecting the opposing formwork:
Once the reinforcement has been placed, the formwork can be closed. Spray the formwork sheet of the opposing formwork with release agent. Stand up the first panel of the opposing formwork. Fit the form ties (see «Tie-rod system»).



Now the opposing formwork is also secured against tipping over. In the same way, carry on lining up panels, clamping them together and fitting form-ties.



Varimid panels must be securely braced in every phase of the construction work!

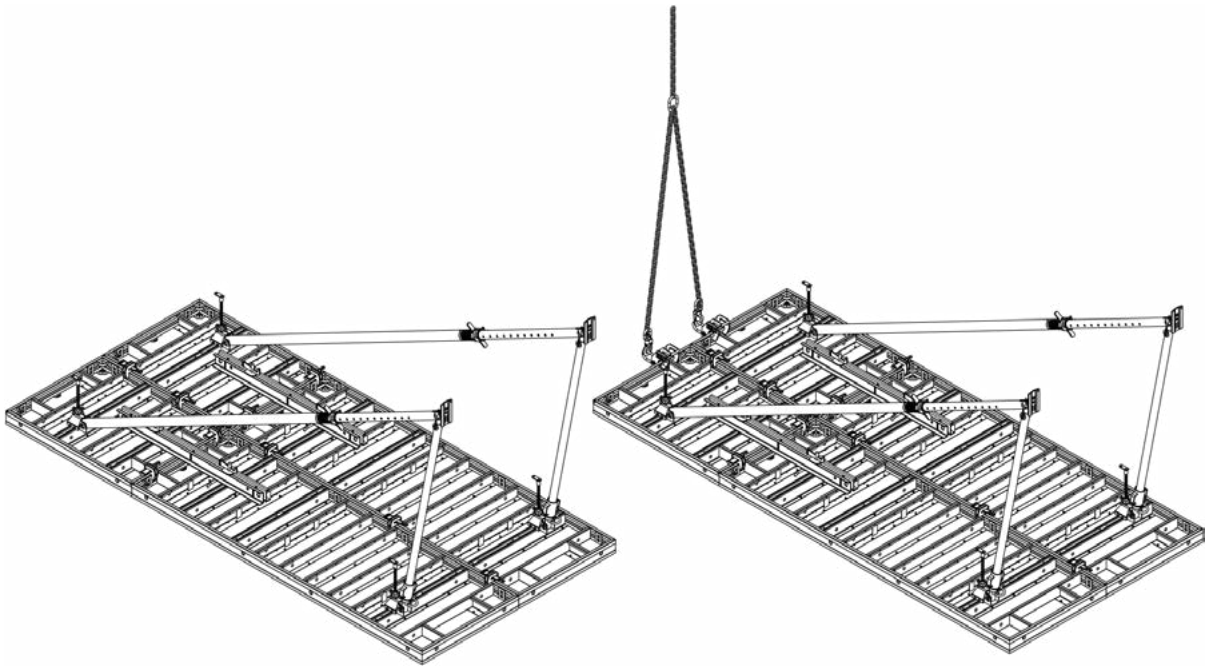
Never use a sledge hammer to plumb the panels!
This would damage the profiles of the panels.
Use only proper plumbing tools that cannot cause any damage!

Mounting the pouring platform.
Mount the wall brackets Varimid.

Pouring
• Do not exceed the maximum permissible rate of placing. Max. pressure of the fresh concrete depends on structural design of elements.
• Pour the concrete.
• Make only moderate use of vibrators, carefully coordinating the times and locations of vibrator use.
• To increase long-life of elements, immediately after pouring, clean the rear face of the formwork with water.

Stripping out
• Dismount the pouring platform.
• Beginning with the opposite formwork, dismount the panels one-by-one - take out the form-ties and remove the connectors to the neighboring panel.
• Lift the panel away and clean concrete residue off the formwork sheet (see «Cleaning and care»).

Varimid as a crane-handled formwork
Large multi-panel elements can be pre-assembled face-down on a level screed floor. See «Vertical stacking of panels» for detailed instructions on how to attach the interpanel connectors.
These gangs can be lifted and reset with lifting chains and Varimid crane grips. For detailed instructions on this, see the section headed «Resetting by crane».
Multi-panel gangs without an opposing formwork and with pouring platforms and Support braces must be fixed on the ground so that they cannot be dislodged.

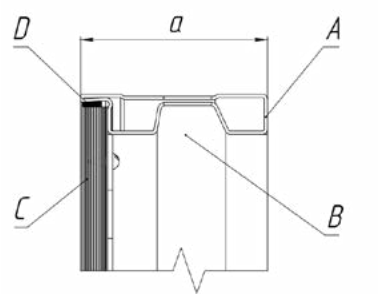


SYSTEM IN DETAIL

High load-bearing capacity

Owing to reinforced steel profiles, which is used for Varimid panel production, high load-bearing capacity of the panels is guaranteed 60 kN/m^2 pressure of fresh concrete acting on whole area.
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.

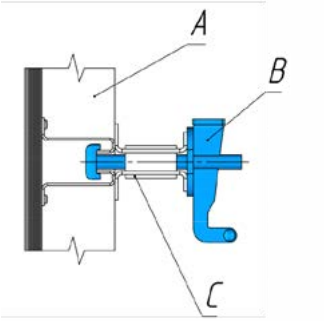


a=117 mm

(A) Frame profile
(B) Slot for inter-panel connectors
(C) Plywood
(D) Silicon sealing sleeve

• Filmfaced plywood of 15 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



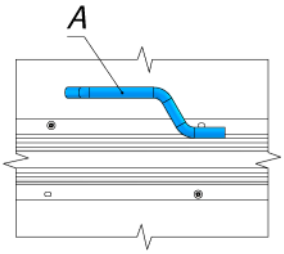
(A) Varimid panel
(B) Contact device
(C) Guide plate

Form-tie holes

Tie-rods are very easy to insert through the holes ø22 mm.

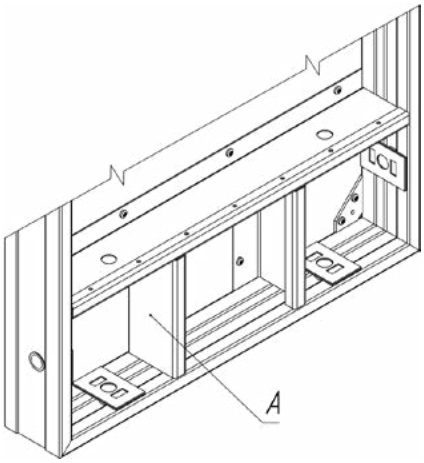
- Tie-rods 15.0 mm are used for maximum permissible pressure of fresh concrete up to 60 kN/m^2
- 4 form-ties are needed for tying a Varimid panel up to 1.5 m and 6 form-ties for a panel 3.00 m

Handles



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

Reinforcement



- Optimum design with reinforcement (A) of top and bottom the frame panel is guarantee long-life use.

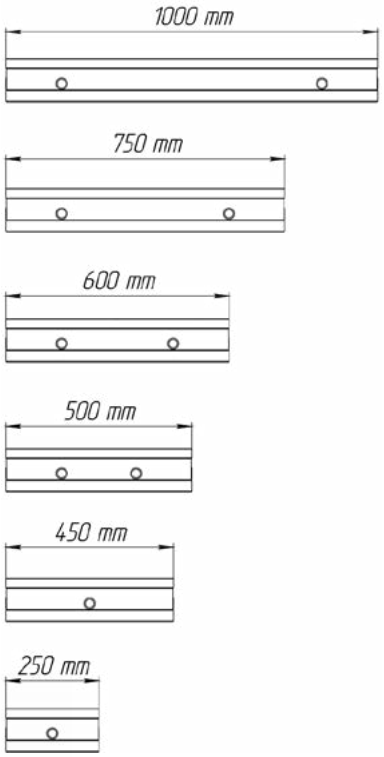
SYSTEM GRID

Varimid medium framed formwork is graded for all ranges in height from the foundation to the walls of any height (100 cm, 150 cm and 300 cm). Also it is possible to put the panel on side, and use it in this way to satisfy any heights needs.
With a wide range of the panels 25, 45, 50, 60, 75, 100 cm in width and the presence of the expansion block Varimid can be adopted to any layout.

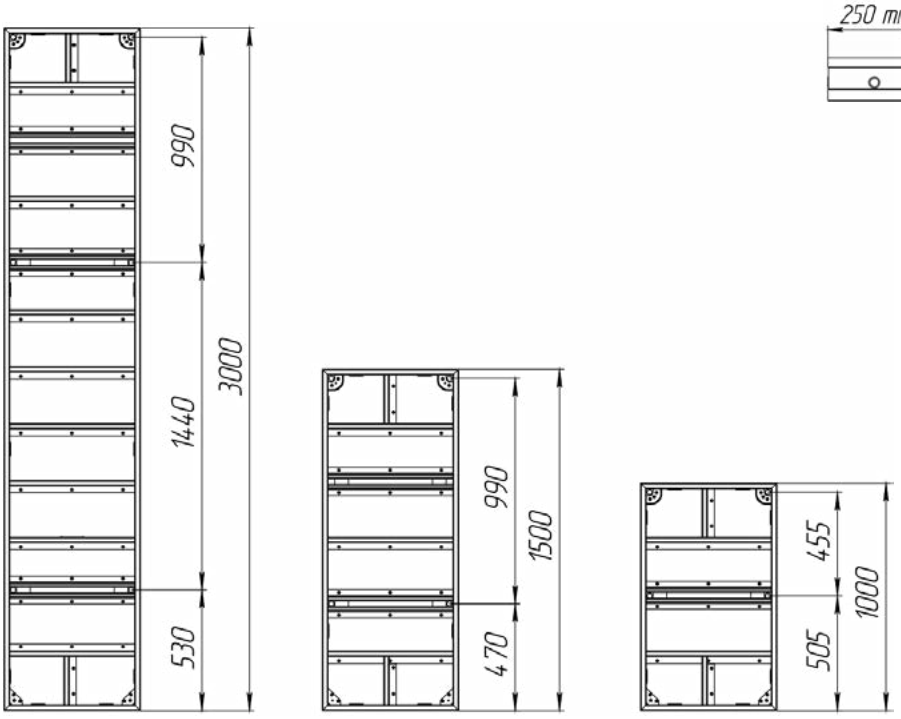
Varimid panels

Panel widths

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



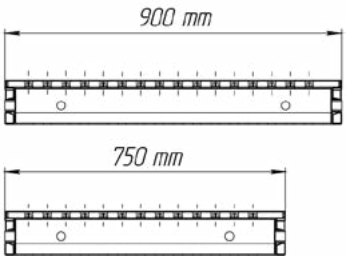
Panel heights



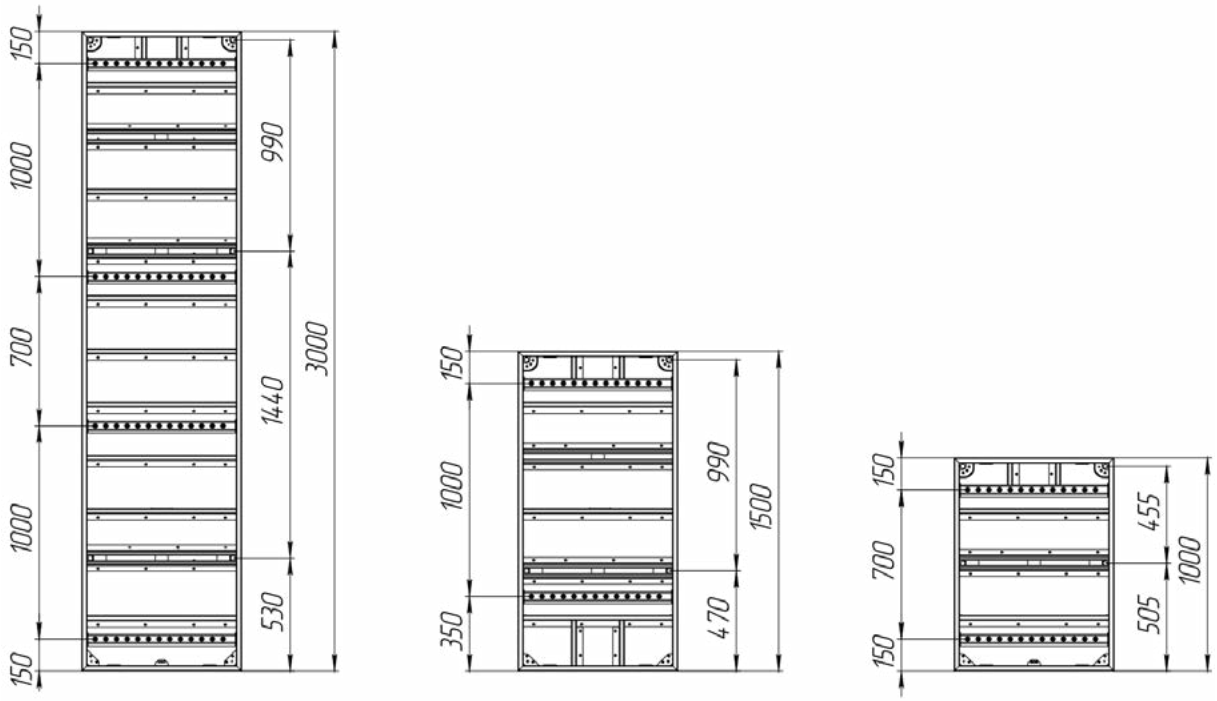
Varimid versatile panels

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



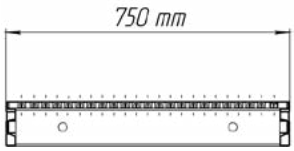
The special hole pattern makes these panels particularly suitable for efficient forming of:

- corners;
- wall junctions;
- columns.

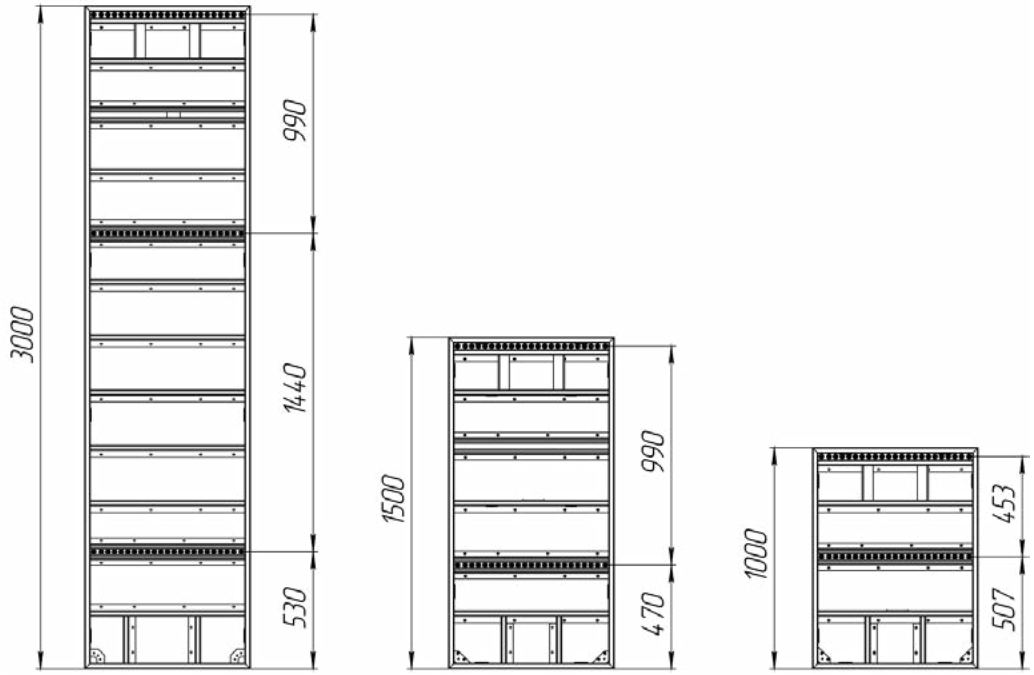
Varimid multipurpose panels

Panel widths

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



Panel heights

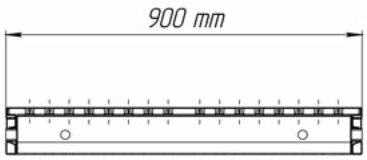


The special hole pattern makes these panels particularly suitable for efficient forming of wall junctions.

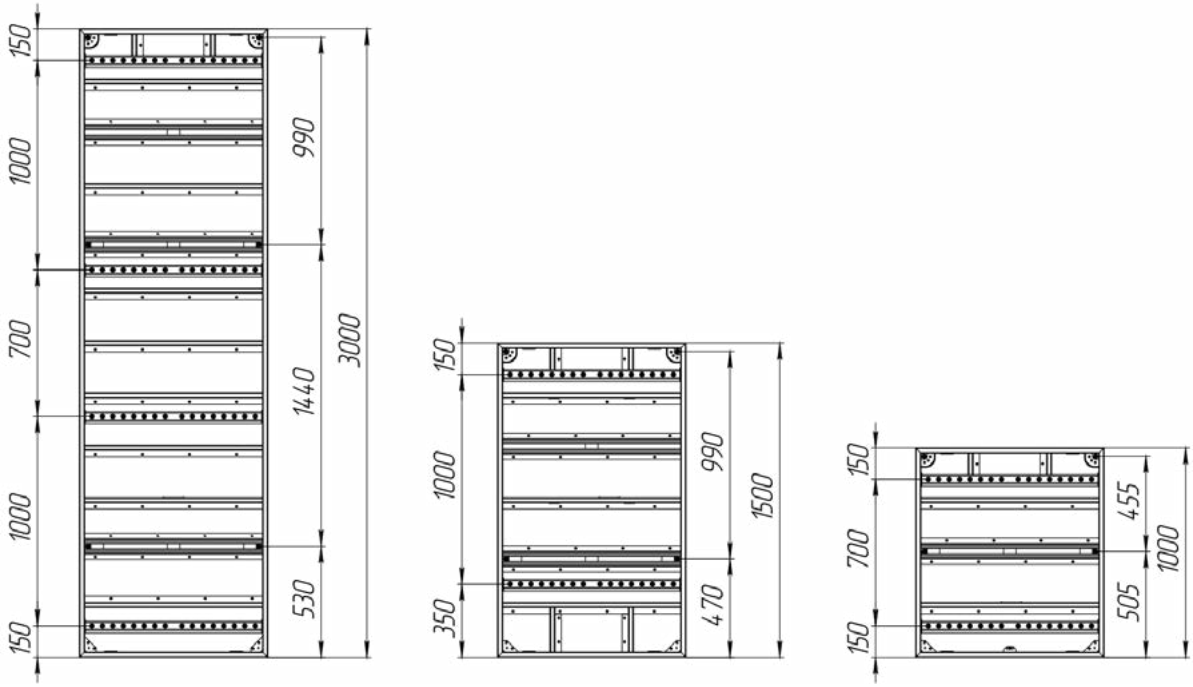
Varimid stop-end panels

Panel widths

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



Panel heights

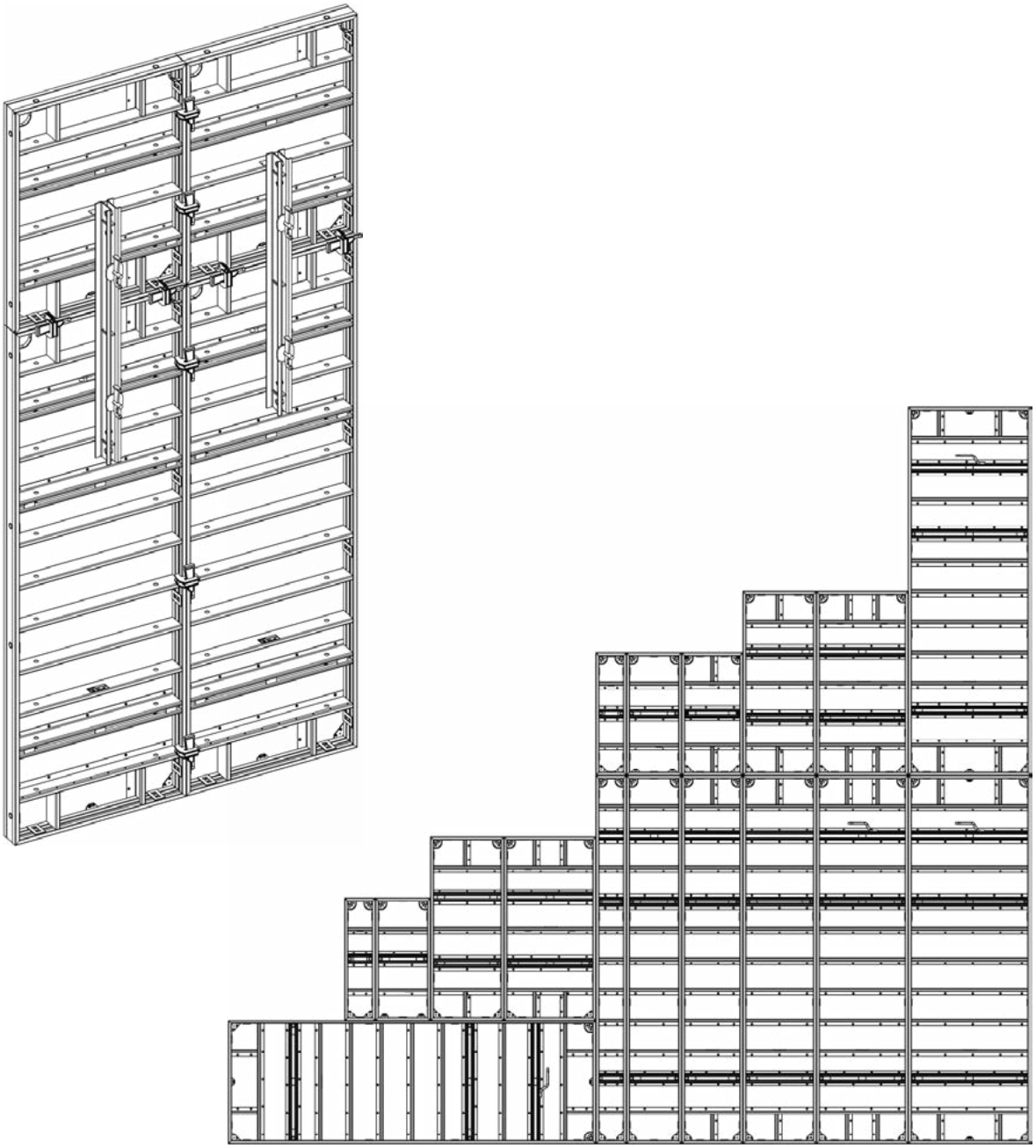


The special hole pattern makes these panels particularly suitable for efficient forming of stop-ends.

ADAPTABILITY

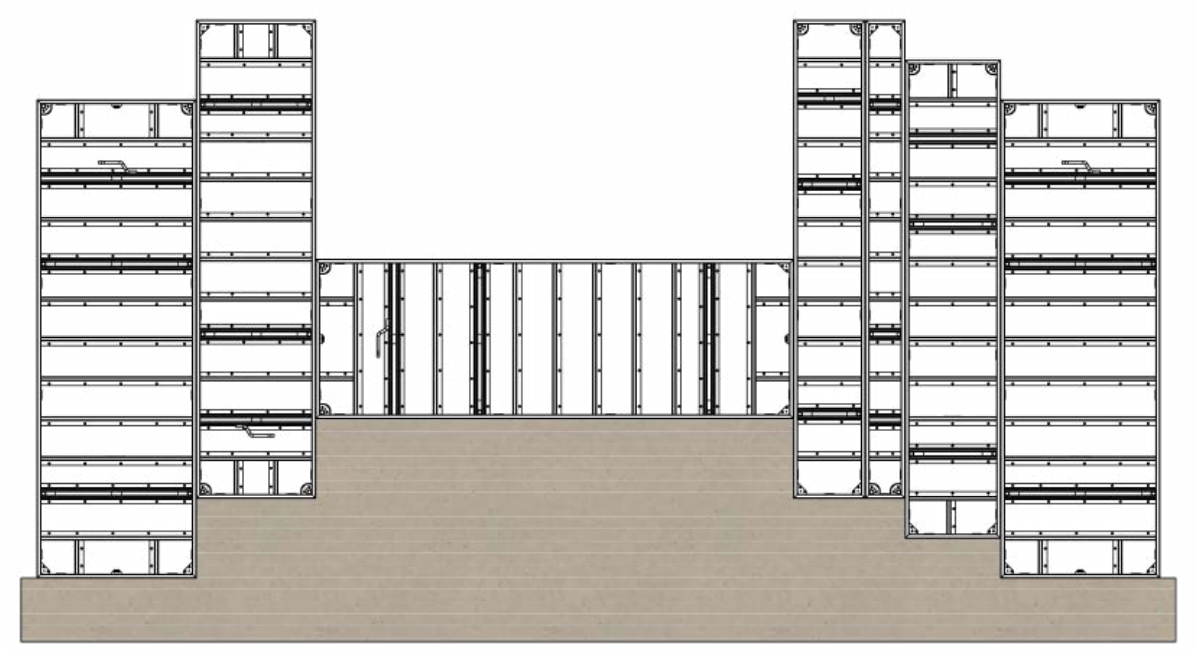
Possible combinations

The perfect panel size-grid gives you innumerable combinations, in both width and height. You can use the panels either upright or horizontal.



Stepless height offset

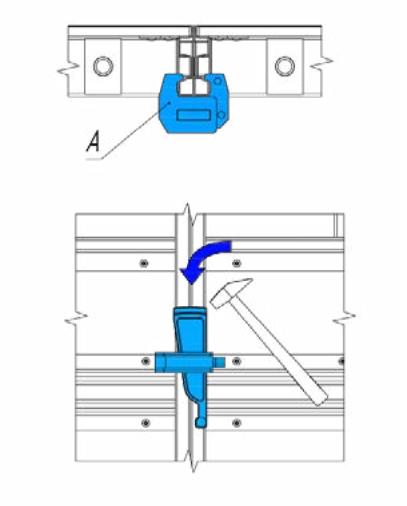
The continuous hardware slot around the inside of the Varimid panels enables the connector components to be fastened anywhere on the frame. This allows any adjacent panels to be steplessly staggered in height, i.e. without being confined to any fixed grid. This means that the formwork can easily be accommodated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



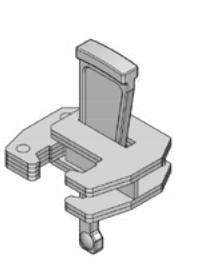
INTER-PANEL CONNECTIONS

Clamp device Varimid

Clamp device Varimid is used for simple inter-panel connections. Clamp device Varimid can be fastened at any desired point on the profile of Varimid panels. This allows adjust panels to be staggered in height, steplessly.



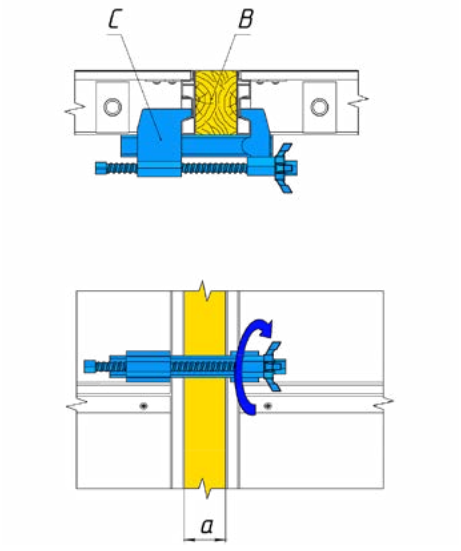
(A) Clamp device Varimid



Installation:
1. place wedge in upper end position;
2. attach clamp device Varimid to panel profile;
3. secure wedge - the clamp device Varimid is now securely in position.

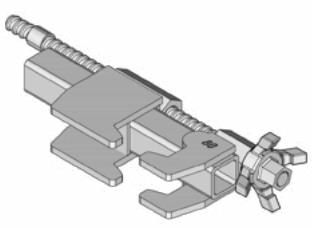
Adjustable clamp Varimid

Adjustable clamp Varimid is used for compensation of linear extension up to 12 cm.



a = max. 12 cm

(B) Adjustable clamp Varimid
(C) Adjustable timber



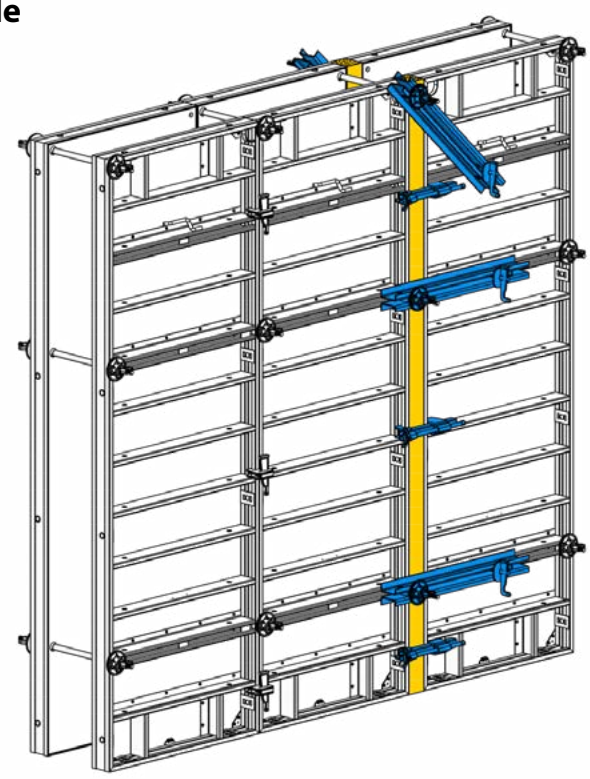
LENGTH ADJUSTMENT USING CLOSURES

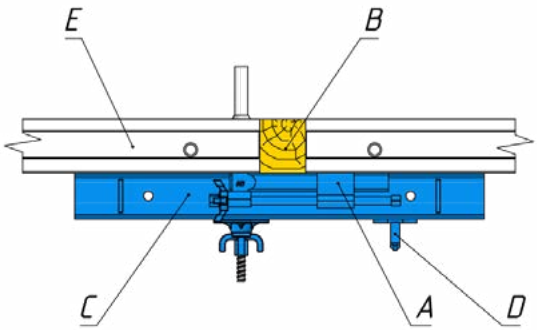
Closures: 0-12cm

with fitting timber and Adjustable clamp Varimid

By combining the fitting-timber widths of up to 12 cm in various ways, the closures can be made in 1 cm increments.

Tie through frame profile



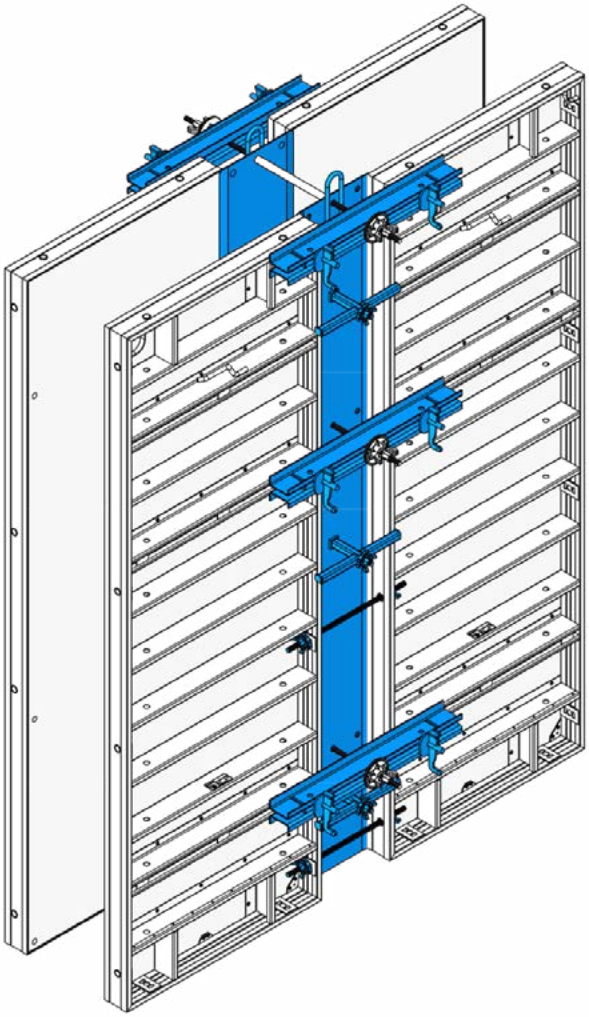


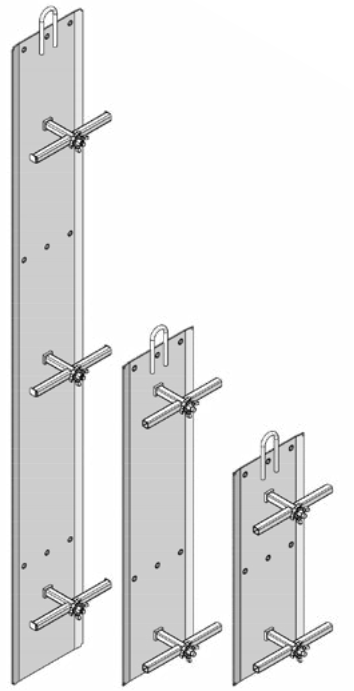
(A) Adjustable clamp Varimid
(B) Fitting timber
(C) Guide plate
(D) Contact device
(E) Framed panel Varimid

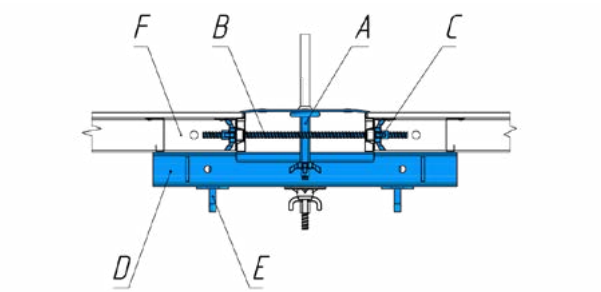
Closures: 4-30 cm

with Expansion block Varimid

Expansion block Varimid is used for compensation of linear extension up to 30 cm.







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

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

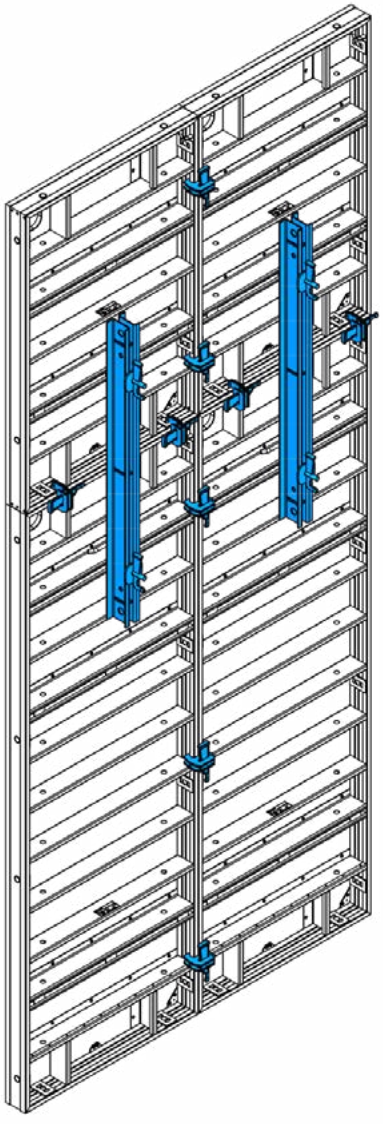
BRACING THE PANELS WITH GUIDE PLATE

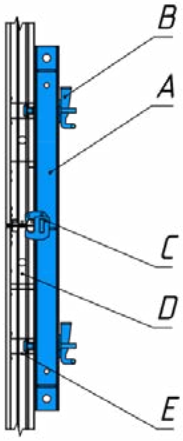
Using for closures

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.



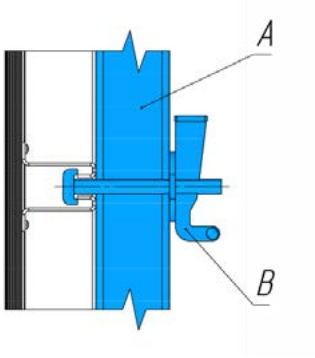


(A) Guide plate 1.50
(B) Contact device
(C) Clamp device
(D) Framed panel Varimid
(E) Framed panel profile

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

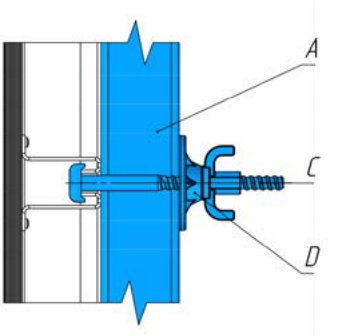
Attaching the guide plate to Varimid panel

Using the Contact device



(A) Guide plate 1.50
(B) Contact device

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

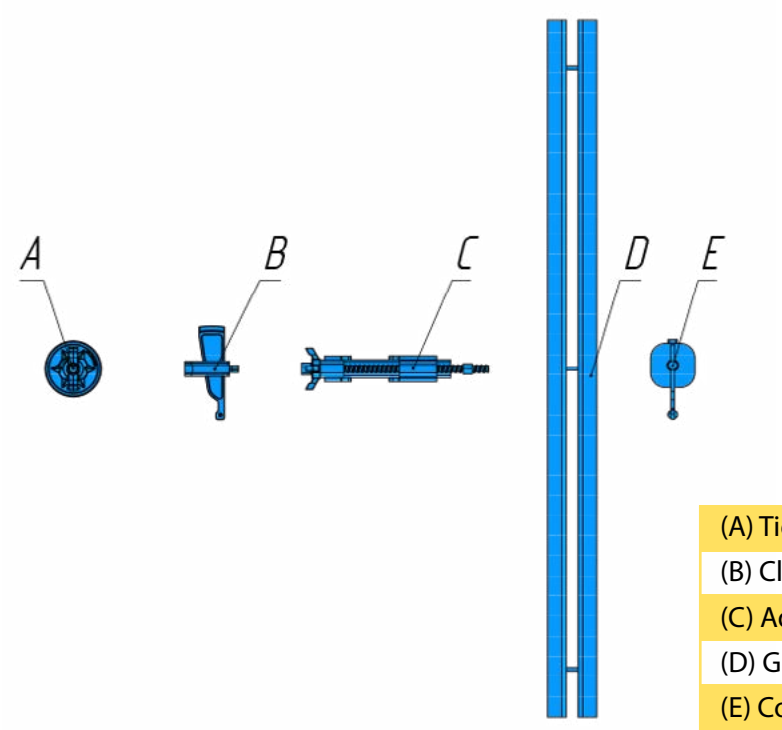
Positions of the interconnecting and tie-rod components and accessories needed for:

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

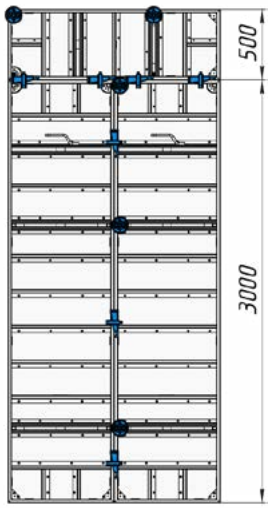
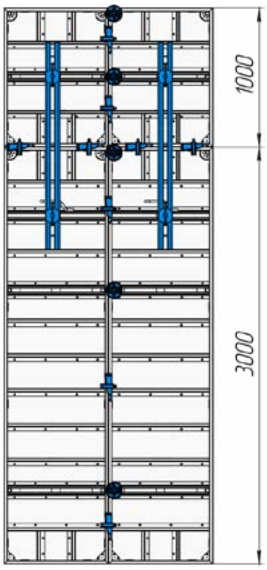
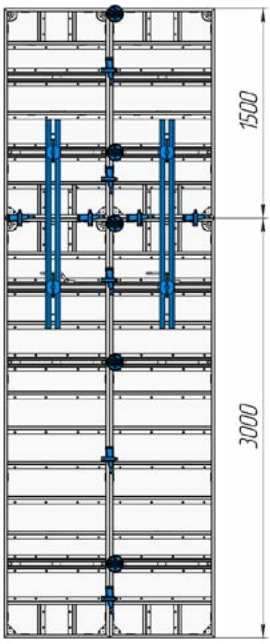
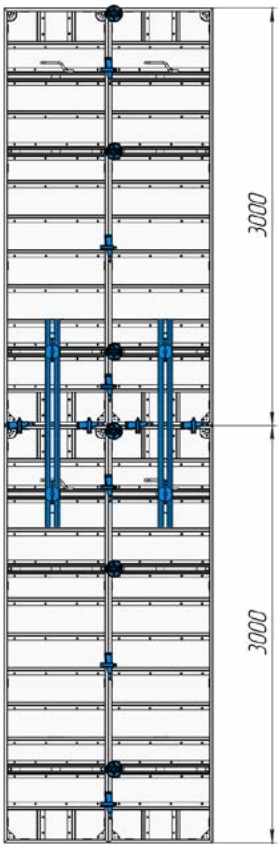
Rules for vertical stacking of panels

- On each inter-panel joint, 1 Guide plate 1.50 & 2 Clamp devices Varimid or Adjustable clamps Varimid are attached for each panel (max. 1.00 m width)
- If top panel has height 0.50 m or less, on each inter-panel joint, 2 Clamp devices Varimid or Adjustable clamps Varimid are attached for each panel (max. 1.00 m width)

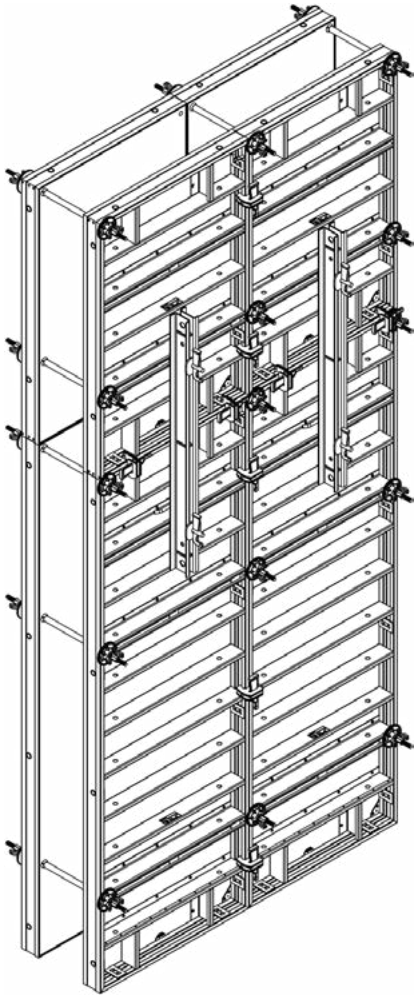
Symbols



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

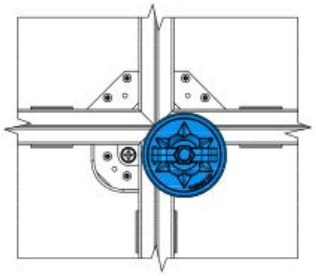
Formwork height: 350 cm	Formwork height: 400 cm
	
Formwork height: 450 cm	**Formwork height: 600 cm**
	

TIE-ROD SYSTEM



Placing form-ties in general

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



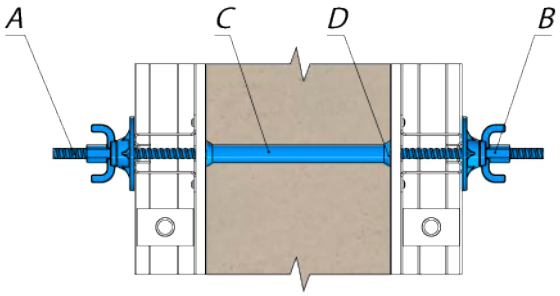
• Always tie in the bigger (wider) of the two panels.

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

Seal off unneeded form-tie holes with plastic plugs.

The tie-rod system 15.0

Tie-rod 15 mm:

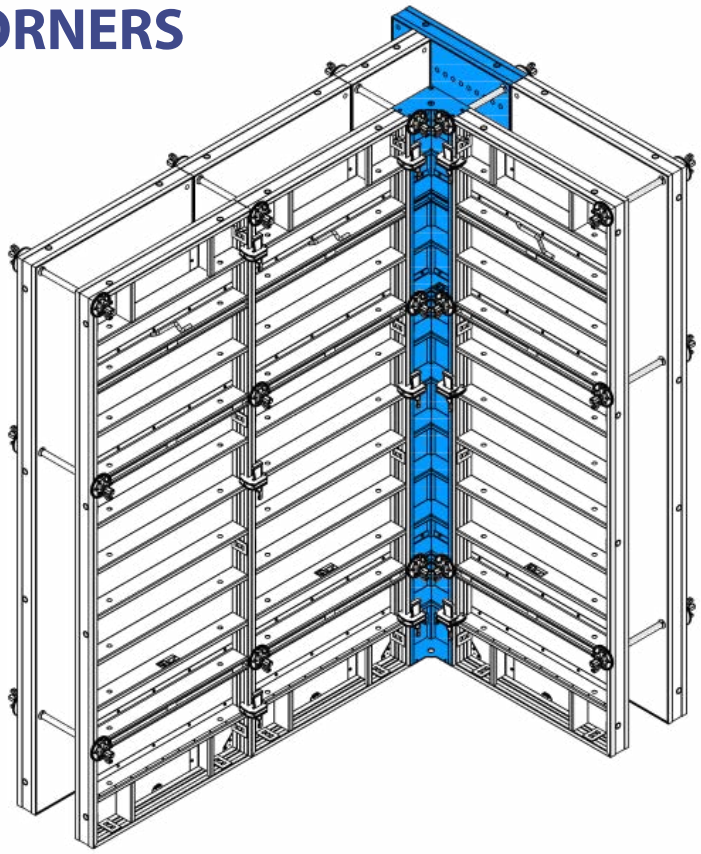


(A) Tie-rod 15.00 mm
(B) Superplate
(C) Plastic tube 22 mm
(D) Universal cone 22 mm

Permitted load with safety factor of 1.6:120 kN
Permitted load to DIN 18216:90 kN

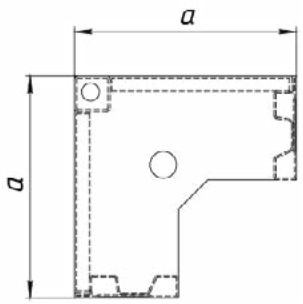
The «Plastic tubes 22 mm» left behind in the concrete sre sealed off with Plug 22 mm

90 DEGREE CORNERS



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

Internal angel Varimid



a... 25 cm

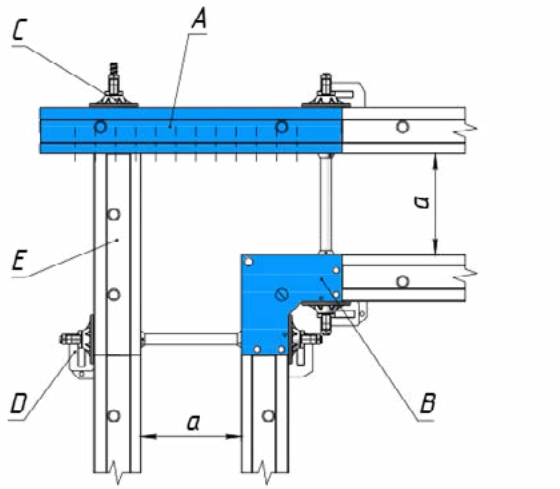
The hole drilled in the Internal angle enables a vertical stacking connection to be made using Connection screws + Superplates.

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



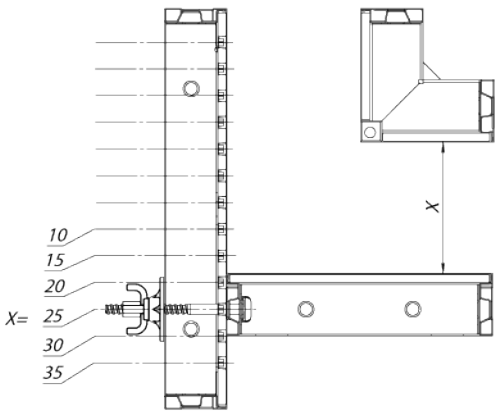
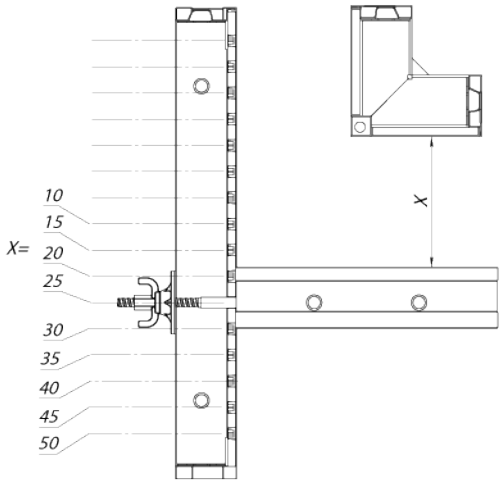
a=25 cm

(A) Versatile panel Varimid
(B) Internal angle Varimid
(C) Connection screw & Superplate
(D) Clamp device Varimid
(E) Framed panel Varimid

Required numbers of Connection screws & Superplates

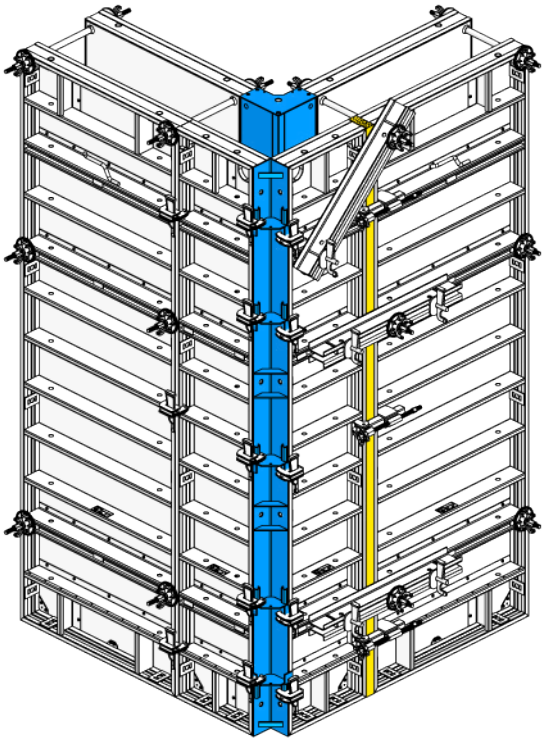
Versatile panel 1.00 m height	2 of each
Versatile panel 1.50 m height	2 of each
Versatile panel 3.00 m height	4 of each

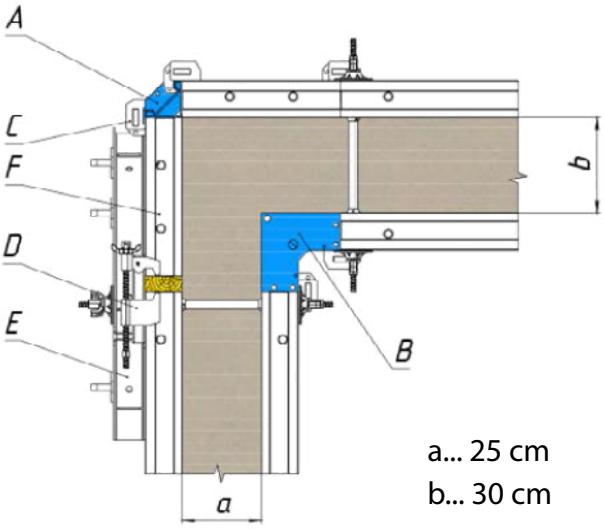
Versatile panel width

0.75 m	0.90 m
	

Various different wall-thickness in a 5 cm grid

With an external angle





a... 25 cm
b... 30 cm

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

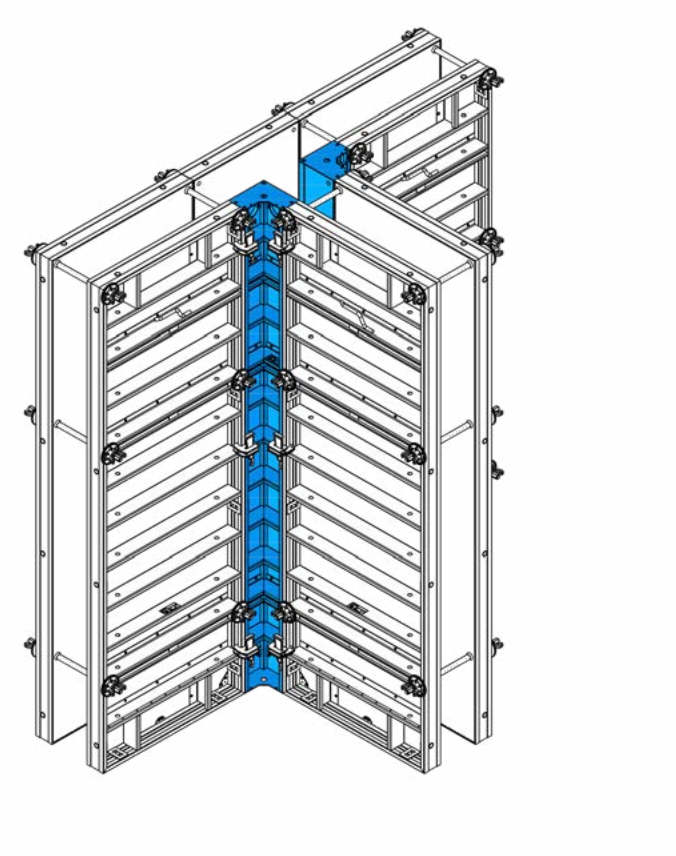
(A) External angle Varimid
(B) Internal angle Varimid
(C) Clamp device Varimid
(D) Adjustable clamp Varimid
(E) Guide plate
(F) Contact device
(G) Fitting timber
(H) Framed panel 0.50 m

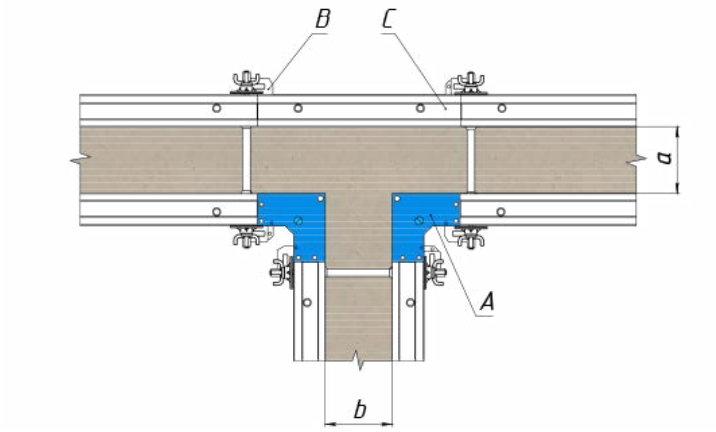
When there is a closure on both sides of the Internal angle, bracing can be achieved economically with the Corner guide plate.

Number of Clamp devices needed:

Height of External angle	Number of clamps
1.00 m	4
1.50 m	6
3.00 m	10

T-junction





(A) Internal angle Varimid
(B) Clamp device Varimid
(C) Fitting timber
(D) Adjustable clamp
(E) Framed panel 0.75 m Varimid

a... 25 cm

b... 25 cm

INTER-PANEL CONNECTIONS FOR INCREASED TENSILE LOADS

As a rule, only 3 clamps are needed per 3.00 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.

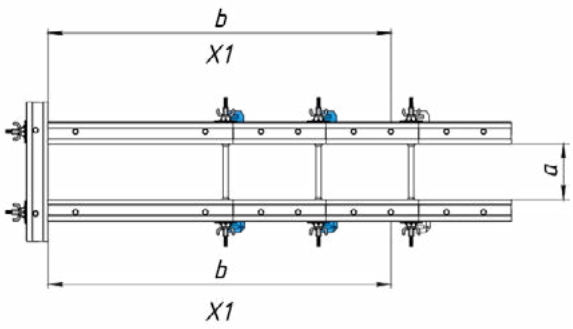
Wall thicknesses up to 40 cm:

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

- 1 extra clamp

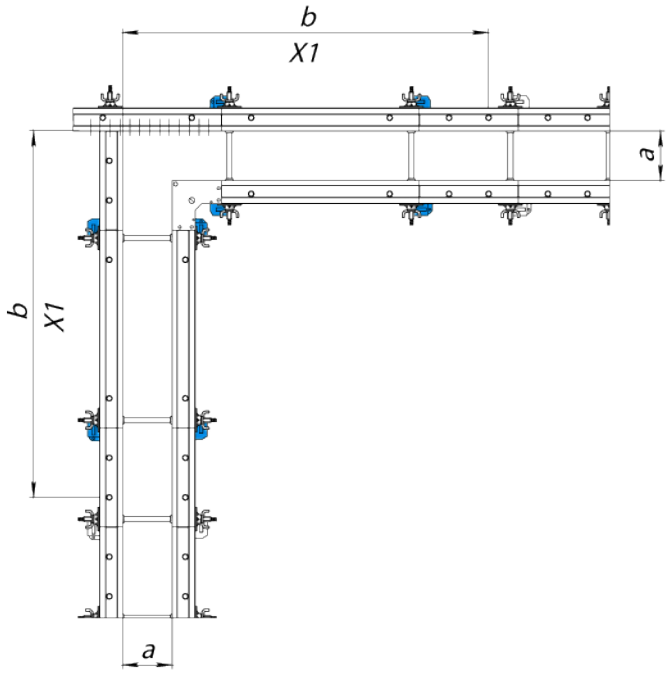
Near stop-ends

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:

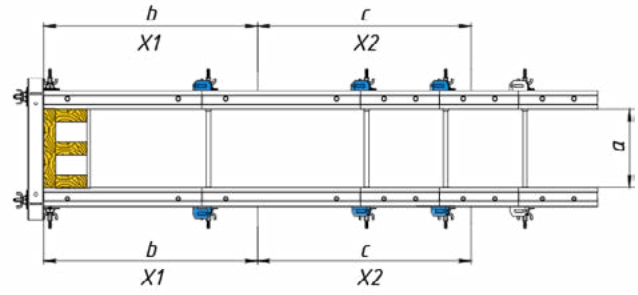
• 2 extra clamps

For each inter-panel join between 1.35 m and 2.70 m away from outside corner / end of wall:

• 1 extra clamp

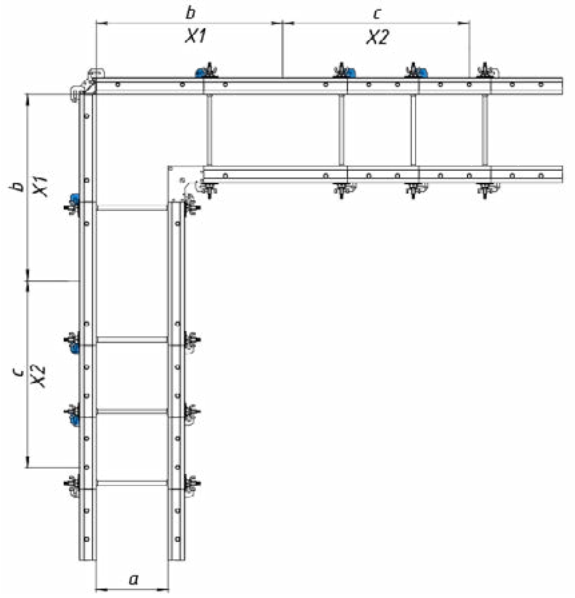
Near stop-ends

a... up to 60 cm
b... up to 1.35 cm
c... from 1.35 m to 2.70 m
X1... 2extra 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... 2extra 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:

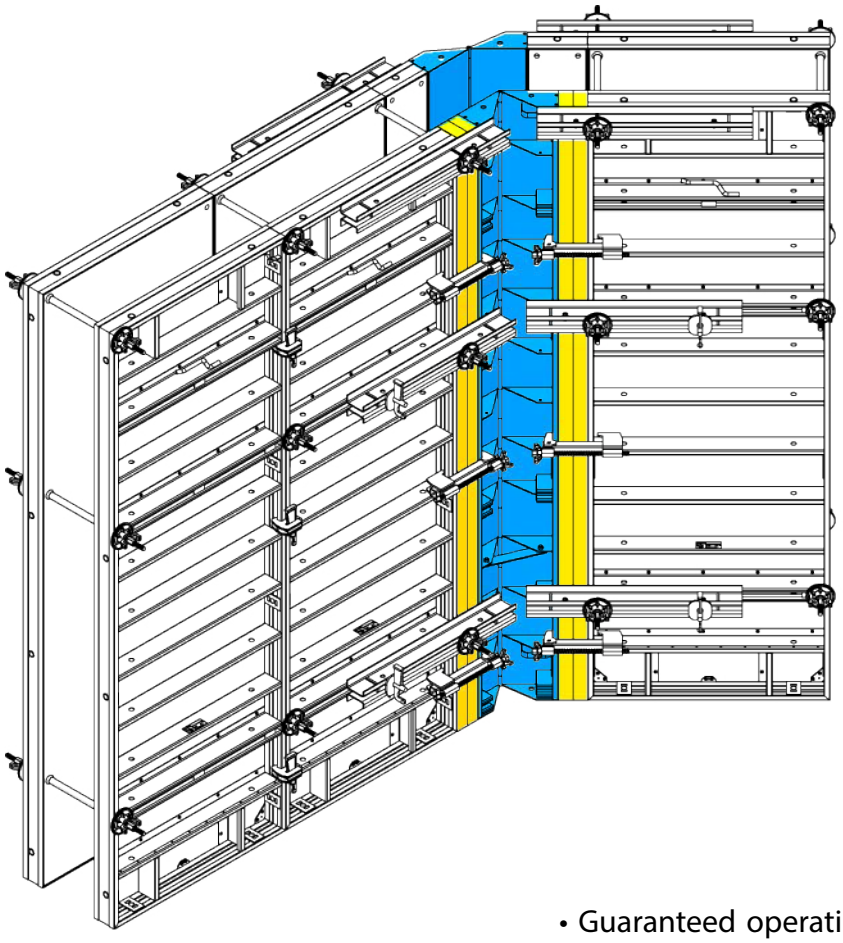
• 2 extra clamps

For each inter-panel join between 2.70 m and 4.05 m away from outside corner / end of wall:

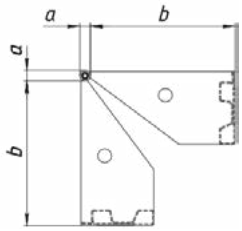
• 1 extra clamp

ACUTE & OBTUSE-ANGLED CORNERS

Acute and obtuse angles are solved using the Joint angle Varimid.



Joint angle Varimid



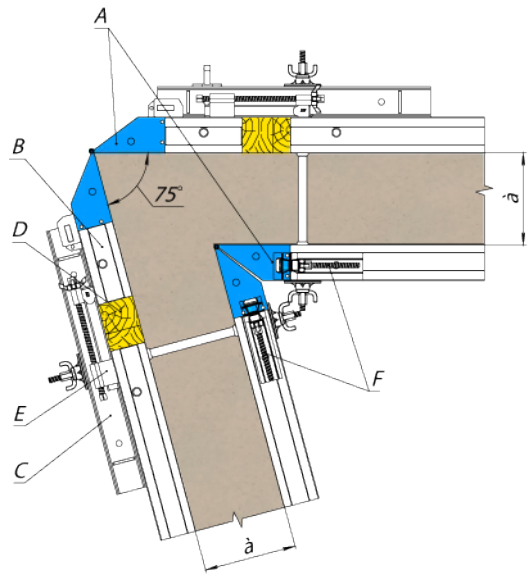
a... 1.7 cm
b... 23.3 cm

- Guaranteed operating range of the joint angle - from 75° to 270°.
- 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».

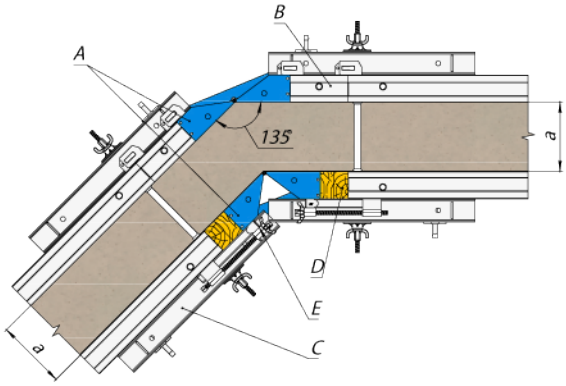
Number of Guide plates needed in the height:

Height of Joint angle	Number of Guide plates
1.00 m	4
1.50 m	4
3.00 m	8

75° - 135°angles with Joint angles Varimid

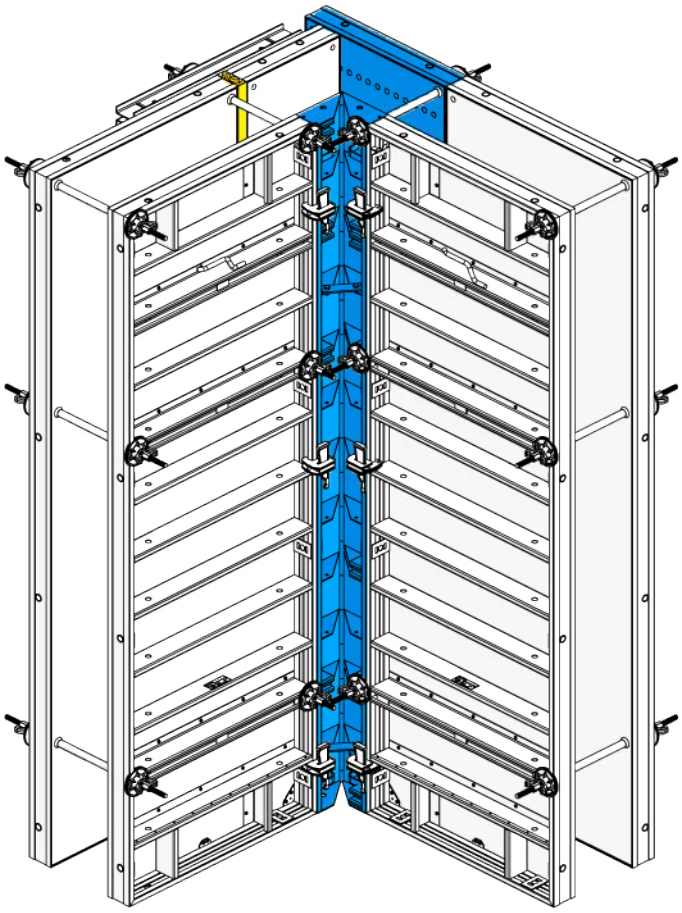


(A) Joint angle Varimid
(B) Framed panel Varimid
(C) Guide plate 0.90 m
(D) Fitting timber
(E) Adjustabe clamp Varimid
(F) Connection screw + Star-shaped nut

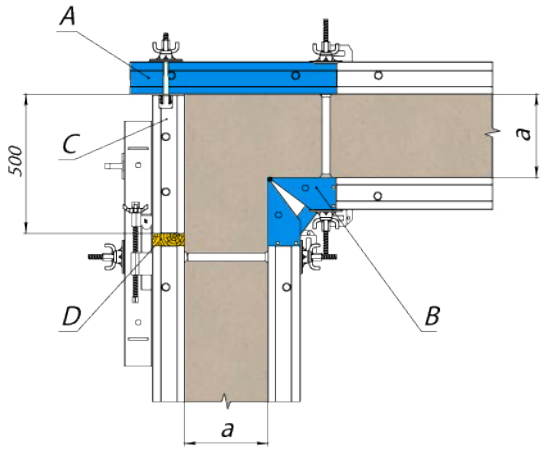


(A) Joint angle Varimid
(B) Framed panel Varimid
(C) Guide plate 0.90 m
(D) Fitting timber
(E) Adjustabe clamp Varimid

90°angle with Joint angle Varimid



The Joint angle Varimid can be fixed at a 90° angle using a distance plate.

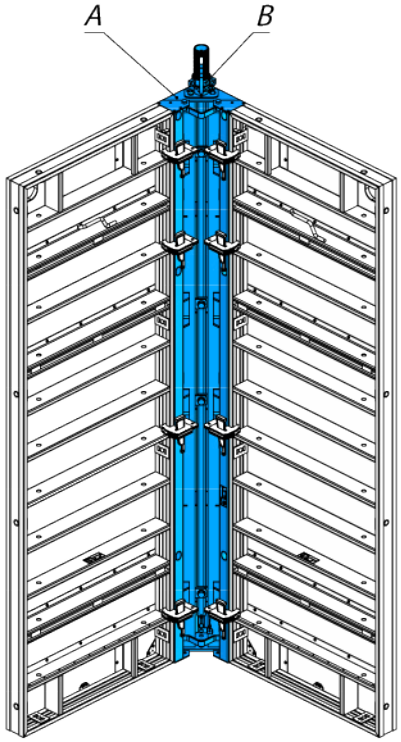


(A) Versalite panel Varimid
(B) Joint angle Varimid
(C) Framed panel Varimid
(D) Fitting timber

a... 30 cm

SHAFT FORMWORK / STRIPPING AID

Shaft formwork with Stripping corner Varimax



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

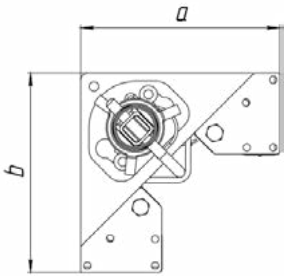
In order to obtain the full available stripping-play, make sure that the Clamp devices are mounted not opposite one another.

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

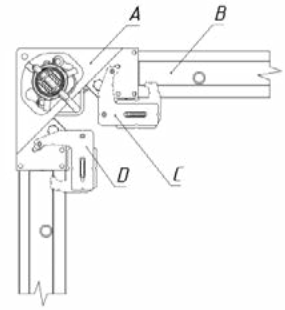
Stripping corner Varimax



a=30 cm

Number of clamps needed:

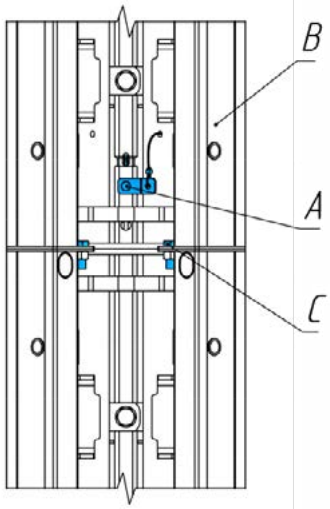
Height of Stripping corner	Number of clamps
1.35 m	4
3.00 m	8



(A) Stripping corner Varimax
(B) Framed panel Varimid
(C) Clamp device Vari-right
(D) Clamp device Vari-left

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 .

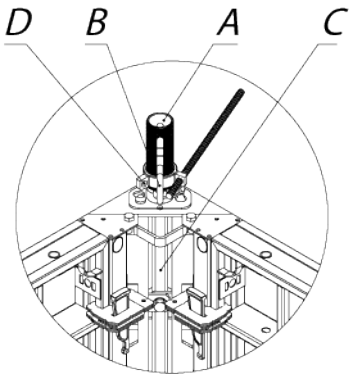


(A) Coupling bolt
(B) Stripping corner Varimax
(C) Hexagonal bolt M16x45

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.

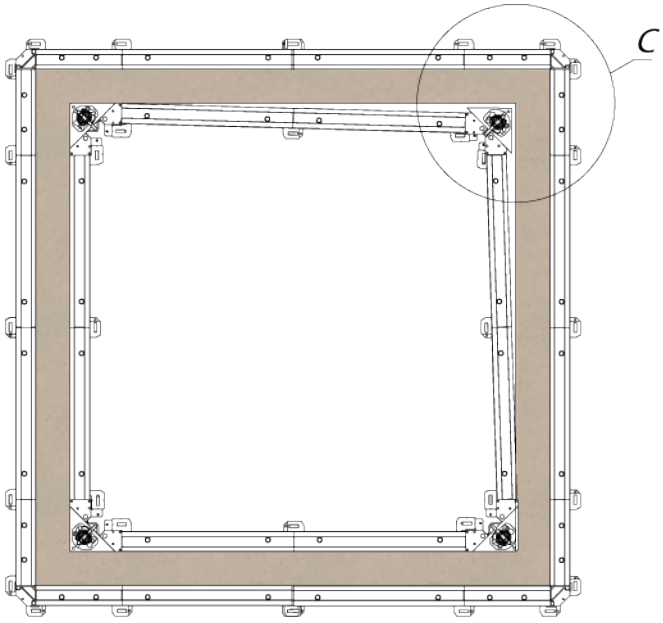
Operating the spindle:

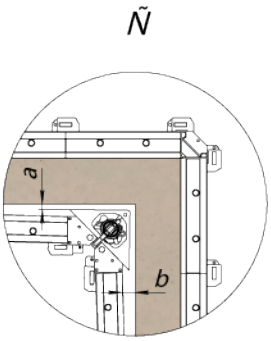


(A) Stripping spindle Varimax
(B) Fastening clamp
(C) Push-rod
(D) Nut

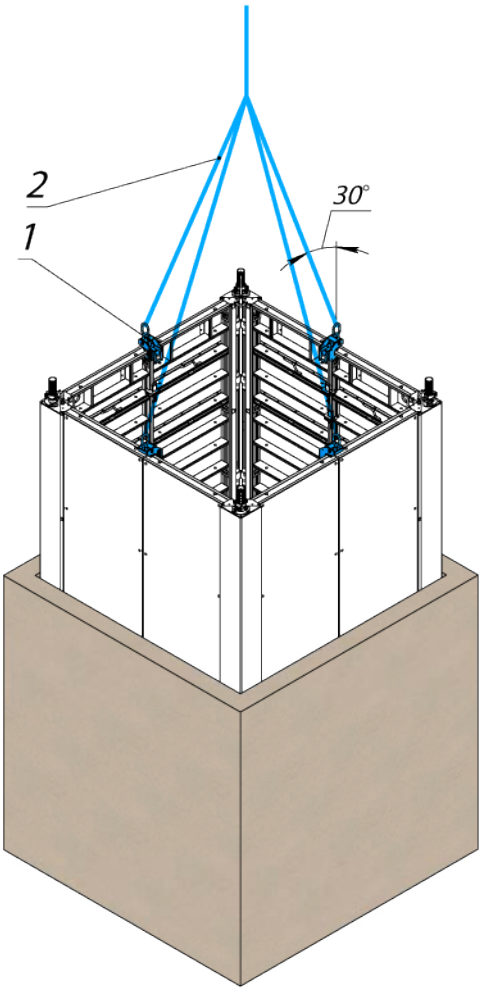
- Stripping = Turn the nut anti-clockwise
- Erecting = Turn the nut clockwise

Stripping play:





a... 3.0 cm
b... 6.0 cm

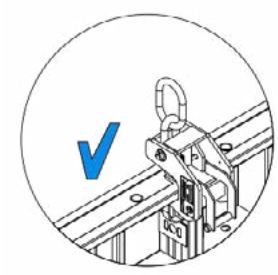


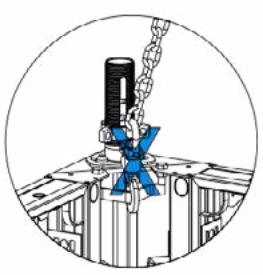
Lifting by crane:

(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.

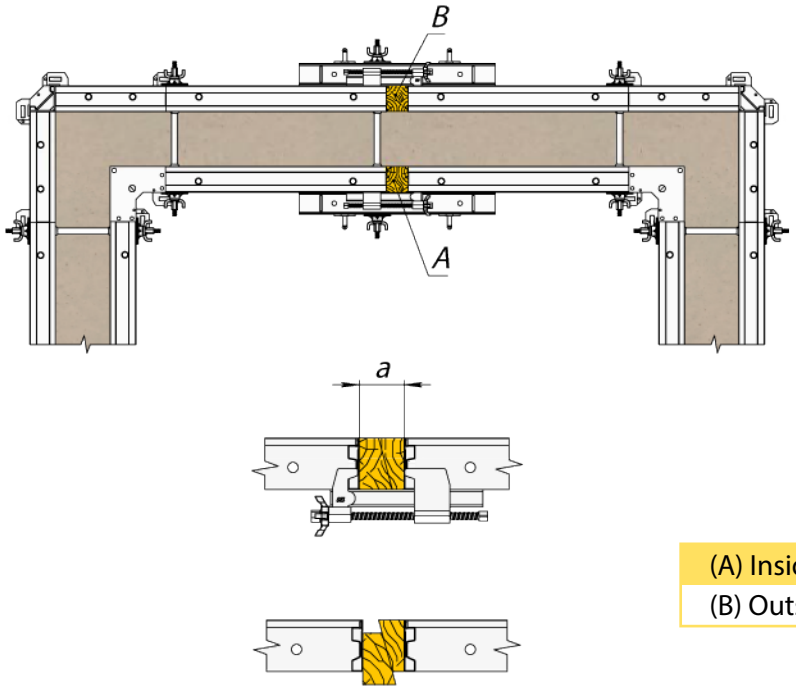
Permitted weight of the shaft formwork:
2000 kg with 4 Lifting hooks





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

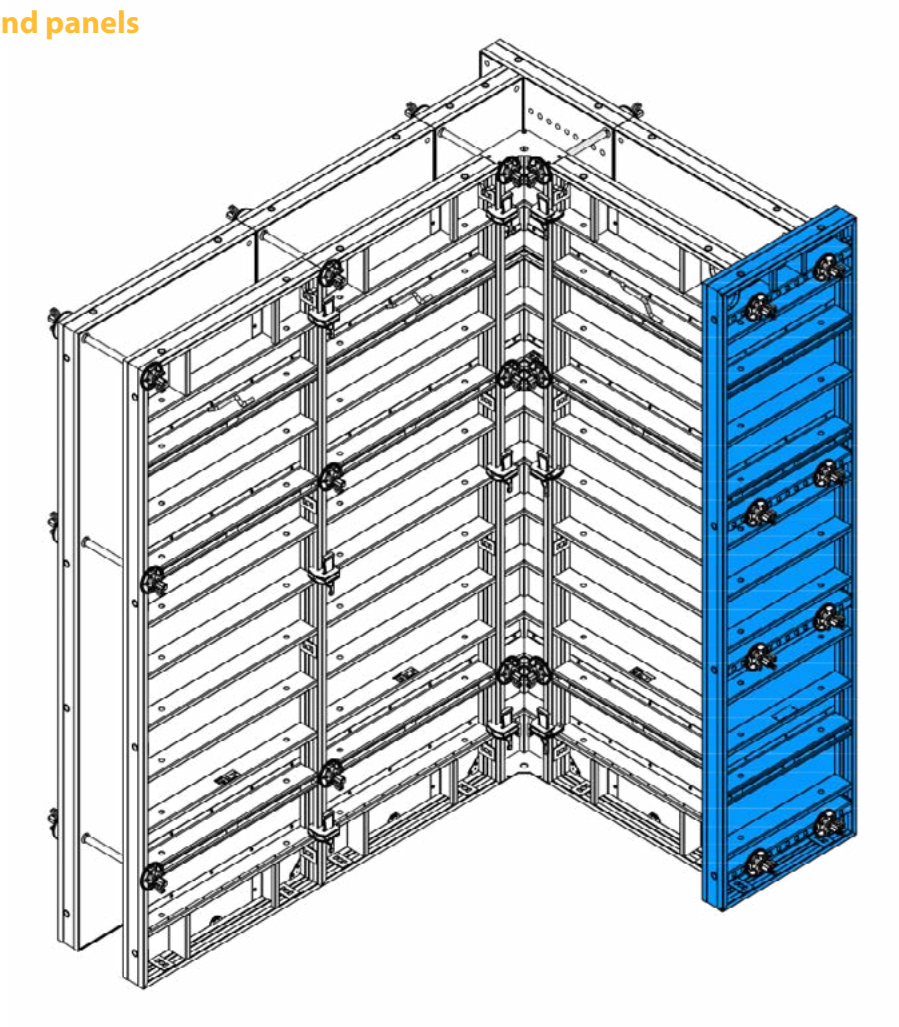
a... 10 cm

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 Stop-end panels



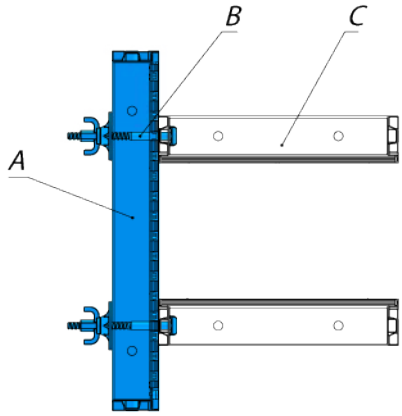
The Stop-end panels are mounted using Connection screws and Superplates.

Required numbers of Connection screws and Superplates:

Height of panel	Number of screws
1.00 m	4
1.50 m	4
3.00 m	8

Stop-end 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) Stop-end panel 90 cm
(B) Connection screw & Superplate
(C) Frame panel 75 cm width or less

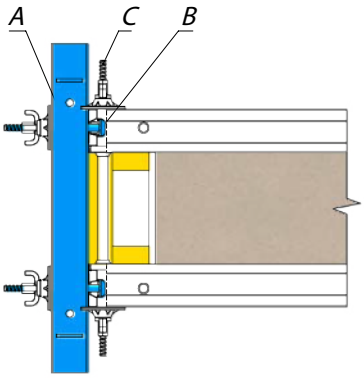
With Guide plates

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

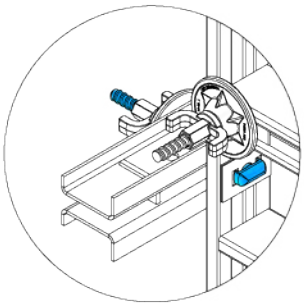
There are 2 possible ways of fastening the Guide plates:
• with connection screws
• with stop-end ties

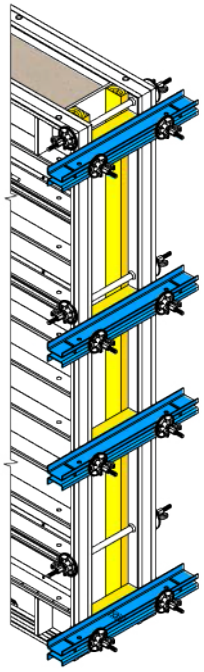
Connection screws

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



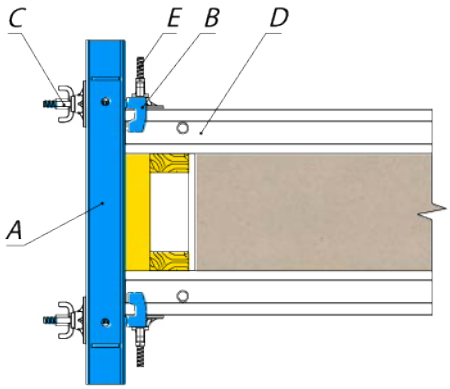
(A) Guide plate
(B) Connection screw & Superplate
(C) Tie-rod 15.0 mm



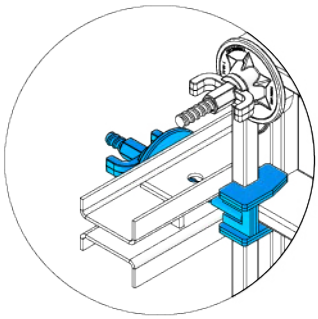


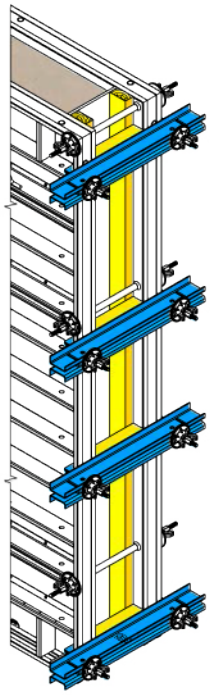
Stop-end ties

The Guide plates 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
(B) Stop-end tie
(C) Superplate
(D) Varimid 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:

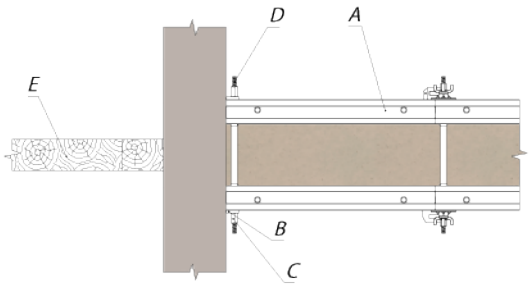
Height of panel: 2.70 m	
Wall thickness	Guide plate
up to 40 cm	2
up to 50 cm	3
up to 60 cm	4

WALL JUNCTIONS, OFFSETS AND STEPS

Connecting to existing walls

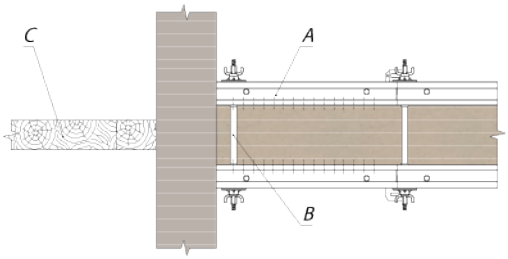
Right-angled connections

with Framed panel and Pressure plate



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

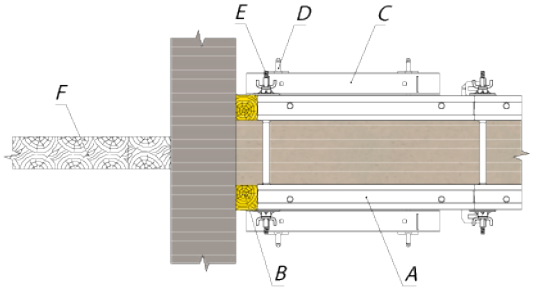
with a Versatile or Multipurpose panel



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

Versatile panel 3.00 m: 4 form-ties are required, in the first hole of each perforated profile

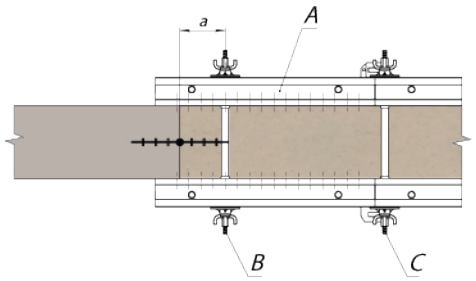
with Framed panel and squared timber



(A) Framed panel Varimid
(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 or Multipurpose panel

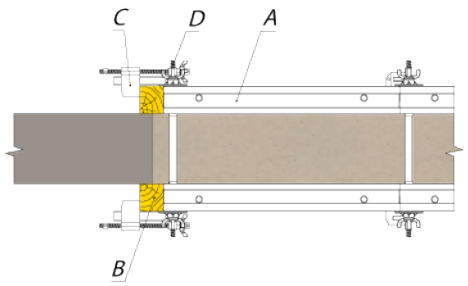


(A) Versatile panel Varimid
(B) Tie-rod 15.0 mm
(C) Tie-rod 15.0 mm

a ... max. 20 cm

Versatile panel 3.00 m: 4 form-ties are required, in the first hole of each perforated profile

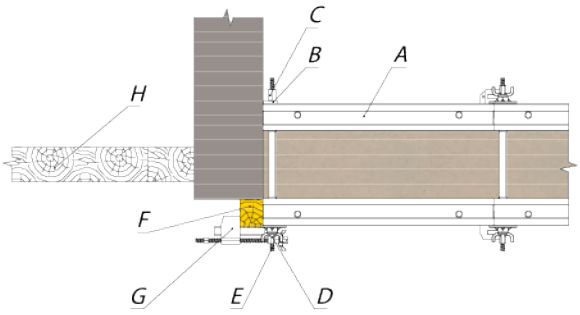
with Framed panel and squared timbers



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

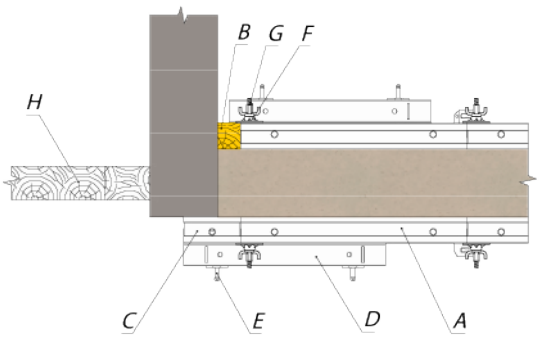
Corner connections

without closure



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

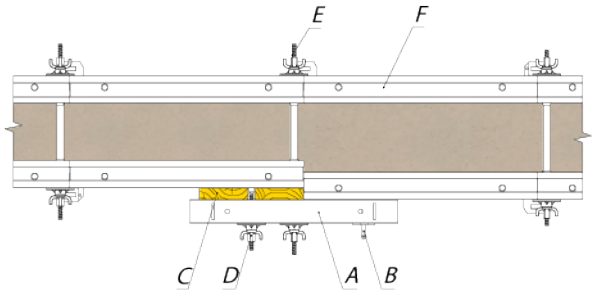
with closure



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

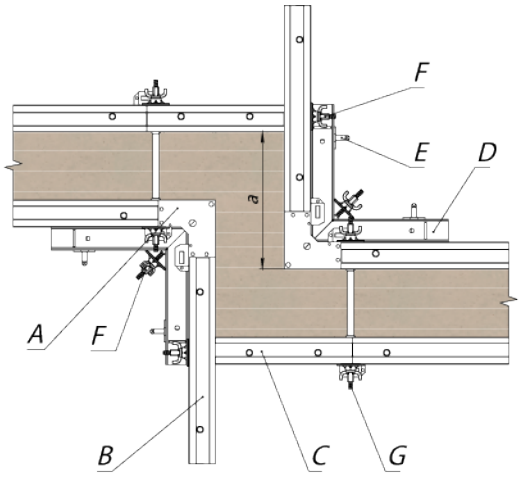
Wall offsets

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 Varimid

Wall steps

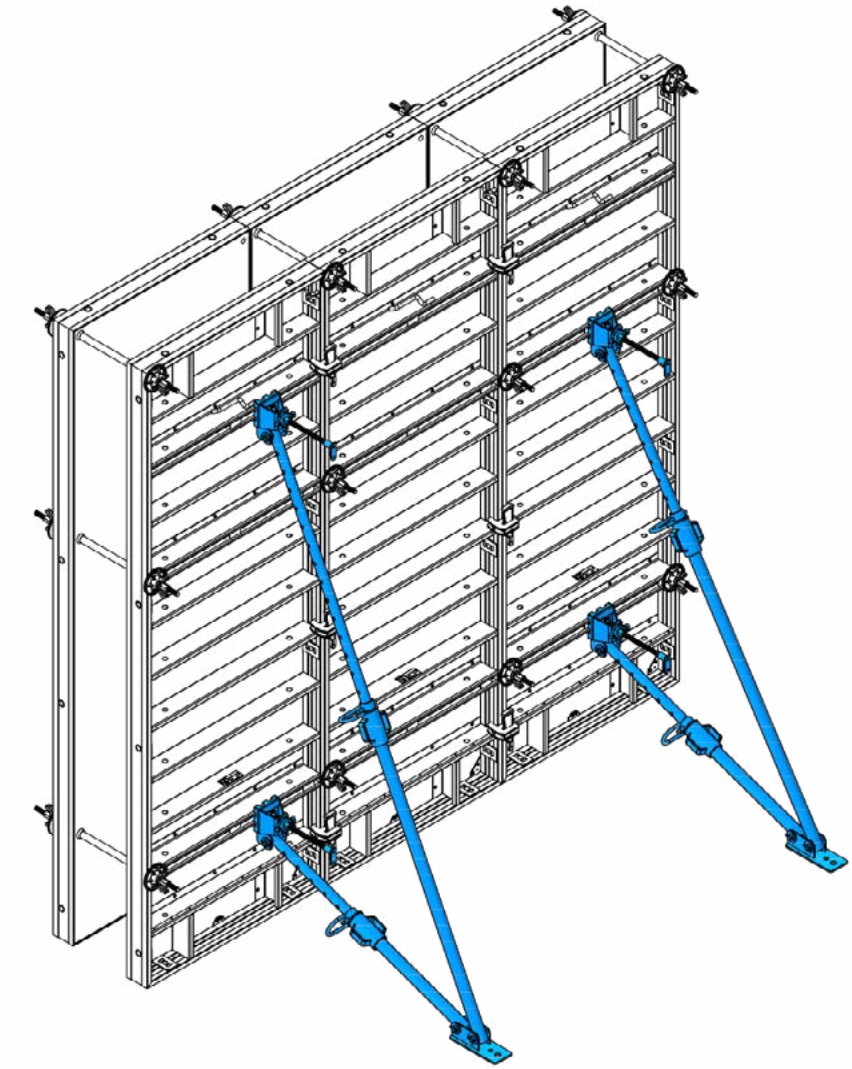


(A) Internal angle Varimid
(B) Versatile panel Varimid
(C) Framed panel Varimid
(D) Corner guide plate
(E) Contact device
(F) Superplate & Connection screw
(G) Tie-rod 15.0 mm

a ... 30 to 60 cm

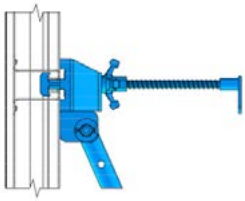
PLUMBING ACCESSORIES

Supporting 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
Every gang-form must be supported by at least 2 panel strut

Connection to the waling profile



Permitted spacing [m] of the plumbing accessories:

Formwork height	Supporting strut		
	250	340	540
3.00 m	2.00		
4.00 m		1.50	
4.50 m			2.00
6.00 m		1.50	1.50

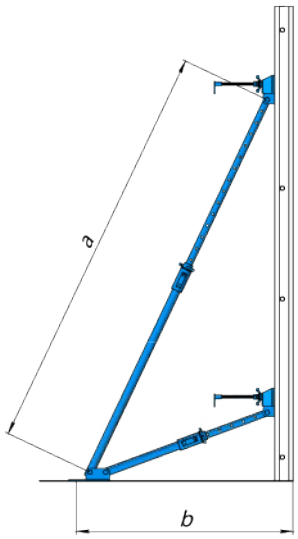
Values apply up to a structure height of 20 m.

For heights over 20 m, the correct spacing of the supports must be calculated as required by the higher wind loads.

Supporting struts
- Can be telescoped in 8 cm increments
- Fine adjustment by screw-thread
- All parts are captively integrated - including the telescopic tube

Supporting strut 250

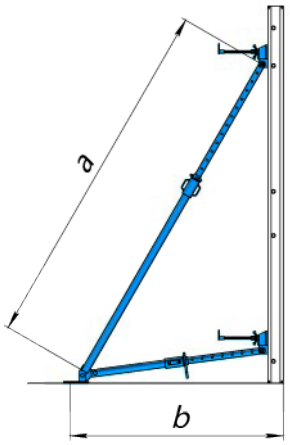
Retractable brace length, m	Allowable load	
	Pressure, kN	Stretching, kN
2,00	22,0	15,0
2,20	21,0	
2,40	17,5	
2,60	14,5	



a ... 152.2 - 277
b ... 97.1 - 140.2

Supporting strut 340

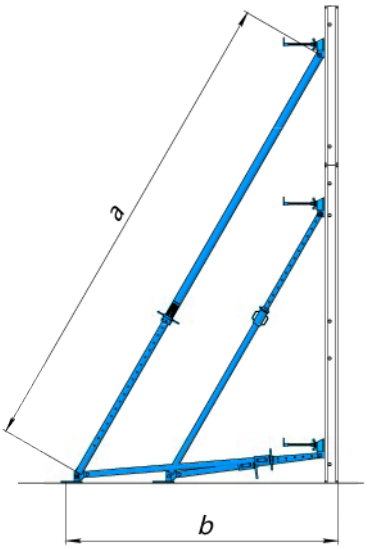
Retractable brace length, m	Allowable load	
	Pressure, kN	Stretching, kN
2,00	22,0	15,0
2,20	21,0	
2,40	17,5	
2,60	14,5	
2,80	12,5	
3,00	11,0	
3,20	9,5	
3,40	8,0	



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	

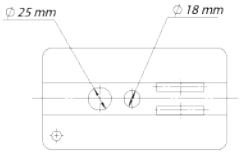


a ... 309.0 - 550.0 cm
b ... 224.2 - 281.6 cm

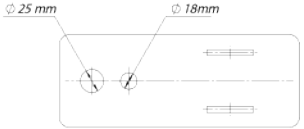
Footplate and anchorage

- 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.

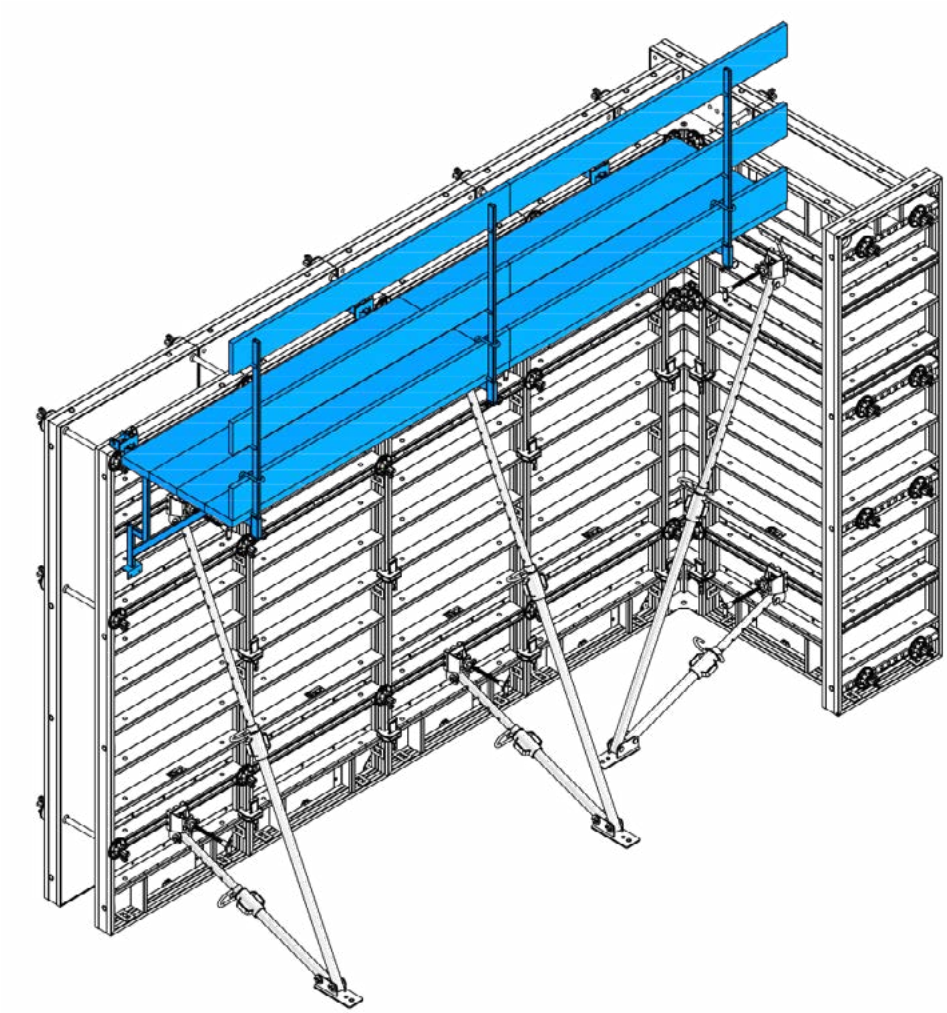
Supporting strut 340; 540



Supporting strut 250



POURING PLATFORMS



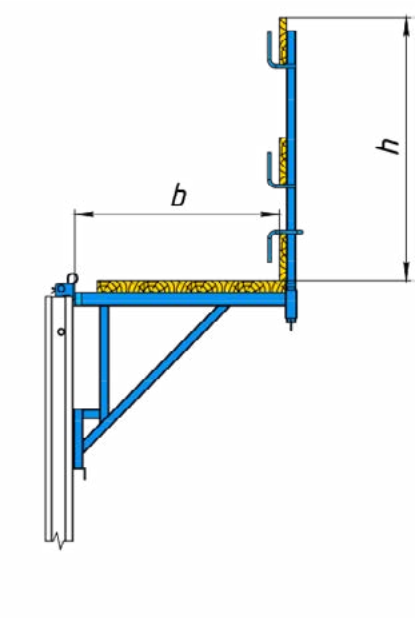
Preconditions for use:

• 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 Varimid



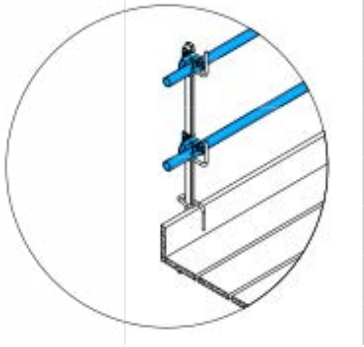
b ... 87 cm
h ... 103 cm

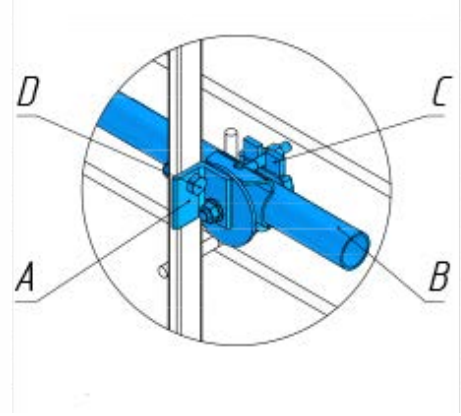
- Wall bracket as a part of pouring has working has working width of 90 cm. These pouring platforms can easily be mounted by hand.
- Max. influence width: 1.50 m
- Permitted live load: 1.5 kN/m^2

Floor decking

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

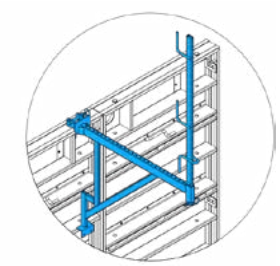
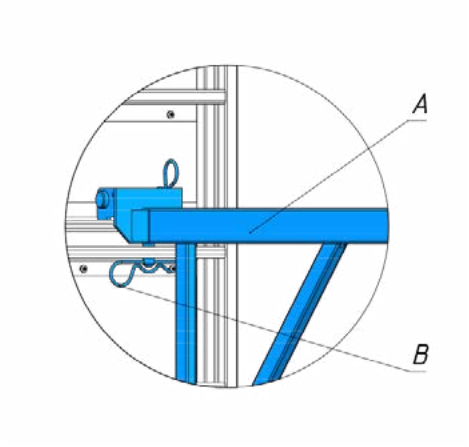
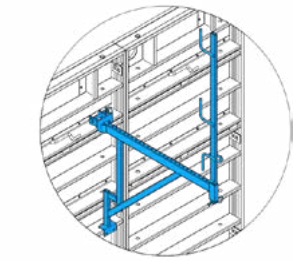
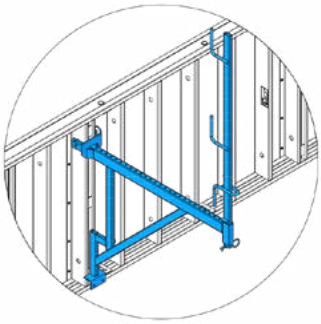
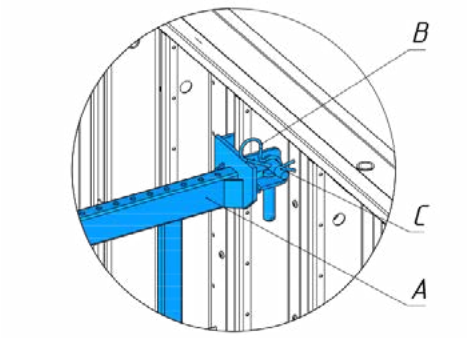
Using scaffolding tubes





(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

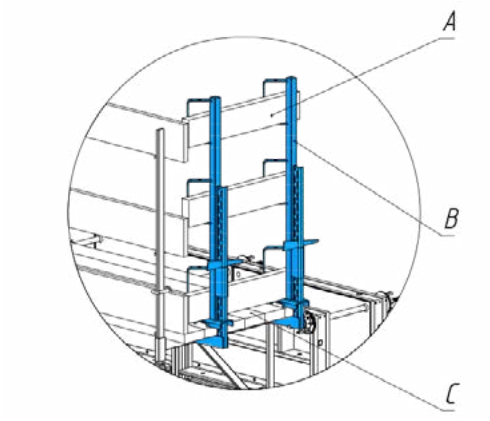
Possible ways of fixing	Lift-out guard
In the frame profile 	
In the cross profile 	
In the cross profile on horizontal panels 	

(A) Wall bracket Varimid

(B) Spring cotter

(C) Bolt

Guide rail clamp



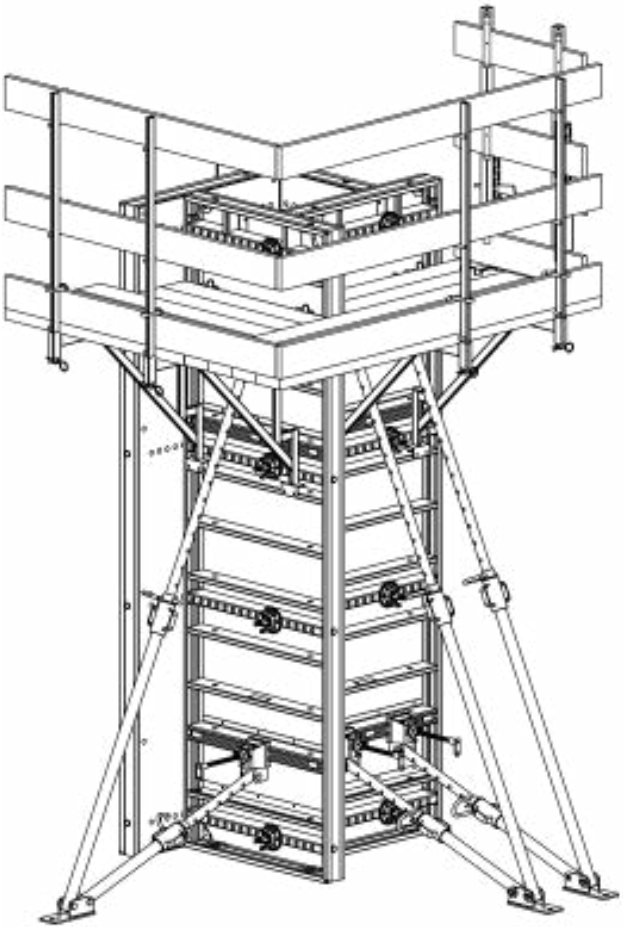
(A) Guard-rail board min. 15x3 cm

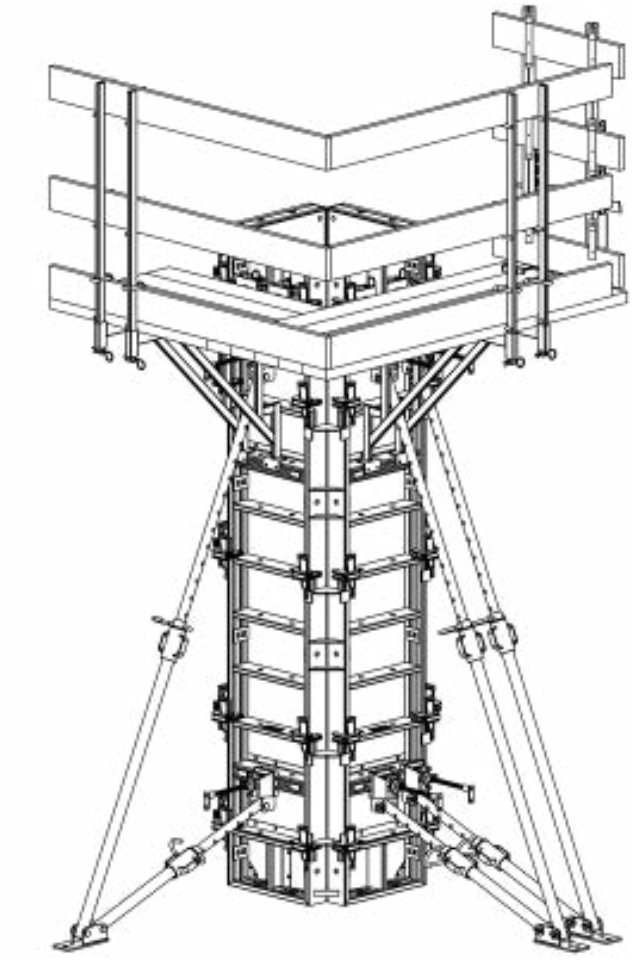
(B) Guide rail clamp

(C) Pouring platform

COLUMN FORMWORK VARIMID

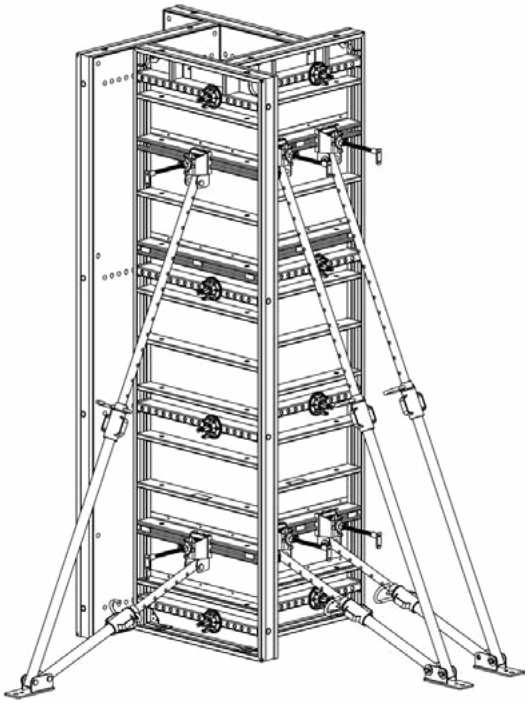
There are two possible ways of making columns:
- with versatile Varimid panels;
- with standard Varimid panels and external angles.





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

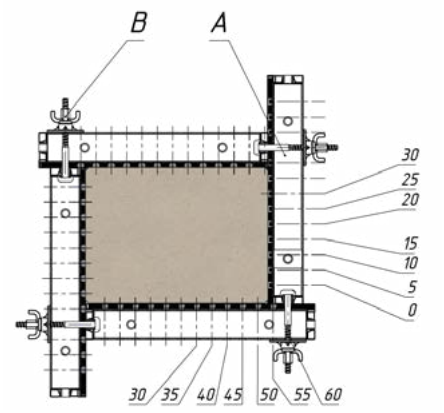
To achieve exact plumbing & aligning of the column formwork use 3 support braces.



With versatile panels

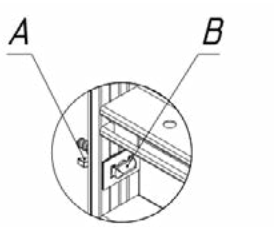
- The practical 5 cm hole-grid is ideal for forming columns.
- Cross-section up to 750 x 750 cm.

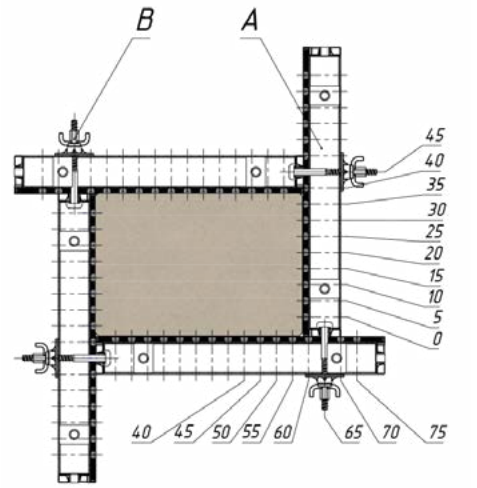
When versatile panels are assembled for pouring columns it is necessary to follow the formwork installation scheme, taking as a base surface side of panel with a size 63 mm before the first hole.



Versatile panel 0.75 m

(A) Versatile panel 0.75 m
(B) Superplate & Connection screw



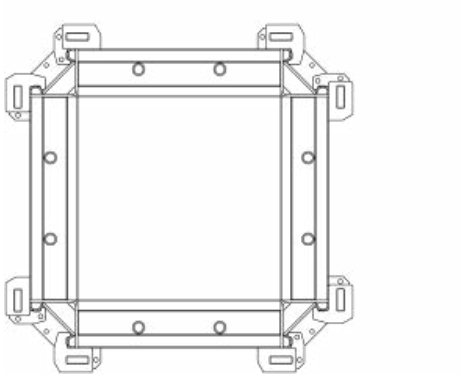


Versatile panel 0.90 m

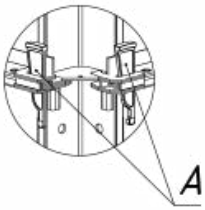
(A) Versatile panel 0.90 m
(B) Superplate & Connection screw

With ordinary framed panels and external angles

Dimensions of 25 cm, 45 cm and 50 cm can also be formed using external angles and ordinary framed panels.

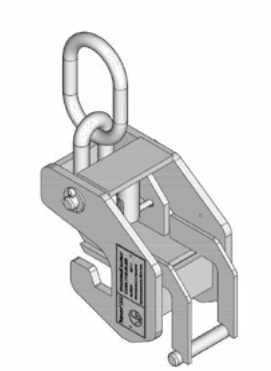


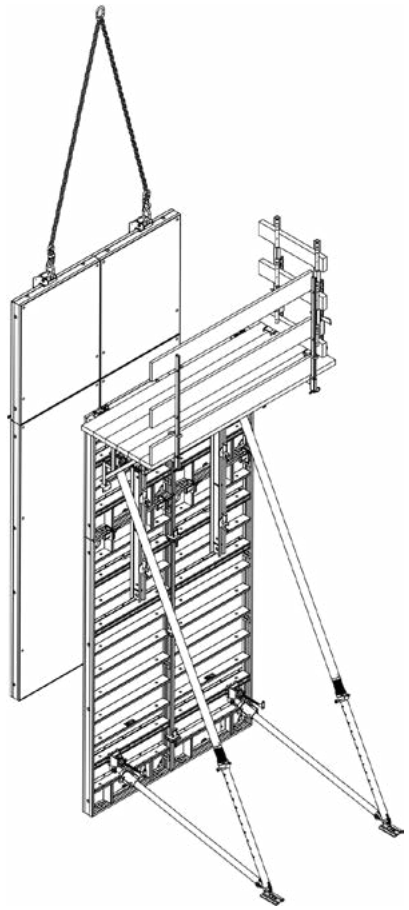
(A) Clamp device Varimid



RESETTING BY CRANE

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





Max. capacity: 500 kg per Lifting hook

Positioning the crane grips

Single panels

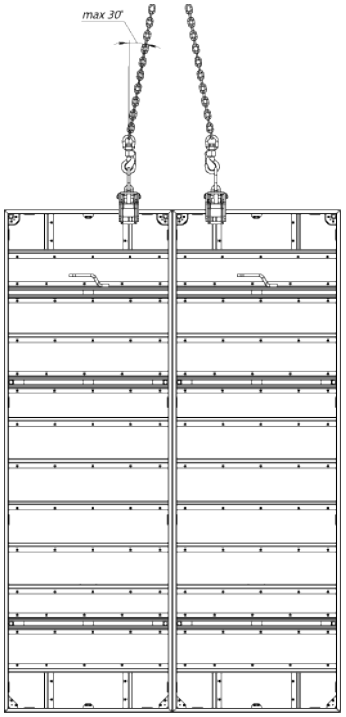
Always place the Lifting hook Varimid over one of the welded-on metal plates, to prevent it from sliding from side to side.

Single panel up
60 cm wide

Single panel over
60 cm wide

Two upright panels

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

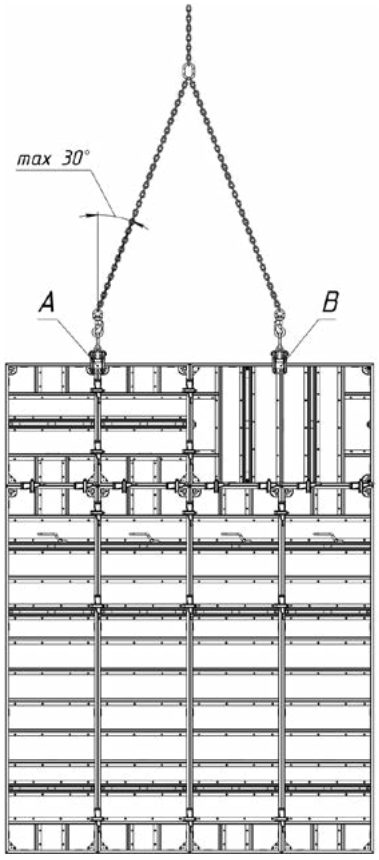


Gang-form

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

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

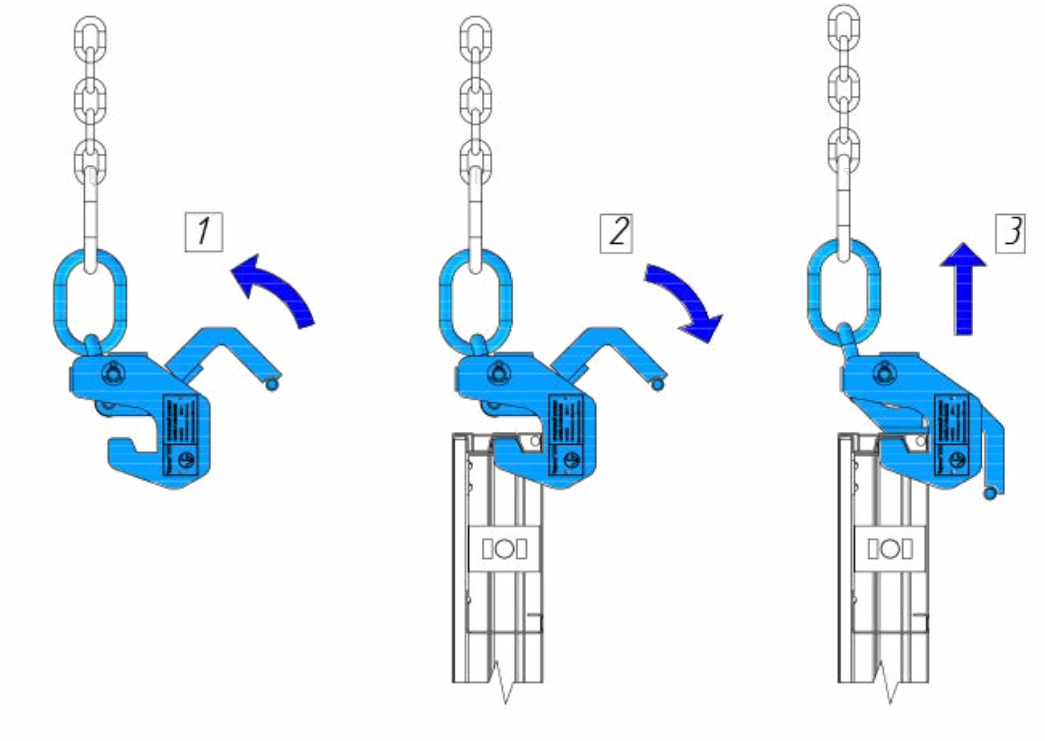
- Suspend the gang-form symmetrically (centre-of-gravity position).
- Spread-angle max. 30°
- Before lifting, remove any loose items from the formwork and platforms, or secure them firmly.



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

Operation with Lifting hook

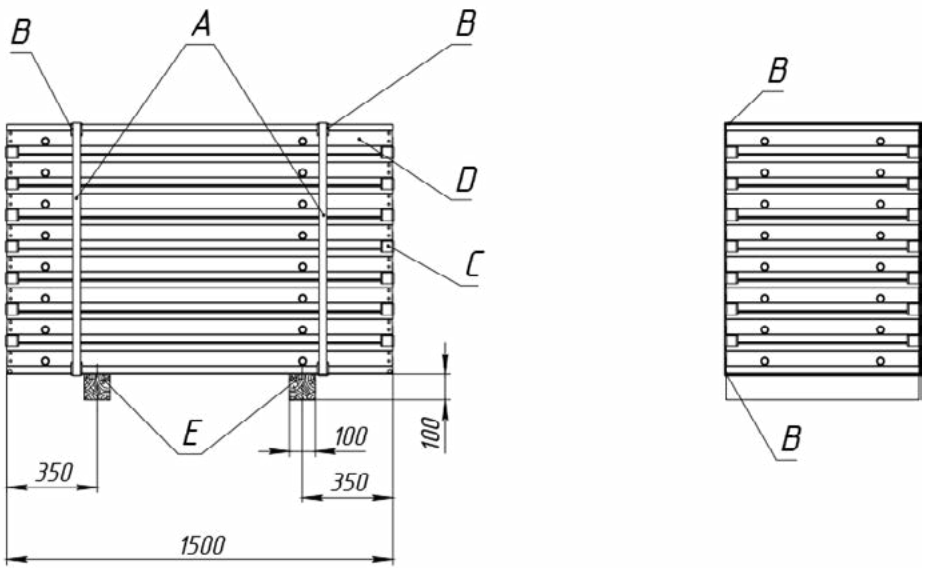
- Raise the handle (locking lever) as far as it will go.
- Push the Lifting hook Varimid onto the frame profile as far as the rear stop, and close the handle (spring-loaded).
- When the panels are lifted by the crane, a load-dependent locking mechanism is activated.
- Lift the gang-form to its new location.

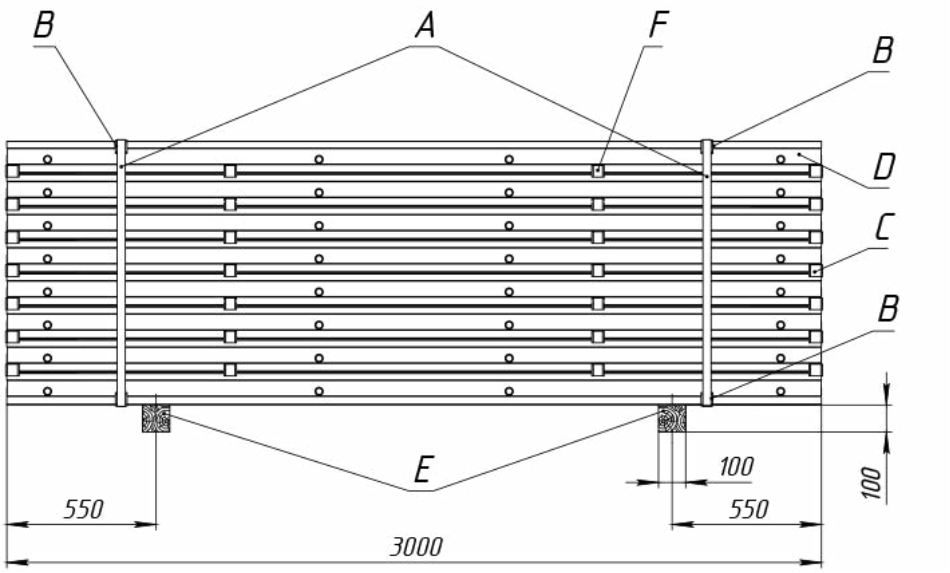


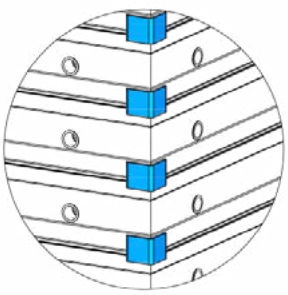
Do a sight-check to make sure that there is a secure form-fit between the Lifting hook Varimidand the frame profile!
The handle must be closed!

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

TRANSPORTING, STACKING AND STORING

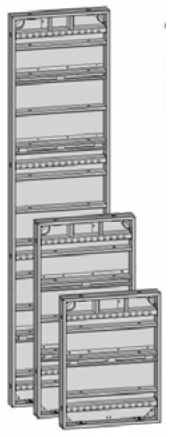


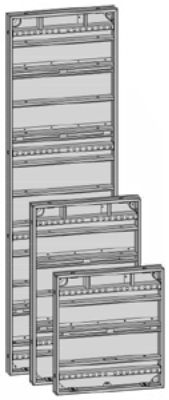


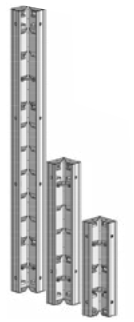
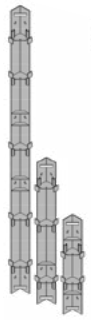
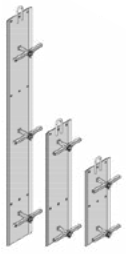


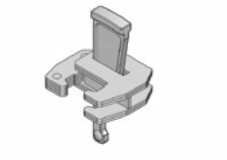
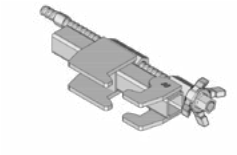
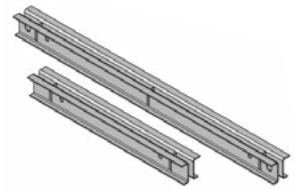
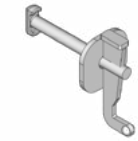
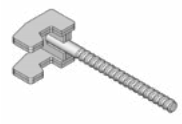
(A) Steel strip
(B) Packing gasket
(C) Stacking angle
(D) Panel Varimid
(E) Timber
(F) Stacking spacer

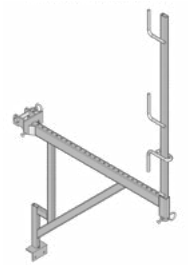
COMPONENT OVERVIEW

Item		[kg]	Article nº
Standard panel Varimid 	1000x3000 mm	131,25	12 100 000
	750x3000 mm	107,10	12 110 000
	600x3000 mm	85,45	12 112 000
	500x3000 mm	80,85	12 114 000
	450x3000 mm	77,18	12 116 000
	250x3000 mm	63,95	12 118 000
	1000x1500 mm	73,17	12 200 000
	750x1500 mm	59,35	12 210 000
	600x1500 mm	49,44	12 212 000
	500x1500 mm	43,76	12 214 000
	450x1500 mm	39,74	12 216 000
	250x1500 mm	28,38	12 218 000
	1000x1000 mm	48,47	12 300 000
	750x1000 mm	39,70	12 310 000
	600x1000 mm	34,58	12 312 000
	500x1000 mm	29,55	12 314 000
	450x1000 mm	27,37	12 316 000
	250x1000 mm	19,22	12 318 000
Versatile panel Varimid 	900x3000 mm	131,25	12 102 000
	750x3000 mm	114,56	12 106 000
	900x1500 mm	71,89	12 202 000
	750x1500 mm	65,43	12 206 000
	900x1000 mm	0,00	12 302 000
	750x1000 mm	46,63	12 306 000

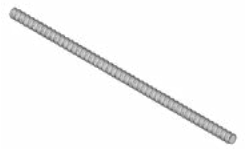
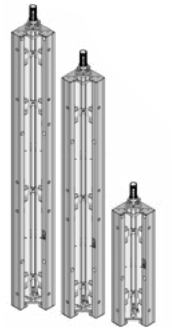
Item		[kg]	Article nº
Stop-end panel Varimid 	900x3000 mm 900x1500 mm 900x1000 mm	131,53 71,88 53,69	12 104 000 12 204 000 12 304 000
Multipurpose panel Varimid 	750x3000 mm 750x1500 mm 750x1000 mm	116,87 65,52 45,15	12 108 000 12 208 000 12 308 000
Internal angle Varimid 	250x3000 mm 250x1500 mm 250x1000 mm	74,55 41,09 0,00	12 610 000 12 620 000 12 630 000

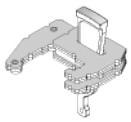
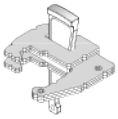
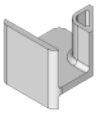
Item		[kg]	Article nº
Joint angle Varimid 	250x3000 mm 250x1500 mm 250x1000 mm	99,75 48,71 34,86	12 612 000 12 622 000 12 632 000
External angle Varimid 	3000 mm 1500 mm 1000 mm	39,38 20,04 0,00	12 614 000 12 624 000 12 634 000
Expansion block Varimid 	3000 mm 1500 mm 1000 mm	54,14 0,00 0,00	12 700 000 12 702 000 12 704 000
Lifting hook Varimid 		7,61	12 718 000

Item		[kg]	Article nº
Clamp device Varimid 		2,02	12 710 100
Adjustable clamp Varimid 		4,95	12 712 100
Guide plate 	900 mm 1500 mm	11,35 18,85	11 912 000 11 914 000
Corner guide plate 	600x600 mm	14,04	11 916 000
Contact device 		1,49	11 918 100
Stop-end tie Varimid 		1,31	12 714 100

Item		[kg]	Article nº
Connection screw 	100–160 mm 100–250 mm	0,63 0,79	11 908 100 11 910 100
Wall bracket Varimid 		12,92	12 720 000
Guide rail clamp 		12,40	52 400 100
Supporting strut 250 		22,94	12 722 100

Item		[kg]	Article nº
Supporting strut 340 		37,38	11 928 100
Supporting strut 540 		56,91	11 930 100
Superplate 	15,0	1,22	95 200 100
Hexagon nut 	15,0	0,37	95 208 100

Item		[kg]	Article nº
Pressure plate 		0,86	95 210 100
Plastic tube 	2500 mm	0,45	99 100 400
Plastic cone 	220 mm	0,005	99 102 400
Tie rod 15,0 mm 	500 mm 750 mm 1000 mm 1250 mm 1500 mm 1750 mm 2000 mm 2250 mm 2500 mm 2750 mm 3000 mm	0,80 1,20 1,60 2,00 2,40 2,80 3,20 3,60 4,00 4,40 4,80	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
Stripping corner Varimax 	300x3300 mm 300x3000 mm 300x2850 mm 300x2700 mm 300x1350 mm	207,90 189,00 145,95 0,00 97,65	11 718 000 11 728 000 11 738 000 11 748 000 11 758 000

Item	[kg]	Article nº
Clamp device Vari-right 	2,69	12 724 100
Clamp device Vari-left 	2,69	12 726 100
Stacking angle 	0,031	2690
Stacking angle 	0,026	2691

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