

Instructions for Assembly and Use

AL2000 ST2000



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RINGER
GERÜSTE + SCHALUNGEN

LET'S BUILD

AUSTRALIAN PARTNER

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1 General information



REFERENCE

Draws attention to other documents containing information of relevance.



TECHNICAL INFORMATION

Draws attention to important product features.



TIP

Draws attention to useful practical tips.

Safety instructions

FOREWORD

Country-specific laws, standards and applicable codes of practice must be complied with for the safe deployment and use of our products. They constitute part of the obligations of employers and employees in relation to occupational health and safety. The employer's obligation to ensure the stability of formwork structures throughout all build phases is one of the resultant obligations. This includes the basic assembly, disassembly and transport of these structures and their component parts. The overall structure must be checked during the assembly process and on completion of assembly.

INSTRUCTIONS FOR ASSEMBLY AND USE (IA&U)

Formwork is technical equipment intended exclusively for industrial/commercial use. Work involved in use as intended by the manufacturer must be undertaken only by competent and qualified personnel. The present Instructions for Assembly and Use (IA&U) manual is an integral part of the formwork structure. It contains safety instructions, information about standard procedures and intended use, and also a description of the system. It also contains drawings and explanatory illustrations.

AVAILABILITY OF THE INSTRUCTIONS FOR ASSEMBLY AND USE

It is an obligation for the contractor to ensure that the IA&U manual(s) made available by RINGER is/are present on the jobsite and is/are accessible to the employees and that the employees are familiar with the content.

INSTRUCTIONS

The instructions for function and use ((standard procedure) in this manual must be followed strictly. Deviations require separate verification by the contractor in compliance with the relevant laws, standards and safety codes.

ILLUSTRATIONS

Some illustrations in this manual show the situation during formwork assembly and therefore depict structures that are not always complete from the safety point of

view. Safety equipment not shown in these depictions must nevertheless be used by the contractor in every instance.

STORAGE AND TRANSPORT

Due consideration must be given to the special requirements of formwork in relation to transport operations and storage.

CHECK OF MATERIALS

On its arrival at the jobsite and again before each use, the formwork material has to be checked to ensure that it is in perfect condition and fully functional. Alterations and modifications are not permitted. All connectors must be checked to ensure that they are secure and fully functional. This is necessary particularly after exceptional events (e.g. severe winds/thunderstorms).

SPARE PARTS AND REPAIRS

Use only the manufacturer's original parts as spare parts. Repairs must be carried out by RINGER or authorised facilities.

USE OF OTHER-MAKE PRODUCTS

Mixing RINGER systems with other-make parts involves risks that can lead to injury to persons and damage to property.

HAZARD ASSESSMENT

The contractor is responsible for drawing up, documenting, implementing and continually updating a hazard assessment for every jobsite. Contractor's employees are legally bound to implement the resulting measures in a manner that is compliant with all applicable laws. The Instructions for Assembly and Use constitute one of the bases for drawing up the hazard assessment.

ASSEMBLY INSTRUCTIONS

The contractor is responsible for drawing up written assembly instructions. The Instructions for Assembly and Use constitute one of the bases for drawing up these assembly instructions.

CHANGES

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

System 2000

Wall formwork



2 Product Description

Our AL2000 and ST2000 framed formwork are complete formwork systems with a wide-ranging area of application. The formwork systems are suitable both for handset usage and for the crane-lifting of large gangforms.

For both systems, the maximum permissible fresh-concrete pressure is **60 kN/m²**.

Assuming compliance with the surface flatness tolerance specified in DIN 18202, Table 3, line 6, the maximum permissible fresh-concrete pressure is **50 kN/m²**

The panel grid with 8 panel widths (25–90 cm) and 3 panel heights (135/270/300 cm) offers numerous possible combinations, so the formwork system adapts perfectly to all site requirements.

FRAME

The frames of the **ST2000** panels are strong, torsionally rigid rolled profiles made of fine-grained steel. The profile height is 100 mm. The surface is galvanised to ensure durable surface protection. This makes the panels easy to clean.

The frames of the **AL2000** panels are strong, torsionally rigid aluminium box-section profiles. They are extremely light and durable.

FORMWORK SHEETING

The sheeting is riveted to the frame. The panels are available with the following sheeting:

- **Phenolic-resin coated sheeting**

Birch plywood, 11 layers glue-bonded, film-coated on both sides

- **Plastic-coated sheeting**

Birch plywood, 11 layers glue-bonded, plastic coating 1.8 mm thick on both sides

- **Alkus**

Extremely durable all-plastic sheet

EFFICIENCY ON THE JOBSITE

The panels of the AL2000 and the ST2000 systems are fully compatible with each other, making for extra-high flexibility on the jobsite.

Transport and storage



Consult the data sheet for the stacking pallet!

Stacking pallet

The system 2000 panels are transported in the space-saving stacking pallet. The frames can be stacked up to 4 high. Panels of different widths can be stored in combination. 600 kg per stacking pallet is the maximum permissible total weight of the panels. Loadable for example with

- 10 AL2000 panels 270/90
- 10 ST2000 panels 270/45



Panel widths 50-90 cm

2 stirrups

Panel widths 25-45 cm stacked on top of each other 4 stirrups



Max. permissible load 600 kg!



UNI container

Ideal for transporting and storing small items, available with or without flap.



Length 1.2 m

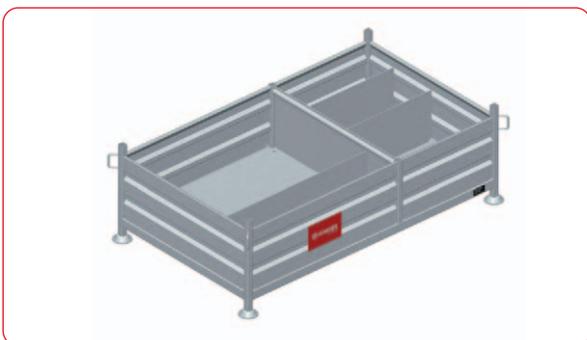
Width 0.8 m

Height 0.78 m

Load-bearing capacity 1500 kg



Consult the data sheet!



Accessories box

Ideal for transporting and storing small items used for formworking.



Length 1.89 m

Width 1.11 m

Height 0.63 m

Load-bearing capacity 1500 kg



Consult the data sheet!

Repositioning by crane



Max. permitted load
Crane hook AL, art. No. 408V5
1600 kg

Crane hook AL, art. No. 408V4
1000 kg

Distinction by type plate,
see Page 10



Consult the operating instructions
of the crane hook AL!

Crane hook

Individual panels or large gang-forms can be repositioned safely with the crane hook AL. The crane hook has to be hooked into the profile of the formwork panel in the area of the inter-panel joint or at the stiffeners. This is done by lifting the clamping bar by hand.

When panels turned on their side are to be lifted, make sure that the direction of loading is correct. Before lifting the formwork panels with the lifting equipment, make sure that the formwork profile is fully seated in the recess of the crane hook AL and that the bottom edge of the clamping bar is seated against the formwork profile. Otherwise there is a risk of the crane hook AL disengaging.

Operation

Only competent persons (crane operator, crane rigger) are permitted to operate the equipment.

- Push the grip of the clamping part up against spring force
- Position the crane hook AL on the frame profile of the formwork panel. This is easy to do because the centre of gravity is in the middle.
- Release the grip and shake the crane hook AL slightly to make sure that it is securely seated on the edge profile. Choose the position on the edge profile so that the panel or gang-form will hang vertically when lifted clear.
- Engage the hook of the slewing crane/construction crane in the suspension link and lift the load. The crane should be moved in such a way that the hook's direction of loading is always upward (crane cable as vertical as possible by following the curve of movement of the panel/gang-form).

Installation

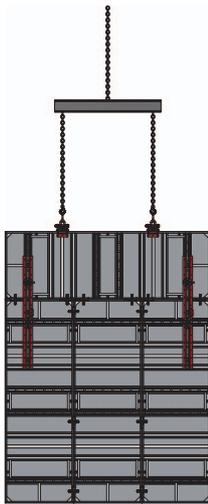
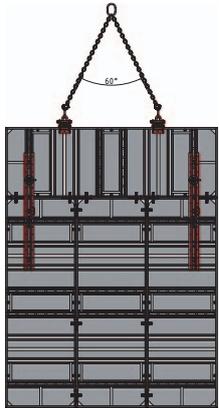
To prevent slippage, position the crane hook AL either centred (to lift a single panel) or at the inter-panel joint (to lift a gang-form). Suspend the gang-form symmetrically (centre-of-gravity position). Vertically stacked gang-form pre-assembled flat on floor level need walers 150 as stiffeners to prevent the gang-form from buckling in on itself as it is being raised.

Repositioning by crane

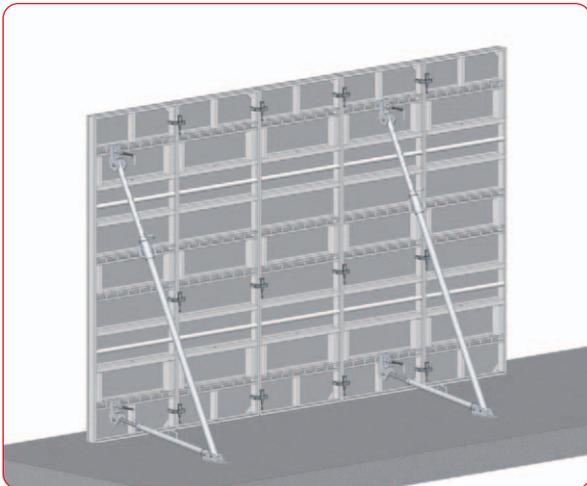
Use of more than one crane hooks

Single panels - and more particularly gang-forms - can be moved using 2 crane hooks at the same time. Make sure that the spread angle of the chains does not exceed 60° (see sketch, bottom right). This condition is satisfied when the chain length is at least equal to the horizontal distance between the crane hooks AL. Attach the hooks in such a way that they cannot slip sideways toward the middle (secured at inter-panel joint, at the shaped tubes or at the

cap and function profiles for lifting panels turned on their side). When a load spreader is used the working load limit of 1600 kg can be assumed for both hooks if the hooks are loaded vertically or within a maximum deviation of 7.5° from the vertical. When 2 rigging chains are attached to one hook of the slewing crane/construction crane, the maximum permissible load is reduced as a factor of the angle between the chains:

Angle between rigging chains	0°	30°	60°
			
Crane hook AL art. No. 408V5 year of construction 2022  RINGER GmbH, A-4844 Regau, Römerweg 9 Lastaufnahmemittel, Spezialhaken Kranhaken AL Max. Tragfähigkeit: 1600kg Serien-Nr. / Baujahr A- [] / [] 	3200 kg	3090 kg	2770 kg
Crane hook AL art. No. 408V4 up to year of construction 2021 inclusive  A-4844 REGAU Römerweg 9 "AL+ST-Kranhaken" Max. Tragkraft: 1000 (kg) Serien-Nr.: AL- [1333] / [2015] TÜF Prüf-Nr.: FT95-077  DIN 15018 H1 / B3	2000 kg	1930 kg	1730 kg

Setting up the formwork and pouring the concrete

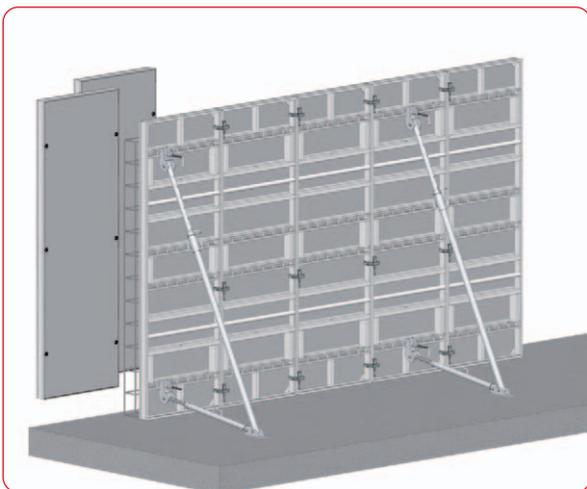


Setting up the formwork

Single the panels and spray the sheeting of each panel with RINGER special release agent. This will make it easier to detach the panels from the concrete when the formwork is being stripped out and it also makes the panels easier to clean after stripping. In addition, it improves the appearance of the finished concrete surface. Crane-lift the panels or gang-forms to the correct position and secure the push-pull props to the formwork first and then to the floor.

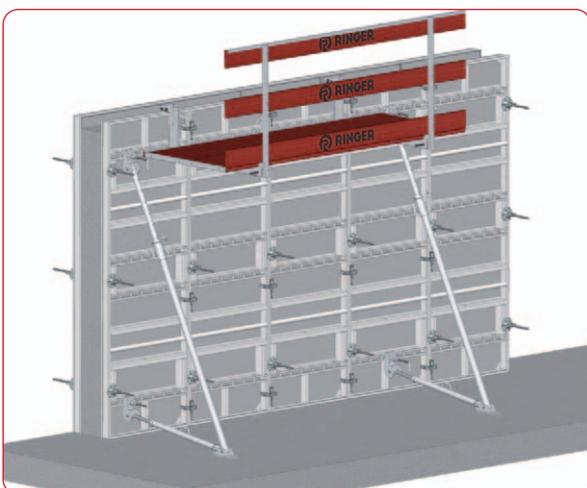


Do not unslung panels or gang-forms from the crane until the push-pull props are secured and/or appropriate measures have been implemented to secure the formwork against wind loads!



When the panels have been precision-adjusted, the next panels or gang-forms can be brought into position. Using suitable accessories, connect the panels in accordance with the specifications.

After the reinforcement has been installed, erect the closing formwork and install the tie rods.

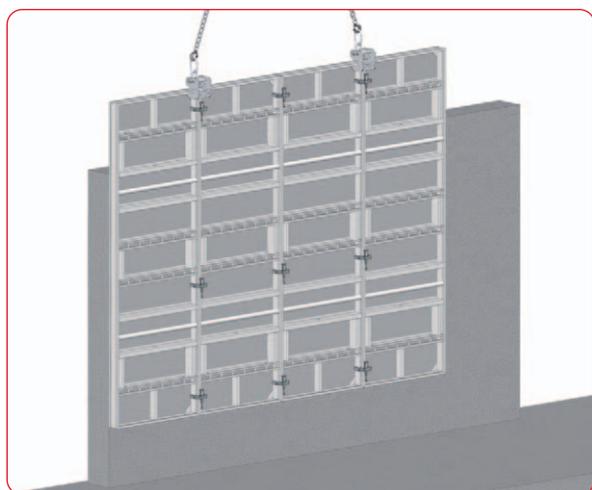


Pouring the concrete

The permissible fresh-concrete pressure is 60 kN/m² in accordance with DIN 18218. Do not exceed the maximum permissible pouring rate when pouring the concrete. Consult DIN 4235 Part 2 for instructions on compacting the concrete by vibrating.

Immediately after the concrete has been poured, clean the rear of the formwork with water.

Stripping out the formwork



Stripping out the formwork

The job of stripping out the formwork can begin when the concrete has hardened to the required minimum strength.

- Secure the opposing formwork so that it cannot tip over, then loosen the combi plates and remove the tie rods
- Loosen the clamps and remove the formwork panels
- Remove concrete residues from the formwork and spray the formwork with RINGER special release agent

Assuming compliance with the working load limits, entire gang-forms complete with push-pull props, scaffolding brackets or pouring platforms can be repositioned.



Do not use the crane to forcibly separate the gang-form from the concrete!

Cleaning and care

Before pouring

- Lightly spray the formwork sheeting with RINGER release agent

After pouring

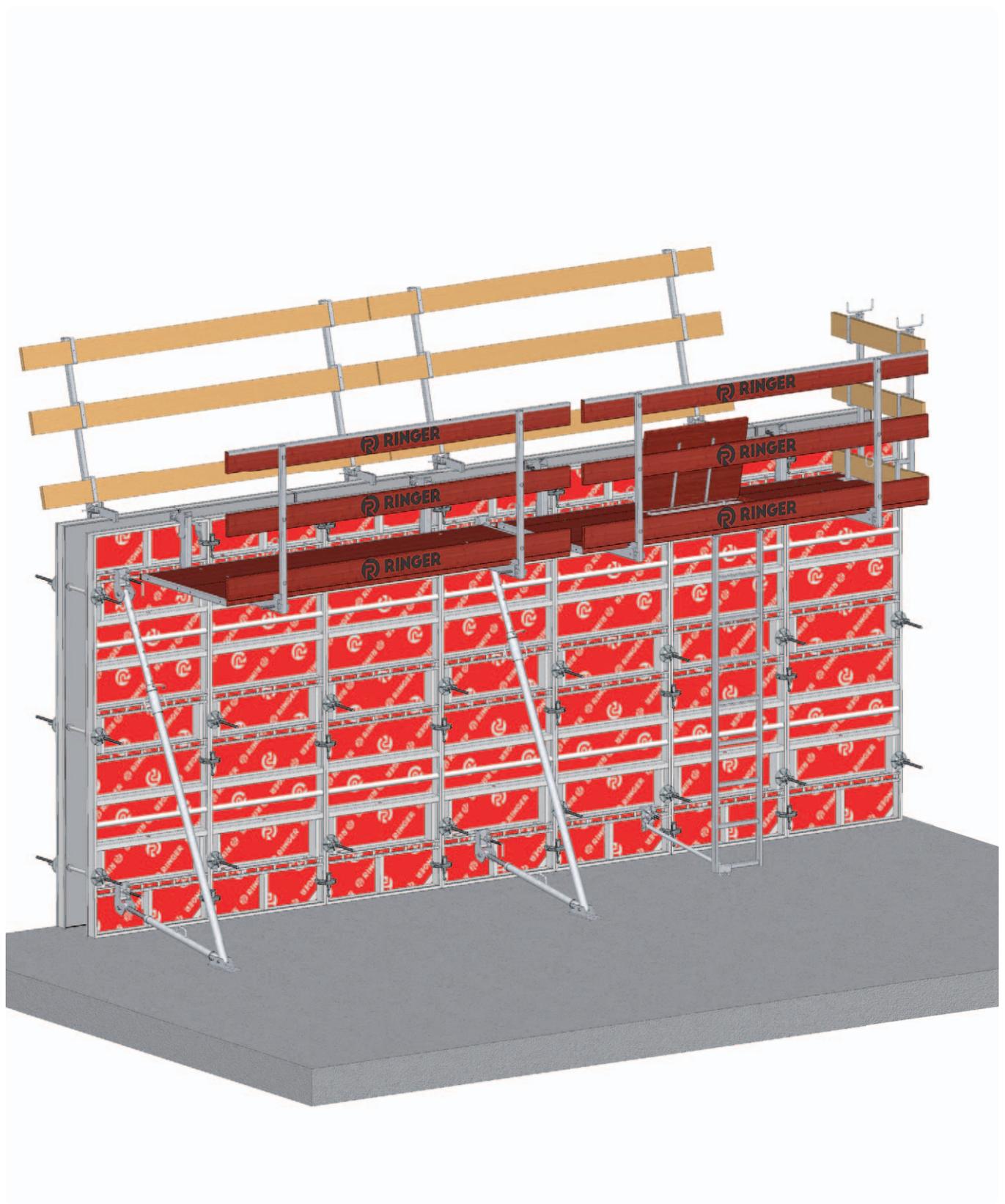
- Immediately remove residues of fresh concrete from the back of the formwork sheeting, Combi Plates and tie rods with water

After stripping the formwork

- Clean the formwork sheeting with scrapers or if necessary with a high-pressure spray cleaner. Do not use wire brushes, rotary grinding wheels or other, similar tools.

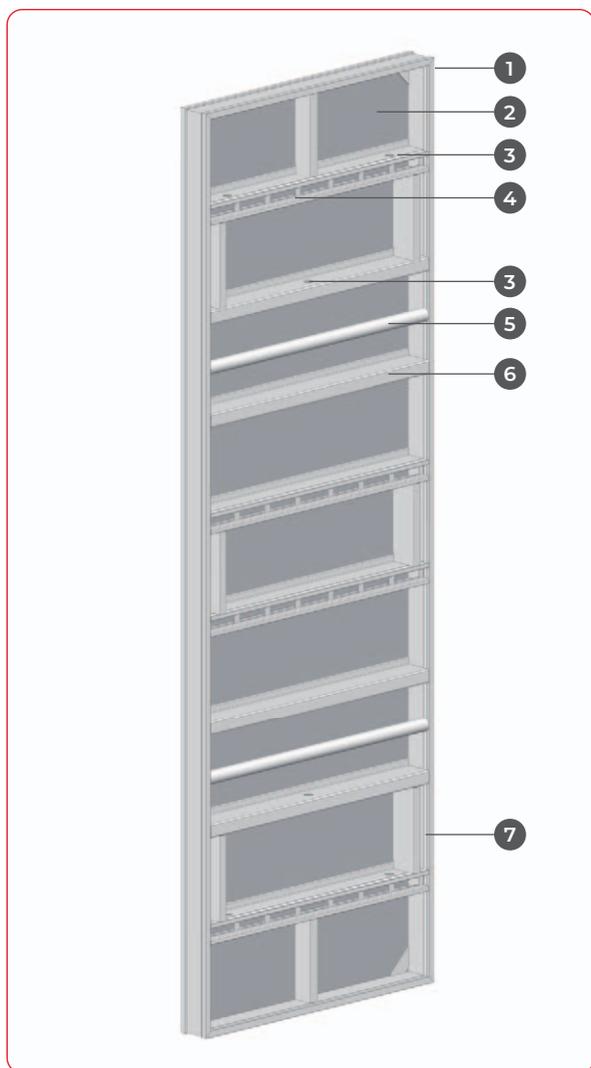


3 Product overview



AL2000

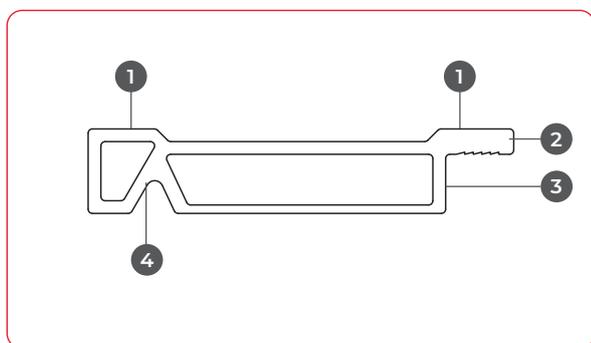
The panel



The panel in detail

The AL2000 panels have a strong, torsionally rigid box-section profile. The panels are suitable for a maximum fresh-concrete pressure of 60 kN/m².

- 1** Frame profile
- 2** Formwork sheeting
- 3** Suspension holes for scaffolding brackets
- 4** Functional profile
- 5** Carrying handles
- 6** Cap profile
- 7** Form-tie point

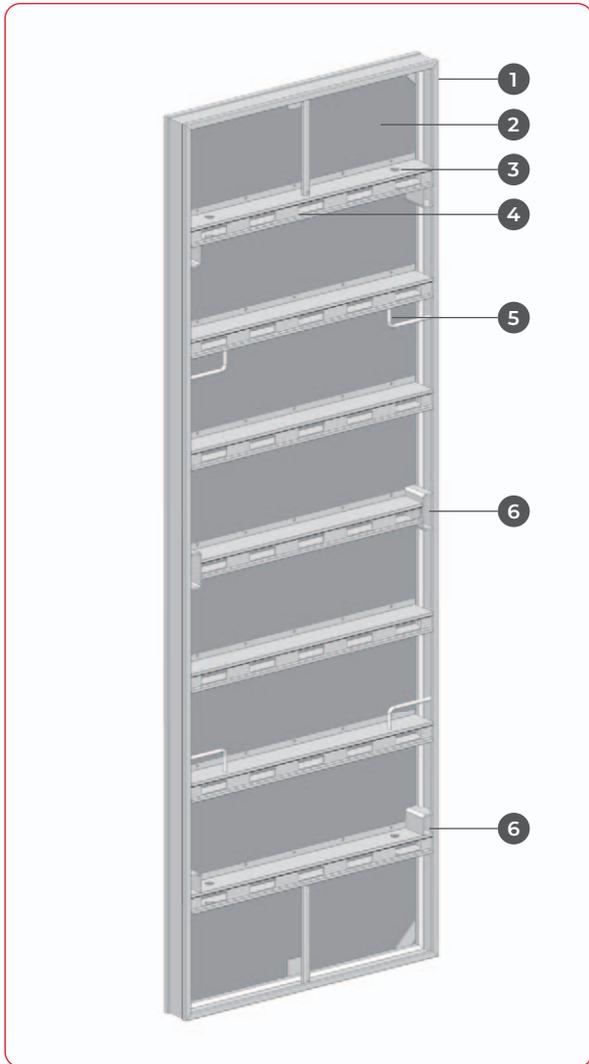


Cross-section of frame profile

- 1** Contact surface
- 2** Nub for edge protection
- 3** Seating surface for formwork sheeting
- 4** Bearing surface for connectors

ST2000

The panel

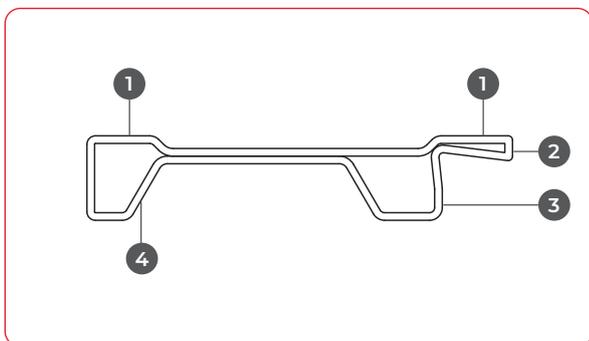


The panel in detail

The profiles of the framed panel are made of rolled fine-grained steel. The panels are suitable for a maximum fresh-concrete pressure of 60 kN/m².

All crossbars are function profiles to maximise flexibility of use.

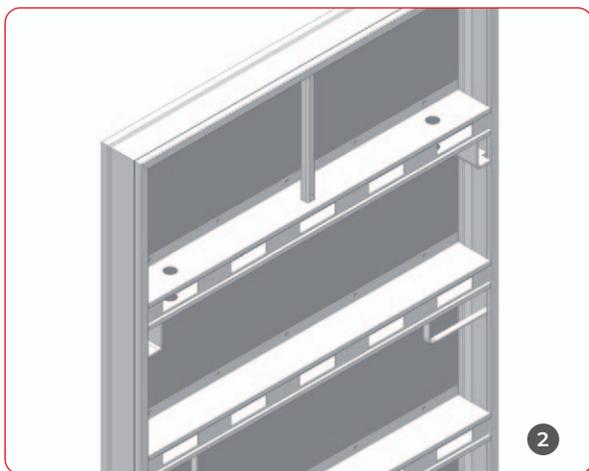
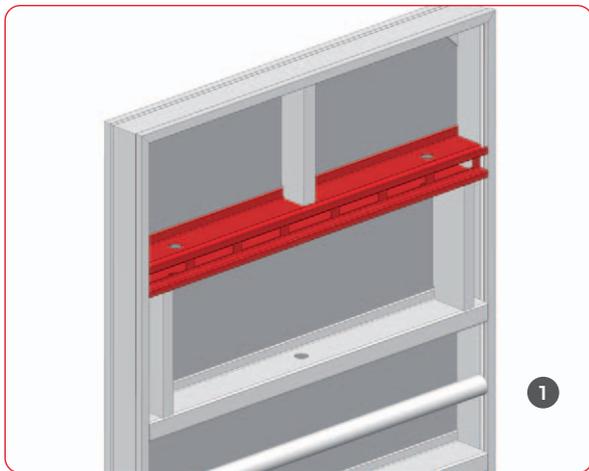
- 1** Frame profile
- 2** Formwork sheeting
- 3** Suspension holes for scaffolding brackets
- 4** Functional profile
- 5** Handle
- 6** Form-tie point



Cross-section of frame profile

- 1** Contact surface
- 2** Nub for edge protection
- 3** Seating surface for formwork sheeting
- 4** Bearing surface for connectors

Functional profile



Functional profiles

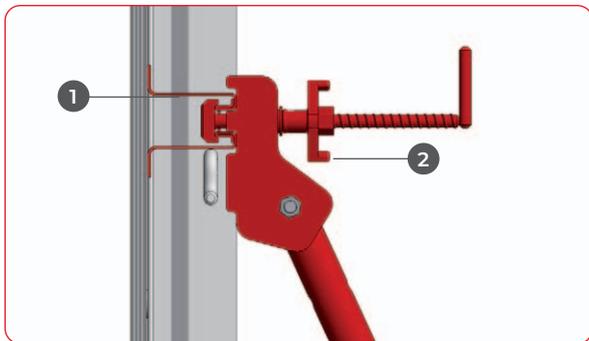
Function profiles that form the seating surface for the formwork sheeting are welded in to stiffen the frame.

The shape of the function profiles makes it easy to secure accessories such as push-pull props and adapters for pouring platforms. In addition, the two outer functional profiles have holes to accommodate scaffolding brackets.

All crossbars of the ST2000 panels are functional profiles.

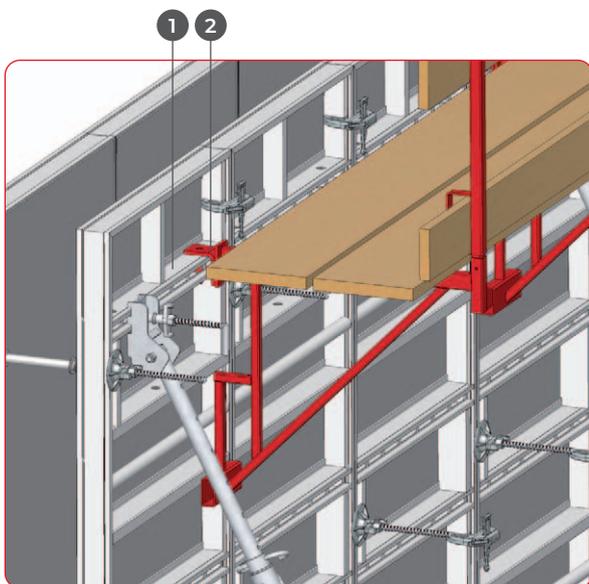
- 1 AL2000 panel
- 2 ST2000 panel

Functional profile



Attachment of push-pull props

- 1 Functional profile
- 2 Push-pull prop



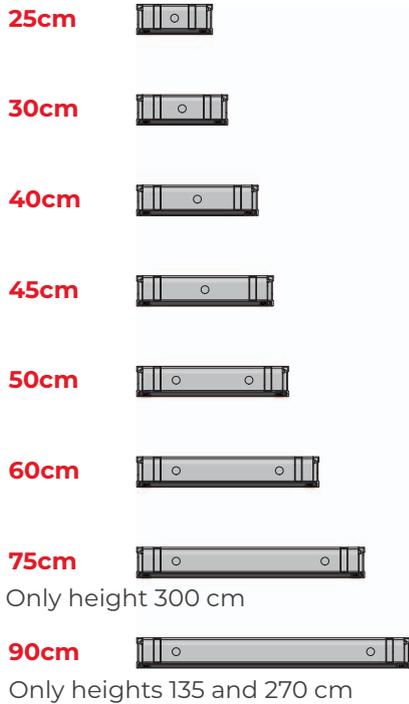
Engagement of scaffolding brackets

- 1 Functional profile
- 2 Scaffolding bracket

Attachment of walers

See Page 21

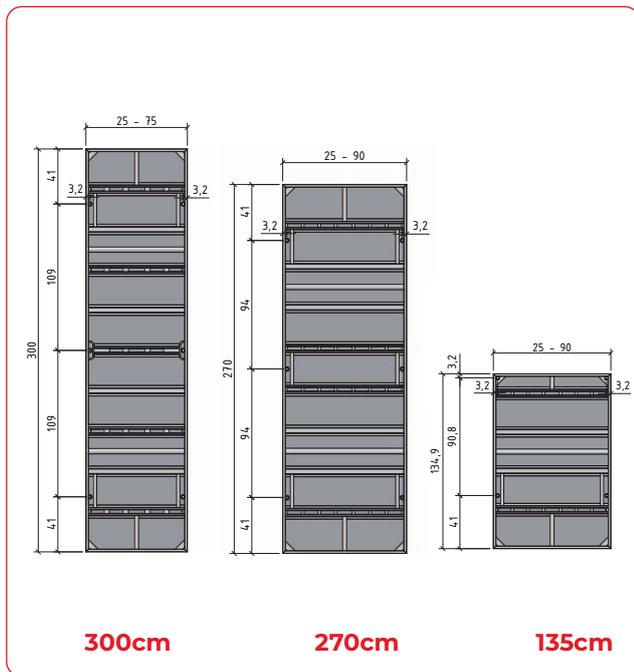
AL2000 panel and form-tie grids



Panel heights and widths

The panel dimensions enable any floor plan to be formed. The panels can be combined either upright or turned on their side

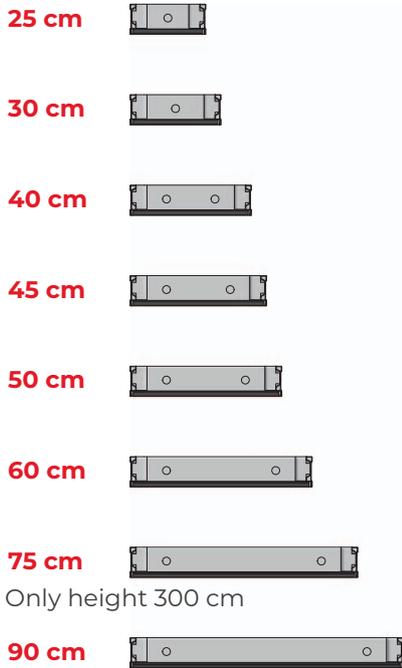
The panels are available in a range of 8 widths and 3 heights. The 90-cm wide panels are available only in the heights of 135 cm and 270 cm. The 75-cm wide panel is available only in the height of 300 cm.



Form-tie grid

Panels 135 cm high have 4 form-tie holes. Panels 270 cm and 300 cm high have 6 form-tie holes.

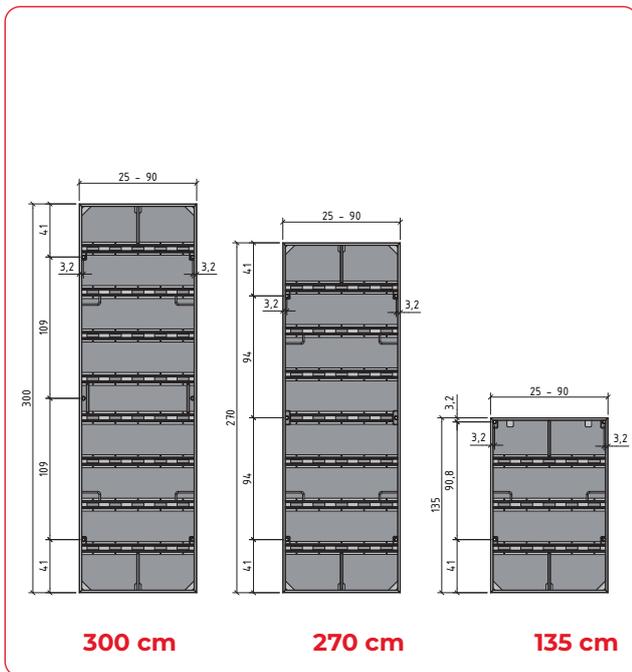
ST2000 panel and form-tie grids



Panel heights and widths

The panel dimensions enable any floor plan to be formed. The panels can be combined either upright or turned on their side.

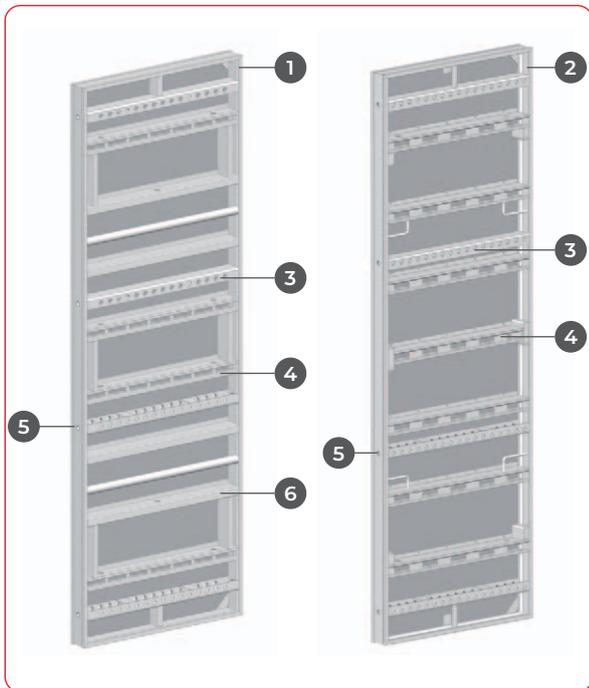
The panels are available in a range of 8 widths and 3 heights. The 75-cm wide panel is available only in the height of 300 cm.



Form-tie grid

Panels 135 cm high have 4 form-tie holes.
Panels 270 cm and 300 cm high have 6 form-tie holes.

System components



Uni panel

The 5-cm end-to-end hole grid of the adjustment waler permits the formwork to be set up for wall thicknesses from 20 cm to 80 cm. The uni panel is ideal for:

- Columns
- Corners
- Stop-ends
- Wall junctions

The spacing of the form-tie holes matches that of the design-identical System 2000 panels.

1 AL2000 uni panel

Panel width 90 cm
Heights 270/135 cm

2 ST2000 uni panel

Panel width 90 cm
Heights 300/ 270/135 cm

3 Adjustment waler

4 Functional profile

5 Cross borehole

6 Cap profile

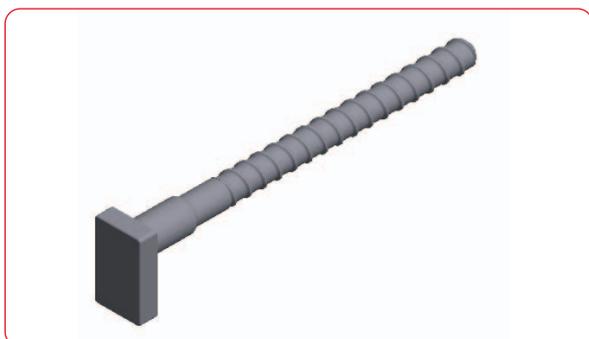


Form-tie material

1 Spacer tube with plugs

2 Tie rod

3 Combi plate galvanised



Universal fixing bolt

For connecting panels through the cross bore-holes in the short sides, e.g. for columns, stop-ends or corners formed using uni panels.

System components

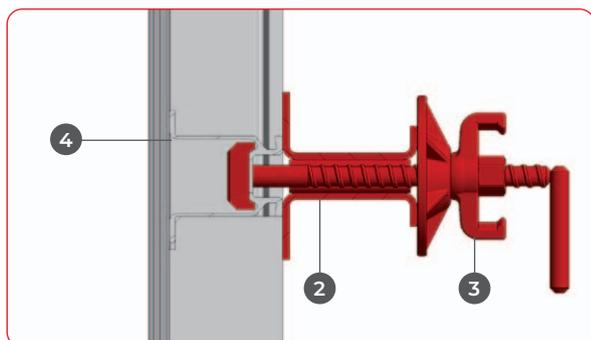


Waler

Vertical stacking with panels 90cm wide or more requires the installation of walers 150 to stiffen the gang-form.

Walers 100 can be used at infills or casting-cycle junctions.

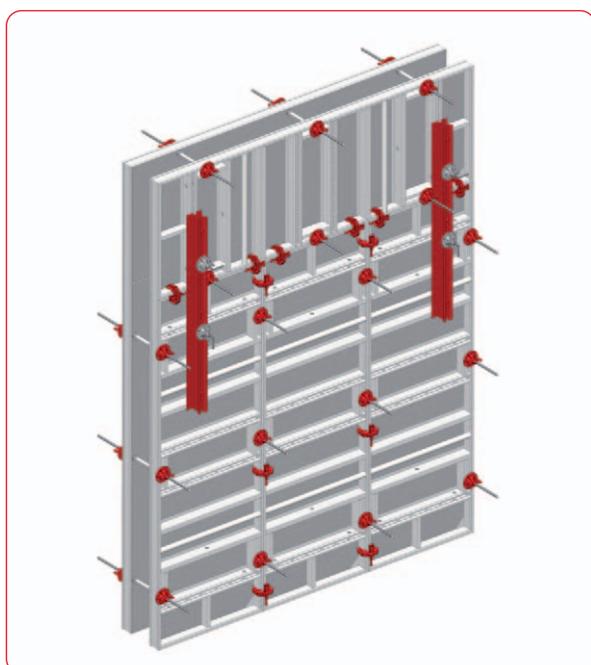
- 1 Waler 100**
- 2 Waler 150**
- 3 RS clamp**
- 4 Functional profile**



Installation

Walers are secured to the functional profiles by RS clamps. The waler can also be additionally tied by the form ties.

The waler ensures optimum transfer of forces in the gang-form. They framed panels are aligned flush with each other by the walers.



System components



Quick wedge clamp galvanised

System 2000 framed panels can be interconnected with Quick wedge clamps. They are self-closing, which means that the clamp can be secured with one hand. A blow with a hammer establishes the friction-locked connection.

Panels upright

Panel height 135 cm 2 clamps
Panel height up to 300cm 3 clamps



Panels turned on their side

Panel width up to 50 cm 1 clamp
Panel width up to 90 cm 2 clamps



See the section headed “Forming corners” for the number of Quick wedge clamps needed at corners

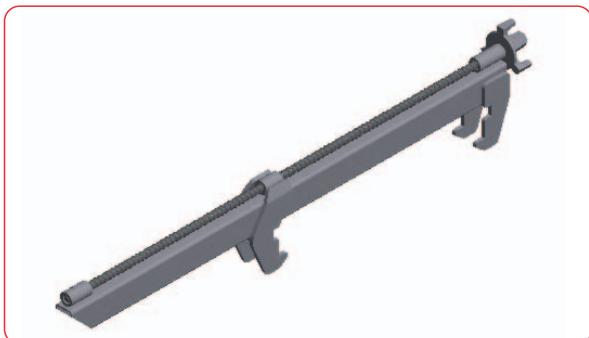


Adjustable clamp galvanised

Adjustable clamps are ideal for inter-panel connections at infills up to max. 20 cm and at casting-cycle junctions.



Panel height up to 300 cm
3 clamps



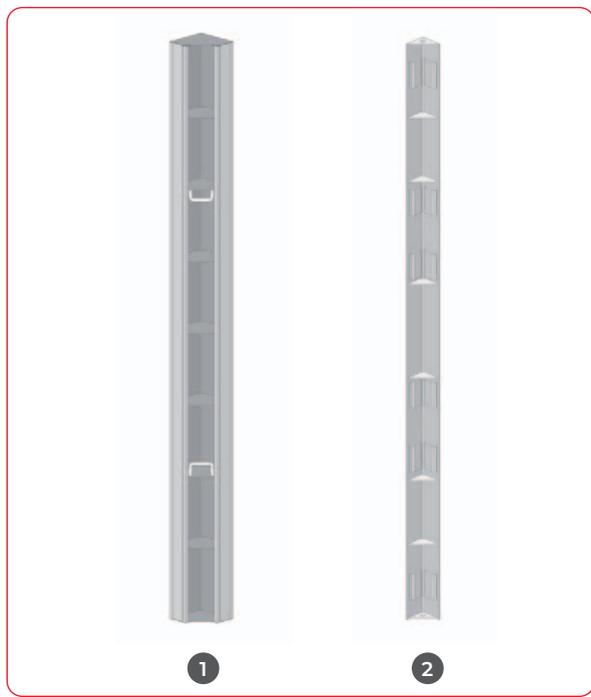
Stop-end coupler

Stop-end couplers can be used for forming any wall thickness up to 40 cm.



Panel height up to 270 cm
3 stop-end couplers
Panel height 300 cm
4 stop-end couplers

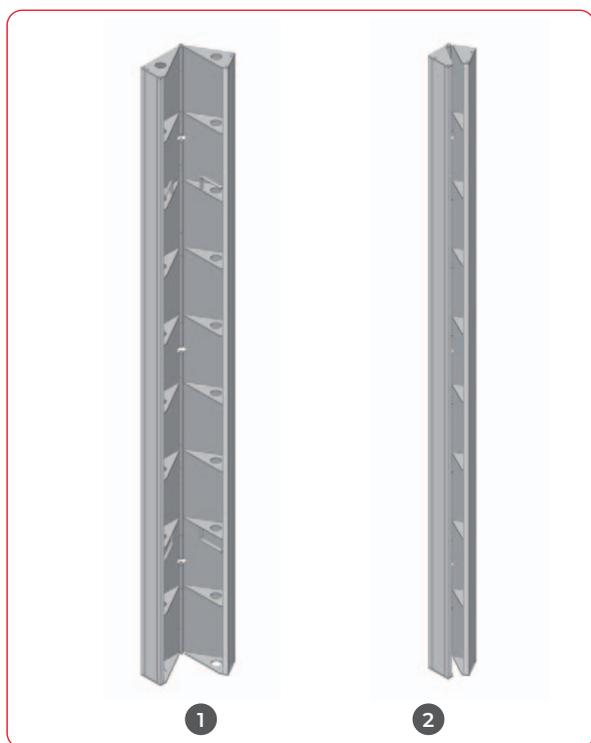
System components



System 2000 inside and outside corners

The appropriate corner panels are an efficient way of forming corners.

- 1 System 2000 inside corner**
Heights 300/270/135 cm
Width 20 cm
- 2 System 2000 outside corner**
Heights 300/270/135 cm

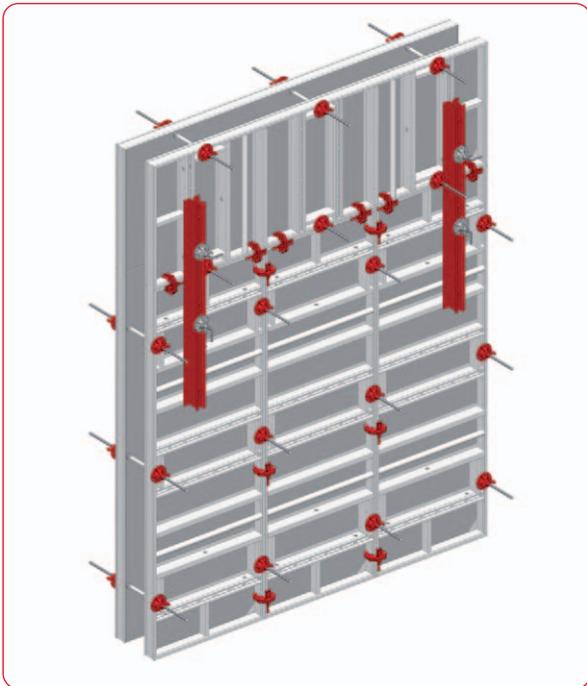


System 2000 hinged corner

System 2000 hinged corners can be used to form acute or obtuse-angled corners in the range from 80 ° to 180 °.

- 1 System 2000 hinged inside corner**
Heights 300/270/135 cm
Wing length 10 cm
- 2 System 2000 hinged outside corner**
Heights 300/270/135 cm
Wing length 10 cm

Tie-rod system



Form-tie components

The System 2000 panels are tied with tie rods DW15 and 2 combi plates per tie rod. Use only approved form-tie components. Whenever panels of different widths are tied, always tie through the wider panel.



Do not heat or weld tie rods - risk of breakage!

Number of form ties per inter-panel joint

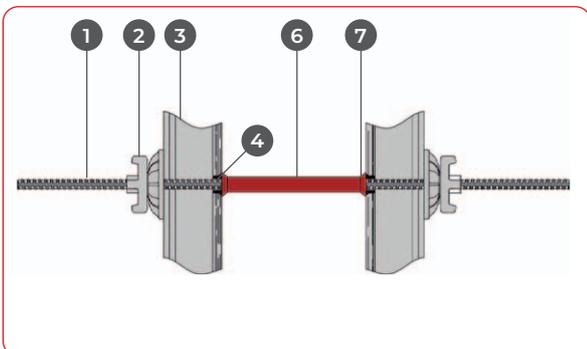
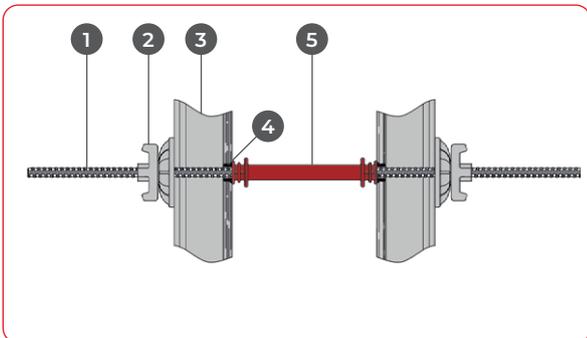


Panel height 135 cm

2 form ties in the vertical

Panel height 270/300 cm

3 form ties in the vertical



Spacing

Spacers can be used to space the opposing formwork panels the correct distance apart. Alternatively, a spacer tube can be cut to length and installed with 2 chuck cones. Seal all unused form-tie points with uni plugs.

- 1 Tie rod
- 2 Combi plate
- 3 System 2000 panel
- 4 Form-tie gland
- 5 Spacer
- 6 Spacer tube
- 7 Pressure cone

Form-tie loads

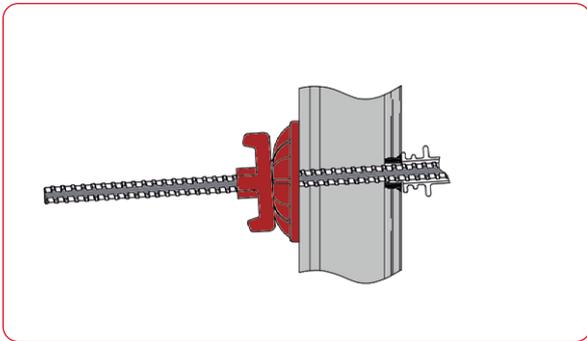


Tie rod DW15

Max. permitted concrete pressure 60 kN/m²

Max. tensile force 90 kN

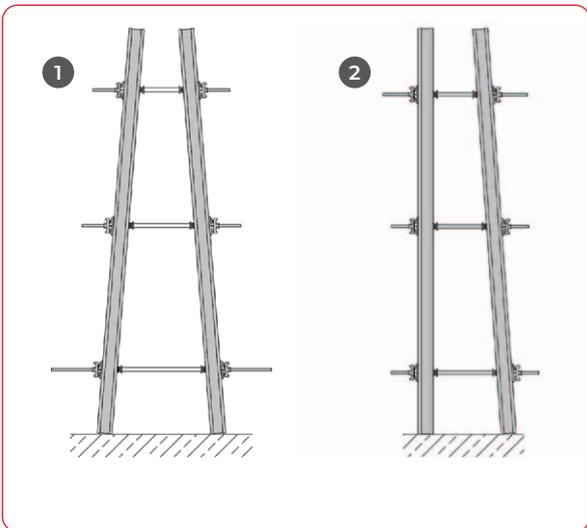
Tie-rod system



Inclined formwork

Formwork panels can also be set inclined off the vertical on one or both sides and/or heights-mismatches. The base part of the combi plate is on a swivel and adapts to the angle of inclination.

Maximum inclination of the combi plate: 10°



1 Conical on both sides

max. 2 x 5°

2 Conical one side

max. 5°

3 Height mismatch

max. 1.0 cm per 10 cm of wall thickness

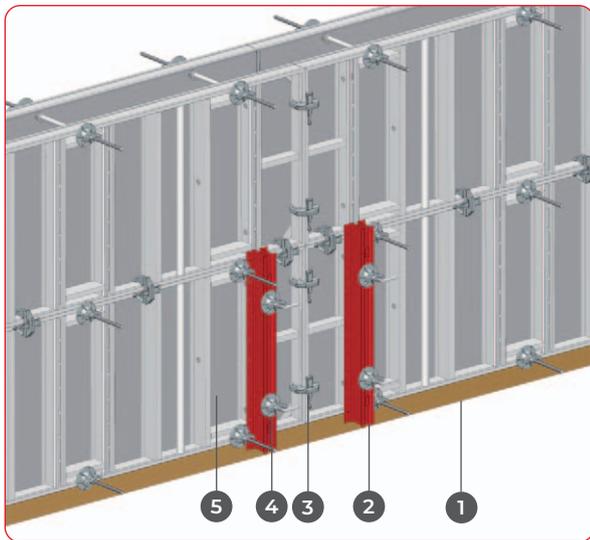


Inclined panels must be secured against uplift.



4 Accessories and use

Panels turned horizontal

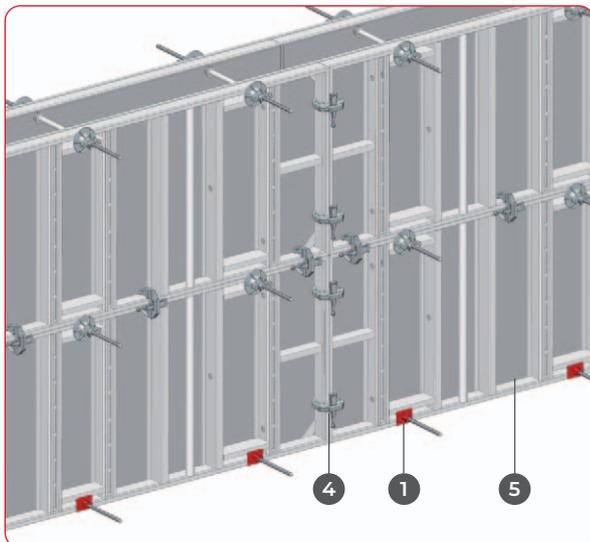


With squared timber

Whenever System 2000 panels are installed horizontal, there are two possible procedures for tying close to the floor.

One possibility is to use a squared timber as sleeper. The panels are tied using combi plates in the usual way. Walers are used to secure formwork and squared timber against slippage.

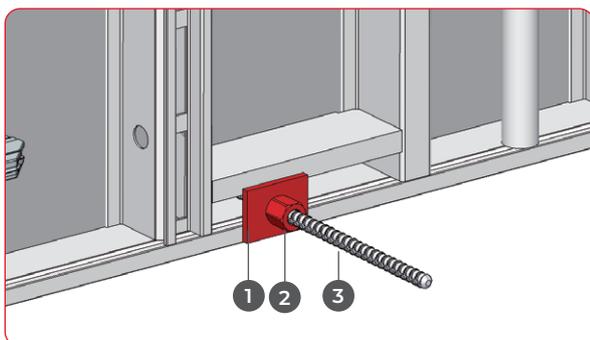
- 1 Squared timber
- 2 Waler 100
- 3 Quick wedge clamp
- 4 RS clamp
- 5 System 2000 panel



Without squared timber

Whenever a framed panel is set directly on the floor, counter plates KL in combination with hexagon nuts DW15 can be used instead of combi plates at bottom level.

- 1 Counter plate KL
- 2 Hexagon nut DW15
- 3 Tie rod DW15
- 4 Quick wedge clamp
- 5 System 2000 panel



Foundation formwork



Panels turned on horizontal

Framed panels can be turned on their side to form foundations.

Advantages:

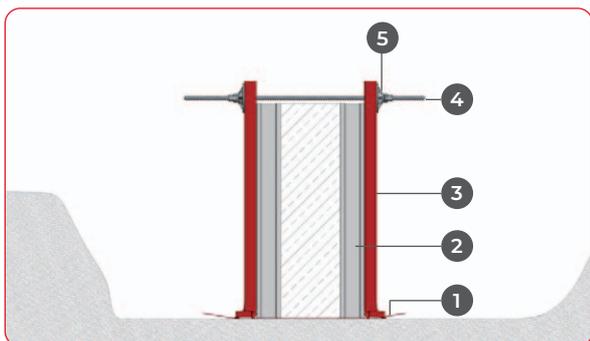
- The use of perforated tape and foundation clamps avoids form-tie holes in the concrete
- Saves space in narrow excavations



Perforated tape adjustable in 5-cm grid.

Load max. 12 kN/perforated tape

Perforated tape length = wall thickness + 45 cm



Pouring height up to 90 cm

1 Perforated metal strip

2 System 2000 panel

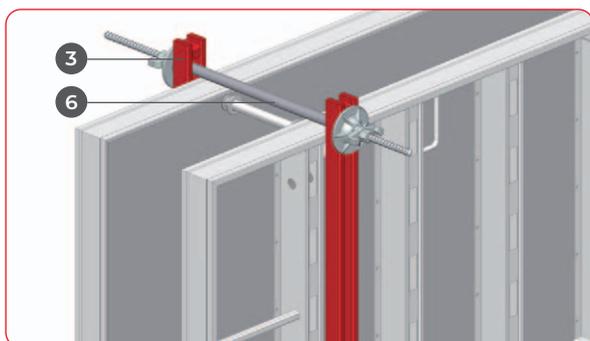
3 Foundation clamp

4 Tie rod DW15

5 Combi plate

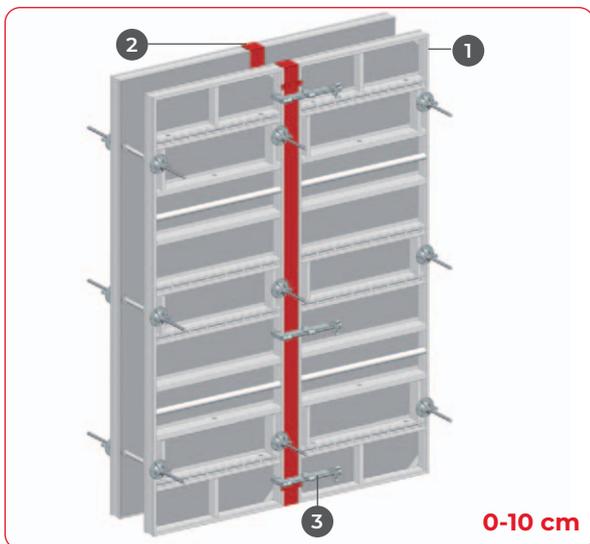
6 Spacer

- Spacing of anchor points < 1.35 m



We recommend the use of spacer tubes to prevent dirtying of the tie rods when the concrete is being poured

Closure



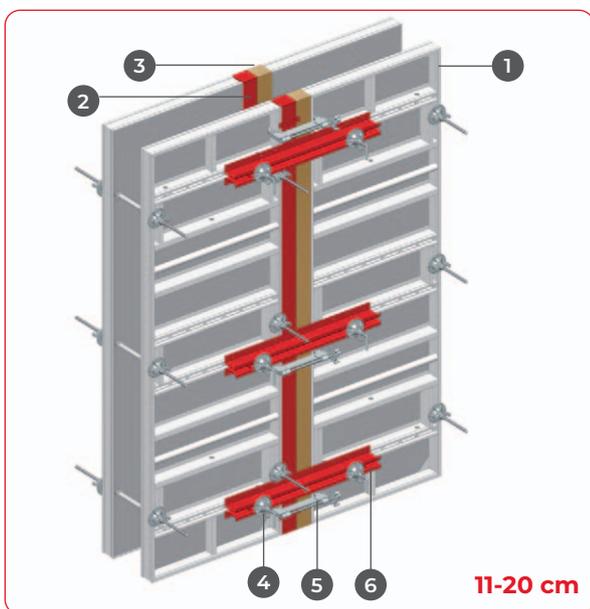
Compensation panel

Closures can be made with the compensation panel and also with fitting timbers. Compensation panels are available in the following widths:

- **Width 2/3/5/10 cm**
Heights 300/270 cm
- **Width 5 cm**
Height 135 cm

Closure 0 to 10 cm

- 1 System 2000 panel**
- 2 System 2000 compensation panel**
- 3 Adjustable clamp**



Closure 11 to 20 cm

- 1 System 2000 framed panel**
- 2 System 2000 compensation panel**
- 3 Fitting timber**
- 4 RS clamps**
- 5 Adjustable clamp**
- 6 Waler 100**

Two or more compensation panels can be combined to make up the desired closure width.

Stripping panel



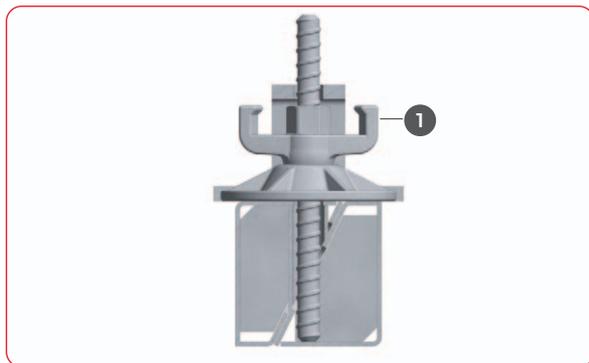
Stripping panels

To facilitate the job of stripping out the formwork in tight spaces such as elevator shafts, stairwells, etc.

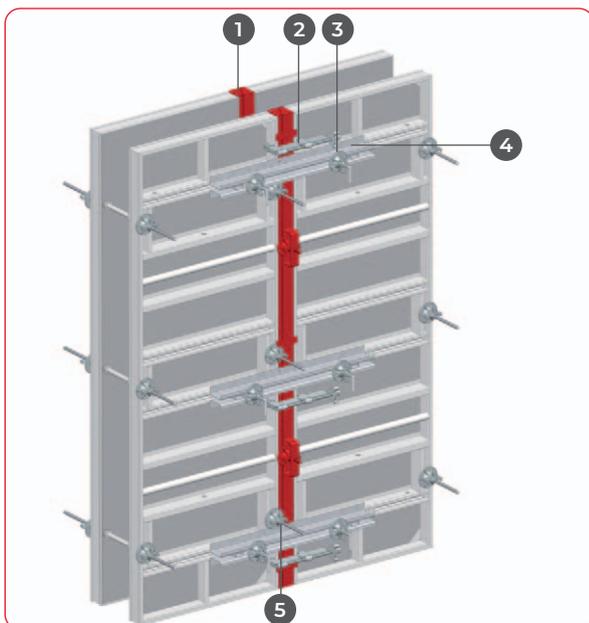
Stripping panel 10 cm

Heights 300/270 cm

Backing off the wingnut counterplate separates the two halves of the stripping panel. This makes the first panel in the gang-form much easier to strip out.

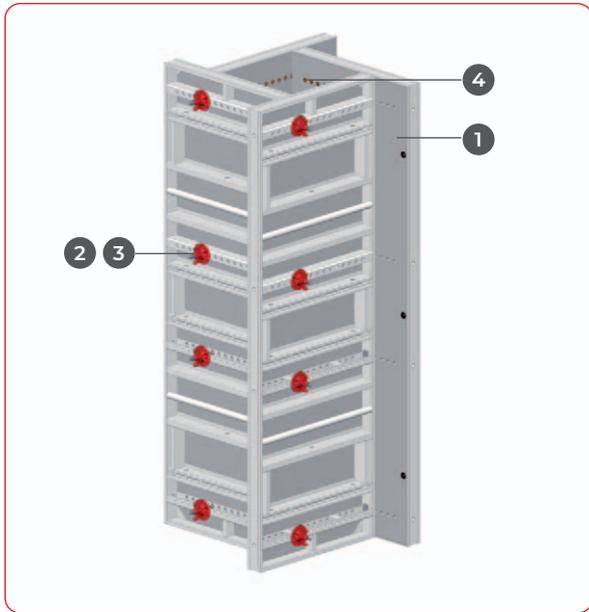


1 Wingnut counterplate



- 1 Stripping panel
- 2 Adjustable clamp
- 3 RS clamp
- 4 Waler 100
- 5 Tie rod with combi plate

Columns with uni panel



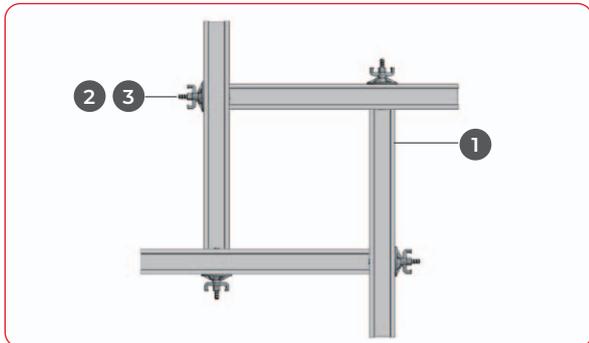
Rectangular columns

Uni panels can be used as a quick way of forming columns in the 20 - 80 cm side length range and a 5 cm grid. Using universal fixing bolts to interconnect the panels means that the formwork leaves no form-tie holes in the column. The panels have to be connected at each adjustment waler, using universal fixing bolts and combi plates.

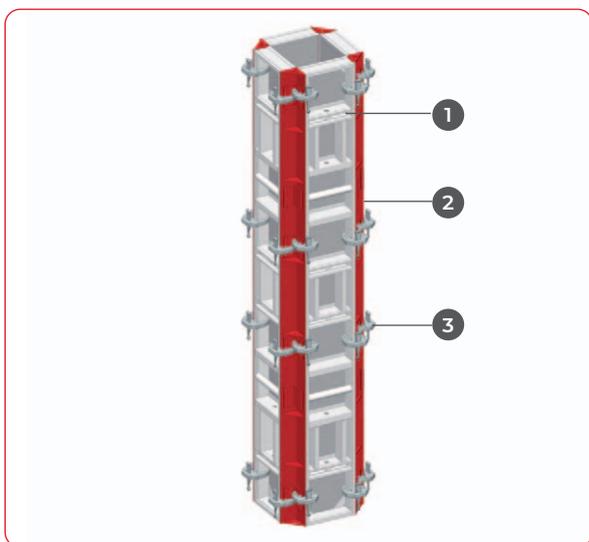
- 1 Uni panel**
- 2 Universal fixing bolt**
- 3 Combi plate**
- 4 Plug, brown**



Seal the unused holes of the uni panel with brown plugs.



Vertical stacking is possible to a maximum height of 6.0 m.
Comply with the instructions regarding permissible pouring rate!



Columns with outside corners

Columns with square or rectangular footprint can be formed with System 2000 panels and outside corners.

- 1 System 2000 panel**
- 2 Outside corner**
- 3 Quick wedge clamp**

Height 135 cm

4 Quick wedge clamps per outside corner

Height 270 cm

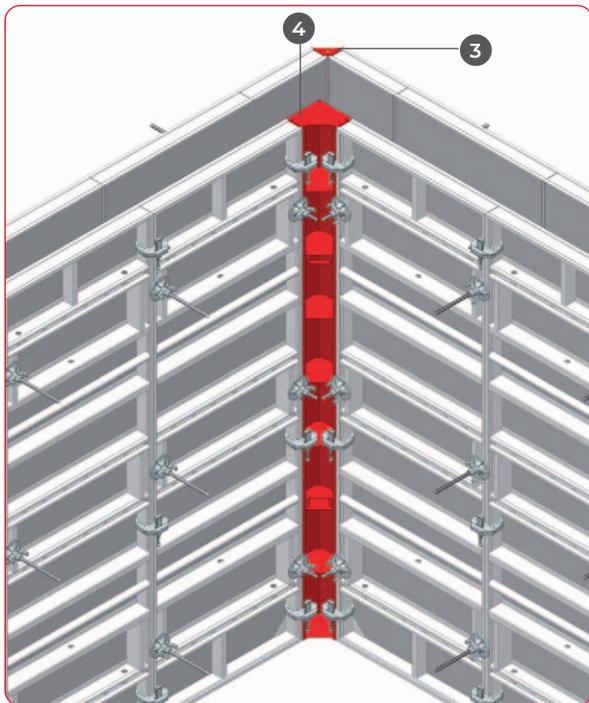
8 Quick wedge clamps per outside corner

Height 300 cm

10 Quick wedge clamps per outside corner



90° corner with System 2000 corners



System 2000 inside and outside corners

The System 2000 inside corner is the basic element for forming corners. It is available in heights of 300/270/135 cm. It combines with the System 2000 outside corner for fast forming of 90° corners in the 5-cm wall-thickness grid.



For outside corners:

Height 135 cm

4 Quick wedge clamps

Height 270 cm

8 Quick wedge clamps

Height 300 cm

10 Quick wedge clamps



For inside corners:

Height 135 cm

2 Quick wedge clamps per side

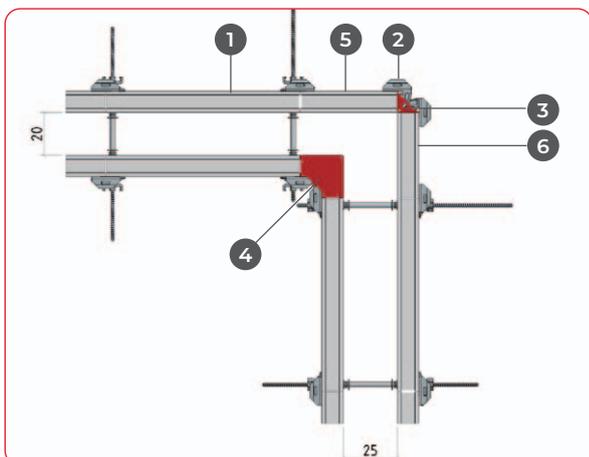
Height 300/270 cm

3 Quick wedge clamps per side

Since there is a large number of framed panels to choose from, the common wall thicknesses can all be formed without extra closures.



Width of the framed panel adjacent to the outside corner = wall thickness + 20 cm



Transitions between wall thicknesses

Corner solutions that also involve a change in wall thickness can be formed by combining System 2000 panels with the appropriate corner elements.

1 System 2000 panel

2 Quick-acting clamp

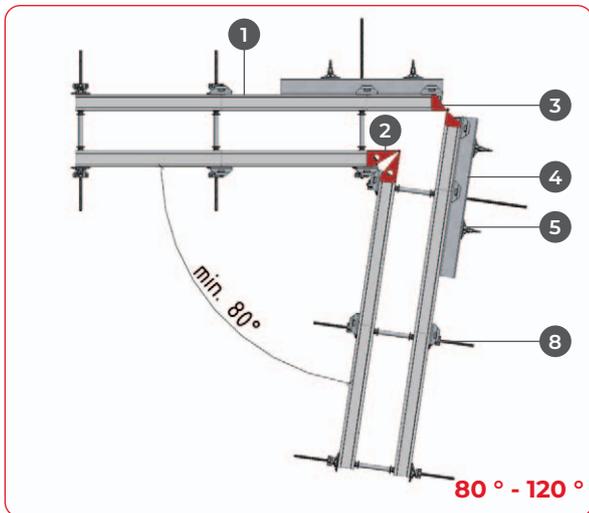
3 Outside corner

4 Inside corner

5 Panel 45 cm (wall thickness + 20 cm)

6 Panel 40 cm (wall thickness + 20 cm)

Acute and obtuse-angled corners



Corners 80 ° to 155 °

Hinged inside corner and hinged outside corner can be combined to form any angle in the range 80 ° - 155 °.

Angles <120 ° do not need walers on the hinged inside corner.



For hinged outside corner

Height 135 cm

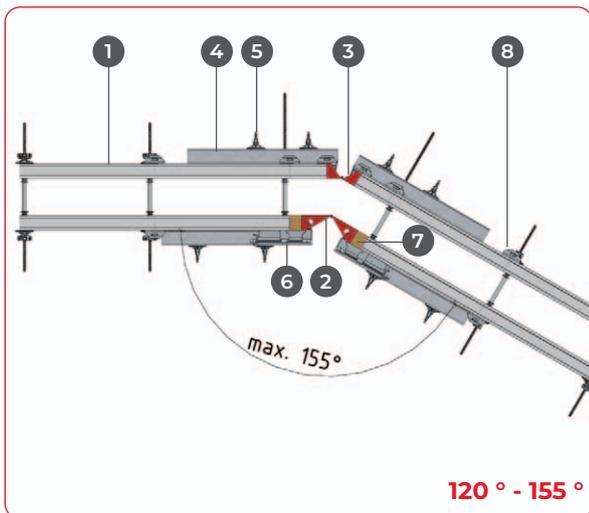
4 Quick wedge clamps

Height 270 cm

8 Quick wedge clamps

Height 300 cm

10 Quick wedge clamps



For hinged inside corners:

Height 135/270 cm

2 Quick wedge clamps per side

Height 300 cm

3 Quick wedge clamps per side

1 System 2000 panel

2 Hinged inside corner

3 Hinged outside corner

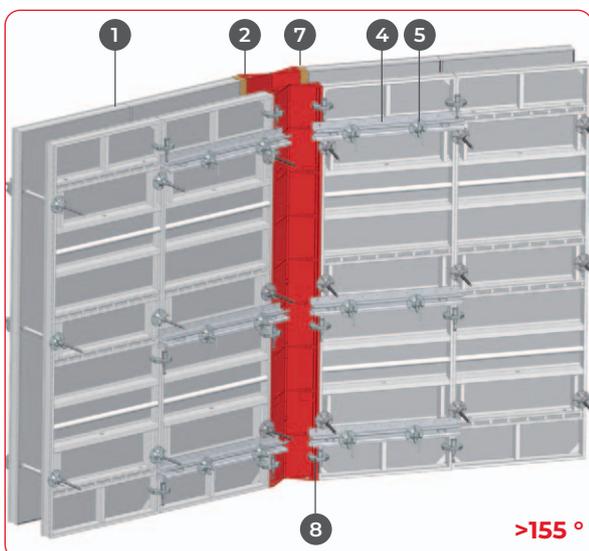
4 Waler

5 RS clamp

6 Adjustable Quick wedge clamps

7 Squared timber as closure

8 Quick-acting clamp

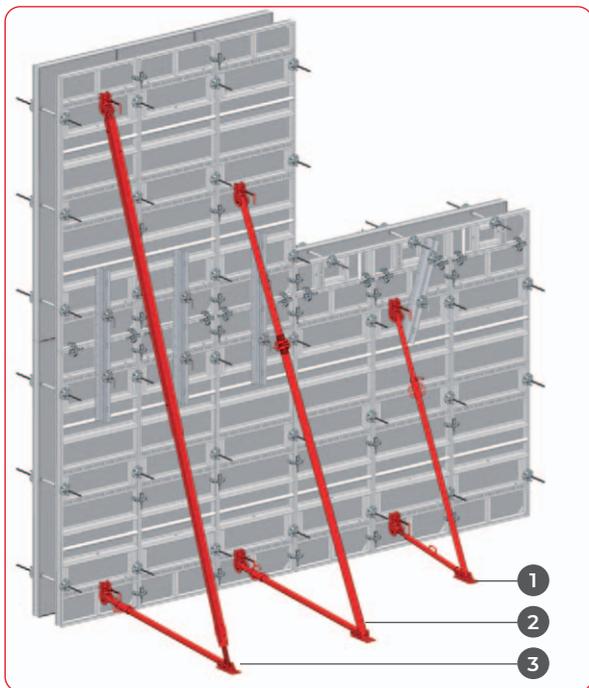
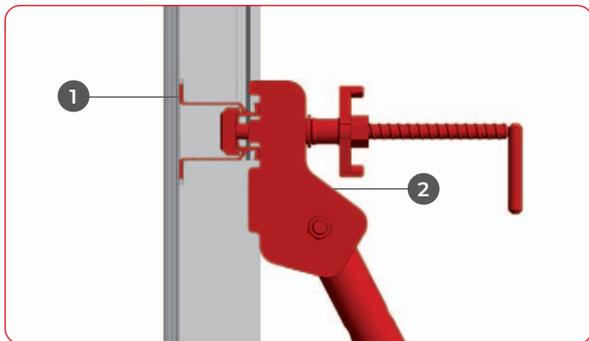


Corners > 155 °

Hinged inside corners can be used for both sides of the formwork to form angles from 155° to 180°.

This configuration needs the same number of Quick wedge clamps on the inside and outside formwork

Plumbing accessories



Push-pull props

The push-pull props are used to plumb the formwork. They ensure stability and brace the formwork against wind loads. The push-pull props are designed to attach to the function profiles of the System 2000 panels.

- 1 Function profile
- 2 Push-pull prop



The push-pull props have to be anchored to the floor in such a way that they can withstand tensile and compressive loads. The stability of the formwork gang and its ability to withstand wind loads must be ensured in every build phase!

- 1 Push-pull prop size 1
- 2 Push-pull prop size 2
- 3 Push-pull prop G
Push-pull prop G with extension

Anchoring

Secure the push-pull props to the floor with Hilti coils and coil anchors 16 x 90mm or Hilti HKD M16 anchors (follow the directions in the manufacturer's installation instructions).

Number of push-pull props

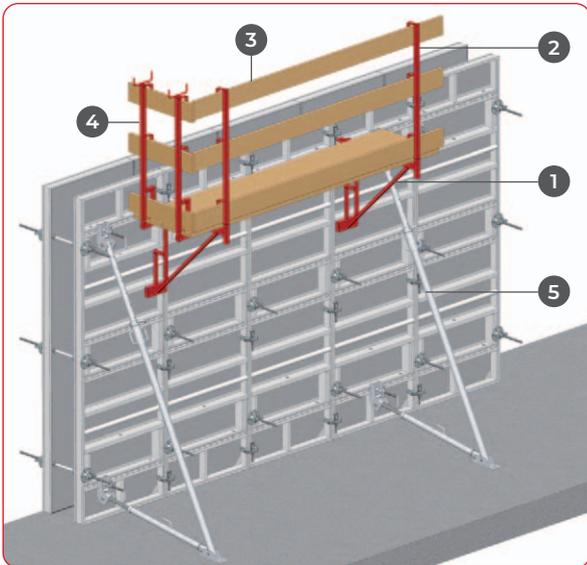
Example, gang-form 2.70 m wide

Formwork height [m]	Size 1	Size 2	Size G	Size G with extension
4.00	1			
5.40		1		
6.00		1		
6.60			1	
7.20	1			1
8.10		1		1

Loads

Type	Range of adjustment	Max. compressive load	Max. tensile load
Size 1	2.15 - 3.60 m	12 kN	18 kN
Size 2	3.10 - 5.50 m	20 kN	30 kN
Size G	3.55 - 5.90 m	30 kN	40 kN
Extension size G	6.20 - 8.40 m	20 kN	40 kN

Working platforms



Scaffolding bracket

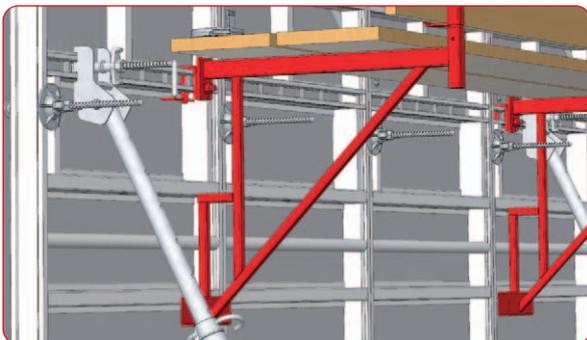
Light scaffolds can be attached to the formwork by means of scaffolding brackets. The brackets can be engaged in upright panels or in panels turned on their side. Each bracket has to be secured against lift-out by insertion of the safety pin.



Width of bracket 75 cm
Centre-to-centre distance of brackets max. 1.5 m
Permitted load 200 kg/m²



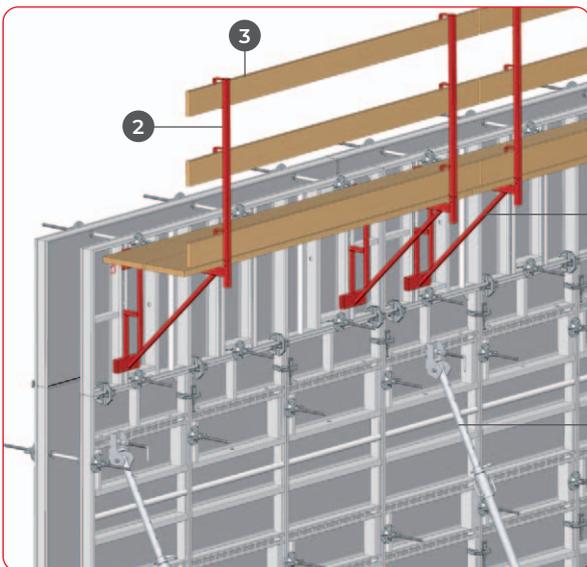
Platforms that do not continue all the way round the formwork have to be closed at each end by end protection consisting of chest-high board, waist-high board and toeboard!
Attachment by guardrail clamps.



- 1 Scaffolding bracket**
- 2 Railing for bracket**
- 3 Guardrail board min. 15x2.4 cm**
- 4 Guardrail clamp**
- 5 Push-pull prop**

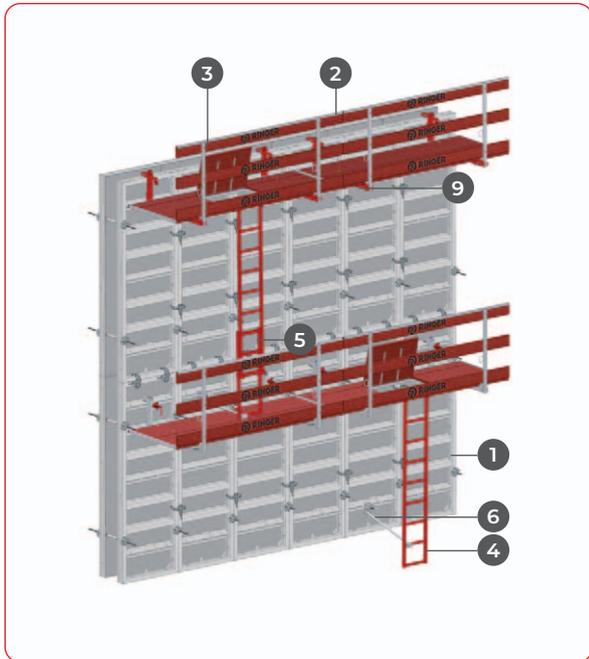
Use on formwork panels turned horizontally

When formwork panels are installed horizontally, the scaffolding brackets are hooked into the function profile.



All components must be inspected for visible defects prior to use. Damaged material must be withdrawn from use.
Fall hazard!

Working platforms



Concreting platform "L"

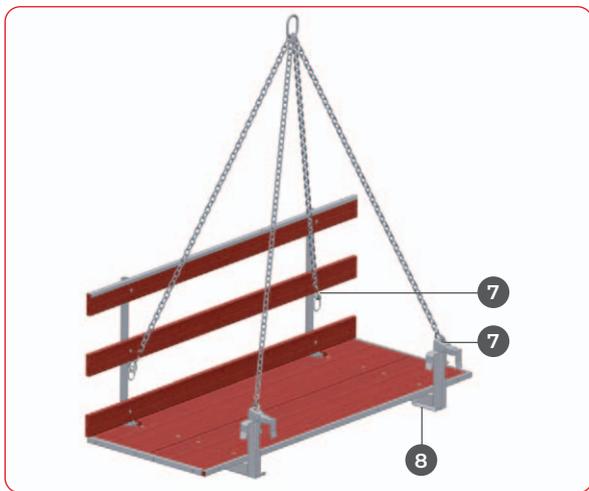
Concreting platform "L" is a fully pre-assembled working platform. The platform can be either hooked into the function profile of the formwork or hooked into the top of the formwork.



Length of platform 2.7 m
Width of platform 1.0 m
Height of guardrail 1.0 m
Centres between brackets max. 1.86 m
Permitted load 200 kg/m²

Step-by-step instructions for installation

- Raise the guardrail and fix it in position with pins secured by linchpins
- Attach the crane rigging to the two safety bows and the two eyelets on the guardrail with a 4-part chain
- Lift the platform into position and hook it into the edge profile.
- Disengage the lifting tackle and engage the safety bows
- if needed attach the ladder to the platform and secure it with safetybolts. attach the spacer bracket to the panel and the ladder and secure it with safetybolts



- 1 System 2000 panels**
- 2 Concreting platform "L" 2.7 m, complete**
- 3 Concreting platform "L" 2,7m with hatch and ladder**
- 4 Ladder 270 galvanized**
- 5 Rise Ladder 330 galvanized**
- 6 Spacer bracket**
- 7 Attachment points for lifting tackle**
- 8 Holder for H20 beam when panels are turned horizontally placed**
- 9 Railing lock**



All components must be inspected for visible defects prior to use. Damaged material must be withdrawn from use.
Fall hazard!



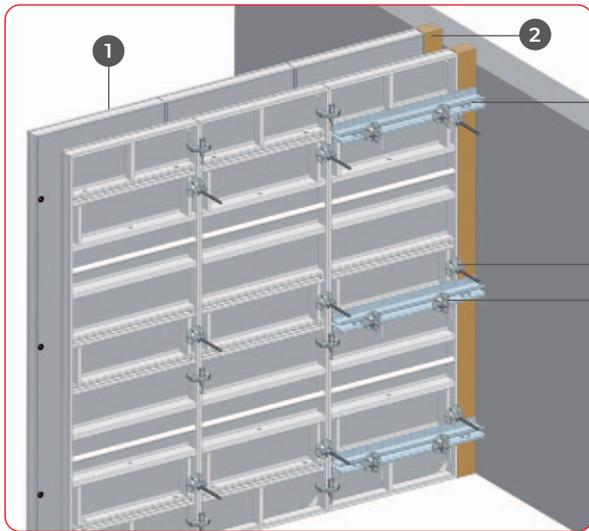
For more details see the datasheet of the concreting platform "L".



For horizontal formwork, a H20 beam with a length = 1.8m must be inserted between the brackets!

5 Areas of use

T-Wall connections



with squared timber

- No walers are necessary for squared timbers from 3 to 5 cm thick.



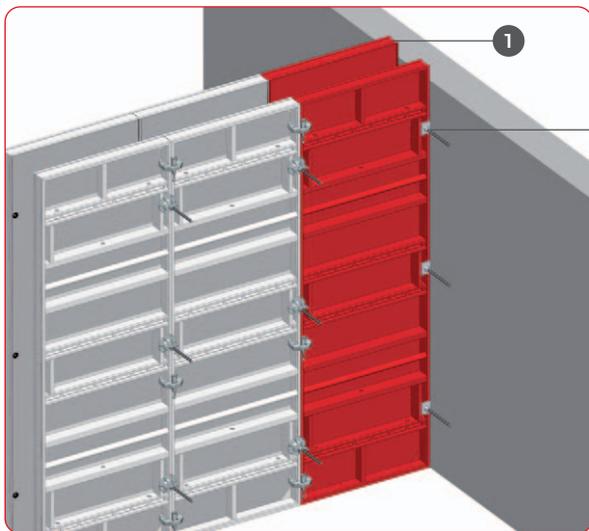
Panel height 135 cm

2 walers 100 per side
2 RS clamps per side

Panel height 270/300 cm

3 walers 100 per side
6 RS clamps per side

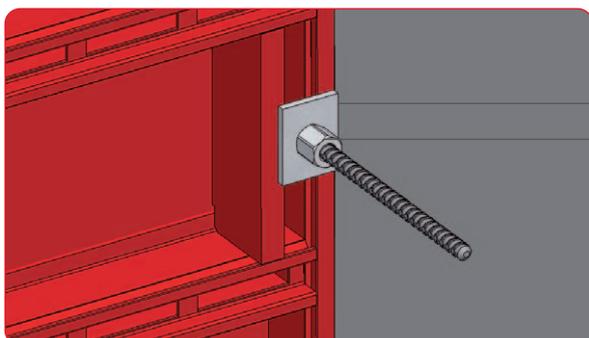
- 1 System 2000 panels
- 2 Squared timber (min. 3 cm)
- 3 Waler 100
- 4 Combi plate
- 5 RS clamp



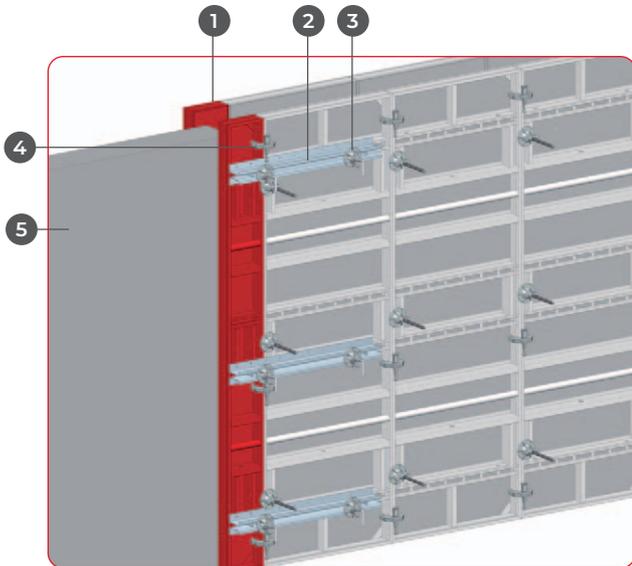
without squared timber

When wall T-junctions are formed without squared timbers, instead of the combi plate use the counter plate KL and a hexagon nut DW15.

- 1 System 2000 panels
- 2 Counter plate KL
- 3 Hexagon nut DW15



In-line connections



with System 2000 panel

In-line junction to an existing wall can be formed with System 2000 panels or squared timbers.

- 1 System 2000 panels**
- 2 Waler 100**
- 3 RS clamp**
- 4 Quick wedge clamp**
- 5 Existing wall**

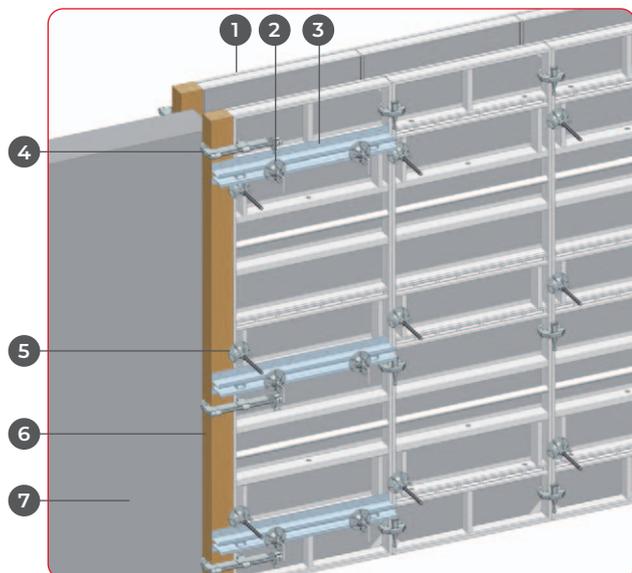


Panel height 135 cm

2 walers 100 per side
4 RS clamps per side

Panel height 270/300 cm

3 walers 100 per side
6 RS clamps per side



with squared timber

- 1 System 2000 panels**
- 2 RS clamp**
- 3 Waler 100**
- 4 Adjustable clamp**
- 5 Combi plate**
- 6 Squared timber (max. 10 cm wide)**
- 7 Existing wall**



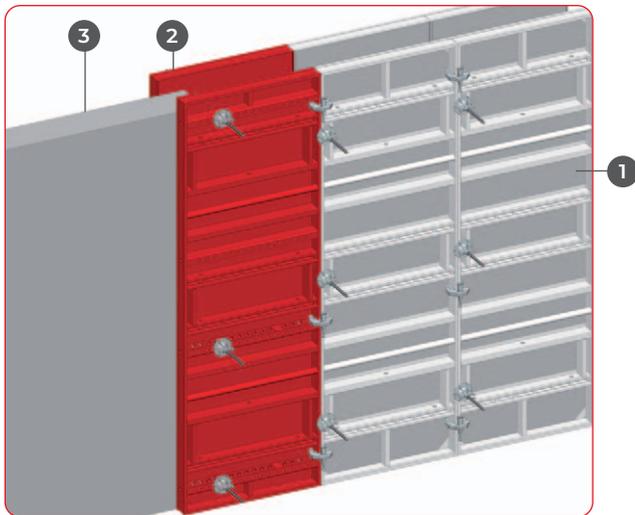
Panel height 135 cm

2 walers 100 per side
4 RS clamps per side
2 Quick wedge clamps per side

Panel height 270/300 cm

3 walers 100 per side
6 RS clamps per side
3 Quick wedge clamps per side

In-line connections



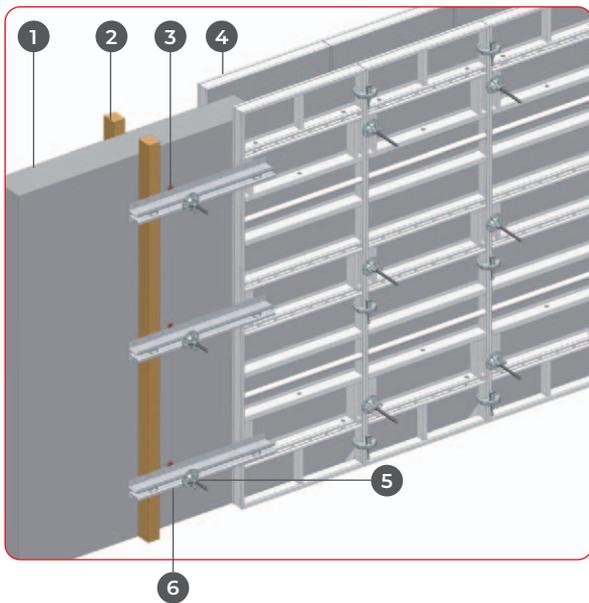
with uni panel

In-line junctions can also be formed using uni panels.

- 1 System 2000 panels**
- 2 Uni panel**
- 3 Existing wall**

Panel height 135 cm
2 tie rods with combs plates

Panel height 270/300 cm
3 tie rods with combs plates



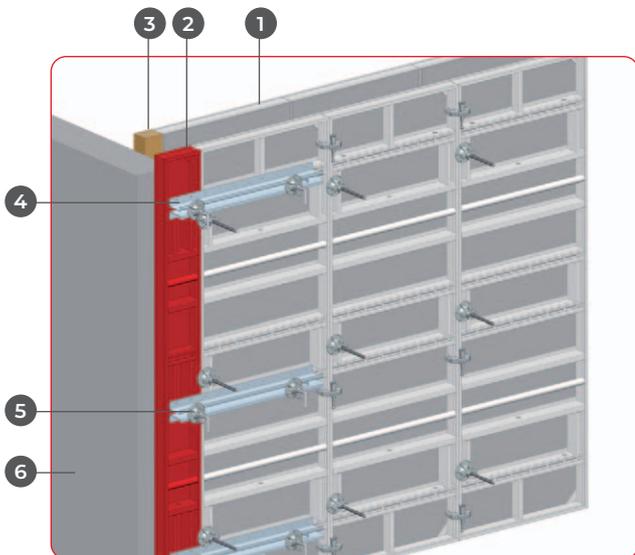
through existing form-tie hole

- 1 Existing wall**
- 2 Squared timber**
- 3 Existing form-tie hole**
- 4 System 2000 panel**
- 5 Tie rod with combi plate**
- 6 Waler**

Panel height 135 cm
2 walers 100 per side
2 tie rods with combs plates

Panel height 270/300 cm
3 walers 100 per side
3 tie rods with combs plates

Corner junctions



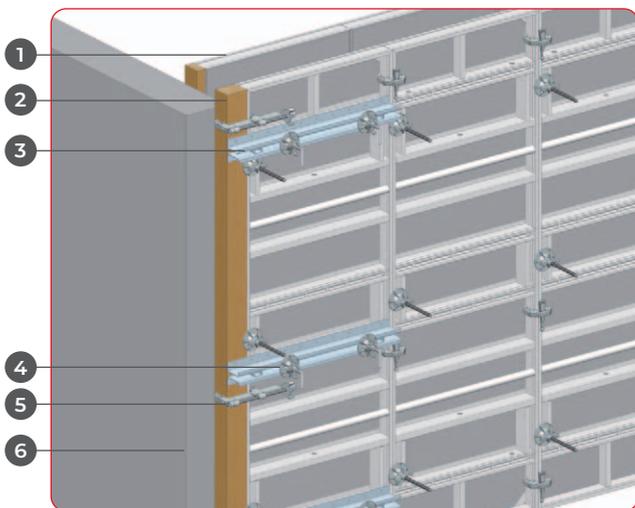
with System 2000 panel

A corner junction to an existing wall can be formed with System 2000 panels or squared timbers.

- 1 System 2000 panel**
- 2 System 2000 panel, width 25 cm**
- 3 Squared timber**
- 4 Waler 100**
- 5 RS clamp**
- 6 Existing wall**



- Panel height 135 cm**
2 walers
4 RS clamps
- Panel height 270/300 cm**
3 walers
6 RS clamps



with squared timber

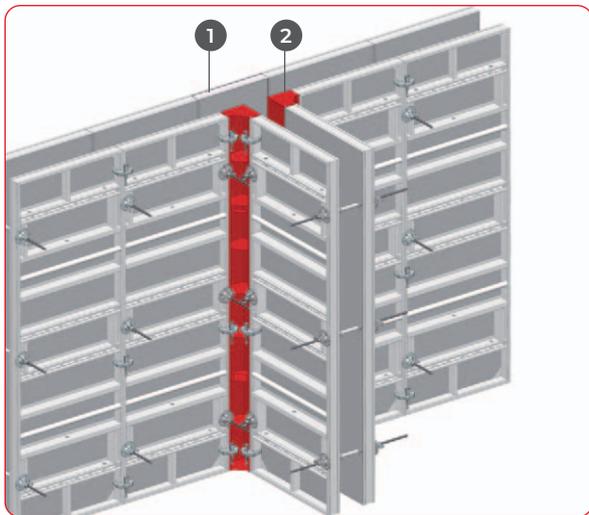
When squared timbers up to 5 cm thick are used to form corner junctions, no walers are needed. In all other cases:



- Panel height 135 cm**
2 walers
4 RS clamps
- Panel height 270/300 cm**
3 walers
6 RS clamps
- To secure the squared timbers**
3 adjustable clamps

- 1 System 2000 panels**
- 2 Squared timber**
- 3 Waler 100**
- 4 RS clamp**
- 5 Adjustable clamp**
- 6 Existing wall**

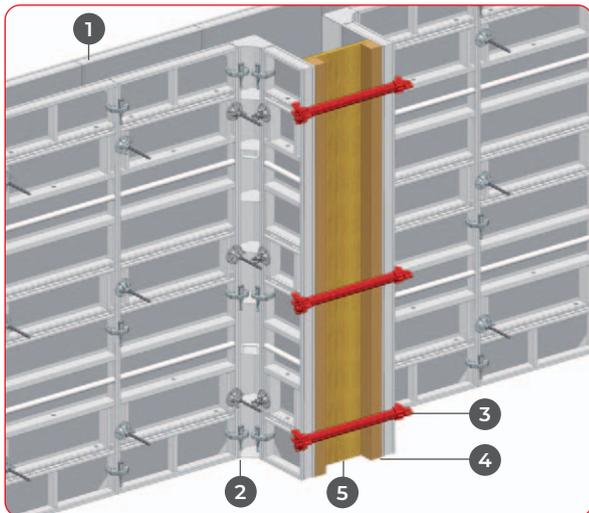
T-junctions and pilasters



T-junction

T-shaped wall footprints can be formed with inside corners.

- 1 System 2000 panels**
- 2 Inside corner**



Pilaster

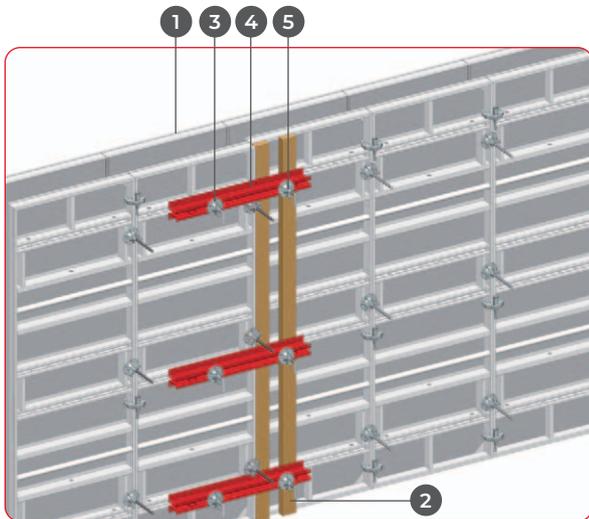
Pilasters can be formed with inside corners in combination with System 2000 panels. The stop-end is formed with squared timbers and a strip of formwork sheeting

- 1 System 2000 panel**
- 2 Inside corner**
- 3 Stop-end coupler**
- 4 Squared timber**
- 5 Formwork sheet**



- Panel height 135 cm**
2 stop-end couplers
- Panel height 270 cm**
3 stop-end couplers
- Panel height 300 cm**
4 stop-end couplers

Wall offset



Wall offset on one side

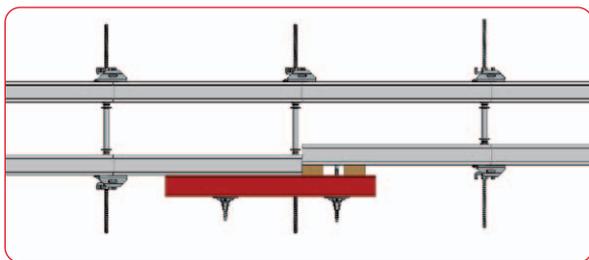
A wall offset up to a maximum of 10 cm in the gang-form is possible. If the wall is short, additional support is necessary

Panel height 135 cm

2 walers

Panel height 270/300 cm

3 walers



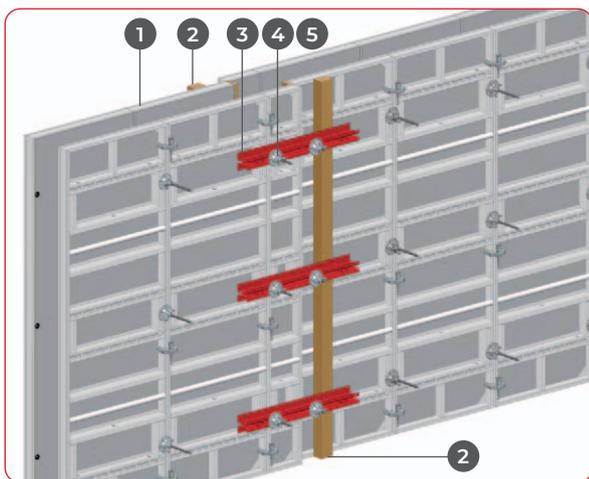
1 System 2000 panels

2 Squared timber

3 RS clamp

4 Waler 100

5 RS clamp, long



Wall offset 0-8 cm

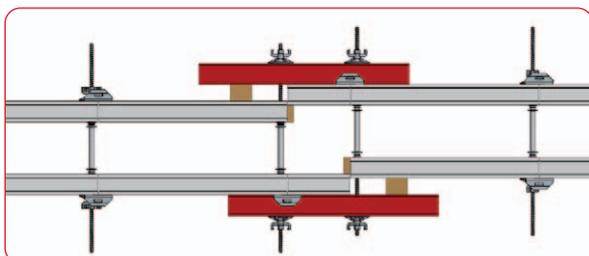
A wall offset up to max. 8 cm is possible with this method. The holes in the panel sides open toward the concrete in the offset have to be sealed with suitable plugs, or alternatively a narrow strip of wood can be inserted.

Panel height 135 cm

2 walers per formwork side

Panel height 270/300 cm

3 walers per formwork side



1 System 2000 panels

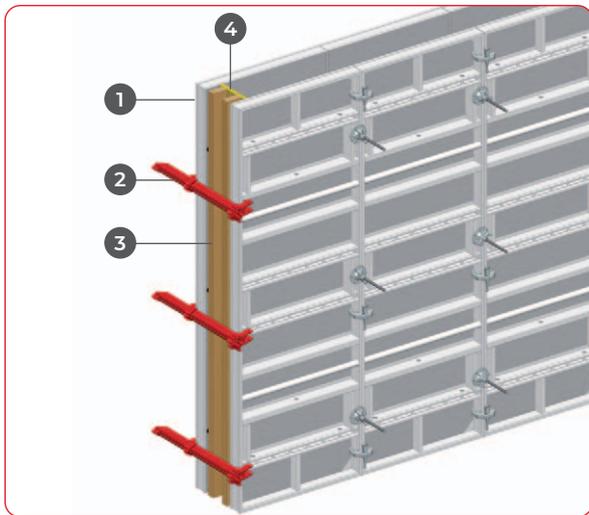
2 Squared timber

3 Waler 100

4 Tie rod with combi plate

5 Combi plate

Stop-end formwork



with stop-end couplers

This is a method for forming stop-ends without form-tie points up to a wall thickness of 45 cm (stepless variation of wall thickness).



Panel height 135 cm

2 stop-end couplers

Panel height 270 cm

3 stop-end couplers

Panel height 300 cm

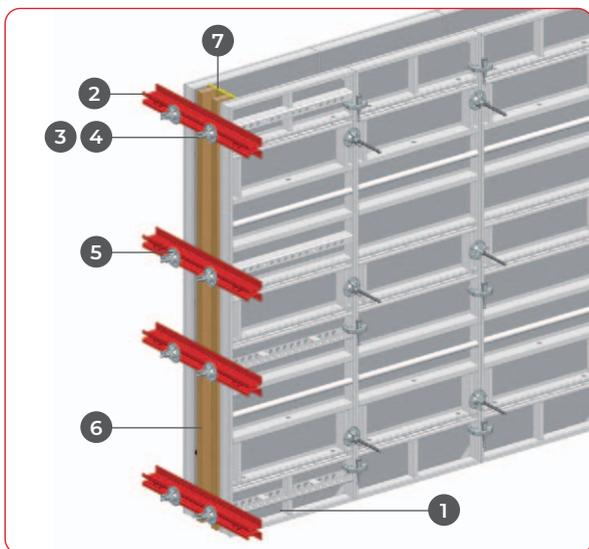
4 stop-end couplers

1 System 2000 panels

2 Stop-end coupler

3 Squared timber

4 Formwork sheet



with waler

The walers are installed with stop-end anchors or universal fixing bolts. They have to be centred between 2 cross profiles to ensure uniform load distribution.



Panel height 135 cm

2 walers

Panel height 270 cm

3 walers

Panel height 300 cm

4 walers

1 Uni panel or 300cm Standard panel

2 Waler 100

3 Universal fixing bolt

or

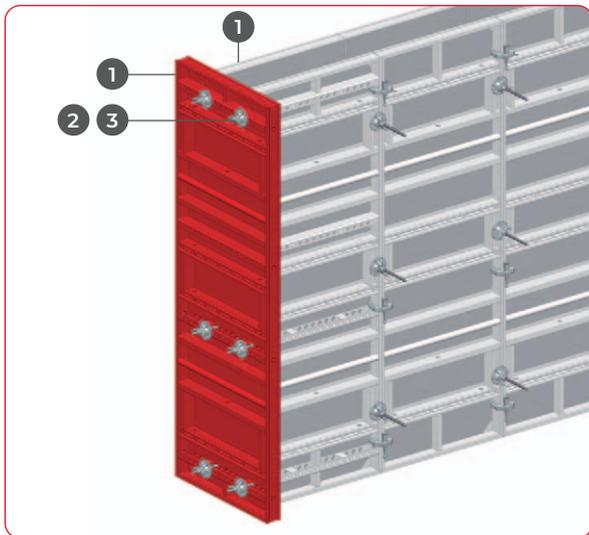
4 System 2000 stop-end anchor

5 Combi plate

6 Squared timber

7 Formwork sheeting

Stop-end formwork



with uni panel

The uni panel permits stop-ends to be formed for wall thicknesses in the 5-cm grid.



Panel height 135 cm

4 anchorages

Panel height 270/300 cm

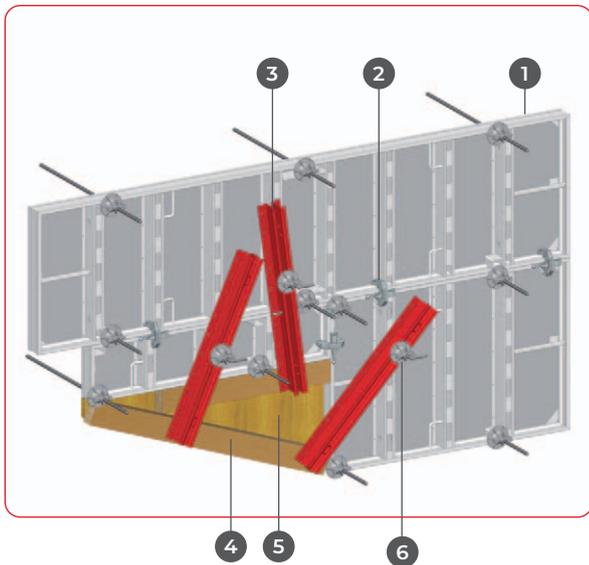
6 anchorages

1 Uni panel or 300cm Standard panel

2 Universal fixing bolt

3 Combi plate

Stepless height offset and infills



Any combination of System 2000 panels

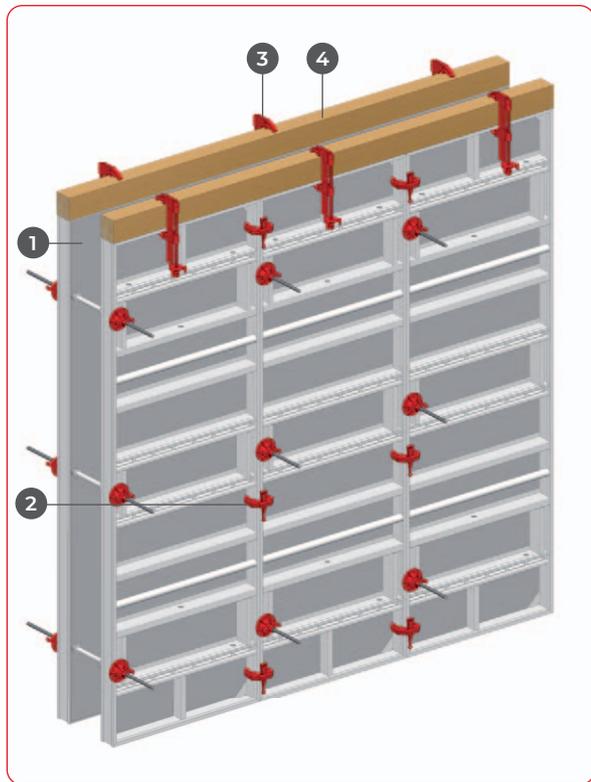
The edge profile of the System 2000 panels permits any combination of panels of different sizes, independently of a fixed grid.

So steps, gradients and irregularities can be formed without significant additional work.

Infills and gradients are easily managed with walers and RS clamps. Formwork panels of suitable size can be used together with squared timbers and strips of formwork sheeting.

- 1 System 2000 panels**
- 2 Quick-acting clamp**
- 3 Waler 100**
- 4 Squared timber**
- 5 Formwork sheets**
- 6 RS clamps**

Vertical stacking of panels



Upward extension with squared timber

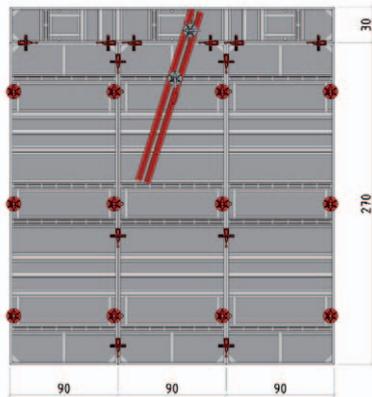
If pour high exceeds the height of the System 2000 panel used, the formwork can be extended up to 10 cm upward with squared timber. Secure the squared timbers to the frame with adjustable clamps.

- 1 System 2000 panels**
- 2 Quick wedge clamp**
- 3 Adjustable quick-acting clamp**
- 4 Squared timber**

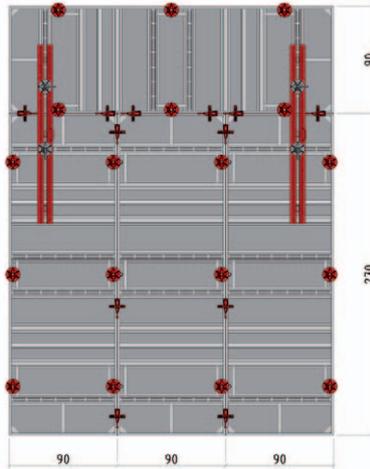
Rules for vertical stacking of the formwork

AL2000/ST2000 panels Height 270 cm

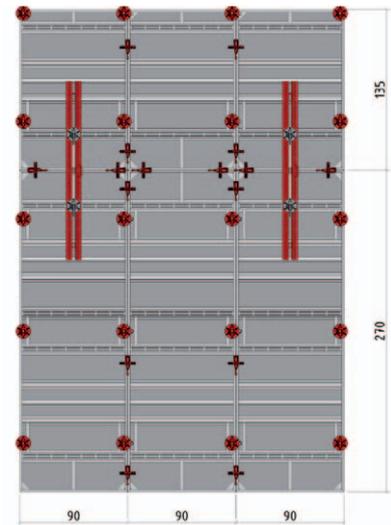
Legend



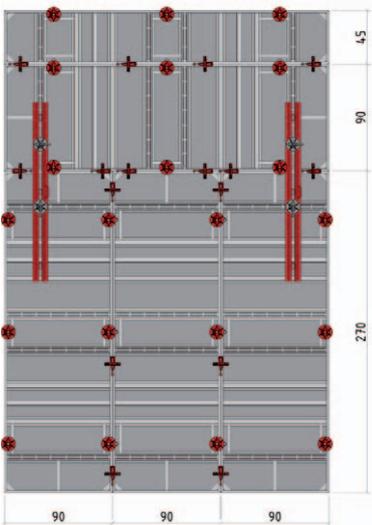
Formwork height:
up to 3.00 m



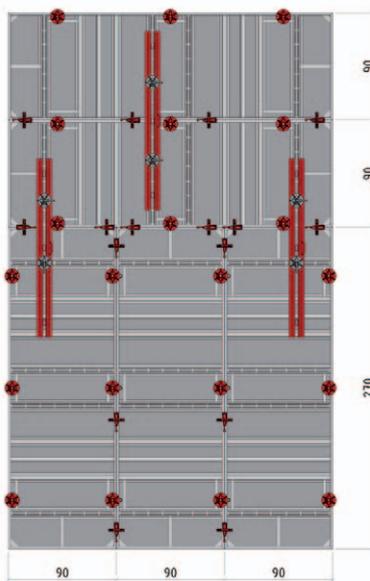
up to 3.60 m



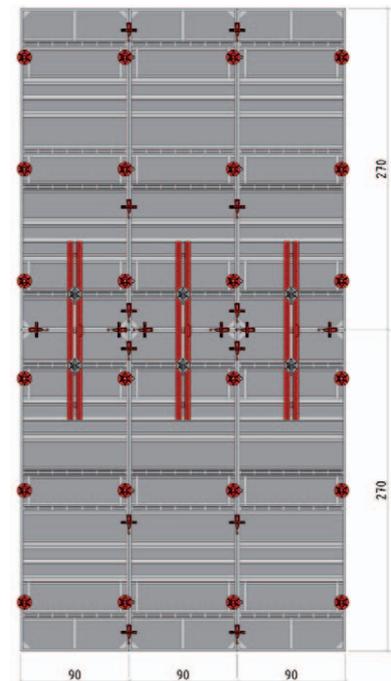
up to 4.05 m



Formwork height:
up to 4.05 m, panels
places horizontally



up to 4.50 m

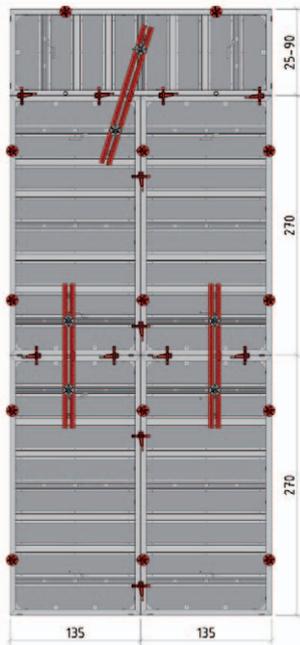


up to 5.40 m

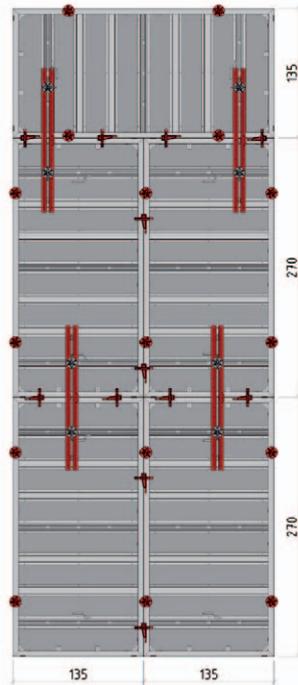
AL2000/ST 2000 panels

Height 270 cm

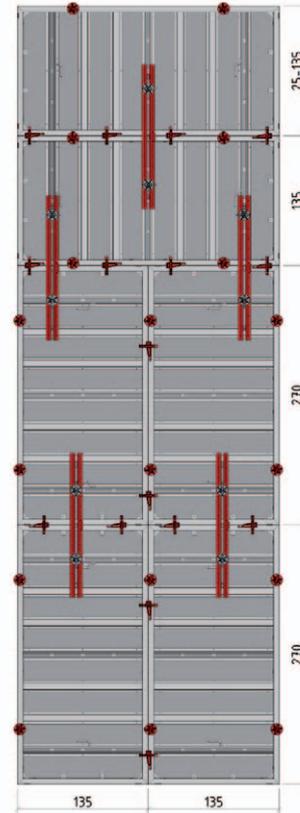
Legend



**Formwork height:
up to 6.30 m**



up to 6.75 m

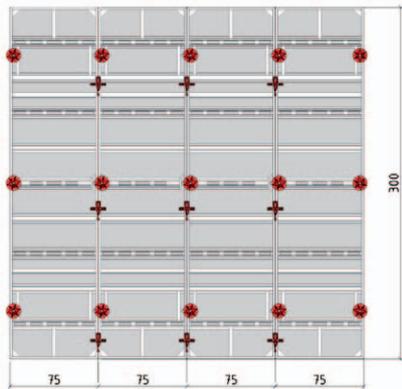
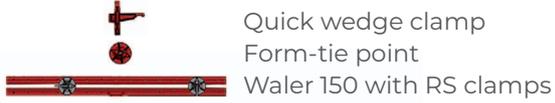


up to 8.10 m

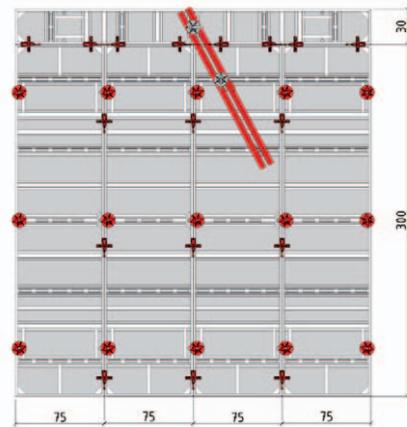
Rules for vertical stacking of the formwork

AL2000/ST2000 panels Height 300 cm

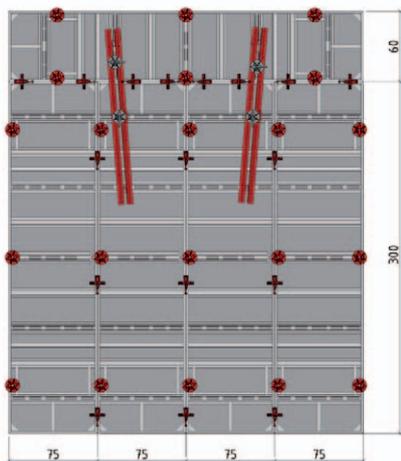
Legend



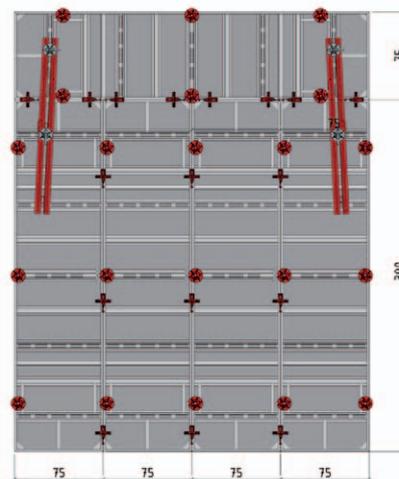
**Formwork height:
up to 3.00 m**



up to 3.30 m



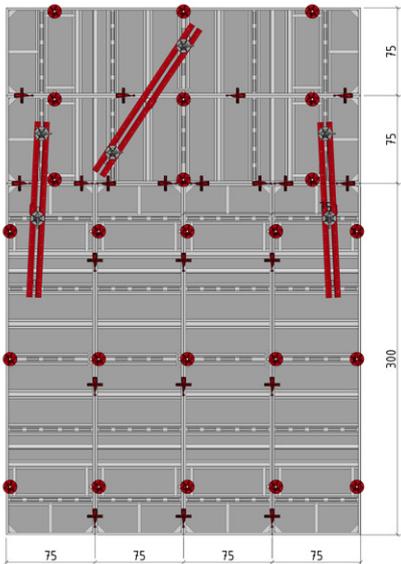
**Formwork height:
up to 3.60 m**



up to 3.75 m

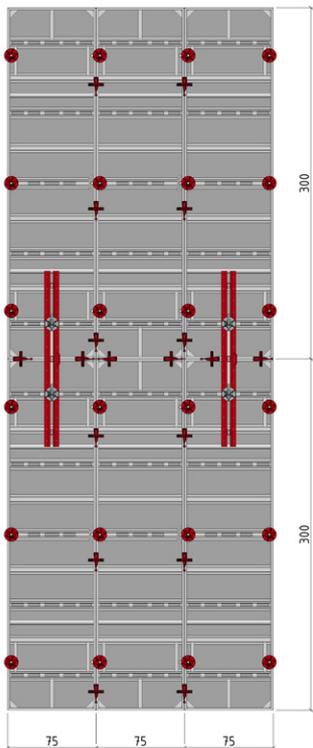
AL2000/ST2000 panels

Height 300 cm

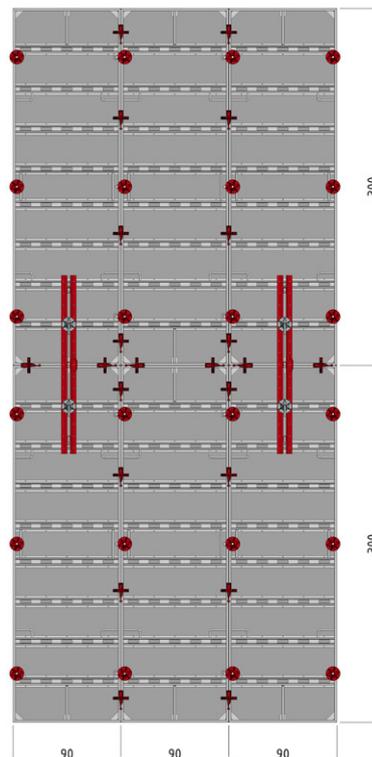


**Formwork height:
up to 4.50 m**

Legend

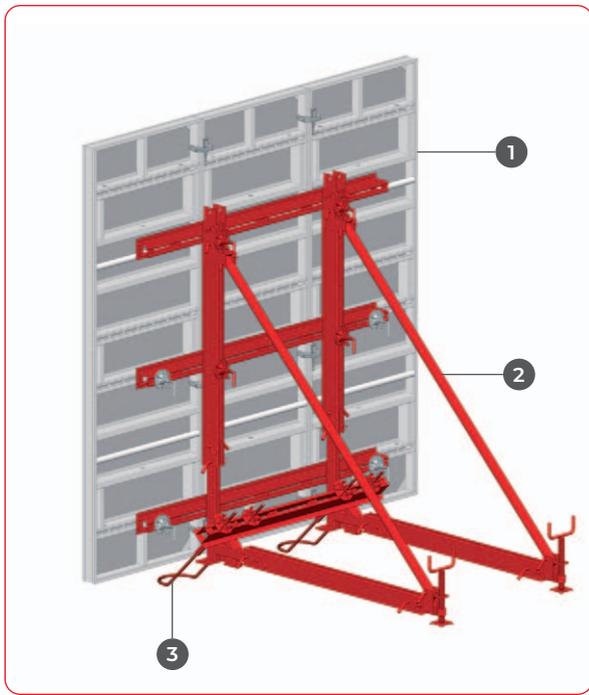


up to 6.00 m



up to 6.00 m / only ST2000 panel 300/90

Single-sided formwork



Brace frame "L"

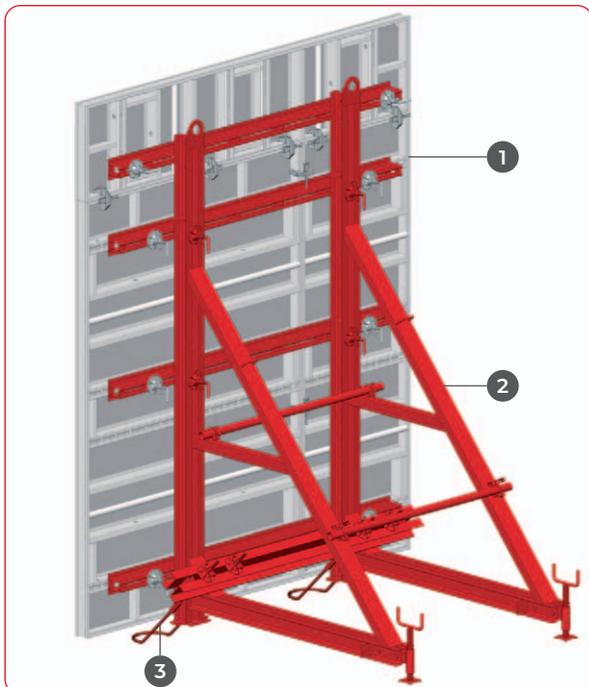
The lightweight RINGER brace frame for single-sided formwork. The brace frame can be taken apart for easy transportation.

- Max. formwork height 2.7 m
- Concrete pressure max. 50 kN/m²
- Max. centre-to-centre distance of brace frames 1.0 m.

- 1 System 2000 panels**
- 2 Brace frame "L"**
- 3 Anchor loop 0.55m**



Follow the directions in the Instructions for Assembly and Use of the brace frames!



Brace frame "M"

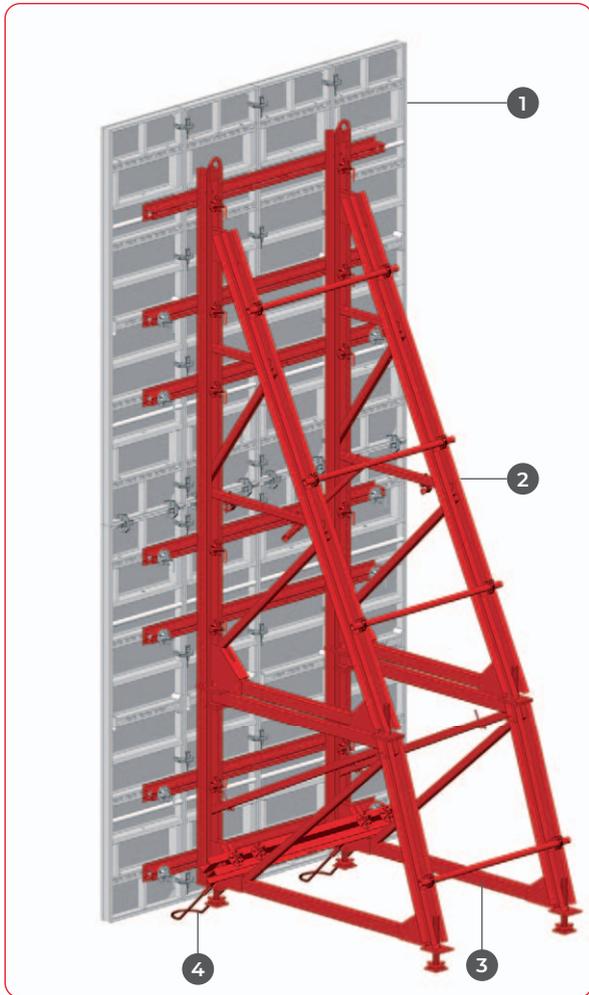
The medium-heavy RINGER brace frame for single-sided formwork.

- Max. formwork height 3.3 m
- Concrete pressure max. 60 kN/m²
- Max. centre-to-centre distance of brace frames 1.35 m.

- 1 System 2000 panels**
- 2 Brace frame "M"**
- 3 Anchor loop 0.55m**



Follow the directions in the Instructions for Assembly and Use of the brace frames!



Brace frame "S"

The heavy RINGER brace frame for single-sided formwork.

- Max. formwork height 4.5 m without attachable frame
- Max. formwork height 6.0 m with attachable frame
- Concrete pressure max. 50 kN/m²
- Max. centre-to-centre distance of brace frames 1.35 m.

- 1 System 2000 panels**
- 2 Brace frame "S"**
- 3 Attachable frame 1.5m**
- 4 Anchor loop 0.55m**



Follow the directions in the Instructions for Assembly and Use of the brace frames!

6 Overview of components

AL2000 Panels

Art. No.	Item	Weight [kg]	Unit
AL2000 300 Phenolic Coated Plywood			
433 75	* AL2000 Panel 300/75 with Phenolic-ply	52.00	pc.
433 60	* AL2000 Panel 300/60 with Phenolic-ply	45.00	pc.
433 50	* AL2000 Panel 300/50 with Phenolic-ply	40.00	pc.
433 45	* AL2000 Panel 300/45 with Phenolic-ply	38.00	pc.
433 40	* AL2000 Panel 300/40 with Phenolic-ply	35.00	pc.
433 30	* AL2000 Panel 300/30 with Phenolic-ply	30.00	pc.
433 25	* AL2000 Panel 300/25 with Phenolic-ply	27.50	pc.
AL2000 270 Phenolic Coated Plywood			
431 90	* AL2000 Panel 270/90 with Phenolic-ply	52.00	pc.
431 60	* AL2000 Panel 270/60 with Phenolic-ply	40.00	pc.
431 50	* AL2000 Panel 270/50 with Phenolic-ply	36.00	pc.
431 45	* AL2000 Panel 270/45 with Phenolic-ply	33.00	pc.
431 40	* AL2000 Panel 270/40 with Phenolic-ply	30.00	pc.
431 30	* AL2000 Panel 270/30 with Phenolic-ply	25.00	pc.
431 25	* AL2000 Panel 270/25 with Phenolic-ply	23.00	pc.
AL2000 135 Phenolic Coated Plywood			
432 90	* AL2000 Panel 135/90 with Phenolic-ply	27.50	pc.
432 60	* AL2000 Panel 135/60 with Phenolic-ply	20.00	pc.
432 50	* AL2000 Panel 135/50 with Phenolic-ply	18.00	pc.
432 45	* AL2000 Panel 135/45 with Phenolic-ply	16.00	pc.
432 40	* AL2000 Panel 135/40 with Phenolic-ply	15.00	pc.
432 30	* AL2000 Panel 135/30 with Phenolic-ply	12.00	pc.
432 25	* AL2000 Panel 135/25 with Phenolic-ply	10.00	pc.
AL2000 Uni Panels Phenolic Coated Plywood			
431 901	* AL2000 Uni Panel 270/90 with Phenolic-ply	59.00	pc.
431 903	* AL2000 Uni Panel 135/90 with Phenolic-ply	29.00	pc.



Art. No.	Item	Weight [kg]	Unit
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AL2000 300 Plastic Coated Plywood

E433 75	* AL2000 Panel 300/75 with Plastic-ply	54.00	pc.
E433 60	* AL2000 Panel 300/60 with Plastic-ply	46.50	pc.
E433 50	* AL2000 Panel 300/50 with Plastic-ply	41.00	pc.
E433 45	* AL2000 Panel 300/45 with Plastic-ply	39.00	pc.
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E433 40	* AL2000 Panel 300/40 with Plastic-ply	36.00	pc.
E433 30	* AL2000 Panel 300/30 with Plastic-ply	30.50	pc.
E433 25	* AL2000 Panel 300/25 with Plastic-ply	28.00	pc.



AL2000 270 Plastic Coated Plywood

E431 90	AL2000 Panel 270/90 with Plastic-ply	54.00	pc.
E431 60	AL2000 Panel 270/60 with Plastic-ply	42.00	pc.
E431 50	AL2000 Panel 270/50 with Plastic-ply	37.00	pc.
E431 45	AL2000 Panel 270/45 with Plastic-ply	34.00	pc.
<hr/>			
E431 40	AL2000 Panel 270/40 with Plastic-ply	32.00	pc.
E431 30	AL2000 Panel 270/30 with Plastic-ply	26.00	pc.
E431 25	AL2000 Panel 270/25 with Plastic-ply	24.00	pc.



AL2000 135 Plastic Coated Plywood

E432 90	AL2000 Panel 135/90 with Plastic-ply	28.50	pc.
E432 60	AL2000 Panel 135/60 with Plastic-ply	21.00	pc.
E432 50	AL2000 Panel 135/50 with Plastic-ply	18.50	pc.
E432 45	AL2000 Panel 135/45 with Plastic-ply	16.50	pc.
<hr/>			
E432 40	AL2000 Panel 135/40 with Plastic-ply	15.00	pc.
E432 30	AL2000 Panel 135/30 with Plastic-ply	12.00	pc.
E432 25	AL2000 Panel 135/25 with Plastic-ply	11.00	pc.



AL2000 Uni Panels Plastic Coated Plywood

E432 901	AL2000 Uni Panel 270/90 with Plastic-ply	60.00	pc.
E431 903	AL2000 Uni Panel 135/90 with Plastic-ply	28.50	pc.



ST2000 Panels

Art. No.	Item	Weight [kg]	Unit
ST2000 300 Phenolic Coated Plywood			
533 90	* ST2000 Panel 300/90 galvanized with Phenolic-ply	87.50	pc.
533 75	* ST2000 Panel 300/75 galvanized with Phenolic-ply	78.00	pc.
533 60	* ST2000 Panel 300/60 galvanized with Phenolic-ply	70.50	pc.
533 50	* ST2000 Panel 300/50 galvanized with Phenolic-ply	60.50	pc.
533 45	* ST2000 Panel 300/45 galvanized with Phenolic-ply	55.00	pc.
533 40	* ST2000 Panel 300/40 galvanized with Phenolic-ply	50.60	pc.
533 30	* ST2000 Panel 300/30 galvanized with Phenolic-ply	45.10	pc.
533 25	* ST2000 Panel 300/25 galvanized with Phenolic-ply	40.70	pc.
ST2000 270 Phenolic Coated Plywood			
531 90	* ST2000 Panel 270/90 galvanized with Phenolic-ply	79.50	pc.
531 60	* ST2000 Panel 270/60 galvanized with Phenolic-ply	64.00	pc.
531 50	* ST2000 Panel 270/50 galvanized with Phenolic-ply	55.00	pc.
531 45	* ST2000 Panel 270/45 galvanized with Phenolic-ply	50.00	pc.
531 40	* ST2000 Panel 270/40 galvanized with Phenolic-ply	46.00	pc.
531 30	* ST2000 Panel 270/30 galvanized with Phenolic-ply	41.00	pc.
531 25	* ST2000 Panel 270/25 galvanized with Phenolic-ply	37.00	pc.
ST2000 135 Phenolic Coated Plywood			
532 90	* ST2000 Panel 135/90 galvanized with Phenolic-ply	42.00	pc.
532 60	* ST2000 Panel 135/60 galvanized with Phenolic-ply	31.00	pc.
532 50	* ST2000 Panel 135/50 galvanized with Phenolic-ply	29.00	pc.
532 45	* ST2000 Panel 135/45 galvanized with Phenolic-ply	27.00	pc.
532 40	* ST2000 Panel 135/40 galvanized with Phenolic-ply	25.00	pc.
532 30	* ST2000 Panel 135/30 galvanized with Phenolic-ply	22.00	pc.
532 25	* ST2000 Panel 135/25 galvanized with Phenolic-ply	18.00	pc.
ST2000 Uni Panels Phenolic Coated Plywood			
533 901	* ST2000 Uni Panel 300/90 galvanized with Phenolic-ply	91.30	pc.
531 901	* ST2000 Uni Panel 270/90 galvanized with Phenolic-ply	83.00	pc.
531 903	* ST2000 Uni Panel 135/90 galvanized with Phenolic-ply	43.00	pc.



Art. No.	Item	Weight [kg]	Unit
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ST2000 300 Plastic Coated Plywood

E533 90	ST2000 Panel 300/90 galvanized with Plastic-ply	91.30	pc.
E533 75	ST2000 Panel 300/75 galvanized with Plastic-ply	80.50	pc.
E533 60	ST2000 Panel 300/60 galvanized with Plastic-ply	72.60	pc.
E533 50	ST2000 Panel 300/50 galvanized with Plastic-ply	61.60	pc.

E533 45	ST2000 Panel 300/45 galvanized with Plastic-ply	56.10	pc.
E533 40	ST2000 Panel 300/40 galvanized with Plastic-ply	51.70	pc.
E533 30	ST2000 Panel 300/30 galvanized with Plastic-ply	46.20	pc.
E533 25	ST2000 Panel 300/25 galvanized with Plastic-ply	41.80	pc.

ST2000 270 Plastic Coated Plywood

E531 90	ST2000 Panel 270/90 galvanized with Plastic-ply	83.00	pc.
E531 60	ST2000 Panel 270/60 galvanized with Plastic-ply	66.00	pc.
E531 50	ST2000 Panel 270/50 galvanized with Plastic-ply	57.00	pc.
E531 45	ST2000 Panel 270/45 galvanized with Plastic-ply	51.00	pc.

E531 40	ST2000 Panel 270/40 galvanized with Plastic-ply	47.00	pc.
E531 30	ST2000 Panel 270/30 galvanized with Plastic-ply	42.00	pc.
E531 25	ST2000 Panel 270/25 galvanized with Plastic-ply	38.00	pc.

ST2000 135 Plastic Coated Plywood

E532 90	ST2000 Panel 135/90 galvanized with Plastic-ply	43.00	pc.
E532 60	ST2000 Panel 135/60 galvanized with Plastic-ply	32.00	pc.
E532 50	ST2000 Panel 135/50 galvanized with Plastic-ply	30.00	pc.
E532 45	ST2000 Panel 135/45 galvanized with Plastic-ply	28.00	pc.

E532 40	ST2000 Panel 135/40 galvanized with Plastic-ply	26.00	pc.
E532 30	ST2000 Panel 135/30 galvanized with Plastic-ply	23.00	pc.
E532 25	ST2000 Panel 135/25 galvanized with Plastic-ply	20.00	pc.

ST2000 Uni Panels Plastic Coated Plywood

E533 901	ST2000 Uni Panel 300/90 galvanized with Plastic-ply	95.70	pc.
E531 901	ST2000 Uni Panel 270/90 galvanized with Plastic-ply	87.00	pc.
E531 903	ST2000 Uni Panel 135/90 galvanized with Plastic-ply	44.00	pc.



Corners

Art. No.	Item	Weight [kg]	Unit
Inside Corners for System 2000			
403V01N	Inside Corner 300/20/20 galvanized System 2000	59.00	pc.
403V11N	Inside Corner 270/20/20 galvanized System 2000	53.00	pc.
403V21N	Inside Corner 135/20/20 galvanized System 2000	27.00	pc.
Outside Corners for System 2000			
403V03	Outside Corner 300 galvanized System 2000	28.50	pc.
403V13	Outside Corner 270 galvanized System 2000	27.50	pc.
403V23	Outside Corner 135 galvanized System 2000	13.50	pc.
Hinged Inside Corners for System 2000			
403 042	Hinged Inside Corner I 300/20/20 galvanized System 2000	67.00	pc.
403 142	Hinged Inside Corner I 270/20/20 galvanized System 2000	60.00	pc.
403 242	Hinged Inside Corner I 135/20/20 galvanized System 2000	32.00	pc.
Hinged Outside Corners for System 2000			
403 04	Hinged Outside Corner A 300/10/10 galvanized System 2000	44.50	pc.
403 14	Hinged Outside Corner A 270/10/10 galvanized System 2000	40.00	pc.
403 24	Hinged Outside Corner A 135/10/10 galvanized System 2000	21.00	pc.



Stripping and Compensation Panels

Stripping Tools for System 2000			
403V27	Stripping Panel 300/10 galvanized System 2000	50.00	pc.
403V28	Stripping Panel 270/10 galvanized System 2000	46.00	pc.
704V52	Stripping Tool for Formwork galvanized	3.80	pc.
Compensation Panels for System 2000			
403V363	Compensation Panel 300/10 galvanized System 2000	19.00	pc.
403V36	Compensation Panel 300/5 galvanized System 2000	13.30	pc.
403V362	Compensation Panel 300/3 galvanized System 2000	12.30	pc.
403V361	Compensation Panel 300/2 galvanized System 2000	11.10	pc.
403V163	Compensation Panel 270/10 galvanized System 2000	17.00	pc.
403V16	Compensation Panel 270/5 galvanized System 2000	12.00	pc.
403V162	Compensation Panel 270/3 galvanized System 2000	11.00	pc.
403V161	Compensation Panel 270/2 galvanized System 2000	10.00	pc.
403V26	Compensation Panel 135/5 galvanized System 2000	7.20	pc.



Art. No.	Item	Weight [kg]	Unit
Circular Forming Plates			
403V52	Circular Forming Plate 270/25 galvanized System 2000	56.00	pc.
403V51	Circular Forming Plate 270/20 galvanized System 2000	54.00	pc.
407V94	Uni Waler 40 for Circular Forming Plate galvanized	4.90	pc.



System 2000 Connecting Parts

Connecting Parts			
404V6	Quick Wedge Clamp System 2000 galvanized	1.70	pc.
404V61	Adjustable Clamp System 2000 galvanized	4.13	pc.
280 0400	Corner Waler galvanized	14.50	pc.
703V152	Waler 150 galvanized	18.66	pc.
703V151	Waler 100 galvanized	12.80	pc.
704V5	RS-Clamp galvanized	1.60	pc.
403 151	* Double Tenon 60	6.00	pc.
704V69	Master Stop End Coupler (up to 40cm wall thickness) galvanized	8.30	pc.
704V66	Slab Beam Clamp (up to 70cm wall thickness) galvanized	9.30	pc.
404V8	Stop End Anchor for System 2000 galvanized	1.50	pc.
407V91	Universal Fixing Bolt galvanized	0.50	pc.



Art. No.	Item	Weight [kg]	Unit
Tie Rod System			
407 050	Tie Rod 0,50m DW15 galvanized	0.75	pc.
407 100	Tie Rod 1,00m DW15 galvanized	1.50	pc.
407 125	Tie Rod 1,25m DW15 galvanized	1.75	pc.
407 150	Tie Rod 1,50m DW15 galvanized	2.15	pc.
407 200	Tie Rod 2,00m DW15 galvanized	3.00	pc.
407 300	Tie Rod 3,00m DW15 galvanized	4.30	pc.
407 1001	* Tie Rod 1,00m DW15 raw	1.50	pc.
407 600	* Tie Rod 6,00m DW15 raw	8.60	pc.
407 55	* Anchor Loop 0,55m DW15	1.80	pc.
407 800	* Pigtail Anchor DW 15 L= 550mm	0.80	pc.
407V77	Combi Plate DW15 galvanized (ø120mm)	1.00	pc.
407V75	* Wingnut Counterplate galvanized (ø 100mm)	0.72	pc.
407V71	* Wingnut galvanized	0.30	pc.
407V73	* Counterplate 120 x 120 x 8mm galvanized	0.90	pc.
404V52	Counterplate "KL" 60 x 80 x 8mm galvanized	0.29	pc.
407V8	Hexagonal Nut DW15 galvanized length 50mm	0.22	pc.
407 56	Connector for Anchor Loop DW15 galvanized	0.60	pc.
703V154	Foundation Clamp galvanized	6.20	pc.
407 500	* Perforated Tape for Foundation Formwork galvanized	17.50	RL
407 60	* Rock Anchor for Drill Hole ø 34 - 35 mm	0.37	pc.
407V76	Anchor Fixing Tool DW 15-20 galvanized	1.80	pc.
407V62	Tie Holder Bracket galvanized	1.40	pc.



Accessories

Art. No.	Item	Weight [kg]	Unit
Push-Pull Props			
708V3	Push-Pull Prop size 1 / 2,15 - 3,60m galvanized	29.50	pc.
708V37	Push-Pull Prop Size 2 / 3,10 - 5,50m galvanized	55.00	pc.
708V31	Push-Pull Prop G / 3,55 - 5,90m galvanized	70.00	pc.
708 36	* Push-Pull Prop "L" dip-coated 2,10 - 3,60m	18.00	pc.
708V34	Extension for Push-Pull Prop "G" galvanized (length 3m)	27.00	pc.
254 21	* Coil for Coil Anchor galvanized	1.50	100 pc.
254 2	* Coil Anchor 16 x 90mm galvanized	0.15	pc.
Concreting Brackets			
708V11	Bracket without Railing galvanized	6.30	pc.
408V12	Railing for Concreting Bracket galvanized	3.90	pc.
704V53	Master Railing Holder galvanized	4.40	pc.
Concreting Platforms			
708V20	Concreting Platform "L" 2,70m preassembled unit	66.00	pc.
708V21	Concreting Platform "L" 2,70m with Access Hatch	66.00	pc.
708V206	Assembly Adapter for Concreting Platform "L"	2.00	pc.
708V211	Ladder for Concreting Platform "L" 2,7m galvanized	15.00	pc.
708V212	Extension 3,3m for Ladder for Concreting Platform "L" galvanized	12.00	pc.
708V222	Distance Bracket for Ladder for Concreting Platform "L"	6.00	pc.



Art. No.	Item	Weight [kg]	Unit
3S-Concreting Platform 3,0m including:			
254V2	3S-Platform 3,0m size 2		Qty. 1 pc.
255V1	3S-Concreting Bracket galvanized		2 pc.
Gesamtgewicht [kg]		187.00	



Transportation Devices

408V5	Crane Hook AL galvanized capacity 1.600 kg serial number/.....	6.00	pc.
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Transportation and Storage

408V90	Pallet for Alu Formwork galvanized	80.00	pc.
408V91	Stirrup for Pallet galvanized	4.20	pc.
408V92	Stirrup for Pallet for Panels 3,0m galvanized	6.00	pc.
260V0006	Accessory Box galvanized	160.00	pc.
260V10	UNI Container with flap galvanized	72.00	pc.
260V11	UNI Container without flap galvanized	70.00	pc.
260V12	* RINGER Multi-Trip Transport Box galvanized	66.00	pc.



Release Agent and Spraying Device

450 1	* Release Agent (canister 25 litre)	22.50	CSTR
450 11	* Release Agent (barrel 200 litre) incl. spigot set	180.00	Bbl
450 3	* Special Release Agent for exposed concrete (25 liter canister)	22.50	CSTR
408 8	* Spraying Device with flat jet nozzle set (5 Liter content)	5.00	pc.



Art. No.	Item	Weight [kg]	Unit
Spacer Tubes and Cones			
441 44	* Spacer Tube WD 40cm (set)	6.50	50 pc.
441 41	* Spacer Tube WD 30cm (set)	5.00	50 pc.
441 4	* Spacer Tube WD 25cm (set)	4.50	50 pc.
441 43	* Spacer Tube WD 20cm (set)	3.00	50 pc.
441 42	* Spacer Tube WD 15cm (set)	2.00	50 pc.
441 15	* Plugs for Spacer Tube waterproof (long)	0.60	100 pc.
441 312	* Spacer Tube ø 26/2mm length 2m	11.00	50 LM
441 22	* Chuck Cone ø 26mm grey	2.30	100 pc.
441 12	* Sealing Disc for Spacer Tube (for exposed concrete)	2.00	250 pc.
Plugs			
441 1	* Plug ø 20mm black System 2000	1.00	500 pc.
441 14	* Plastic Plug ø 24mm brown for Uni Panels	0.60	200 pc.
Additional Accessories			
230V3	* Ground Anchor galvanized	4.00	pc.
408 5	* Carbide Scraper with reversing plate width 10cm arm length 1,3m	1.40	pc.
408 51	* Carbid Scraper with reversing plate width 10cm arm lenght 0,8 m	1.20	pc.



LET'S BUILD

20230126JFU

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RINGER
GERÜSTE + SCHALUNGEN