

Instructions for Assembly and Use **AL Plus**



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RINGER
SCAFFOLDING + FORMWORK

LET'S BUILD

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Contents

1	General Information	4
2	Product Description	7
	Transport and Storage	8
	Moving by Crane	9
	Forming and Concreting	11
	Stripping, Cleaning & Care	12
3	Product Overview	13
	AL Plus - The Panel	14
	Functional Profile	16
	AL Plus - Panel and Anchor Grid	18
	System Parts	20
	Anchor System	24
4	Accessories and Use	
	Horizontal Use	26
	Foundation Formwork	27
	Compensation Panel	28
	Stripping Panel	29
	Columns with Uni Panel	30
	90° Corners	31
	Acute and Obtuse Corners	34
	Supporting and Adjusting Aids	35
	Working Platforms	36
5	Applications	
	T-Wall Connections	39
	Longitudinal Connections	40
	Corner Connections	42
	T-Connection and Pilaster	43
	Wall Offsets	44
	Stop-End Formwork	45
	Height Offset and Remaining Areas	47
	Height Extension	47
	Extension Rules	49
	Single-Sided Formwork	53
6	Overview of Component Parts	55

1 General Information



REFERENCE

Points to other documents with more detailed information.



TECHNICAL INFORMATION

Points out important product properties.



TIP

Refers to useful practical tips.

Safety Instructions

FOREWORD

For the safety-related application and use of the products, country-specific laws, standards and any additional applicable regulations must be applied. They form part of the duties of employers and employees regarding occupational health and safety. This results, among other things, in the employer's duty to ensure the stability of formwork structures during all stages of construction. This also includes the basic assembly, disassembly and transport of these structures or their parts. The overall structure must be checked during and after assembly.

INSTRUCTIONS FOR ASSEMBLY AND USE (AuV)

Formwork is technical work equipment intended exclusively for commercial use. The intended use may only be carried out by technically suitable and qualified personnel. These Instructions for Assembly and Use (AuV) are an integral part of the formwork structure. They contain safety instructions, details on the standard design and intended use, as well as a system description. Drawings and explanatory illustrations are also shown.

AVAILABILITY OF THE AuV

The user must ensure that the AuV provided by RINGER is available at the place of use and is known and accessible to the employees.

INSTRUCTIONS

The functional instructions (standard design) in the AuV must be followed precisely. Deviations from this require separate proof by the user, taking into account the relevant laws, standards and safety regulations.

ILLUSTRATIONS

The illustrations shown in the AuV are partly assembly states and are therefore not always complete in terms of safety. Any safety devices not shown in these illustrations must nevertheless be used by the user in any case.

STORAGE AND TRANSPORT

The special requirements of the formwork structures regarding transport operations and storage must be observed.

MATERIAL INSPECTION

The formwork material must be checked for

perfect condition and function upon arrival at the construction site and before each further use. Modifications or conversions are not permitted. All connections must be checked for fit and function. This is particularly necessary after extraordinary events (e.g. storm/severe weather).

SPARE PARTS AND REPAIRS

Only original parts may be used as spare parts. Repairs may only be carried out by RINGER or authorized facilities.

USE OF OTHER PRODUCTS

Mixing RINGER systems with parts from other manufacturers poses risks that can lead to personal injury and property damage.

RISK ASSESSMENT

The user is responsible for drawing up, documenting, implementing and revising a risk assessment for each construction site. His employees are obliged to implement the resulting measures in compliance with the law. The AuV forms one of the bases for creating a risk assessment.

ASSEMBLY INSTRUCTIONS

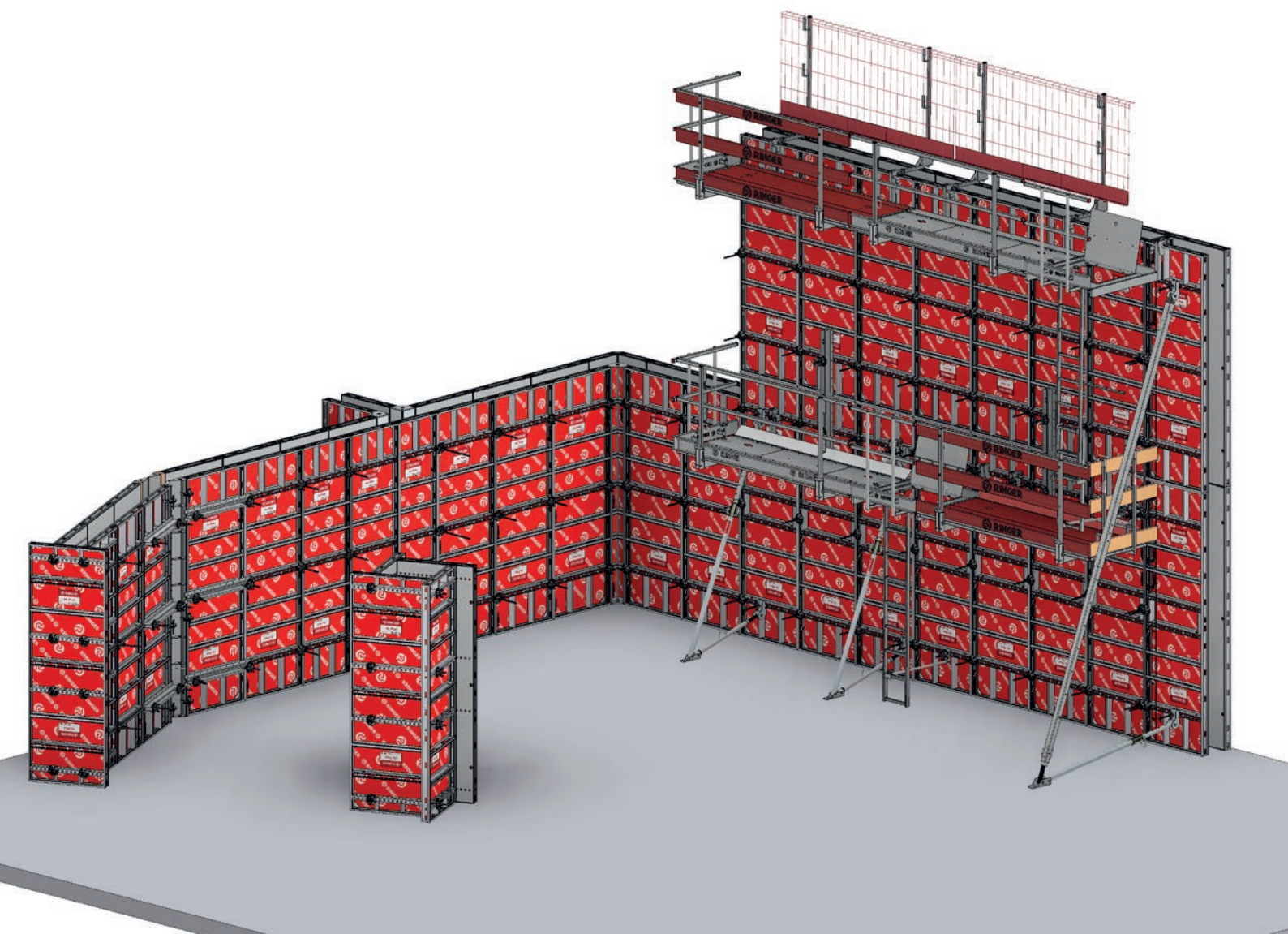
The user is responsible for creating written assembly instructions. The AuV forms one of the bases for creating these assembly instructions.

CHANGES

Subject to changes in the course of technical development.

AL Plus

Wall Formwork



2 Product Description

The AL Plus frame formwork is a complete formwork system with a wide range of applications. The formwork is suitable both for manual formwork operations and for large-area moving by crane.

The maximum permissible fresh concrete pressure is **60 kN/m²** in compliance with the flatness class according to DIN 18202 Table 3 Line 5.

To comply with Line 6 according to DIN 18202 Table 3, the maximum permissible fresh concrete pressure is **50 kN/m²**

Due to the extensive panel grid with 8 panel widths (25–90 cm) and 3 panel heights (150/270/300 cm), numerous combination possibilities are offered, allowing the formwork system to be adapted to all layouts almost without the use of compensation panels.

The AL Plus stands out above all as a lightweight: for example, the panel 270 x 90 has a weight per unit area of only 19.3 kg/m² with the plastic-ply sheeting.

The AL Plus is also fully compatible with AL2000 and ST2000 from Ringer.

FRAME

The edge profiles of the panels are dimensionally stable, torsion-resistant aluminum hollow chamber profiles. The functional profiles are used to connect all accessories. The I-profiles are used for reinforcement and have practical grip holes at the correct height for easy handling.

PLYWOOD

The plywood is fastened by riveting. The panels are available with the following plywood options:

- **Phenolic coated plywood**
Birch plywood, 9-ply, film-coated on both sides
- **Plastic coated plywood**
Birch plywood, 9-ply, coated on both sides with 1.8 mm plastic
- **Alkus**
All-plastic panel with an extremely long service life

EFFICIENCY ON THE CONSTRUCTION SITE

The panels are connected using the AL Plus connector, which is installed quickly and silently in a single operation without tools. The system is designed in such a way that at least two openings can always be used for any combination of panels, whether horizontal or vertical. The large panel 300 x 90 cm is particularly efficient, weighing only slightly more than 50 kg at 2.7 m².

Transporting and storing



Observe data sheet for stacking frame!

Pallet for Alu Formwork

The panels are transported in a space-saving manner in the pallet. Up to 4 pallets can be stacked on top of each other. Panels of different widths can also be stored in combination. The pallet can be filled with e.g.:

- 10 pcs AL Plus Panels 300 x 90 (using the stirrups 10003116)



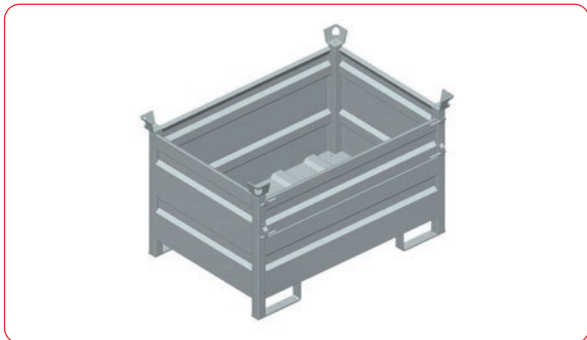
Panel widths 50 - 90 cm

2 stirrups

Panel widths 25 - 45 cm height-extended 4 stirrups



Max. perm. load capacity 600 kg!



UNI - Container

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



Length 1.2 m

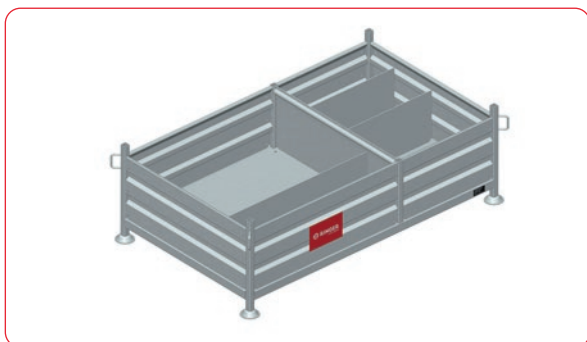
Width 0.8 m

Height 0.78 m

Load capacity 1,500 kg



Observe data sheet!



Accessory Box

Ideal for transporting and storing small parts used during formwork.



Length 1.89 m

Width 1.11 m

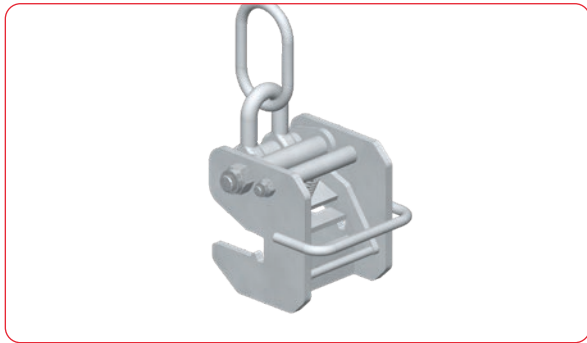
Height 0.63 m

Load capacity 1,500 kg



Observe data sheet!

Shifting with the crane



max. permissible load capacity
Crane Hook AL Art. No. 10000730
1,600 kg

Crane Hook AL Art. No. 10002975
1,000 kg

Distinction depending on the name-plate, see page 10



Observe operating instructions for Crane Hook AL!

Crane Hook

With the Crane Hook AL, individual panels or larger panel assemblies can be shifted safely. The crane hook is hooked into the profile of the formwork panel in the area of the panel joint or at the reinforcements. This is done by lifting the clamping bracket by hand.

When picking up panels lying on the ground, the loading direction must be observed. Before lifting the formwork panels with the lifting device, check whether the formwork profile is completely inside the recess of the crane hook and the lower edge of the clamping bracket rests on the formwork profile. Otherwise, there is a risk of the crane hook coming loose.

Operation

Operation must only be carried out by qualified personnel (crane operators, slingers).

- Push the handle of the clamping part upwards against the spring force
- Place the crane hook onto the frame profile of the formwork panel. This is easy to do due to the central center of gravity.
- Release the handle and check by shaking gently whether the crane hook is securely seated on the edge profile. Choose the position on the edge profile so that the panel or panel assembly hangs horizontally when lifted.
- Attach the hook of the tower crane/construction crane to the suspension link and lift the load. The crane should be moved in such a way that the loading direction of the hook is always upwards (crane rope as vertical as possible by following the movement curve of the panel/panel assembly).

Assembly

Attach the Crane Hook AL in the center of individual panels or at the panel joint for panel assemblies to prevent slipping.

Hang the panel assembly symmetrically (center of gravity). For height-extended shifting units preassembled on the ground, Walers 150 must be attached for reinforcement so that the panel assembly does not buckle when lifted.

Shifting with the crane

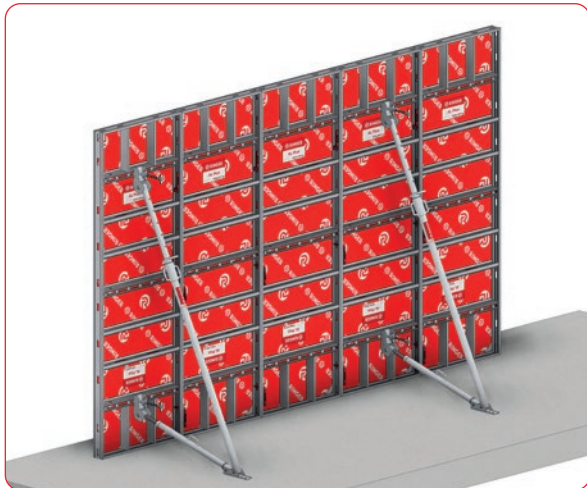
Using several crane hooks

Individual panels, but especially panel assemblies, can also be moved with 2 crane hooks at the same time. Care must be taken that the spread angle of the chains does not become larger than 60° (see sketch bottom right). This is achieved if the chain length is at least as large as the horizontal distance between the crane hooks. The hooks must be attached in such a way that they cannot slide inwards sideways (fixation at the panel joint, at the profile tubes or at the

functional or I-profiles when used horizontally). If a crane spreader beam is used, the maximum load capacity of 1,600 kg may be applied to both hooks, provided that the hooks are loaded vertically or with a maximum deviation of 7.5° . When using 2 sling chains on one hook of the tower crane/construction crane, the maximum permissible total load is reduced depending on the angle between the chains:

Angle between sling chains	0°	30°	60°
Crane Hook AL from year of manufacture 2022 RINGER GmbH, A-4844 Regau, Römerweg 9 Lastaufnahmemittel, Spezialhaken Kranhaken AL Max. Tragfähigkeit: 1600kg Serien-Nr. / Baujahr A- / 	3,200 kg	3,090 kg	2,770 kg
Crane Hook AL up to and including year of manufacture 2021 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	2,000 kg	1,930 kg	1,730 kg

Erecting formwork and concreting

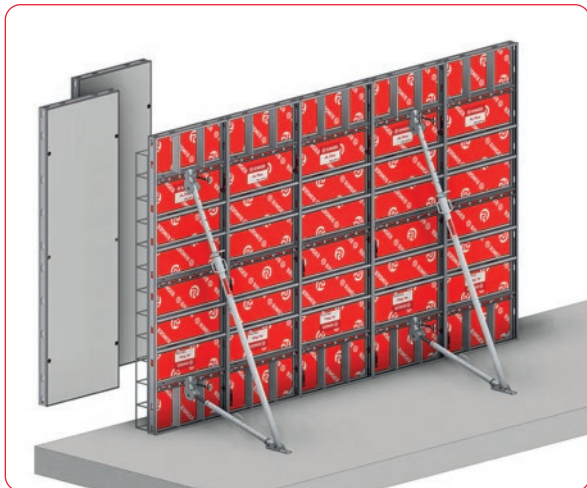


Erecting formwork

Separate the panels and then spray the formwork skin with RINGER Special Release Agent. This makes it easier for the panels to release from the concrete surface during stripping and makes them easier to clean. In addition, the appearance of the concrete surface is improved. Place panels or panel assemblies in the desired position using a crane and fix the Push-Pull Props first to the formwork and then to the ground.

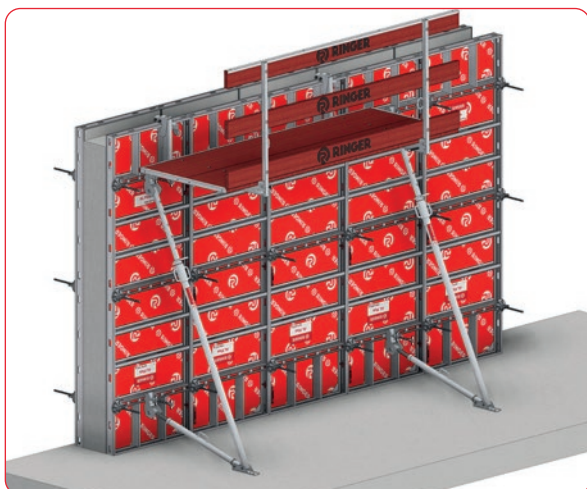


The panels or panel assemblies must only be released from the crane when the Push-Pull Props are attached or the panels are secured against wind!



After fine-adjusting the panels, further panels or assemblies can be added. Connect the panels according to the specifications using the suitable connecting parts.

After placing the reinforcement, the closing formwork is set up and the ties are installed.



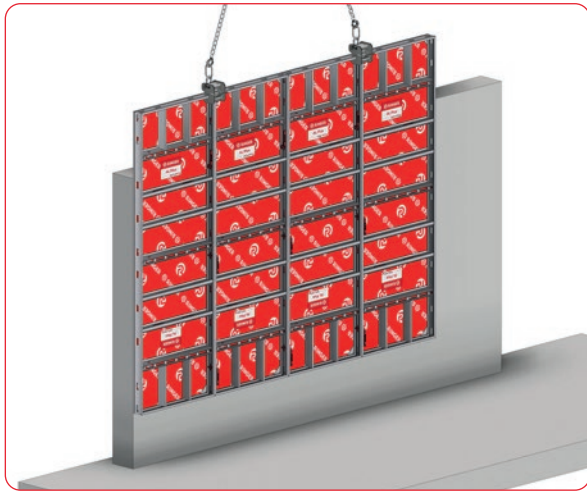
Concreting

The permissible fresh concrete pressure is 60 kN/m² according to DIN 18218 line 5 (or 50 kN/m² for line 6).

The maximum rate of rise must not be exceeded during concreting. When vibrating the concrete, DIN 4235 Part 2 must be observed. The back of the formwork should be cleaned with water immediately after concreting. This reduces the subsequent cleaning effort after stripping.

This applies especially to cement slurry that has entered through the lateral openings in the edge profile.

Stripping



Procedure

When the minimum concrete strength has been reached, stripping can begin.

- Secure panels or panel assembly with the crane
- Loosen Combi Plates and pull out ties.
- Loosen the Quick Wedge Clamps or connectors used and remove the formwork panels
- Clean the formwork of concrete residues and spray with RINGER Special Release Agent

Whole panel assemblies including Push-Pull Props, Concreting Brackets or Concreting Platforms can be shifted while complying with the maximum load limits.



The panel assembly must not be torn loose with the crane!

Cleaning and care



before concreting

- Spray the formwork skin thinly with RINGER Release Agent

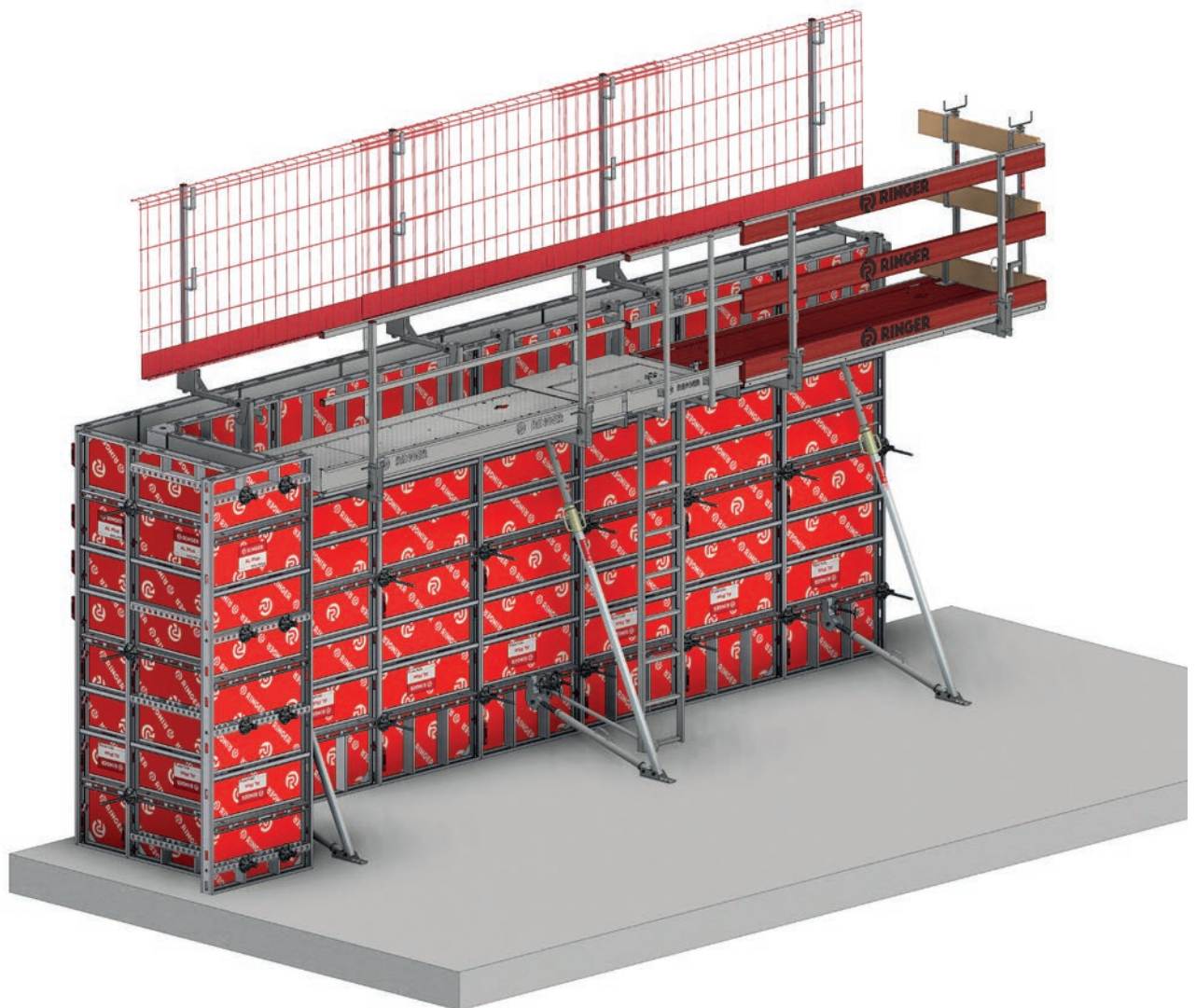
after concreting

- Immediately remove fresh concrete contamination on the back of the formwork, Combi Plate and Tie Rod with water

after stripping

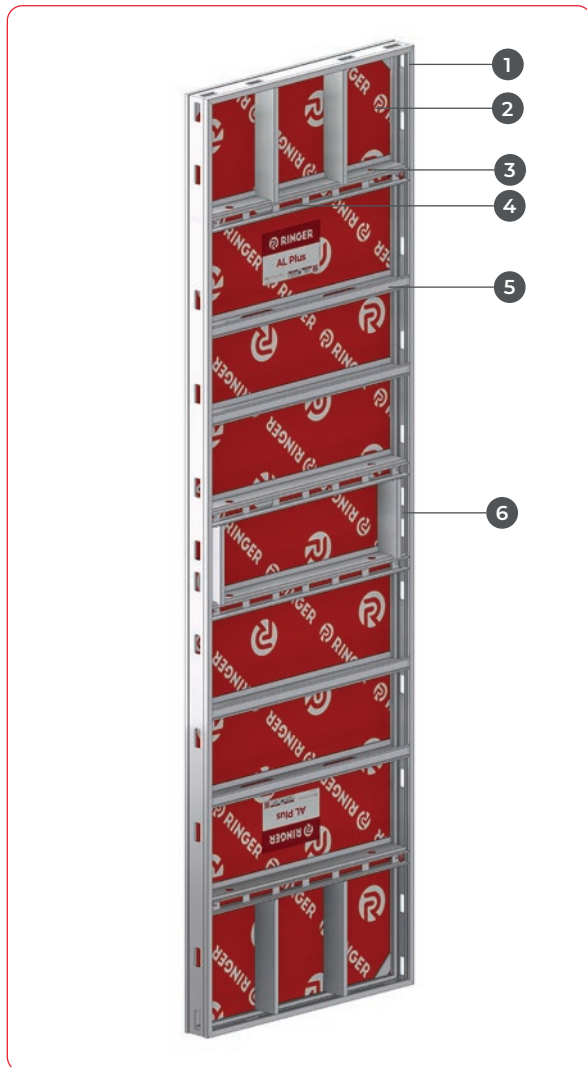
- Clean the formwork skin with a scraper or, if necessary, with a high-pressure cleaner. Do not use wire brushes, rotating grinding discs or similar tools!

3 Product overview



AL Plus

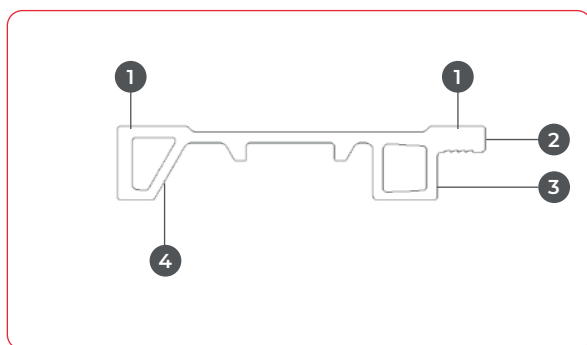
The panel



The panel in detail

The AL Plus panels consist of a frame made of dimensionally stable, torsion-resistant hollow chamber frame profiles and reinforcing functional and I-profiles. The panels are suitable for a max. fresh concrete pressure of 60 kN/m².

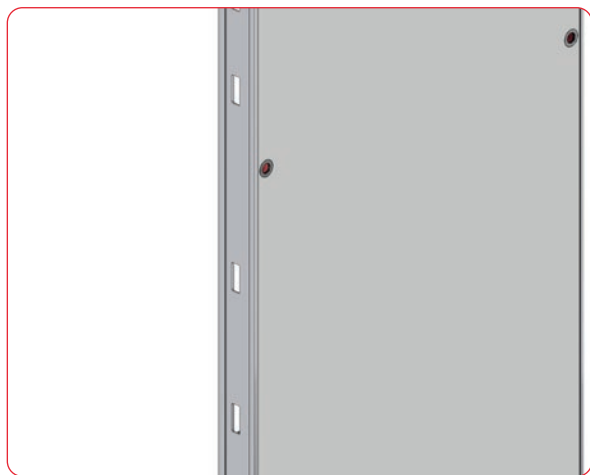
- 1** Frame profile
- 2** Formwork skin
- 3** Suspension holes for Concreting Bracket
- 4** Functional profile
- 5** I-profile
- 6** Tie point



Cross section of frame profile

- 1** Contact surface
- 2** Nose for edge protection
- 3** Support surface for formwork skin
- 4** Pressure surface for connecting parts

Lateral openings in the edge profiles



AL Plus edge profile

In the edge profiles, slots are provided all around in the dimension 60 x 22 mm. These serve for panel connection with the connectors.

By simply inserting and a subsequent quarter turn, the adjacent panels are securely and easily connected – without tools, without noise.

In the closed position, the connectors do not project beyond the back of the formwork, which means that walers or other accessories can be attached here without hindrance.

Functional profile



Functional profiles

To stiffen the frame, functional profiles are welded in, which form the support surface for the formwork skin.

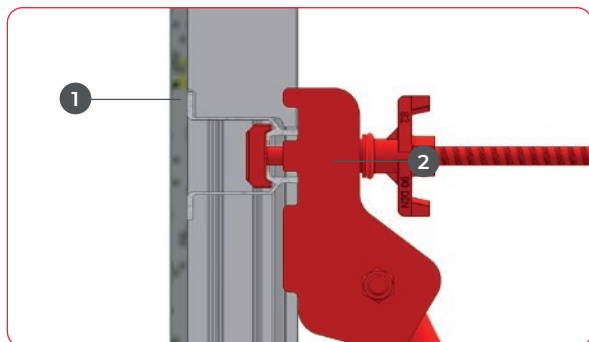
The functional profiles are designed in such a way that accessories such as Push-Pull Props and adapters for Concreting Platforms can be easily attached.

In addition, the functional profiles have holes for suspending Concreting Brackets.

Most functional profiles also serve to accommodate the anchor sleeves, i.e. the ties are arranged at the height of the functional profiles

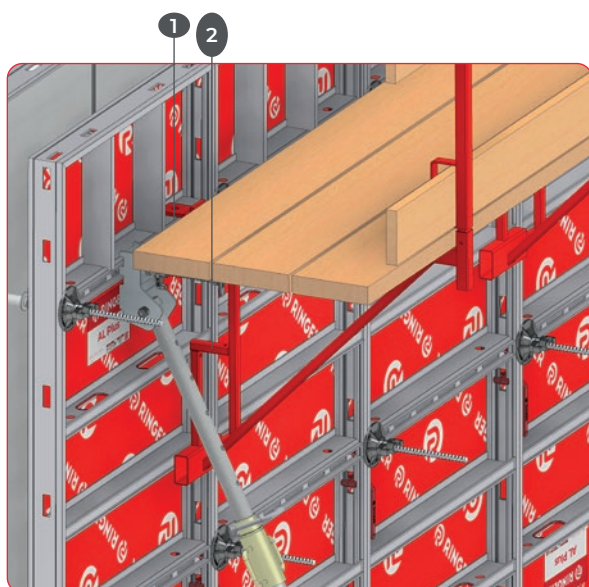
- 1 Functional profile**
- 2 AL Plus panel**

Functional profile



Attachment of Push-Pull Props

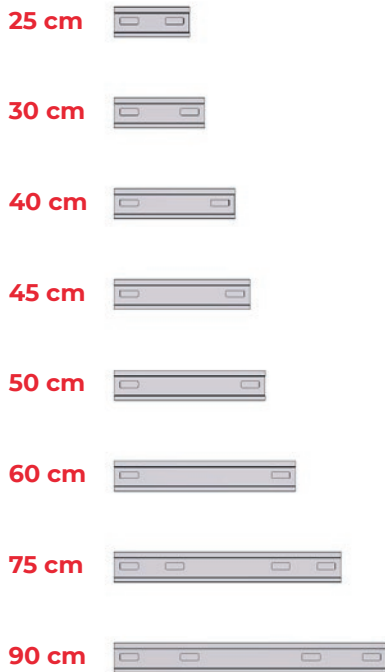
- 1 Functional profile
- 2 Push-Pull Prop



Suspending Concreting Brackets

- 1 Functional profile
- 2 Concreting Bracket

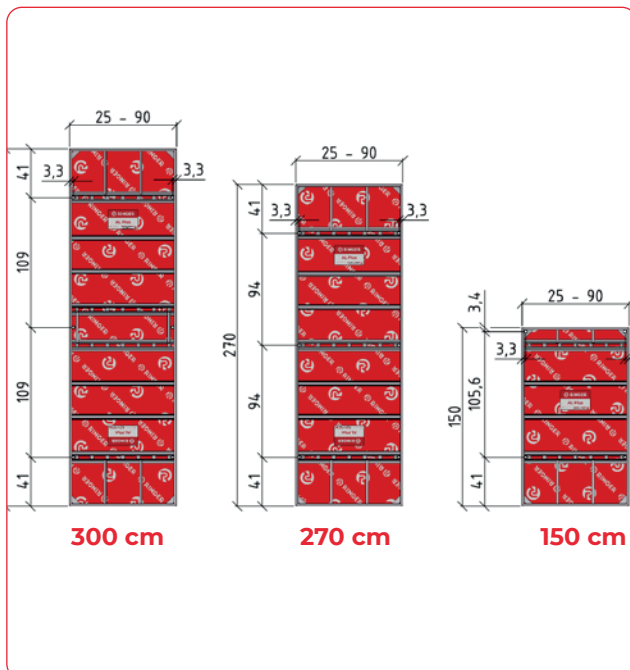
AL Plus Panel and Tie Grid



Panel Heights and Widths

The dimensions of the panels are chosen so that any layout can be created. The panels can be combined with each other both vertically and horizontally.

The panels are available in 8 widths and three heights of 150 / 270 and 300 cm.



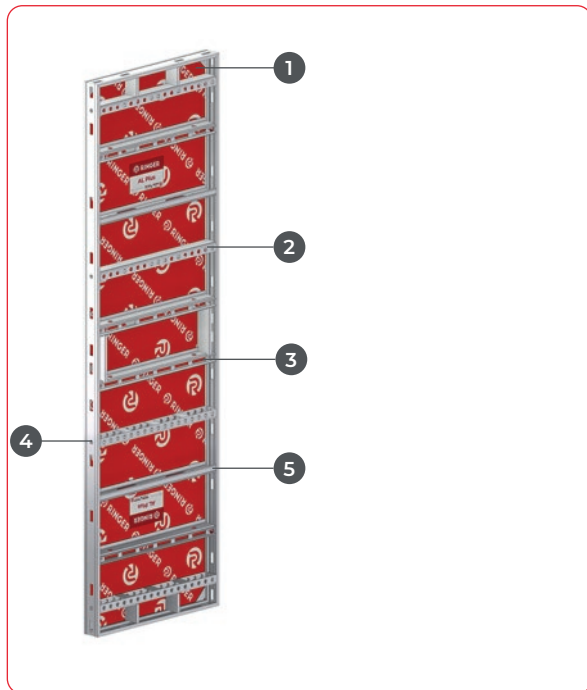
Tie Grid

Panels with a height of 150 cm have 4 tie holes each.

Panels with a height of 270 and 300 cm are equipped with 6 tie holes and are symmetrical at the top/bottom.

The position of the tie holes corresponds to the System 2000 formwork systems. This allows the systems to be mixed and combined.

System Parts



Uni Panel

The continuous and symmetrical hole pattern of the adjusting rail allows for variable wall thicknesses from 20 cm to 80 cm in 5 cm increments. The Uni Panel is ideally suited for:

- Columns
- Corners
- Stop-end formwork
- Wall connections

The position of the tie holes is identical to those of the System 2000 panels.

1 AL Plus Uni Panel

Panel width 90 cm

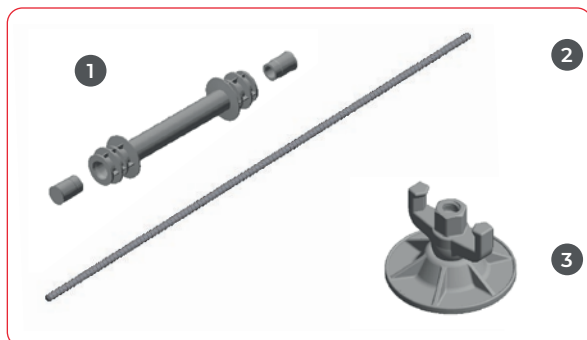
Heights 150/270/300 cm

2 Adjusting rail

3 Functional profile

4 Cross hole

5 I-profile

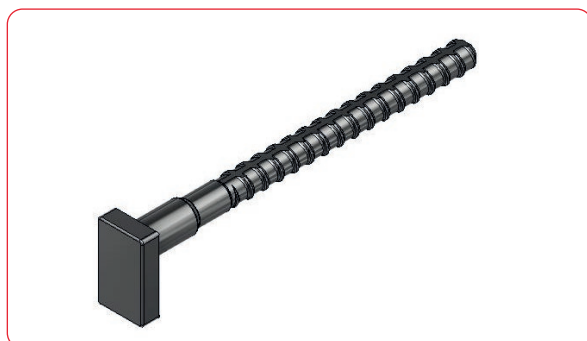


Tie Rod System

1 Spacer Tube with plugs

2 Tie Rod

3 Combi Plate galvanized



Universal Fixing Bolt

For connecting panels through the transverse holes on the face side, e.g. for stop-end formwork or corner configurations with the Uni Panel.

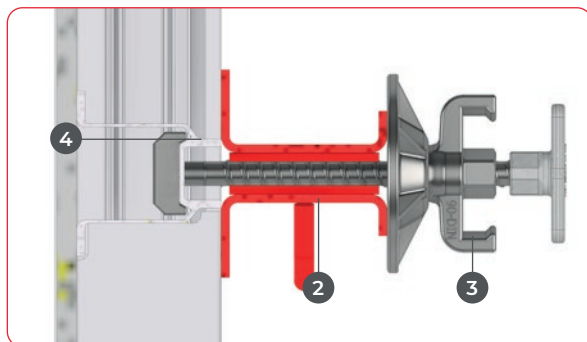
System Parts



Waler

For height extensions of 90 cm or more, Walers 150 are attached to stiffen the panel assembly. Waler 100 can be used for infills or construction joint connections.

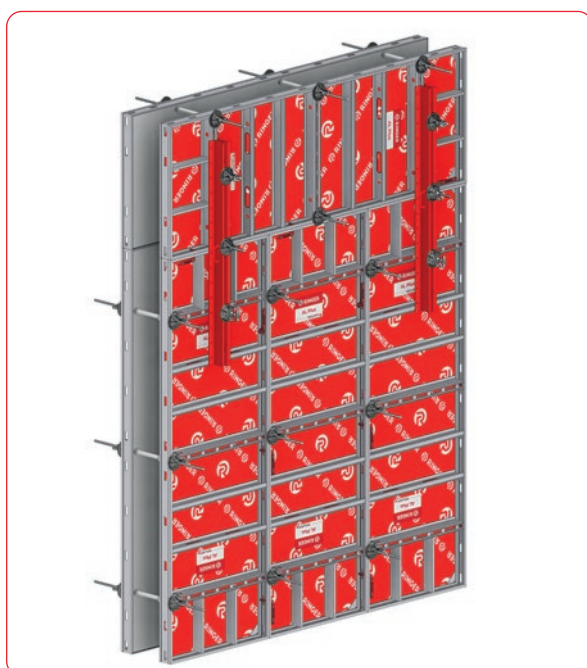
- 1 Waler 100**
- 2 Waler 150**
- 3 RS-Clamp**
- 4 Functional profile**



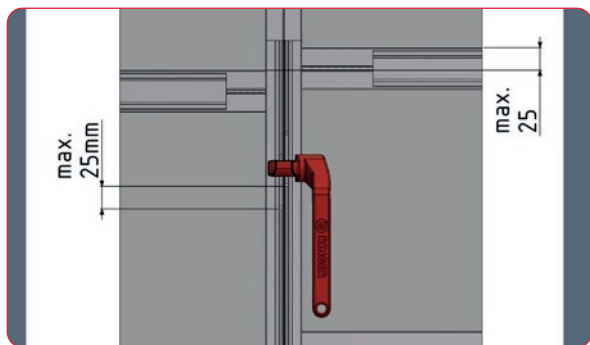
Assembly

Walers are attached to the functional profiles using RS-Clamps. In addition, the waler can also be anchored.

The waler ensures optimal transfer of forces in the panel assembly. This aligns the frame panels flush with each other.



System Parts



panel connector

The connector is a simple locking element between the panels that can be operated with just one hand. These can be combined vertically or horizontally as desired. The connector can also be used with AL Plus Inside and Outside Corners.

The lateral recesses in the edge profiles are dimensioned so that the connector can still be used without any problems even with an offset of up to 25 mm.

Vertical arrangement

Panel height 150 cm:
2 connectors

Panel height 270 to 300 cm:
3 panel connector

horizontal arrangement

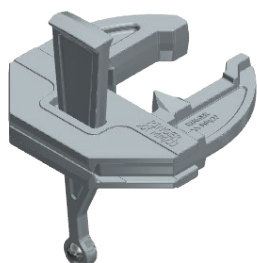
Panel width up to 50 cm:
1 panel connector

Panel width up to 90 cm:
2 panel connector



If the connector cannot be locked at this point due to a functional or top-hat profile
: turn the connector by 180° and insert it from the opposite side

System Parts



Quick Wedge Clamp galvanized

AL Plus panels can also be connected with Quick Wedge Clamps, just like System 2000. These are self-closing, i.e. the clamp can be attached with one hand. A hammer blow establishes the force-fit connection.

Vertical arrangement

Panel height 150 cm: 2 Quick Wedge Clamps

Panel height 270 to 300 cm 3 Quick Wedge Clamps

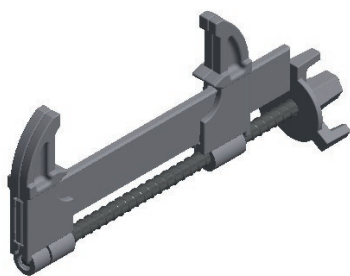
horizontal arrangement

Panel width up to 50 cm 1 Quick Wedge Clamps

Panel width up to 90 cm 2 Quick Wedge Clamps



For the number of Quick Wedge Clamps in the corner area, see the Corner Configuration section



Adjustable Clamp System 2000 galvanized

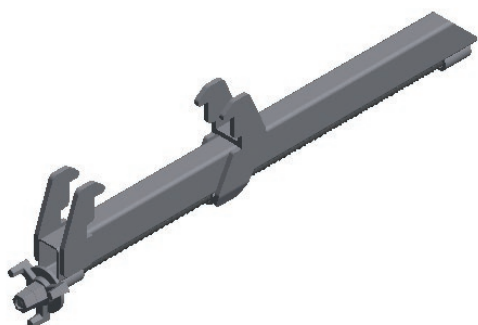
Infill connections up to max. 20 cm as well as construction joint connections can be made with the Adjustable Clamp.

Panel height up to 150 cm

2 Adjustable Clamp

Panel height 270 to 300 cm

3 Adjustable Clamp



Stop End Coupler

With the Stop End Coupler, wall thicknesses up to 45 cm can be continuously formed.

Panel height up to 150 cm

2 clamps

Panel height up to 270 cm

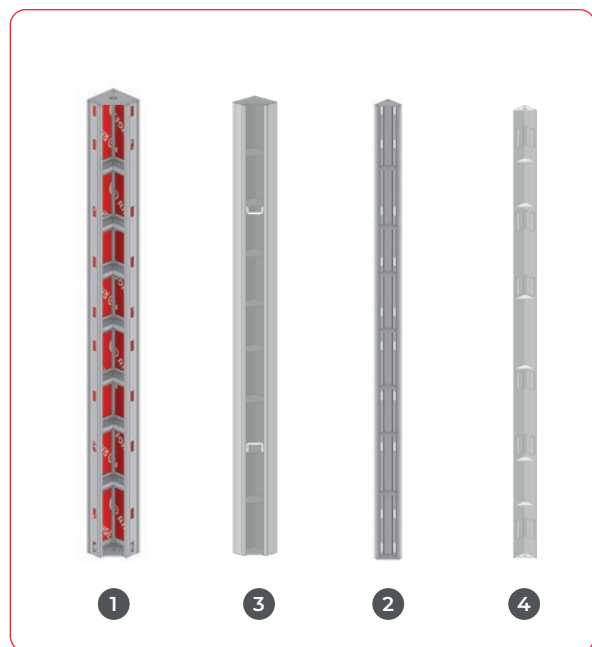
3 clamps

Panel height 300 cm

4 clamps



System Parts

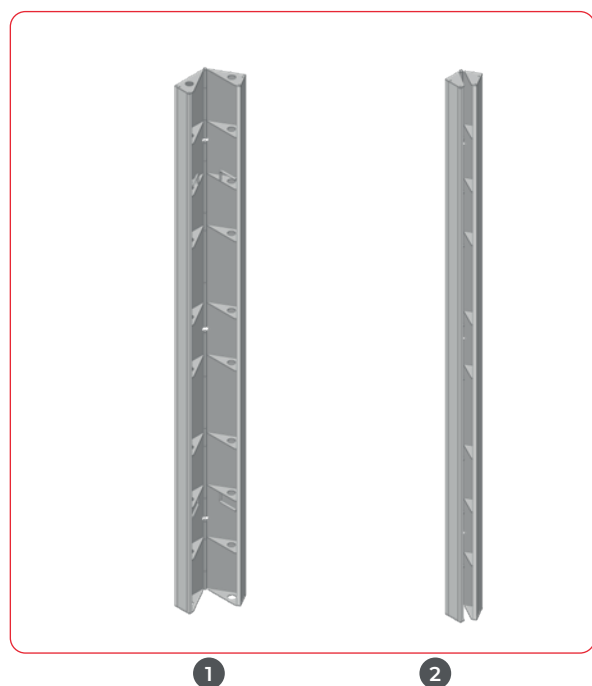


Inside and Outside Corners

Corner configurations can be efficiently formed using the respective corner panels. For AL Plus, these are also available in aluminum and can be connected using the connector.

Alternatively, Inside and Outside Corners of Series 2000 can also be used, although Quick Wedge Clamps must then be used for panel connection.

- 1 AL Plus Inside Corner**
Heights 150 / 270 / 300 cm
- 2 AL Plus Outside Corner**
Heights 150 / 270 / 300 cm
- 3 Inside Corner System 2000**
Heights 150 / 270 / 300 cm
- 4 Outside Corner System 2000**
Heights 150 / 270 / 300 cm

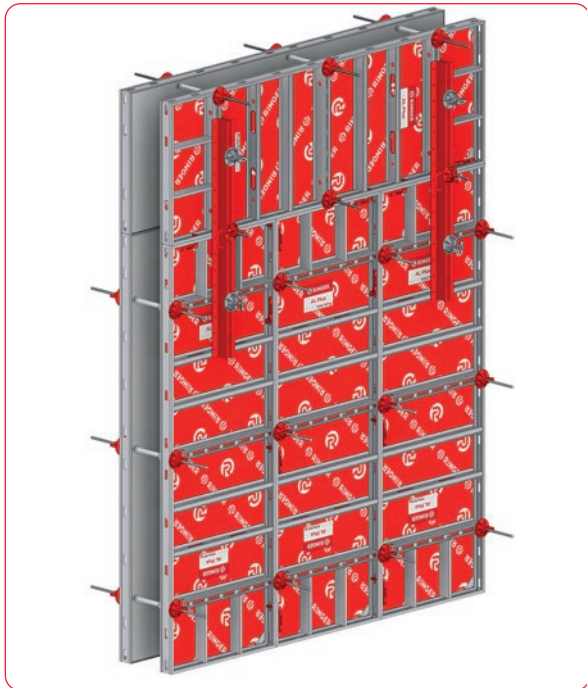


Hinged Corner System 2000

For acute and obtuse corners from 80° - 180°, Hinged Corners System 2000 can be used.

- 1 Hinged Inside Corner System 2000**
Heights 300/270/150/
Leg length 20 cm
- 2 Hinged Outside Corner System 2000**
Heights 300/270/150/
Leg length 10 cm

Tie Rod System



Tie Rod System

The panels are anchored with Tie Rod DW15 and 2 Combi Plates each. Only approved Tie Rod System components may be used. If panels of different widths are connected, anchoring must always be done through the wider panel.



Do not heat or weld the Tie Rod - risk of breakage!

Number of ties per panel

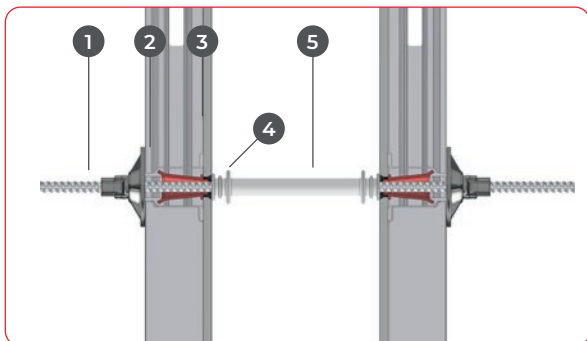
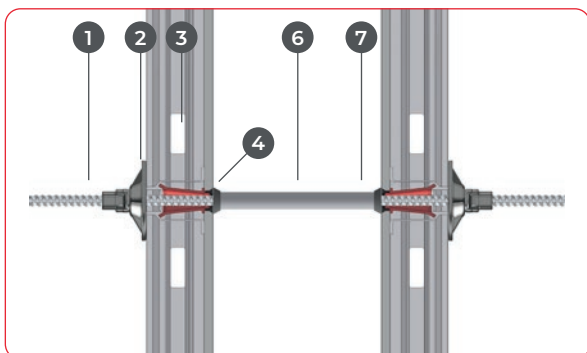


Panel height 150 cm

2 ties vertically

Panel height 270/300 cm

3 ties vertically



Spacing

Spacer Tubes can be used to space the form-work panels. Alternatively, a spacer tube that can be cut to length with 2 pressure cones can be used. Unused tie points must be sealed with Uni Plugs.

- 1 Tie Rod**
- 2 Combi Plate**
- 3 AL Plus Panel**
- 4 Tie sleeve**
- 5 Spacer Tube**
- 6 Spacer tube**
- 7 Pressure cone**

Tie loads

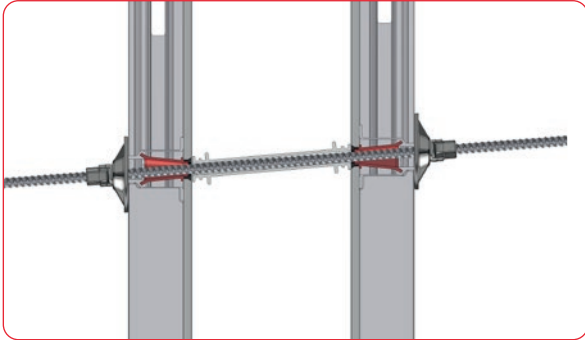


Tie Rod DW15

max. permissible concrete pressure 60 kN/m²

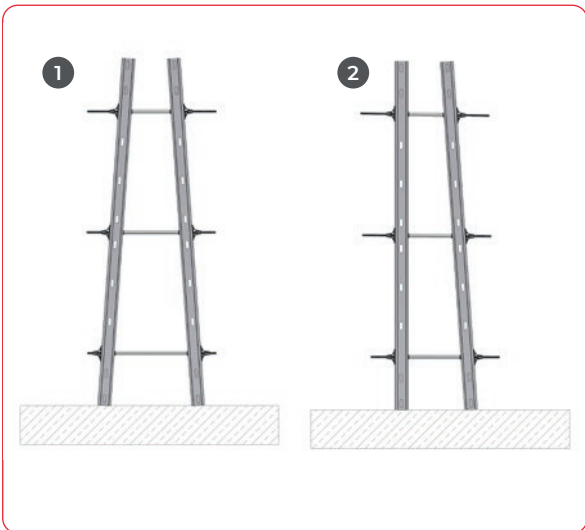
max. 90 kN tensile force

Tie Rod System



Inclination

The formwork panels can also be placed in inclined positions or with a height offset. The washer of the Combi Plate is articulated and thus adapts to the inclination.



1 conical on both sides

max. 2 x 4.5°

2 conical on one side

max. 4.5°

3 Height offset

max. 1.0 cm per 12 cm wall thickness



Inclined panels must be secured against uplift!



4 Accessories and Use

Horizontal Use



With squared timber

If the AL Plus panels are used horizontally, there are two procedures for anchoring in the area close to the ground:

One option is to use a squared timber as a support. Anchoring is then carried out as standard using Combi Plates. The formwork and squared timber are secured against slipping using Walers.

- 1 Squared timber**
- 2 Waler 100**
- 3 AL Plus connector**
- 4 RS-Clamp**
- 5 AL Plus Panel**



Without squared timber

If the frame panels are set up directly on the ground, Counterplates "KL" in combination with Hexagonal Nuts DW15 can be used in the lower tie area instead of Combi Plates.

- 1 Counterplate "KL"**
- 2 Hexagonal Nut DW15**
- 3 Tie Rod DW15**
- 4 AL Plus connector**
- 5 AL Plus Panel**



Foundation formwork



Horizontal panels

The frame panels can be used horizontally for forming foundations. **Advantages:**

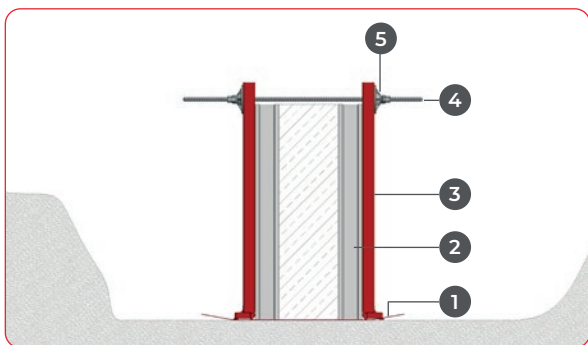
- By using Perforated Tape and Foundation Clamps, tie holes are avoided
- Low space requirement in narrow excavations



Perforated Tape adjustable in a 5 cm grid

Max. load 12 kN/Perforated Tape

Perforated Tape length = wall thickness + 40 cm



Concreting height up to 90 cm

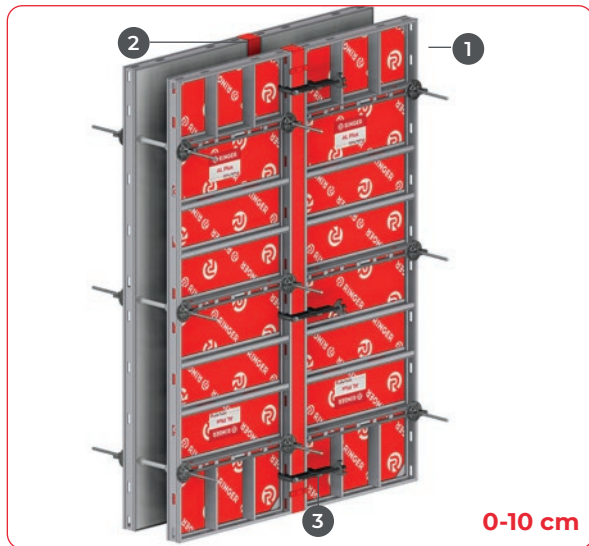
- 1 Perforated Tape**
- 2 AL Plus Panel**
- 3 Foundation Clamp**
- 4 Tie Rod DW15**
- 5 Combi Plate**
- 6 Spacer Tube**

- Distance between tie points < 1.35 m



To avoid contamination of the Tie Rod during concreting, we recommend using Spacer Tubes.

Length compensation



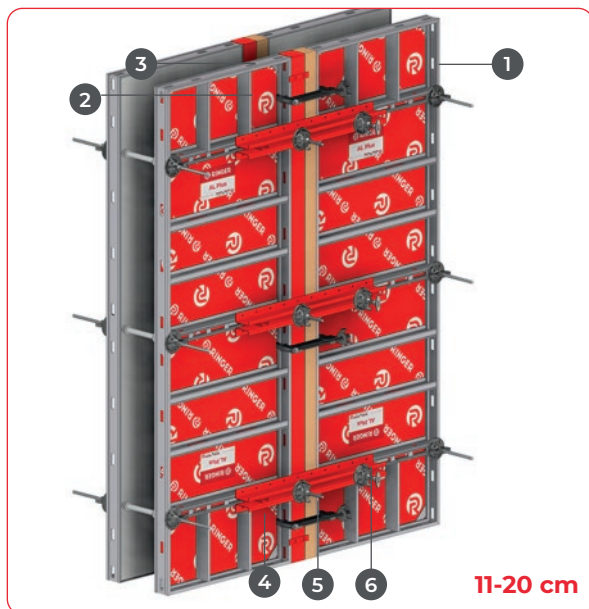
Compensation Panel

Length compensations can be made with compensation panels as well as wooden infills. Compensation panels are available in the following widths:

- **Width 2/3/5/10 cm**
Heights 300/270 cm
- **Width 5 cm**
Height 150

Compensation 0 to 10 cm

- 1 AL Plus Panel**
- 2 Compensation Panel System 2000**
- 3 Adjustable Clamp**



Compensation 11 to 20 cm

- 1 AL Plus Panel**
- 2 Compensation Panel System 2000**
- 3 Wooden infill**
- 4 RS-Clamps**
- 5 Adjustable Clamp**
- 6 Waler 100**

Several compensation panels can also be combined to achieve the desired compensation width.

Stripping panel



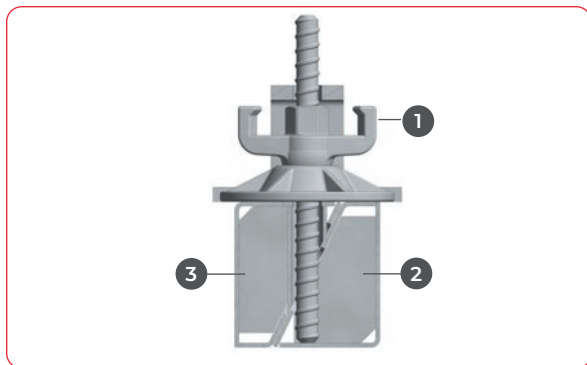
Stripping panels

For easy stripping in narrow cross-sections such as lift shafts, stairwells, etc.

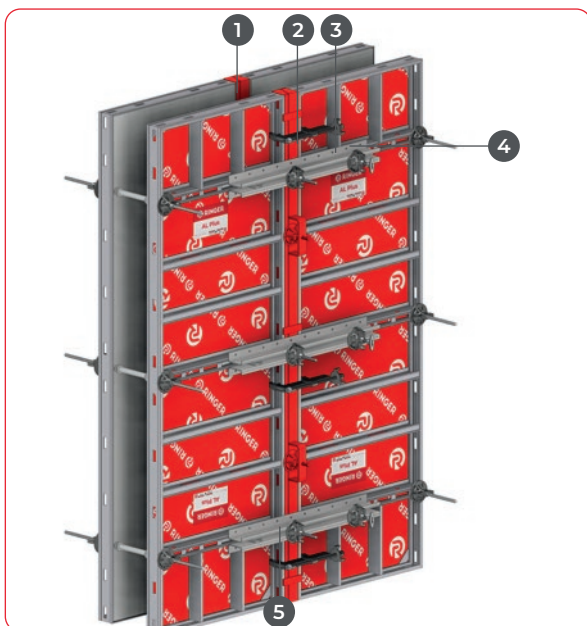
Stripping panel 10 cm

Heights 150/270/300 cm

By loosening the wingnut counterplate, the two halves of the stripping panel can be slid against each other. This significantly facilitates the stripping of the first panel in the panel assembly.



- 1 Wingnut Counterplate
- 2 Fixed part
- 3 Sliding part



- 1 Stripping panel
- 2 Adjustable Clamp
- 3 RS-Clamp
- 4 Waler 100
- 5 Tie Rod with Combi Plate

Columns with Uni Panel



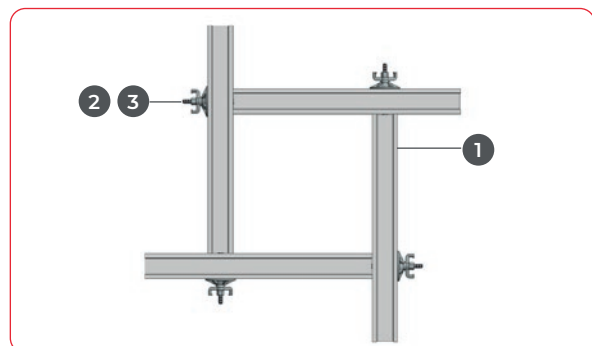
Rectangular columns

Using the Uni Panels width 90 cm, columns with side lengths from 20 to 80 cm can be quickly formed in a 5 cm grid. By connecting the panels with Universal Fixing Bolts, no anchor holes are created. The panels must be connected to each adjusting rail with a Universal Fixing Bolt and Combi Plate.

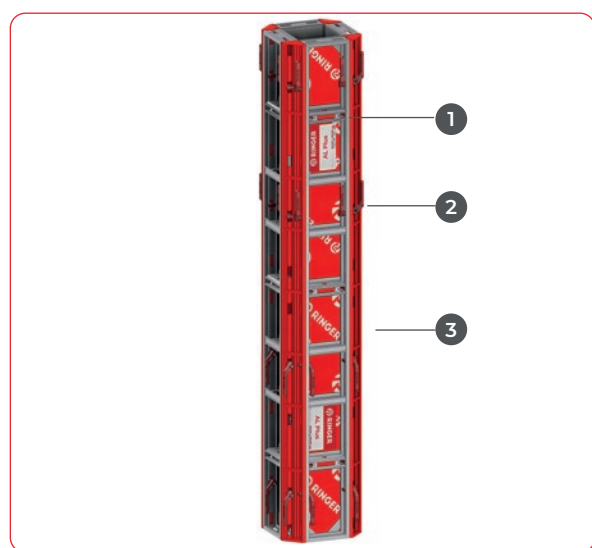
- 1 Uni Panel**
- 2 Universal Fixing Bolt**
- 3 Combi Plate**
- 4 Plastic Plug brown**



Close the unused holes of the Uni Panel with brown plastic plugs.



Stacking of the panels is possible up to a max. height of 6.0 m.
The permissible concreting speed must be observed!



Columns with Outside Corners

Square and rectangular column layouts can be formed using AL Plus panels and Outside Corners.

- 1 AL Plus Panel**
- 2 Outside Corner**
- 3 AL Plus connector**



Height 150 cm
6 connectors per Outside Corner
Height 270 cm
8 connectors per Outside Corner
Height 300 cm
10 connectors per Outside Corner

90° corner with AL Plus corners



AL Plus Inside and Outside Corners

These are available in aluminium in heights of 150/270/300 cm and can be connected to the wall panels using connectors.

the following applies to Outside Corners:

Height 150 cm

6 connectors

Height 270 cm

8 connectors

Height 300 cm

12 connectors



the following applies to Inside Corners:

Height 150 cm

2 connectors per side

Height 300/270 cm

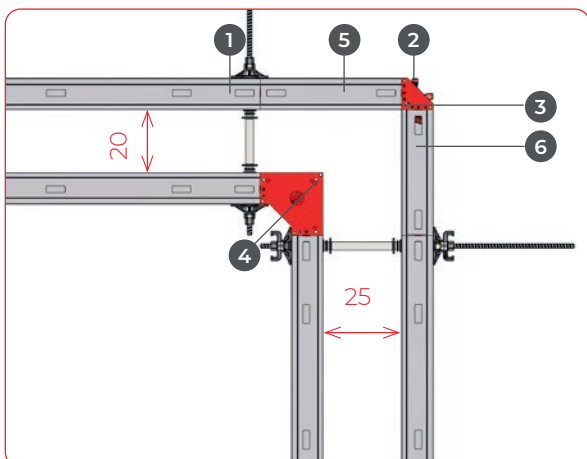
3 connectors per side



Due to the large number of available frame panels, standard wall thicknesses can be formed without additional compensations.



Width of the panel adjacent to the Outside Corner = wall thickness + 20 cm



Wall thickness transition

Corner solutions with a simultaneous change in wall thicknesses can be created by combining AL Plus panels with the corresponding corner panels.

1 AL Plus Panel

2 AL Plus connector

3 AL Plus Outside Corner

4 AL Plus Inside Corner

5 Panel 45 cm (wall thickness + 20 cm)

6 Panel 40 cm (wall thickness + 20 cm)

90° corner with System 2000 corners



System 2000 Inside and Outside Corners

Existing System 2000 corners can also be used with the AL Plus.

The connection is made with Quick Wedge Clamps.

The basic panel for corner configurations is the Inside Corner System 2000. It is available in heights of 270/300 cm. The combination with the Outside Corner System 2000 allows the rapid creation of 90° corners in a 5 cm grid for wall thicknesses.

the following applies to Outside Corners:

Height 150 cm

4 connectors

Height 270 cm

8 connectors

Height 300 cm

10 connectors



the following applies to Inside Corners:

Height 150 cm

2 connectors per side

Height 300/270 cm

3 connectors per side

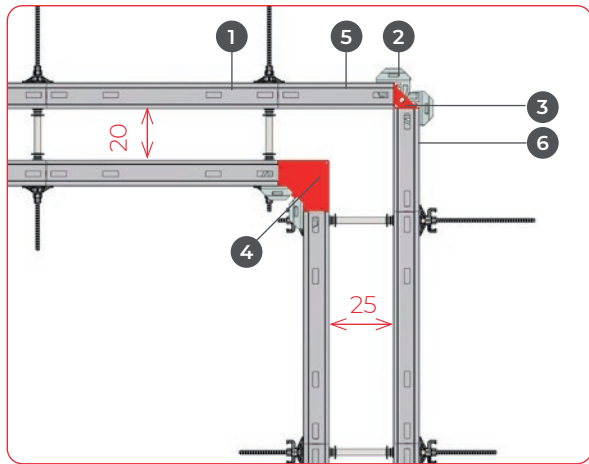


Due to the large number of available frame panels, standard wall thicknesses can be formed without additional compensations.

Width of the panel adjacent to the Outside Corner = wall thickness + 20 cm



90° corner with System 2000 corners

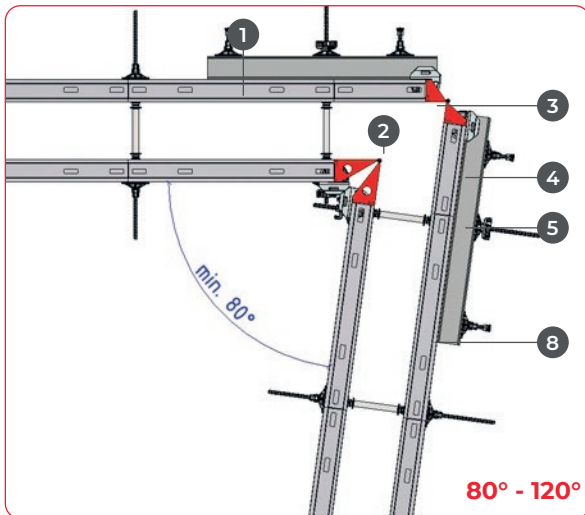


Wall thickness transition

Corner solutions with a simultaneous change in wall thicknesses can be created by combining System 2000 panels with the corresponding corner panels.

- 1 System 2000 Panel**
- 2 Quick Wedge 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 corners



Corners 80° to 155°

The combination of Inside Corner and Outside Corner allows the forming of angles from 80° to 155°.

For angles <120°, no walers are necessary on the Hinged Inside Corner.

The connection is generally made with Quick Wedge Clamps.

for Hinged Outside Corner

Height 150 cm

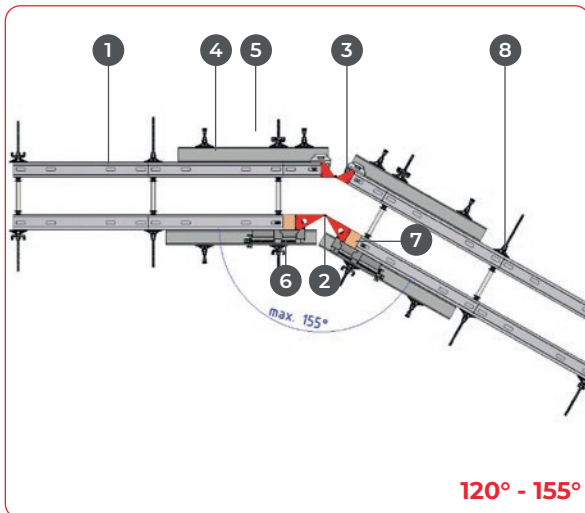
4 Quick Wedge Clamps

Height 270 cm

8 Quick Wedge Clamps

Height 300 cm

10 Quick Wedge Clamps



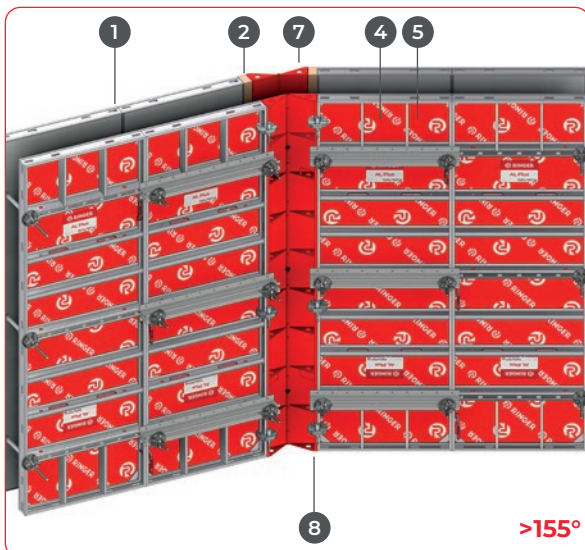
the following applies to Hinged Inside Corners:

Height 150 / 270 cm

2 Quick Wedge Clamps per side

Height 300 cm

3 Quick Wedge Clamps per side

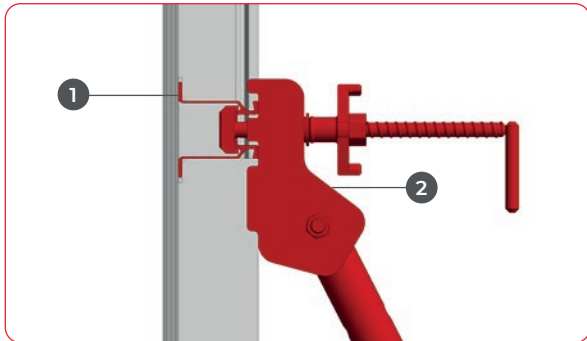


Corners >155°

The combination of Hinged Inside Corners on both sides of the formwork allows angles from 155° to <180°. Here, the same number of walers and

Quick Wedge Clamps must be used on the inside as on the outside.

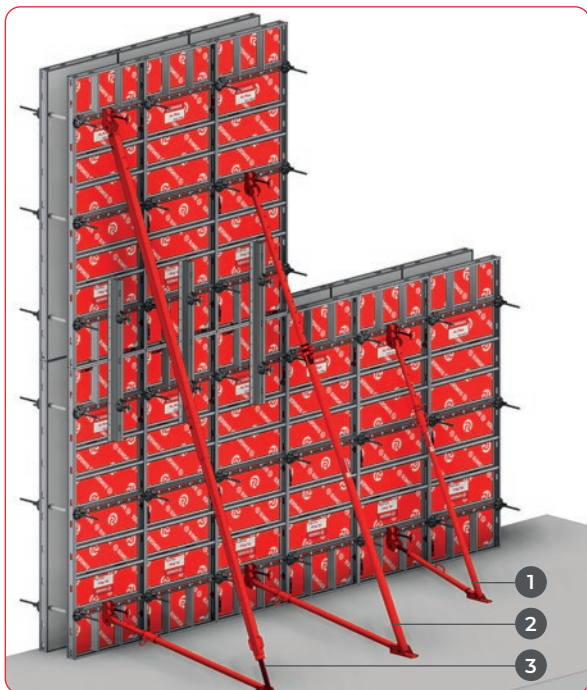
Setup and alignment aids



Push-Pull Props

The Push-Pull Props are used for aligning the formwork and ensure stability and wind safety. The Push-Pull Props are attached to the functional profiles of the AL Plus panels.

- 1 Functional profile
- 2 Push-Pull Prop



The Push-Pull Props must be anchored to the ground in a tensile and compressive-proof manner. The stability and wind safety of the formwork assembly must be guaranteed in every construction 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

The Push-Pull Props are fixed with Coil and Coil Anchor 16 x 90 mm or HKD M16 compact dowels from Hilti (the manufacturer's installation instructions must be observed).

Loads

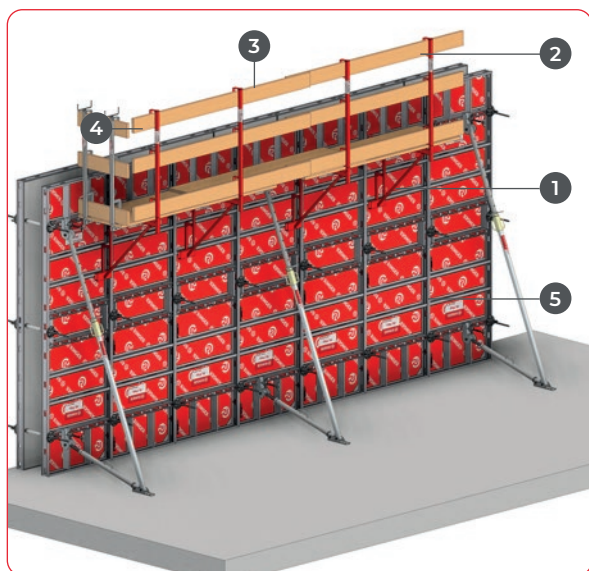
Type	Adjustment range	max. compressive load	max. tensile load
Size 1	2.15 - 3.60 m	11 kN	20 kN
Size 2	3.10 - 5.50 m	9 kN	20 kN
Size G	3.55 - 5.90 m	16 kN	30 kN
Extension Size G	6.20 - 8.40 m	6 kN	30 kN

Selection of Push-Pull Props

Example of panel assembly with 2.70 m width:

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

Working platforms



Concreting Bracket

With the Concreting Bracket, light scaffolding can be attached to the formwork. Suspending the bracket is possible with both vertical and horizontal panels. It must be secured against lifting by inserting the safety pin.



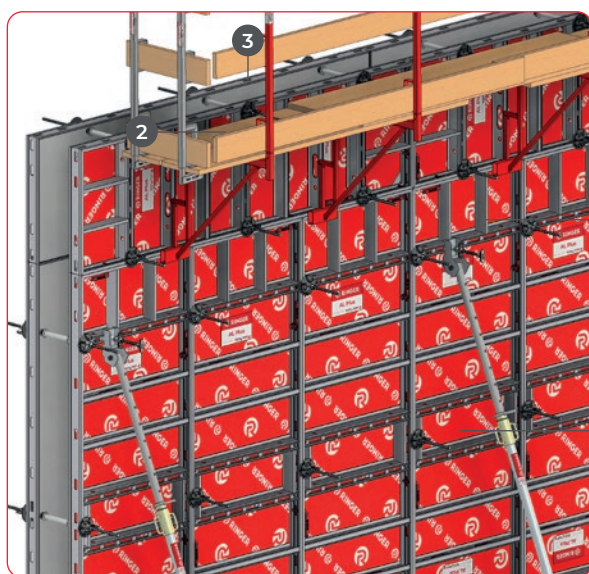
Bracket width 75 cm
Bracket spacing max. 1.5 m
Permissible load 150 kg/m²



For non-continuous platforms, side protection consisting of a handrail, intermediate rail and Toe Board must be installed on the front side! Fastening by means of a Guardrail Clamp.



- 1 Concreting Bracket**
- 2 Railing for Concreting Bracket**
- 3 Toe board min. 15 x 2.4 cm**
- 4 Guardrail Clamp**
- 5 Push-Pull Prop**



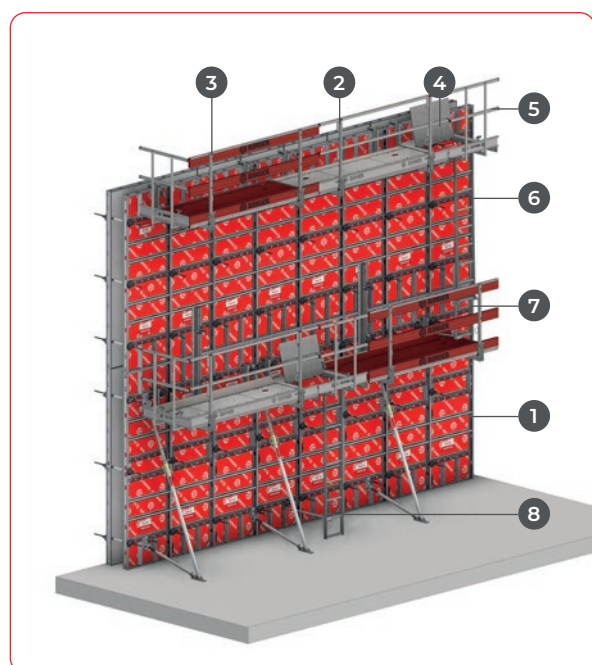
Use with horizontal formwork

For horizontal formwork panels, the suspension bolt of the Concreting Bracket is rotated by 90° and inserted laterally into the holes in the functional profile. The suspension bolt must be secured with the cotter pin!



Before use, the components must be checked for visible defects. Damaged material must not be used. Risk of falling!

Working platforms



Concreting Platform

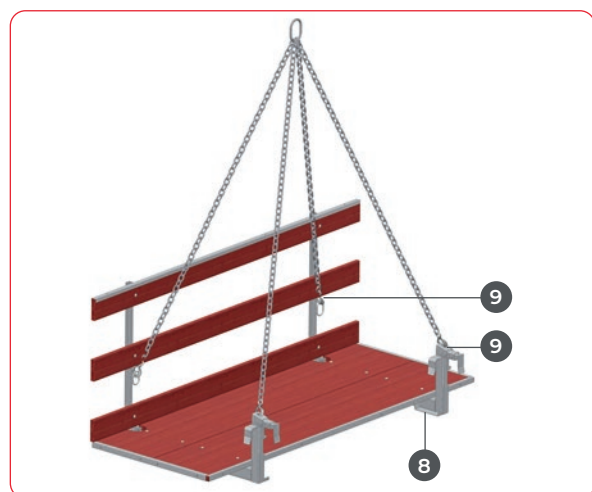
The Concreting Platform is a pre-assembled working platform. The platform can be suspended both in the functional profile of the formwork and at the top of the formwork.



Platform length 2.7 m
Platform width 1.0 m
Railing height 1.0 m
Permissible load 200 kg/m²

Assembly steps

- Unfold the railing and secure it with bolts and linchpins
- Attach the crane sling to both safety brackets as well as to the eyelets on the railing with a 4-leg chain
- Lift the platform and hook it into the edge profile
- Unhook the sling and engage the safety bracket.
- If necessary, hook in the ladder at the Concreting Platform 1.0 m with access hatch and secure it with a cotter pin.
- Mount the Distance Bracket on the formwork, hook it onto the ladder and secure it with a cotter pin.



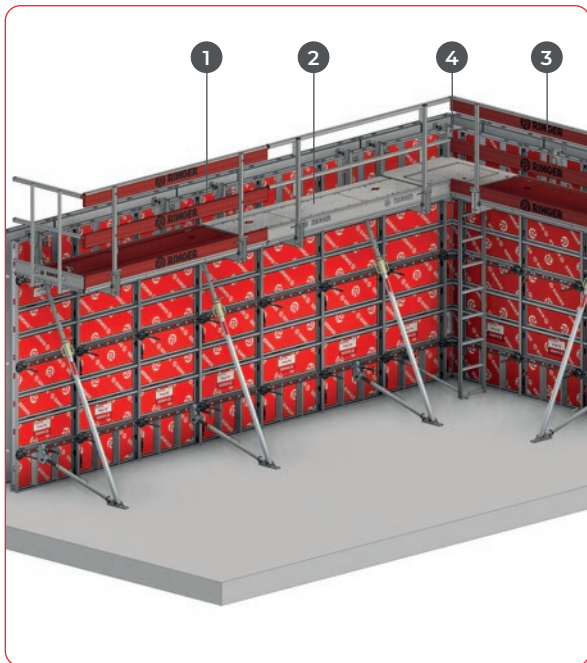
Before use, the components must be checked for visible defects. Damaged material must not be used. Risk of falling!



For further details, see the Concreting Platform data sheet.

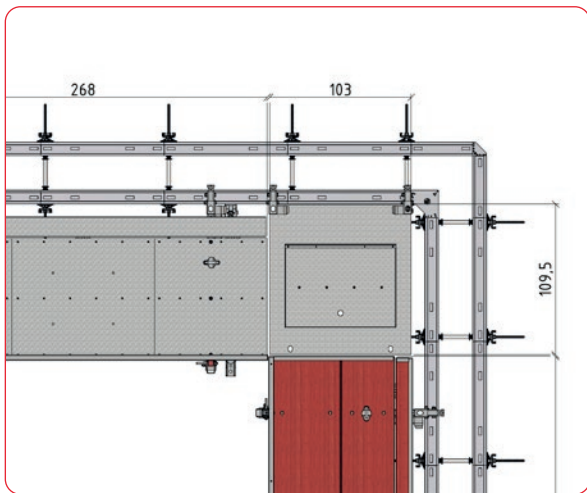
- 1 AL Plus Panels**
- 2 Concreting Platform 2.7 m (ST)**
- 3 Concreting Platform 2.7 m (H)**
- 4 Concreting Platform 1.0 m with access hatch (ST)**
- 5 End Guardrail 100 cm galvanized**
- 6 Ladder 270 galv.**
- 7 Extension 330 galv.**
- 8 Distance Bracket galv.**
- 9 Suspension points for sling**

Working Platforms



Inside Corner

The Concreting Platform 1.0 m with Access Hatch (S) can also be used as an Inside Corner. The Assembly is carried out in the same way as the Assembly of the Concreting Platform.



- 1 AL Plus Panels**
- 2 Concreting Platform 2.7 m (ST)**
- 3 Concreting Platform 2.7 m (H)**
- 4 Concreting Platform 1.0 m with Access Hatch (ST)**

5 Applications

T-wall connections



With timber

For timber from 3 to 5 cm thick, no Walers are necessary. These are held by the Combi Plate.



Panel height 150 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

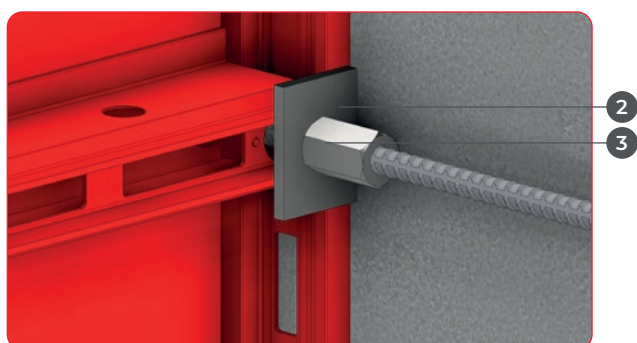
- 1 AL Plus Panels
- 2 Timber (min. 3 cm)
- 3 Waler 100
- 4 Combi Plate
- 5 RS-Clamp



Without timber

For T-junctions without timber, the Counterplate "KL" and a Hexagonal Nut DW 15 must be used instead of the Combi Plate.

- 1 AL Plus Panels
- 2 Counterplate "KL"
- 3 Hexagonal Nut DW 15



Longitudinal connections



with AL Plus Panel

Longitudinal connections to an existing wall can be made with AL Plus Panels or timber.

- 1 AL Plus Panel**
- 2 Waler 100**
- 3 RS-Clamp**
- 4 AL Plus connector**
- 5 existing wall**

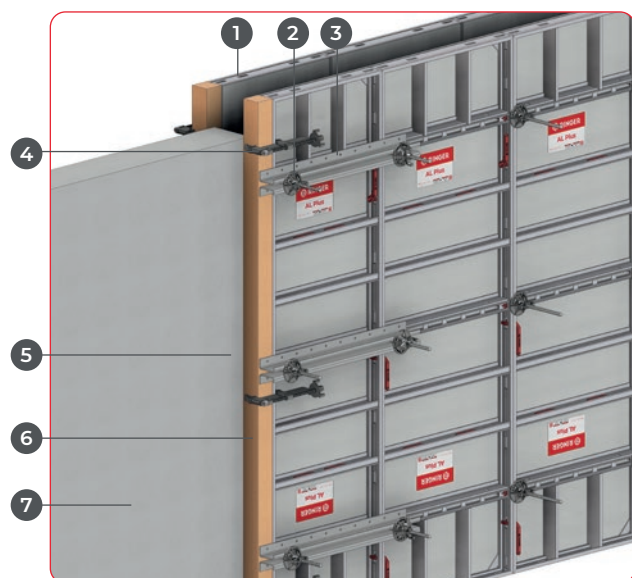


Panel height 150 cm

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 timber

- 1 AL Plus Panel**
- 2 RS-Clamp**
- 3 Waler 100**
- 4 Adjustable Clamp**
- 5 Combi Plate**
- 6 Timber (max. 10 cm wide)**
- 7 existing wall**



Panel height 150 cm

2 Walers 100 per side
4 RS-Clamps per side
2 Adjustable Clamps per side

Panel height 270/300 cm

3 Walers 100 per side
6 RS-Clamps per side
3 Adjustable Clamps per side

Longitudinal connections



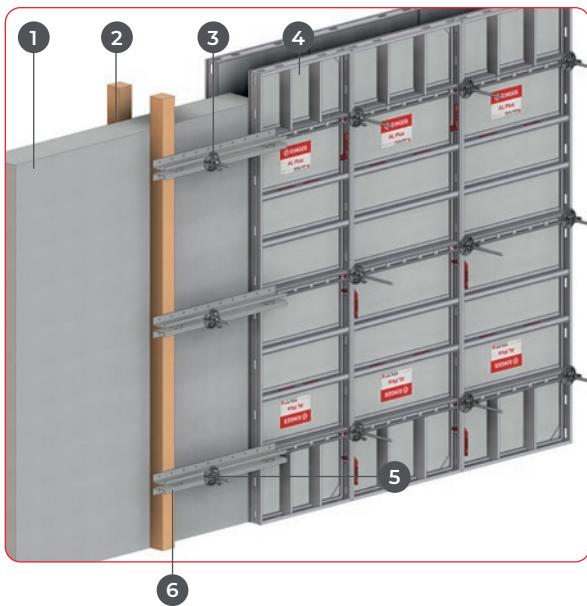
with Uni Panel

Longitudinal connections can also be made with the Uni Panel.

- 1 AL Plus Panels**
- 2 AL Plus Uni Panel**
- 3 existing wall**

Panel height 150 cm
2x Tie Rod with Combi Plates

Panel height 270/300 cm
3x Tie Rod with Combi Plates



through an existing tie hole

- 1 existing wall**
- 2 Timber 10 cm height**
- 3 existing tie hole**
- 4 AL Plus Panel**
- 5 Tie Rod with Combi Plate**
- 6 Waler**

Panel height 150 cm
2 Walers 100 per side
2x Tie Rod with Combi Plates

Panel height 270/300 cm
3 Walers 100 per side
3x Tie Rod with Combi Plates

Corner connections



with AL Plus Panel

Corner connections to an existing wall can be made with AL Plus Panels or timber.

- 1 AL Plus Panel**
- 2 AL Plus Panel width 25 cm**
- 3 Timber**
- 4 Waler 100**
- 5 RS-Clamp**
- 6 existing wall**

Panel height 150 cm

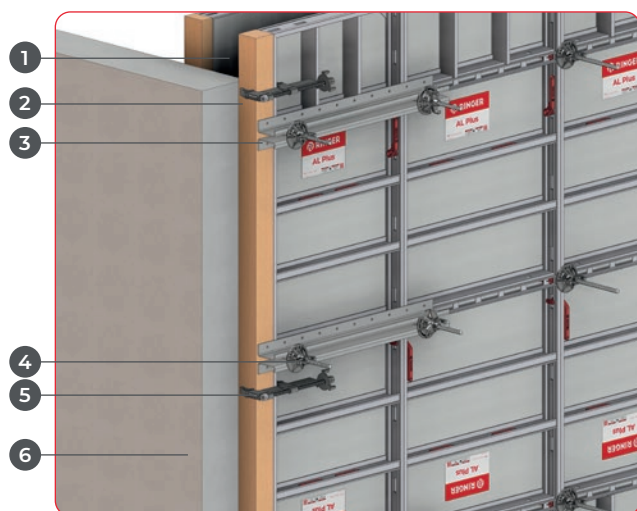
2 Walers

4 RS-Clamps

Panel height 270/300 cm

3 Walers

6 RS-Clamps



with timber

For corner connections with timber, no Walers are required for timber thicknesses up to 5 cm. Otherwise, the following applies:

Panel height 150 cm

2 Walers

4 RS-Clamps

Panel height 270/300 cm

3 Walers

6 RS-Clamps

Fastening of the timber

3 Adjustable Clamps

- 1 AL Plus Panel**
- 2 Timber**
- 3 Waler 100**
- 4 RS-Clamp**
- 5 Adjustable Clamp**
- 6 existing wall**

T-junction and wall projection



T-junction

T-shaped layouts can be formed with the Inside Corner.

- 1 AL Plus Panels**
- 2 Inside Corner AL Plus or System 2000**



Wall projection

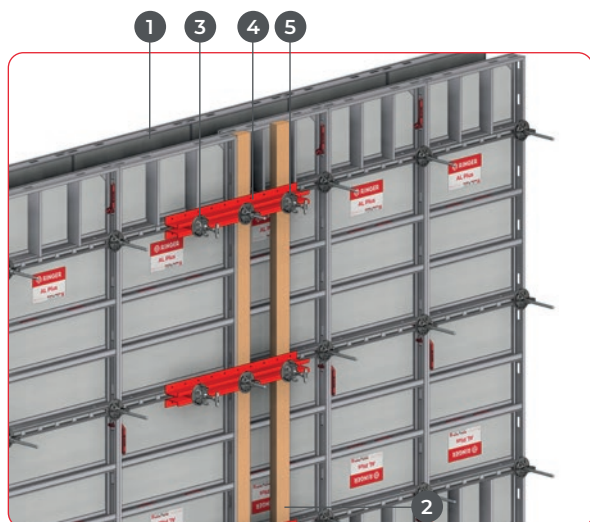
Wall projections can be formed with the Inside Corner in combination with AL Plus Panels. The closure is made with timber and Formwork Sheets.

- 1 AL Plus Panel**
- 2 Inside Corner AL Plus or System 2000**
- 3 Stop End Coupler**
- 4 Timber**
- 5 Formwork Sheet**



- Panel height 150 cm**
2 Stop End Couplers
- Panel height 270 cm**
3 Stop End Couplers
- Panel height 300 cm**
4 Stop End Couplers

Wall offset



Single-sided wall offset

A wall offset in the formwork assembly is possible up to max. 10 cm. For short walls, additional bracing is required.



Panel height 150 cm

2 pcs. Walers

Panel height 270/300 cm

3 pcs. Walers

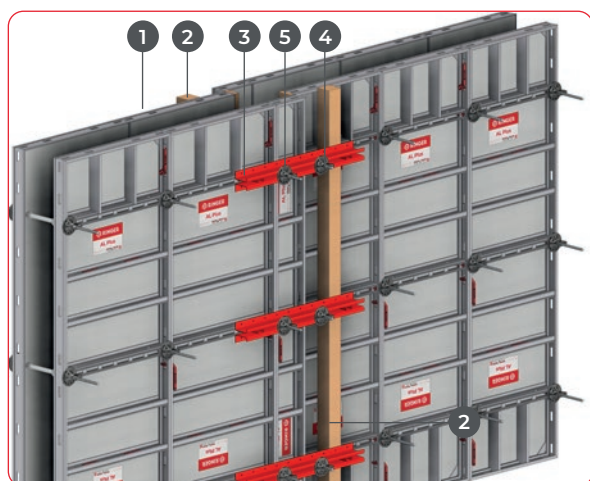
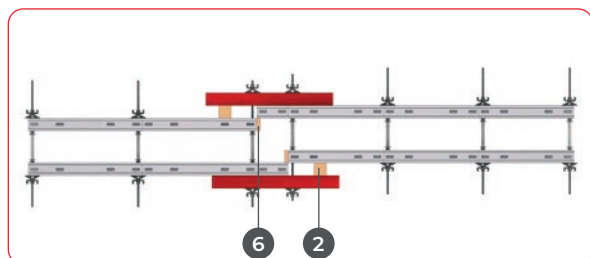
1 AL Plus Panels

2 Timber

3 RS-Clamp

4 Waler 100

5 RS-Clamp long



Wall offset 0-8 cm

A wall offset of up to max. 8 cm is possible with this method. The lateral holes of the panels exposed towards the offset must be closed with wooden strips.



Panel height 150 cm

2 pcs. Walers per formwork side

Panel height 270/300 cm

3 pcs. Walers per formwork side

1 AL Plus Panels

2 Timber

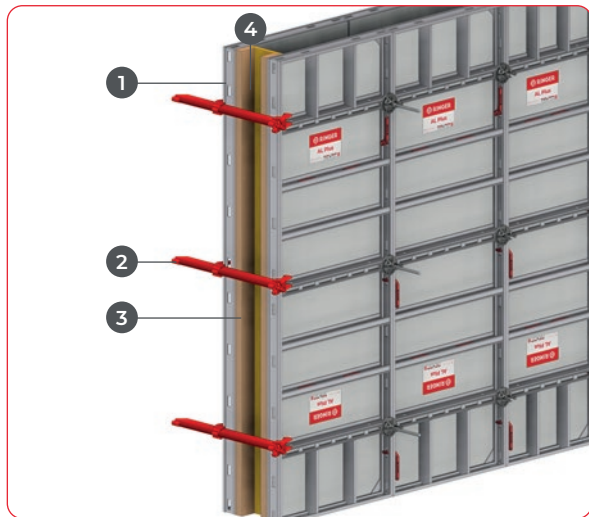
3 Waler 100

4 Tie Rod with Combi Plate

5 Combi Plate

6 Wooden strips

Stop-end formwork



with Stop End Coupler

This variant allows stop-end forming without tie points up to a wall thickness of 45 cm (stepless).



Panel height 150 cm

2 Stop End Couplers

Panel height 270 cm

3 Stop End Couplers

Panel height 300 cm

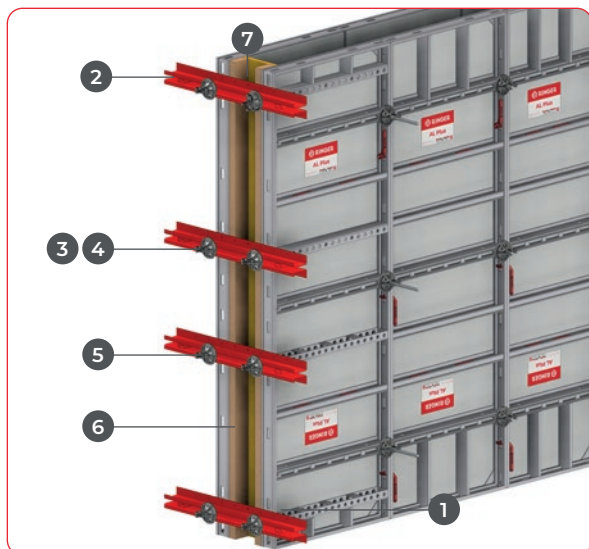
4 Stop End Couplers

1 AL Plus Panels

2 Stop End Coupler

3 Timber

4 Formwork Sheet



with Waler

The Walers are mounted with Stop End Anchors or Universal Fixing Bolts. These must be positioned centrally between 2 I-profiles to ensure an even load distribution.



For wall thicknesses up to 40 cm

Panel height 150 cm

2 Walers

Panel height 270 cm

3 Walers

Panel height 300 cm

4 Walers

For wall thicknesses over 40 - 50 cm

Panel height 150 cm

3 Walers

Panel height 270 cm

4 Walers

Panel height 300 cm

6 Walers

- 1 Uni Panel or 300 cm Standard Panel
- 2 Waler 100
- 3 Universal Fixing Bolt or
- 4 Stop End Anchor System 2000
- 5 Combi Plate
- 6 Timber
- 7 Formwork Sheet

Stop-end formwork



with Uni Panel

The Uni Panel allows stop-end forming of wall thicknesses in a 5 cm grid.

For wall thicknesses up to 40 cm

Panel height 150 cm

4 Anchorings

Panel height 270/300 cm

6 Anchorings

For wall thicknesses over 40 - 50 cm

Panel height 150 cm

4 Anchorings

Panel height 270/300 cm

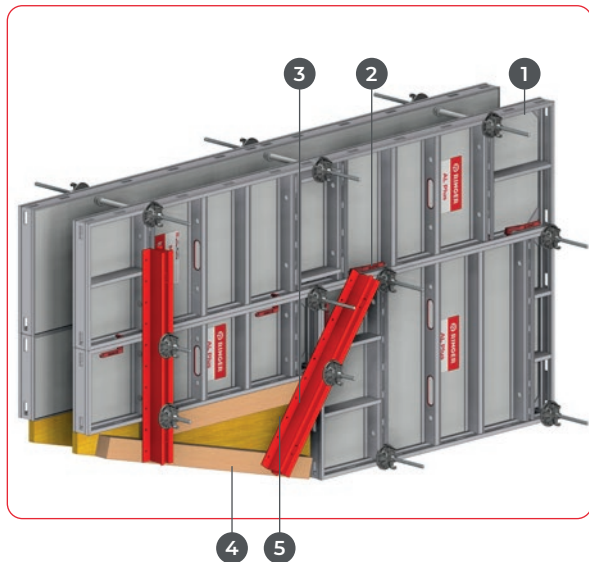
8 Anchorings

1 Uni Panel

2 Universal Fixing Bolt

3 Combi Plate

Stepless height offset and infill areas



Combine AL Plus Panels as desired

The edge profile of the AL Plus Panels allows any combination of different sized formwork panels, independent of a fixed grid.

This allows steps, slopes, and unevenness to be formed without much additional effort.

Infill areas and slopes can easily be compensated with Walers and RS-Clamps. Formwork panels in suitable sizes as well as timber and Formwork Sheets can be used.

Panels from the AL2000 or Steel 2000 series can also be used, however, a Quick Wedge Clamp is required for panel connection.

- 1 AL Plus Panel**
- 2 AL Plus connector**
- 3 Walers 100**
- 4 Timber**
- 5 Formwork Sheets**

Height extension



Height extension with squared timber

If the concreting height exceeds the dimensions of the AL Plus Panel used, it can be extended by up to 10 cm using squared timber. To do this, secure the squared timbers to the frame using the adjustable clamp.

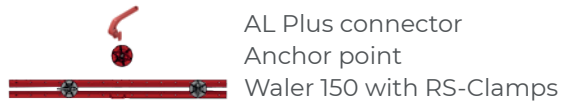
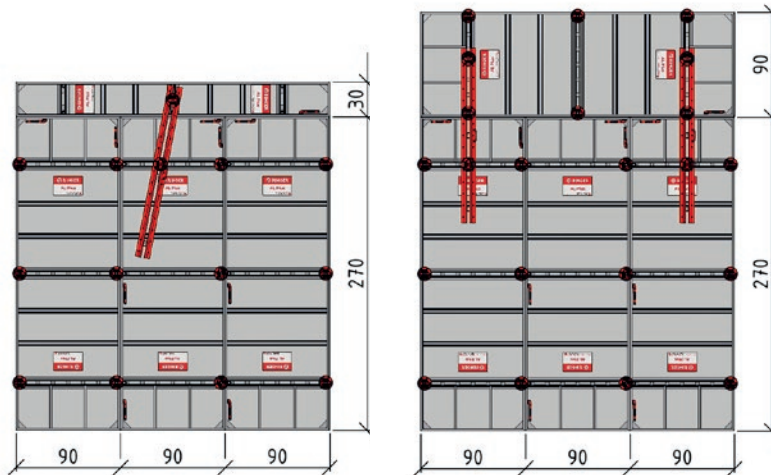
- 1** AL Plus Panels
- 2** AL Plus connector
- 3** Adjustable Clamp
- 4** squared timber

Height extension rules

AL Plus Panels

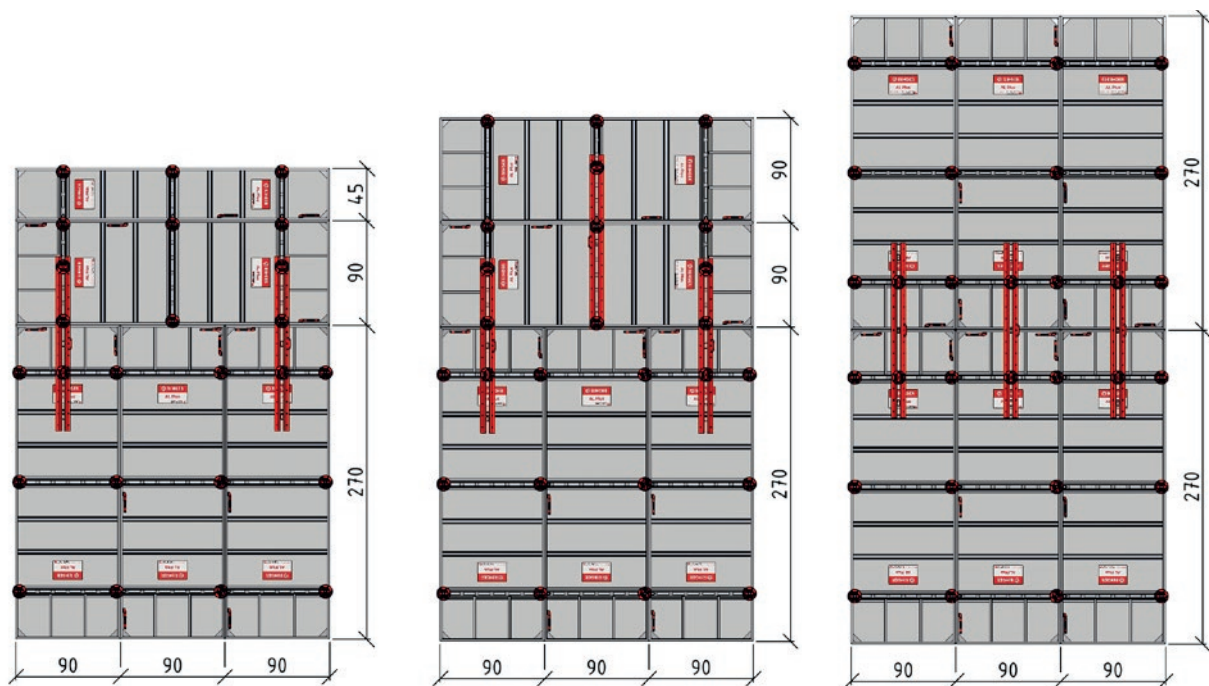
height 270 cm

Legend



Formwork height:
up to 3.00 m

up to 3.60 m



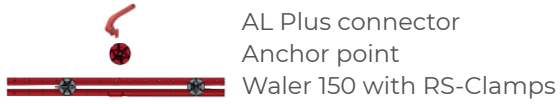
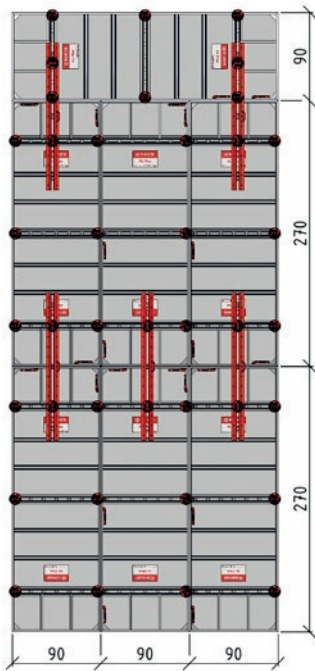
Formwork height:
up to 4.05 m

up to 4.50 m

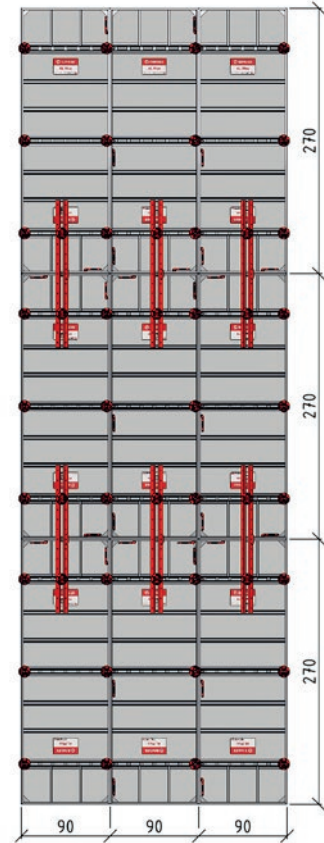
up to 5.40 m

AL Plus Panels height 270 cm

Legend



**Formwork height:
up to 6.30 m**

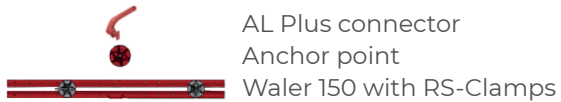
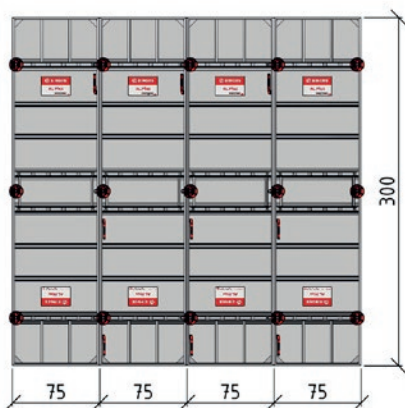


up to 8.10 m

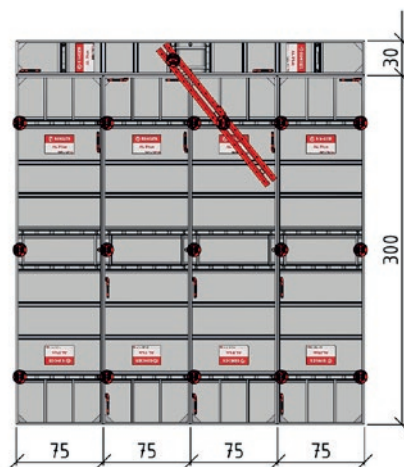
Height extension rules

AL Plus Panels height 300 cm

Legend



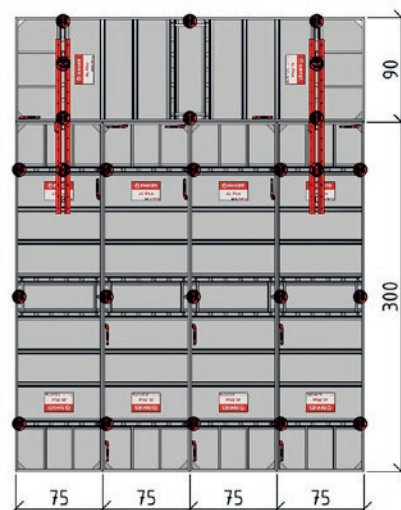
Formwork height:
up to 3.00 m



up to 3.30 m

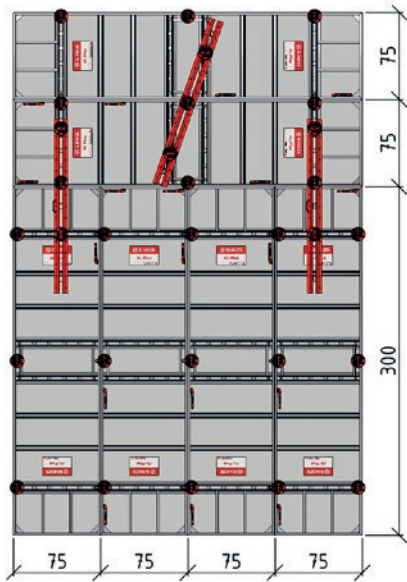


Formwork height:
up to 3.60 m



up to 3.90 m

AL Plus Panels height 300 cm

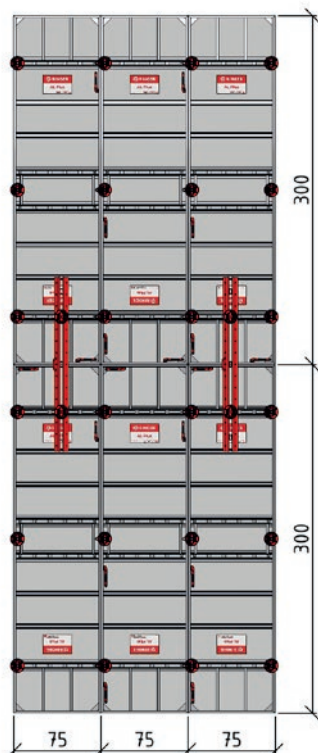


**Formwork height:
up to 4.50 m**

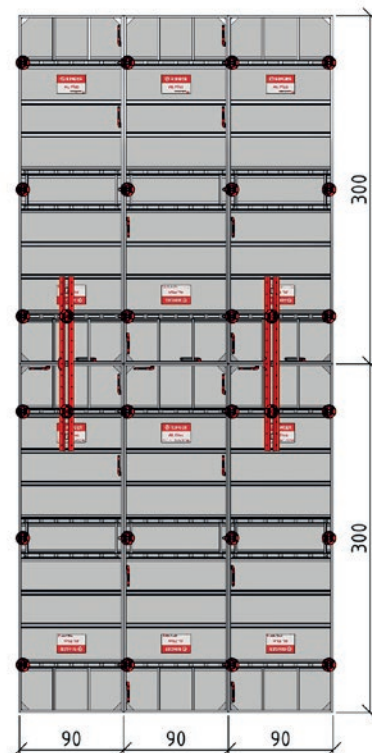
Legend



AL Plus connector
Anchor point
Waler 150 with RS-Clamps

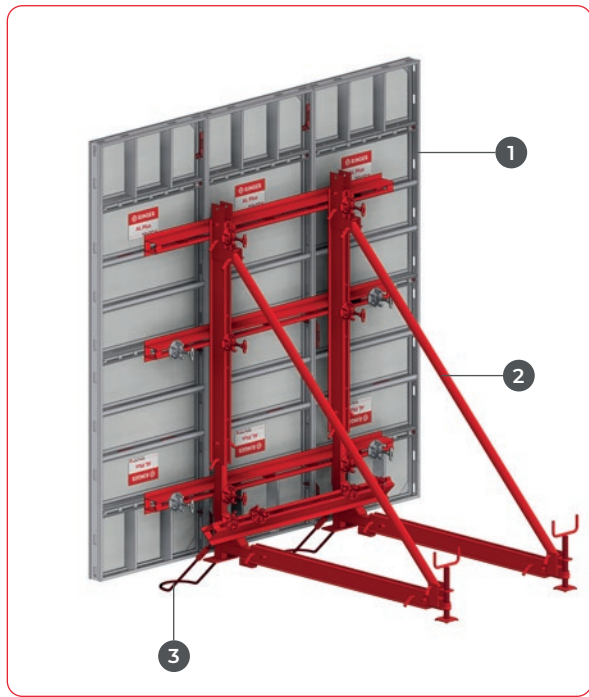


up to 6.00 m



up to 6.00 m / only ST2000 Panel 300/90

Single-sided formwork



Brace Frame "L"

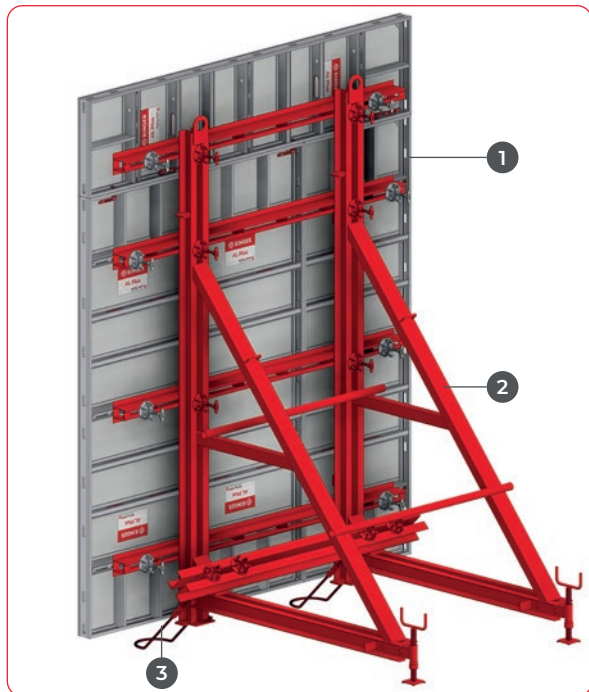
The light-duty RINGER Brace Frame for single-sided formwork. The Brace Frame can be dismantled for easy transport.

- max. formwork height 2.7 m
- concrete pressure max. 50 kN/m²
- max. spacing of brace frames 1.0 m

- 1 AL Plus Panels**
- 2 Brace Frame "L"**
- 3 Anchor Loop 0.55 m**



Observe the Instructions for Assembly & Use for Brace Frames!



Brace Frame "M"

The medium-duty RINGER Brace Frame for single-sided formwork.

- max. formwork height 3.3 m
- concrete pressure max. 50 kN/m²
- max. spacing of brace frames 1.35 m

- 1 AL Plus Panels**
- 2 Brace Frame "M"**
- 3 Anchor Loop 0.55 m**



Observe the Instructions for Assembly and Use for Brace Frames!



Brace Frame "S"

The heavy-duty 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. spacing of brace frames 1.35 m

- 1 AL Plus Panels**
- 2 Brace Frame "S"**
- 3 Attachable Frame 1.5 m**
- 4 Anchor Loop 0.55 m**



Observe the Instructions for Assembly and Use for Brace Frames!

6 Overview of Components

AL Plus

Art. No.	Item	PG	Weight [kg]	Unit	Price [€]
AL Plus 300 (Phenolic Coated Plywood)					
10008111	* AL Plus Panel 300/90 phenolic	20050	52,00	pc.	0,00
10008112	* AL Plus Panel 300/75 phenolic	20050	45,40	pc.	0,00
10008113	* AL Plus Panel 300/60 phenolic	20050	37,60	pc.	0,00
10008114	* AL Plus Panel 300/50 phenolic	20050	33,20	pc.	0,00
10008115	* AL Plus Panel 300/45 phenolic	20050	30,30	pc.	0,00
10008116	* AL Plus Panel 300/40 phenolic	20050	27,60	pc.	0,00
10008117	* AL Plus Panel 300/30 phenolic	20050	23,70	pc.	0,00
10008118	* AL Plus Panel 300/25 phenolic	20050	21,00	pc.	0,00
10008119	* AL Plus Panel 300/20 phenolic	20050	18,60	pc.	0,00



AL Plus 270 (Phenolic Coated Plywood)					
10008101	* AL Plus Panel 270/90 phenolic	20050	46,30	pc.	0,00
10008102	* AL Plus Panel 270/75 phenolic	20050	40,30	pc.	0,00
10008103	* AL Plus Panel 270/60 phenolic	20050	33,50	pc.	0,00
10008104	* AL Plus Panel 270/50 phenolic	20050	29,60	pc.	0,00
10008105	* AL Plus Panel 270/45 phenolic	20050	26,60	pc.	0,00
10008106	* AL Plus Panel 270/40 phenolic	20050	24,50	pc.	0,00
10008107	* AL Plus Panel 270/30 phenolic	20050	20,70	pc.	0,00
10008108	* AL Plus Panel 270/25 phenolic	20050	18,70	pc.	0,00
10008109	* AL Plus Panel 270/20 phenolic	20050	16,60	pc.	0,00



AL Plus 150 (Phenolic Coated Plywood)					
10008121	* AL Plus Panel 150/90 phenolic	20050	27,50	pc.	0,00
10008122	* AL Plus Panel 150/75 phenolic	20050	24,00	pc.	0,00
10008123	* AL Plus Panel 150/60 phenolic	20050	19,80	pc.	0,00
10008124	* AL Plus Panel 150/50 phenolic	20050	17,50	pc.	0,00
10008125	* AL Plus Panel 150/45 phenolic	20050	16,50	pc.	0,00
10008126	* AL Plus Panel 150/40 phenolic	20050	14,30	pc.	0,00
10008127	* AL Plus Panel 150/30 phenolic	20050	12,00	pc.	0,00
10008128	* AL Plus Panel 150/25 phenolic	20050	10,90	pc.	0,00
10008129	* AL Plus Panel 150/20 phenolic	20050	9,30	pc.	0,00



AL Plus Universalelement (Phenolic Coated Plywood)					
10008120	* AL Plus Panel UNI 300/90 phenolic	20050	55,20	pc.	0,00
10008110	* AL Plus Panel UNI 270/90 phenolic	20050	50,80	pc.	0,00
10008130	* AL Plus Panel UNI 150/90 phenolic	20050	28,90	pc.	0,00



Art. No.	Item	PG	Weight [kg]	Unit
AL Plus 300 (Plastic Coated Plywood)				
10008081	AL Plus Panel 300/90 plastic	20050	52,60	pc.
10008082	AL Plus Panel 300/75 plastic	20050	45,80	pc.
10008083	AL Plus Panel 300/60 plastic	20050	38,20	pc.
10008084	AL Plus Panel 300/50 plastic	20050	33,70	pc.
10008085	AL Plus Panel 300/45 plastic	20050	30,40	pc.
10008086	AL Plus Panel 300/40 plastic	20050	28,10	pc.
10008087	AL Plus Panel 300/30 plastic	20050	23,60	pc.
10008088	AL Plus Panel 300/25 plastic	20050	21,30	pc.
10008089	AL Plus Panel 300/20 plastic	20050	19,20	pc.



AL Plus 270 (Plastic Coated Plywood)				
10008059	AL Plus Panel 270/90 plastic	20050	46,80	pc.
10008072	AL Plus Panel 270/75 plastic	20050	40,70	pc.
10008073	AL Plus Panel 270/60 plastic	20050	33,80	pc.
10008074	AL Plus Panel 270/50 plastic	20050	29,80	pc.
10008075	AL Plus Panel 270/45 plastic	20050	26,80	pc.
10008076	AL Plus Panel 270/40 plastic	20050	24,70	pc.
10008077	AL Plus Panel 270/30 plastic	20050	20,70	pc.
10008078	AL Plus Panel 270/25 plastic	20050	18,60	pc.
10008079	AL Plus Panel 270/20 plastic	20050	16,80	pc.



AL plus 150 (Plastic Coated Plywood)				
10008091	AL Plus Panel 150/90 plastic	20050	27,70	pc.
10008092	AL Plus Panel 150/75 plastic	20050	24,10	pc.
10008093	AL Plus Panel 150/60 plastic	20050	19,90	pc.
10008094	AL Plus Panel 150/50 plastic	20050	17,50	pc.
10008095	AL Plus Panel 150/45 plastic	20050	15,60	pc.
10008096	AL Plus Panel 150/40 plastic	20050	14,40	pc.
10008097	AL Plus Panel 150/30 plastic	20050	12,00	pc.
10008098	AL Plus Panel 150/25 plastic	20050	10,70	pc.
10008099	AL Plus Panel 150/20 plastic	20050	9,60	pc.



AL Plus Universalelemente (Plastic Coated Plywood)				
10008090	AL Plus Panel UNI 300/90 plastic	20050	55,80	pc.
10008080	AL Plus Panel UNI 270/90 plastic	20050	50,00	pc.
10008100	AL Plus Panel UNI 150/90 plastic	20050	29,30	pc.



AL Plus Corners

Art. No.	Item	PG	Weight [kg]	Unit
AL Plus Inside Corners(Phenolic Coated Plywood)				
10008147	AL Plus Inside Corner 300/20/20 phenolic	20050	26,10	pc.
10008148	AL Plus Inside Corner 270/20/20 phenolic	20050	23,60	pc.
10008149	* AL Plus Inside Corner 150/20/20 phenolic	20050	13,40	pc.
AL Plus Inside Corners(Plastic Coated Plywood)				
10008144	AL Plus Inside Corner 300/20/20 plastic-ply	20050	26,40	pc.
10008145	AL Plus Inside Corner 270/20/20 plastic-ply	20050	23,90	pc.
10008146	AL Plus Inside Corner 150/20/20 plastic-ply	20050	13,50	pc.
AL Plus Outside Corners				
10008132	AL Plus Outside Corner 300	20050	9,90	pc.
10008133	AL Plus Outside Corner 270	20050	9,00	pc.
10008134	AL Plus Outside Corner 150	20050	9,00	pc.



AL Plus Connecting Parts

Connecting Parts				
10007579	AL Plus connector	20051	0,10	pc.



Corners

Art. No.	Item	PG	Weight [kg]	Unit
Inside Corners for System 2000				
10002608	Inside Corner 300/20/20 galvanized System 2000	20030	59,50	pc.
10004295	Inside Corner 270/20/20 galvanized System 2000	20030	53,60	pc.
10004298	Inside Corner 135/20/20 galvanized System 2000	20030	27,30	pc.
Outside Corners for System 2000				
10002607	Outside Corner 300 galvanized System 2000	20030	30,40	pc.
10003075	Outside Corner 270 galvanized System 2000	20030	28,00	pc.
10003074	Outside Corner 135 galvanized System 2000	20030	14,20	pc.
Hinged Inside Corners for System 2000				
10002610	Hinged Inside Corner I 300/20/20 galvanized System 2000	20001	67,00	pc.
10001364	Hinged Inside Corner I 270/20/20 galvanized System 2000	20001	72,00	pc.
10001332	Hinged Inside Corner I 135/20/20 galvanized System 2000	20001	32,00	pc.
Hinged Outside Corners for System 2000				
10002609	Hinged Outside Corner A 300/10/10 galvanized System 2000	20001	44,50	pc.
10001824	Hinged Outside Corner A 270/10/10 galvanized System 2000	20001	40,00	pc.
10002973	Hinged Outside Corner A 135/10/10 galvanized System 2000	20001	21,00	pc.



Stripping and Compensation Panels

Compensation Panels for System 2000				
10000422	Compensation Panel 300/10 galvanized System 2000	20001	19,00	pc.
10000424	Compensation Panel 300/5 galvanized System 2000	20001	13,30	pc.
10000425	Compensation Panel 300/3 galvanized System 2000	20001	12,30	pc.
10004599	Compensation Panel 300/2 galvanized System 2000	20001	11,10	pc.
10000895	Compensation Panel 270/10 galvanized System 2000	20001	23,80	pc.
10001215	Compensation Panel 270/5 galvanized System 2000	20001	13,00	pc.
10004087	Compensation Panel 270/3 galvanized System 2000	20001	11,00	pc.
10004086	Compensation Panel 270/2 galvanized System 2000	20001	10,00	pc.
10003096	Compensation Panel 135/5 galvanized System 2000	20001	7,20	pc.



Art. No.	Item	PG	Weight [kg]	Unit
Stripping Tools for System 2000				
10003426	Stripping Panel 300/10 galvanized System 2000	20001	50,00	pc.
10004088	Stripping Panel 270/10 galvanized System 2000	20001	46,00	pc.
10008252	* Stripping panel 150/10 galvanized System 2000	20001	28,40	pc.
10000067	Stripping Tool for Formwork galvanized	20081	3,80	pc.
Circular Forming Plates				
10001287	Circular Forming Plate 270/25 galvanized System 2000	20001	56,00	pc.
10001286	Circular Forming Plate 270/20 galvanized System 2000	20001	54,00	pc.
10001475	Uni Waler 40 for Circular Forming Plate galvanized	20081	4,90	pc.



System 2000 Connecting Parts

Connecting Parts				
10001876	Quick Wedge Clamp System 2000 galvanized	20001	1,70	pc.
10004399	* Quick Wedge Clamp "L" galvanized	20001	1,60	pc.
10001875	Adjustable Clamp System 2000 galvanized	20001	4,10	pc.
10000948	Corner Waler galvanized	20082	15,10	pc.
10001766	Waler 150 galvanized	20081	18,70	pc.
10001830	Waler 100 galvanized	20081	13,60	pc.
10003515	RS-Clamp galvanized	20082	1,70	pc.
10001375	Stop End Coupler (up to 40cm wall thickness) galvanized	20082	8,30	pc.
10004383	Slab Beam Clamp up to 70cm galvanized	20082	9,30	pc.
10004794	Stop End Anchor for System 2000 galvanized	20001	1,40	pc.
10003511	Universal Fixing Bolt galvanized	20001	0,49	pc.



Art. No.	Item	PG	Weight [kg]	Unit
Tie Rod System				
10000886	Tie Rod 0,50m DW15 galvanized 90 kN DIN 18216	20081	0,75	pc.
10003507	* Tie Rod 0,75m DW15 galvanized 90 kN DIN 18216	20081	1,10	pc.
10003506	Tie Rod 1,00m DW15 galvanized 90 kN DIN 18216	20081	1,50	pc.
10003505	Tie Rod 1,25m DW15 galvanized 90 kN DIN 18216	20081	1,80	pc.
10003504	Tie Rod 1,50m DW15 galvanized 90 kN DIN 18216	20081	2,20	pc.
10003503	Tie Rod 2,00m DW15 galvanized 90 kN DIN 18216	20081	3,00	pc.
10003502	Tie Rod 3,00m DW15 galvanized 90 kN DIN 18216	20081	4,30	pc.
10000114	* Tie Rod 1,00m DW15 raw 90 kN DIN 18216	20081	1,50	pc.
10001316	* Tie Rod 6,00m DW15 raw 90kN DIN 18216	20081	8,60	pc.
10003501	* Anchor Loop 0,55m DW15	20081	1,80	pc.
10000955	* Pigtail Anchor DW 15 L= 550mm	20081	0,80	pc.
10003789	Combi Plate DW15 galvanized (ø120mm)	20082	1,00	pc.
10001863	Wingnut Counterplate galvanized (ø 100mm)	20081	0,72	pc.
10001881	Wingnut galvanized	20081	0,30	pc.
10001870	* Counterplate 120 x 120 x 8mm galvanized	20082	0,90	pc.
10000877	Counterplate "KL" 60 x 80 x 8mm galvanized	20082	0,29	pc.
10001862	Hexagonal Nut DW15 galvanized length 50mm	20081	0,22	pc.
10003500	Connector for Anchor Loop DW15 galvanized	20082	0,60	pc.
10007908	Foundation Clamp galvanized	20081	6,20	pc.
10001379	* Perforated Tape for Foundation Formwork galvanized	20081	17,50	RL
10003509	* Rock Anchor for Drill Hole Ø 34 - 35 mm	20081	0,37	pc.
10004265	Anchor Fixing Tool DW 15-20 galvanized	20081	1,80	pc.
10001324	Tie Holder Bracket galvanized	20001	1,60	pc.



Accessories

Art. No.	Item	PG	Weight [kg]	Unit
Push-Pull Props				
10001473	Push-Pull Prop size 1 with spindle / 2,15 - 3,60m galvanized	20081	29,50	pc.
10004432	Push-Pull Prop Size 2 / 3,10 - 5,50m galvanized	20081	55,00	pc.
10001865	Push-Pull Prop G with spindle / 3,55 - 5,90m galvanized	20081	79,90	pc.
10001020	* Push-Pull Prop "L" dip-coated 2,10 - 3,60m	20081	18,00	pc.
10001507	Extension for Push-Pull Prop "G" galvanized length 3m	20081	26,00	pc.
10002056	* Coil for Coil Anchor galvanized	20300	1,50	bag
10002055	* Coil Anchor 16 x 90mm galvanized	20300	0,15	pc.
Concreting Brackets				
10001678	Bracket without Railing galvanized	20082	6,30	pc.
10008227	Railing for Concreting Bracket galvanized	20081	3,90	pc.
Concreting Platforms				
10001019	Concreting Platform "L" 2,70m preassembled unit	20081	156,70	pc.
10002245	Concreting Platform "L" 2,70m with Access Hatch	20081	139,40	pc.
10008272	Assembly Adapter for Concreting Platform "L"	20081	1,90	pc.
10004535	Ladder for Concreting Platform "L" with hatch galvanized	20081	15,00	pc.
10004536	Extension 3,3m for Ladder for Concreting Platform "L" galvanized	20081	12,00	pc.
10000313	Distance Bracket for Ladder for Concreting Platform "L"	20081	6,00	pc.
10007637	Adapter for counter railing for concreting platform "L" (precast walls) galvanized	20300	5,30	pc.
10007636	Adapter for counter railing for concreting platform "L" (formwork) galvanized	20300	4,50	pc.



Art. No.	Item	PG	Weight [kg]	Unit
3S-Concreting Platform 3,0m including:				
10003004	3S-Platform 3,0m size 2			Qty. 1 pc.
10001661	3S-Concreting Bracket galvanized			2 pc.
Total weight [kg]		187,00		



Transportation Devices

10000730	Crane Hook System 2000 load capacity 1600 kg galvanized	20001	6,00	pc.
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Transportation and Storage

10001752	Pallet for Alu Formwork galvanized	20370	80,40	pc.
10001748	Stirrup for Pallet galvanized	20370	4,20	pc.
10003116	Stirrup for Pallet for Panels 3,0m galvanized	20370	6,00	pc.
10001327	Accessory Box galvanized	20370	160,00	pc.
10003660	UNI Container with flap galvanized	20370	72,00	pc.
10004321	* UNI Container without flap galvanized	20370	70,00	pc.
10004322	* RINGER Multi-Trip Transport Box galvanized	20370	66,00	pc.



Release Agent and Spraying Device

10006706	* Release Agent (canister 25 litre)	20081	22,50	can.
10006708	* Release agent (in 200 liter barrels)	20081	180,00	Bar.
10006707	* Special Release Agent for exposed concrete (25 liter canister)	20081	22,50	can.
10003508	* Spraying Device with flat jet nozzle set (5 Liter content)	20081	5,00	pc.



Art. No.	Item	PG	Weight [kg]	Unit
Spacer Tubes and Cones				
10003353	* Spacer Tube WD 40cm (set) 25 pcs	20340	3,30	bag
10001786	* Spacer Tube WD 30cm (set) 50 pcs	20340	5,00	bag
10001787	* Spacer Tube WD 25cm (set)	20340	4,50	bag
10003352	* Spacer Tube WD 20cm (set) 50 pcs	20340	3,00	bag
10003355	* Spacer Tube WD 15cm (set) 50 pcs	20340	2,00	bag
10003639	* Plugs for Spacer Tube waterproof (long) 100 pcs	20340	0,30	bag
10003133	* Spacer Tube ø 26/2mm length 2m, 25 pcs.	20340	11,00	PU
10003134	* Chuck Cone ø 26mm grey for spacer tube 26/2mm incl. plugs) 100 pcs.	20340	2,30	bag
10000066	* Sealing Disc for Spacer Tube (for exposed concrete) 250 pcs	20340	2,00	RL
Plugs				
10003489	* Plug ø 20mm black System 2000, 500pcs	20340	1,00	bag
10001216	* Plastic Plug ø 24mm brown for Uni Panels 200 pcs	20340	0,60	bag
Additional Accessories				
10004075	* Carbide Scraper with reversing plate width 10cm arm length 1,3m	20081	1,40	pc.
10007518	* Shuttering angles 20 x 25 galvanized	20081	1,10	pc.
10007519	* Shuttering angles 30 x 35 galvanized	20081	1,60	pc.
10008175	System 2000 floor bracket galvanized	20001	1,00	pc.



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