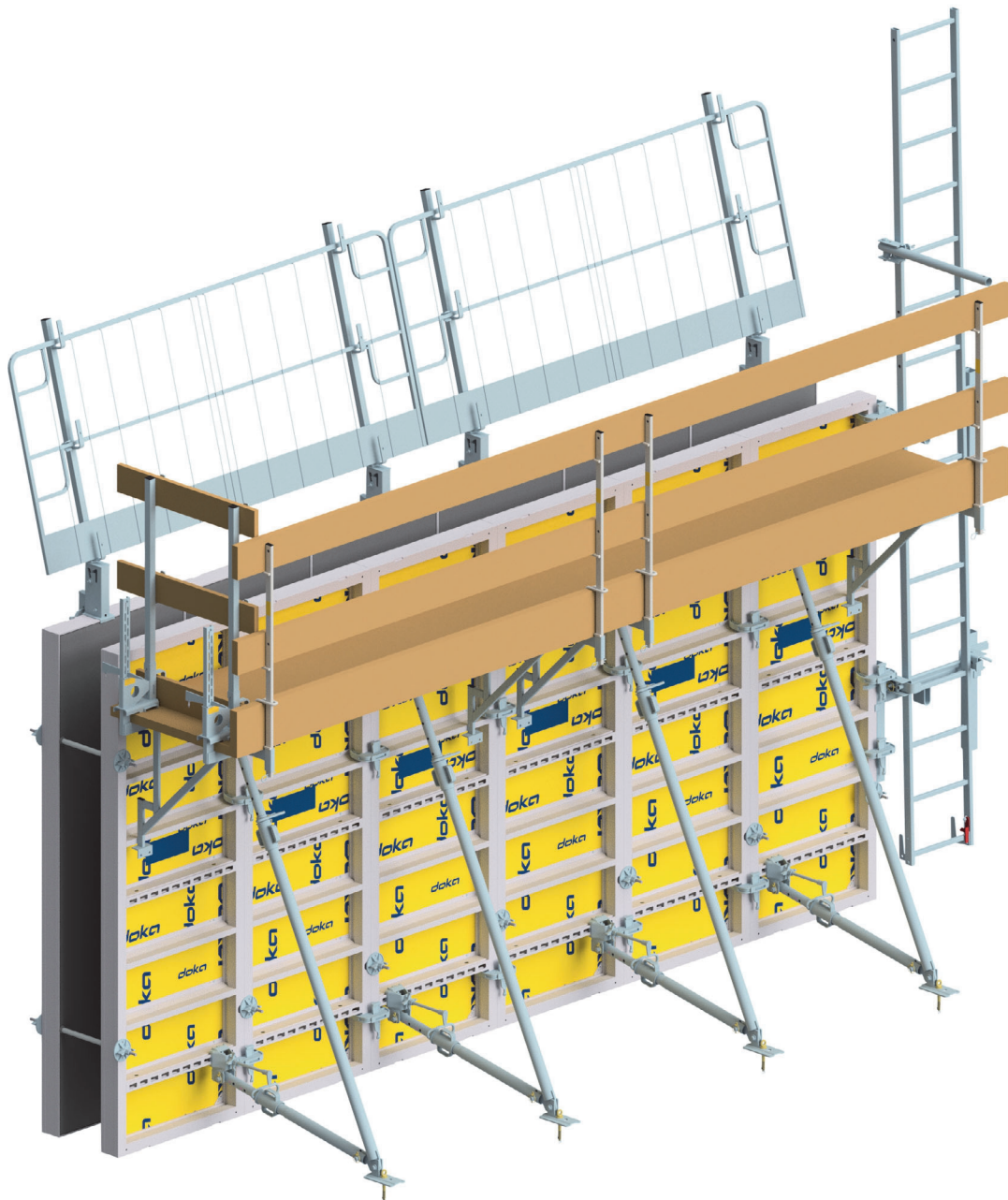


Framed formwork Alu-Framax Xlife

User Information

Instructions for assembly and use (Method statement)



9765-294

Contents

4	Introduction	
4	Elementary safety warnings	102
7	Intended use	Article list
8	Wall formwork	
9	Instructions for assembly and use (Method statement)	
11	Alu-Framax Xlife panel in detail	
13	System grid	
14	Inter-panel connections	
16	Bracing the panels	
17	Tie rod system	
19	Length adjustment using closures	
23	90 degree corners	
26	Acute & obtuse-angled corners	
30	Stop-end formwork	
34	Inter-panel connections for increased tensile loads	
36	Wall junctions, offsets and steps	
38	Window and door openings	
39	Vertical stacking of panels	
43	Plumbing accessories	
46	Pouring platforms with single brackets	
49	Pouring platforms	
55	Opposing guardrail	
58	Ladder system	
62	Lifting by crane	
65	Transporting, stacking and storing	
73	Column formwork	
74	Design of column formwork	
77	Doka column formwork platform 150/90cm	
81	Circular formwork	
82	Design of the circular formwork	
85	Determining the max. panel width	
86	Determining the best distribution of the panels	
87	Erecting and plumbing / Pouring platform / Lifting	
88	Foundation formwork	
89	Tying the panels	
92	Design of the foundation formwork	
94	Slab stop-end with Supporting construction	
95	General	
95	Using as downturned-beam formwork	
96	Alu-Framax Xlife in conjunction with Framax Xlife	
97	Forming self-compacting concrete (SCC)	
98	Cleaning and care of your equipment	
101	Fall protection on the structure	

Introduction

Elementary safety warnings

User target groups

- This booklet is aimed at all persons who will be working with the Doka product or system that it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilisation of the system.
- All persons working with the product described herein must be familiar with the contents of this booklet and with all the safety instructions it contains.
- Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.
- The customer is to ensure that the information materials provided by Doka (e.g. User Information booklets, Instructions for Assembly and Use, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that they have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and formwork utilisation plans, Doka shows the workplace safety precautions that are necessary in order to use the Doka products safely in the usage situations shown.
In all cases, users are obliged to ensure compliance with national laws, standards and regulations throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

Hazard assessment

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

Remarks on this booklet

- This document can be used as general Instructions for Assembly and Use (Method Statement) or be incorporated into site-specific Instructions for Assembly and Use (Method Statement).
- **The graphics, animations and videos in this document or app sometimes depict partially assembled assemblies and may require additional safety equipment and/or measures to comply with safety regulations.**
The customer must ensure all applicable regulations are complied with, even if they are not shown or implied in the graphics, animations and videos provided.
- **Individual sections contain further safety instructions and/or special warnings as applicable.**

Planning

- Provide safe workplaces for those using the formwork (e.g. for when it is being erected/dismantled, modified or repositioned etc). It must be possible to get to and from these workplaces via safe access routes!
- **If you are considering any deviation from the details and instructions given in this booklet, or any application which goes beyond those described in the booklet, then revised static calculations must be produced for checking, as well as supplementary assembly instructions.**

Regulations; industrial safety

- All laws, Standards, industrial safety regulations and other safety rules applying to the utilisation of our products in the country and/or region in which you are operating must be observed at all times.
- If a person or object falls against, or into, the side-guard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.

Rules applying during all phases of the assignment

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose in accordance with the applicable laws, standards and rules, under the direction and supervision of suitably skilled persons. These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.
- Doka products are technical working appliances which are intended for industrial / commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.
- The stability and load-bearing capacity of all components and units must be ensured during all phases of the construction work!
- Do not step on or apply strain to cantilevers, closures, etc. until suitable measures to ensure their stability have been correctly implemented (e.g. by tie-backs).
- Strict attention to and compliance with the functional instructions, safety instructions and load specifications are required. Non-compliance can cause accidents and severe injury (risk of fatality) and considerable damage to property.
- Sources of fire in the vicinity of the formwork are prohibited. Heaters are permissible only when used correctly and situated a correspondingly safe distance from the formwork.
- Customer must give due consideration to any and all effects of the weather on the equipment and regards both its use and storage (e.g. slippery surfaces, risk of slipping, effects of the wind, etc.) and implement appropriate precautionary measures to secure the equipment and surrounding areas and to protect workers.
- All connections must be checked at regular intervals to ensure that they are secure and in full working order.
In particular threaded connections and wedged connections have to be checked and retightened as necessary in accordance with activity on the jobsite and especially after out-of-the-ordinary occurrences (e.g. after a storm).
- It is strictly forbidden to weld Doka products – in particular anchoring/tying components, suspension components, connector components and castings etc. – or otherwise subject them to heating.
Welding causes serious change in the microstructure of the materials from which these components are made. This leads to a dramatic drop in the failure load, representing a very great risk to safety.
It is permissible to cut individual tie rods to length with metal cutting discs (introduction of heat at the end of the rod only), but it is important to ensure that flying sparks do not heat and thus damage other tie rods.
The only articles which are allowed to be welded are those for which the Doka literature expressly points out that welding is permitted.

Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in an acceptable condition. Steps must be taken to exclude components that are damaged, deformed, or weakened due to wear, corrosion or rot (e.g. fungal decay).
- Using our safety and formwork systems together with those of other manufacturers can create risks that may lead to injury and damage to property. This requires separate verification by the user.
- The equipment/system must be assembled and erected in accordance with the applicable laws, standards and rules by trained customer personnel whilst maintaining any applicable safety inspections that may be required.
- It is not permitted to modify Doka products; such modifications constitute a safety risk.

Closing the formwork

- Doka products and systems must be set up so that all loads acting upon them are safely transferred!

Pouring

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

Stripping the formwork

- Do not strip out the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped out!
- When stripping out the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as Framax stripping corners.
- When stripping out the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place!

Transporting, stacking and storing

- Observe all country-specific regulations applying to the handling of formwork and scaffolding. For system formwork the Doka slinging means stated in this booklet must be used – this is a mandatory requirement.

If the type of sling is not specified in this document, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.

- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- When lifting formwork or formwork accessories with a crane, no persons must be carried along, e.g. on working platforms or in multi-trip packaging.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

Maintenance

- Only original Doka components may be used as spare parts. Repairs may only be carried out by the manufacturer or authorised facilities.

Miscellaneous

The weights as stated are averages for new material; actual weights can differ, depending on material tolerances. Dirt accretions, moisture saturation, etc. can also affect weight.

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

Eurocodes at Doka

The permissible values stated in Doka documents (e.g. $F_{perm} = 70$ kN) are not design values (e.g. $F_{Rd} = 105$ kN), unless specified!

- It is essential to avoid confusing permissible values with design values!
- Doka documents will continue to state the permissible values.

Allowance has been made for the following partial factors:

- $\gamma_F = 1.5$
- $\gamma_{M, timber} = 1.3$
- $\gamma_{M, steel} = 1.1$
- $k_{mod} = 0.9$

Consequently, all the design values for an EC design calculation can be determined from the permissible values.

Symbols used

The following symbols are used in this document:



DANGER

This is a notifier drawing attention to an extremely dangerous situation in which non-compliance with this notifier will lead to death or severe, irreversible injury.



WARNING

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to death or severe, irreversible injury.



CAUTION

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to slight, reversible injury.



NOTICE

This is a notifier drawing attention to a situation in which non-compliance with this notifier can lead to malfunctions or damage to property.



Instruction

Indicates that actions have to be performed by the user.



Sight-check

Indicates that you need to do a sight-check to make sure that necessary actions have been carried out.



Tip

Points out useful practical tips.



Reference

Cross-references other documents.

Intended use

The Framed formwork Alu-Framax Xlife is a formwork system for the cast-in-place concrete construction of walls, foundations, shafts and columns. The Framed formwork Alu-Framax Xlife is designed for forming by hand and for crane-assisted forming of large areas.

Boundary conditions for use:

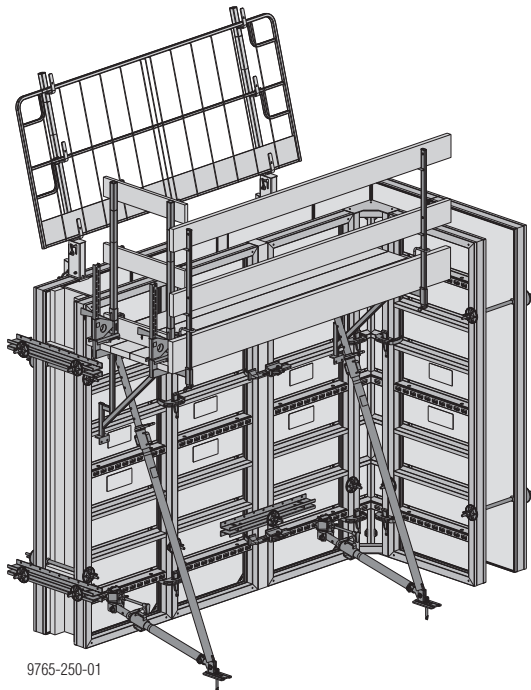
- Max. formwork height: 5.40 m
- Max. wall thickness: 60 cm

In special cases, boundary conditions can vary. The relevant information in the Doka technical documents must be observed.

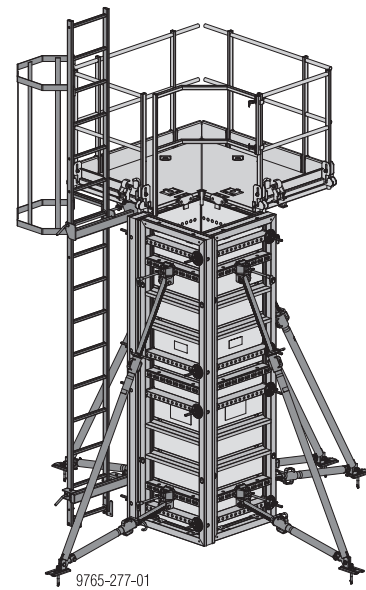
Other use or use not in conformity with that stated above is non-intended use and requires the prior written approval of the Doka company!

Areas of use

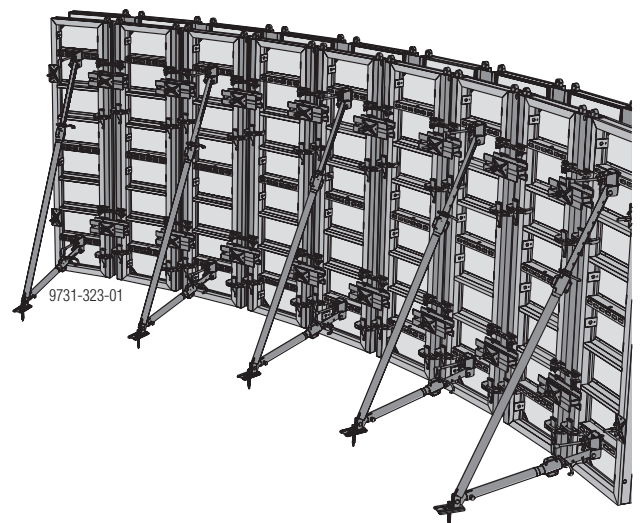
Wall formwork



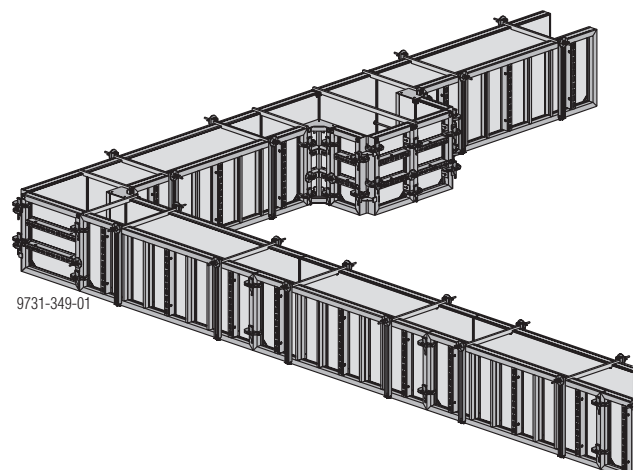
Column formwork



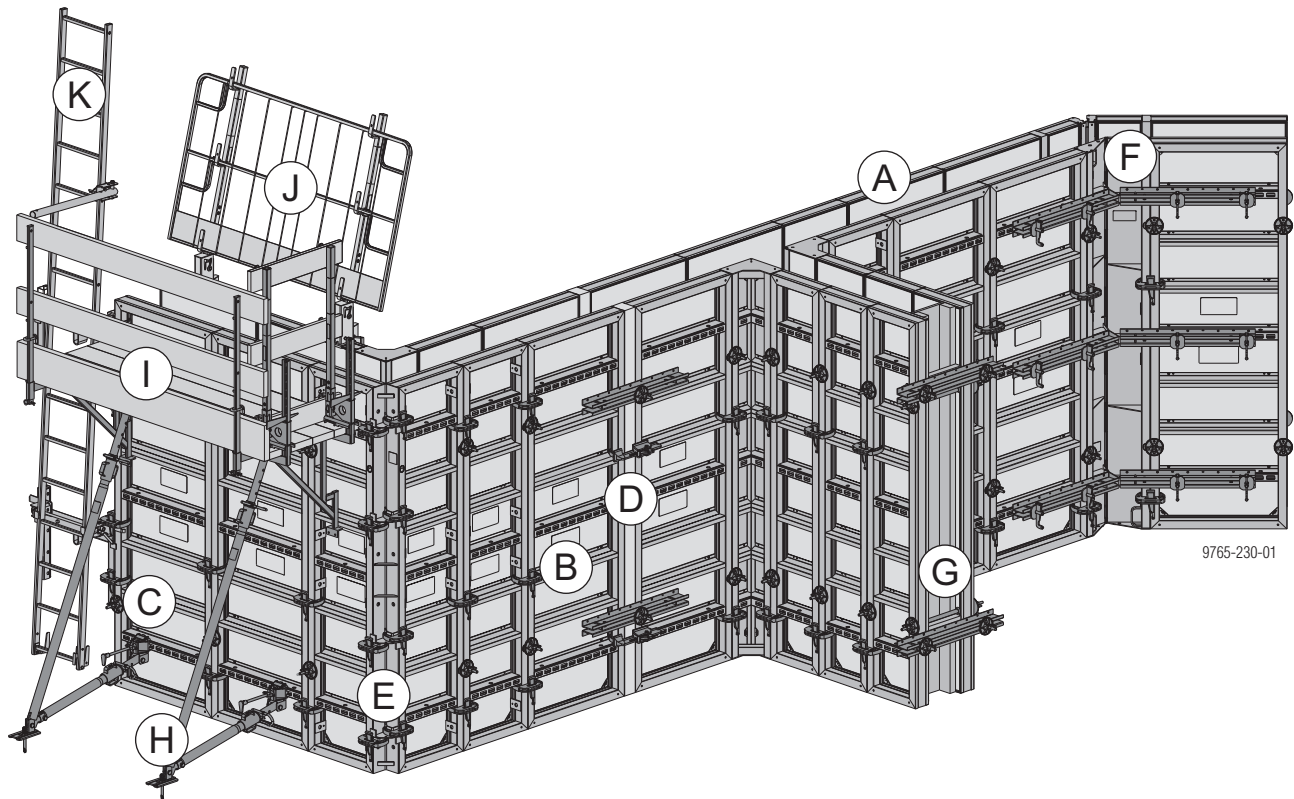
Circular formwork



Foundation formwork



Wall formwork



Section:

- A [Alu-Framax Xlife panel in detail](#)
- B [Inter-panel connections](#)
- C [Tie rod system](#)
- D [Length adjustment using closures](#)
- E [90 degree corners](#)
- F [Acute & obtuse-angled corners](#)
- G [Stop-end formwork](#)
- H [Plumbing accessories](#)
- I [Pouring platforms with single brackets](#)
- J [Opposing guardrail](#)
- K [Ladder system](#)

Permissible fresh-concrete pressure: 60 kN/m²

Instructions for assembly and use (Method statement)

Alu-Framax as a hand-moved formwork

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

Ladders must be located so as to create viable 'traffic routes' in the horizontal. (On a straight wall, for example, one ladder on the first element and another on the last).

Transporting / handling the panels

- Unload and reposition single panel stacks with Framax transport gear from the truck (see section [Transporting, stacking and storing](#)).

Closing the formwork

- Spray the formwork sheet with release agent (see section [Cleaning and care of your equipment](#)).
- Fix the first panel to the floor with the panel strut (see section [Plumbing accessories](#)). This stabilises the panel so it cannot fall over.



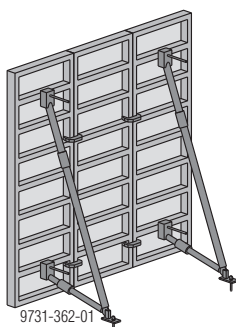
CAUTION

Never use a sledge hammer to plumb and align the panels!

This would damage the profiles of the panels.

- Use only proper aligning tools that cannot cause any damage.

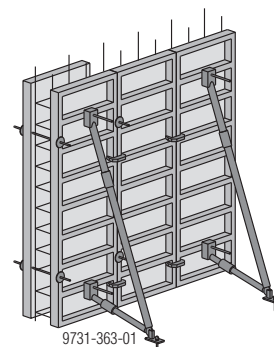
- Continue lining up panels in this way, clamp them together (see section [Inter-panel connections](#)) and install panel struts. The gang-form is now stable and can be plumbed and aligned exactly.



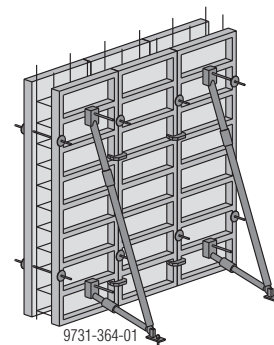
Erecting the opposing formwork:

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

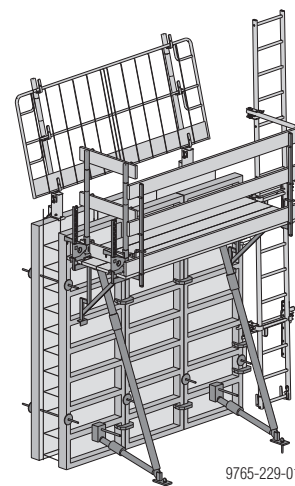
- Spray the formwork sheet of the opposing formwork with release agent.
- Set up the first panel of the opposing formwork.
- Fit the form ties (see section [Tie rod system](#)). Now the opposing formwork is also secured against tipping over.



- In the same way, carry on lining up panels, clamping them together and fitting form ties.



- Mount the pouring platform (see section [Pouring platforms with single brackets](#)).
- Mount the Ladder system XS (see section [Ladder system](#)).
- Fit end-of-platform sideguards (see section [Pouring platforms with single brackets](#)).
- Mount the counter railing (see section [Opposing guardrail](#)).



Pouring



NOTICE

Do not exceed the maximum permissible rate of placing.

Framed formwork Alu-Framax Xlife:

Permissible fresh-concrete pressure: 60 kN/m²



Observe the section 'Pressure of fresh concrete on vertical formwork, DIN 18218' in the Calculation Guide 'Doka formwork engineering' or contact Doka.



Observe DIN 4235 Part 2 'Compacting of concrete by vibrating; Compacting by internal vibrators'.

- ▶ Pour the concrete.
- ▶ Make only moderate use of vibrators, carefully coordinating the times and locations of vibrator use.

Stripping the formwork



NOTICE

▶ Comply with the stipulated stripping times.

- ▶ Remove the end-of-platform sideguards, pouring platform and counter railings.
- ▶ Beginning with the opposing formwork, dismantle the panels one by one - take out the form ties and remove the connectors to the neighbouring panel.
- ▶ Lift the panel away and clean concrete residue off the formwork sheet (see section [Cleaning and care of your equipment](#)).

Alu-Framax as a crane-moved formwork

Large gang-forms can be pre-assembled face-down on a prepared flat area. For detailed instructions on installing the connectors, see section [Vertical stacking of panels](#).

These gangs can be lifted and reset with lifting chains and Framax lifting hooks. For detailed instructions see section [Lifting by crane](#) and the 'Framax lifting hook' Operating Instructions.

Permissible working load limit:

1000 kg / Framax lifting hook

(area of formwork that can be lifted using 2 lifting hooks is approx. 30 m²)



NOTICE

If 'hybrid' gang-forms (containing both Alu-Framax Xlife + Framax Xlife panels) are lifted and reset by crane, they must be given additional stiffening reinforcement.

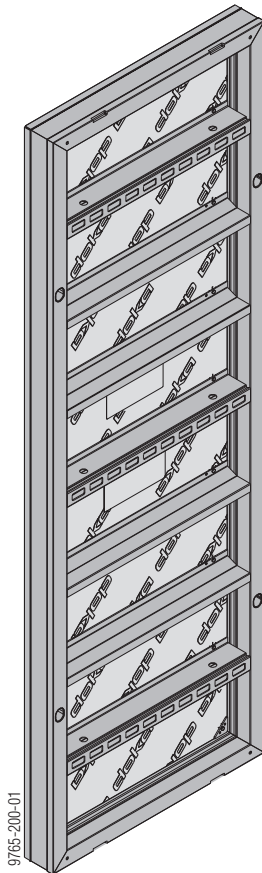
Do not exceed the permissible design values of the Alu-Framax Xlife connector components! (see section [Inter-panel connections](#))



For more information on how to handle tall formwork, see section 'Instructions for assembly and use' in the 'Framed formwork Framax Xlife' User Information booklet.

Alu-Framax Xlife panel in detail

High load-bearing capacity



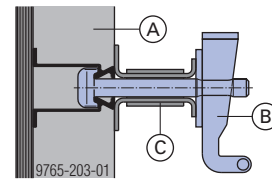
60 kN/m² pressure of fresh concrete acting on whole area, to DIN 18218, where the surface planeness tolerances to DIN 18202 Table 3 Line 6 are observed.

Clean concrete surfaces with the innovative Xlife sheet

The Xlife sheet ensures high numbers of repeat use, it is less prone to damage and gives a superb concrete finish every time.

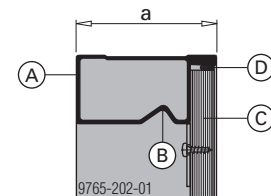
- High quality concrete finish
- Less touching-up needed
- Less cleaning - the Xlife sheet can be cleaned using a high-pressure spray cleaner
- The sheeting is screwed on from the back, preventing rivet impressions in the concrete and making cleaning easier

Accessories are easy to fasten in the function profile



- A Alu-Framax Xlife panel
- B Framax wedge clamp
- C Framax universal waling

Dimensionally stable powder-coated aluminium frame



a ... 123 mm

- A Frame profile
- B Bead for inter-panel connectors
- C Xlife-sheet
- D Silicone sealing strip

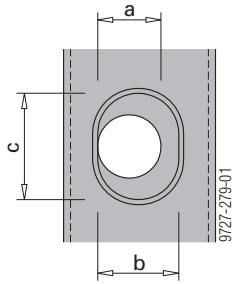
- Dimensionally stable frame profiles
- Strong cross-profiles
- Powder coated, so easy to clean
- Edges are easy to clean - so panels always abut tightly
- All-round hardware slot for fastening the inter-panel connectors at any point required
- Edges of formwork sheet are protected by frame profile
- Cross boreholes in 55 cm and 60 cm wide panels, for corner configurations and stop-ends



WARNING

- ▶ It is forbidden to climb on the cross-profiles. The cross-profiles are NOT a substitute for a ladder.

Form-tie sleeves



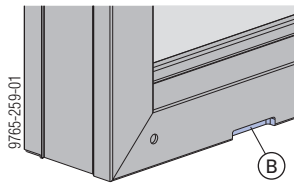
a ... diameter 25 mm

b ... 32 mm

c ... 42 mm

- Tie rods are very easy to insert through the large, conical form-tie sleeves

Lifting edge



B Lifting edge on Alu-Framax Xlife panel HK

- Practical lifting edge, as an insertion point for the aligning tool

System grid

Alu-Framax Xlife panels

Logical panel size-grid in 15 cm increments. The heights and widths of the Alu-Framax Xlife panels together result in a logical, advantageous increment-grid that makes this formwork highly flexible and economical.

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

Only 2 form ties needed in the vertical. On the 2.70 m high Alu-Framax Xlife panels, only 2 form ties are required.

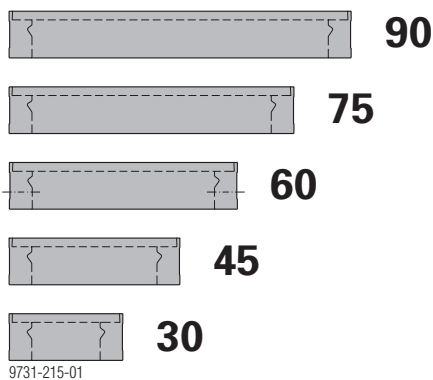
Only

- 5 standard panel widths and
- 2 standard panel heights

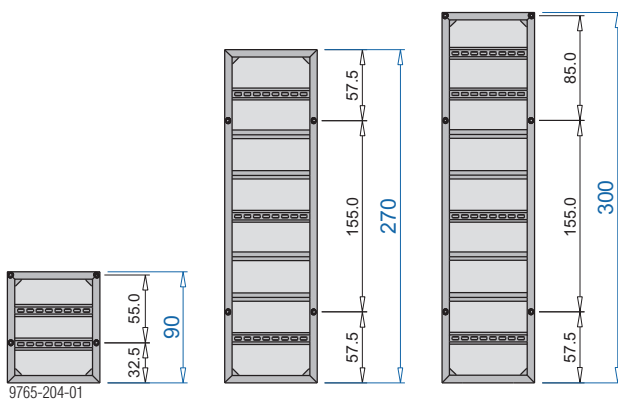
are all you need to form any layout.

Additional panel widths and heights are available in the sales range on request.

Panel widths



Panel heights



Dimensions in cm

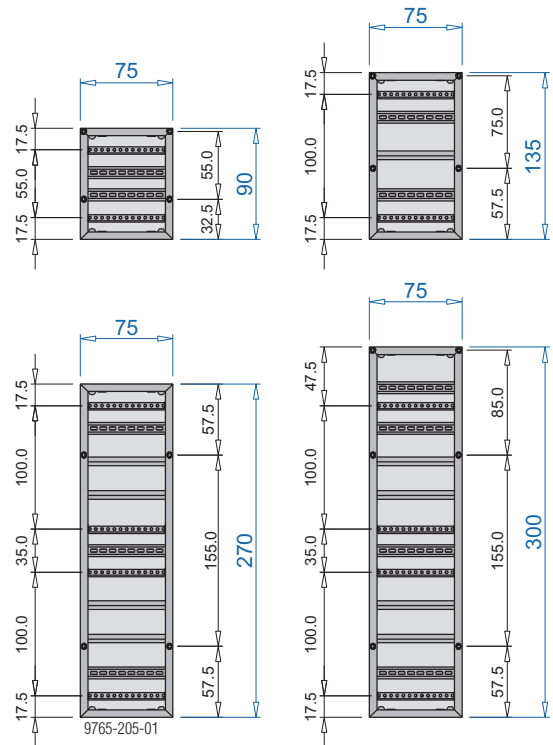
Panel height 3.00 m in panel widths up to 0.75 m available on request.

The production of panel height 3.0 m at a panel width of 0.90 m is possible on special customer request.

Alu-Framax Xlife universal panels

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

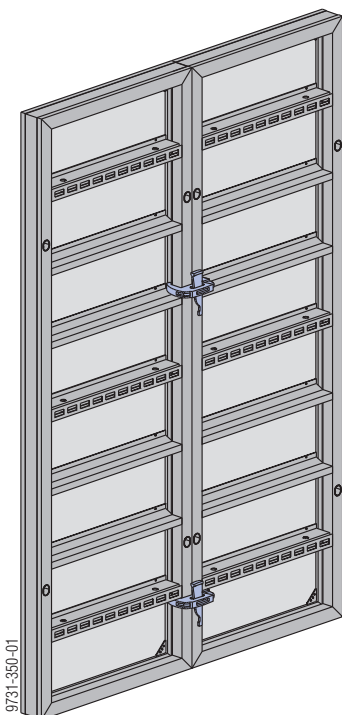
- corners
- wall junctions
- stop-ends
- columns



Dimensions in cm

Panel height 3.00 m available on request.

Inter-panel connections



Attributes of the panel connectors:

- provide self-aligning, crane-handleable connections between the panels
- have no loose parts which might get lost
- dirt-resistant
- easy to fix with a formwork hammer



NOTICE

- Use a formwork hammer weighing max. 800 g.
- Do not oil or grease wedge-clamped joints.

Panels upright:

Panel height	Number of clamps
0.90 m	2
2.70 m	2
3.00 m	3

Panels on their sides:

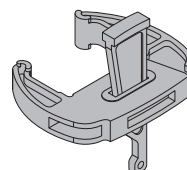
Panel width	Number of clamps
0.20 - 0.55 m	1
0.60 - 0.90 m	2

Note:

- For details regarding additional inter-panel connections at outside corners and stop-ends (for increased tensile loads) see section [Inter-panel connections for increased tensile loads](#).
- See section [Vertical stacking of panels](#) for details on the positions of the Framax quick acting clamps RU and Framax multi function clamps that are needed when vertically stacking.

Simple inter-panel connections

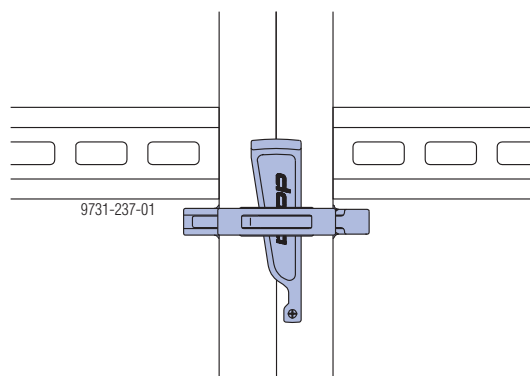
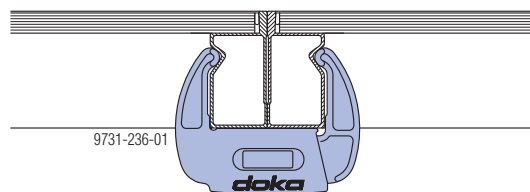
with Framax quick acting clamp RU



Framax quick acting clamp RU:

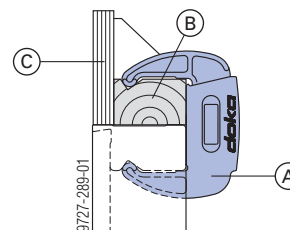
- perm. tensile force: 15.0 kN
- perm. shear force: 4.0 kN
- perm. moment: 0.25 kNm

The bead running around the inside of the outside frame profile means that the clamp can be fastened at any point desired. This allows adjacent panels to be staggered in height.



More functions

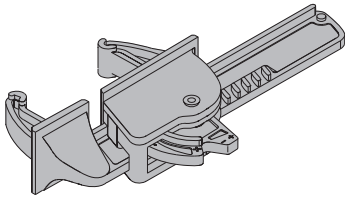
Vertical stacking with moulded timber



- A** Framax quick acting clamp RU
- B** Framax moulded timber 27mm (for 27mm formwork sheet) or Framax moulded timber 21mm (for 21mm formwork sheet) or Framax moulded timber 18mm (for 18mm formwork sheet) or
- C** Formwork sheet

Self-aligning inter-panel connections and closures

with Framax multi function clamp



Framax multi function clamp:

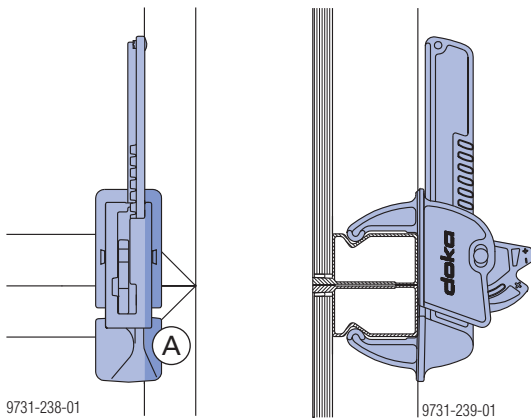
perm. tensile force: 15.0 kN

perm. shear force: 6.0 kN

perm. moment: 0.45 kNm

Values apply only when mounted on profile.

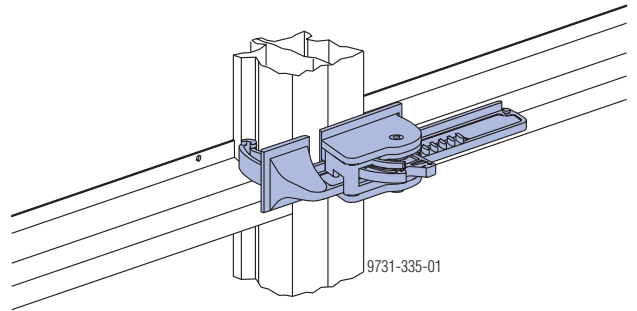
Particularly when panels are stacked in the vertical, the fact that the clamp bears directly on the profiles means that there is no need for any extra bracing of the panels with universal walings.



A Contact surface on the profile

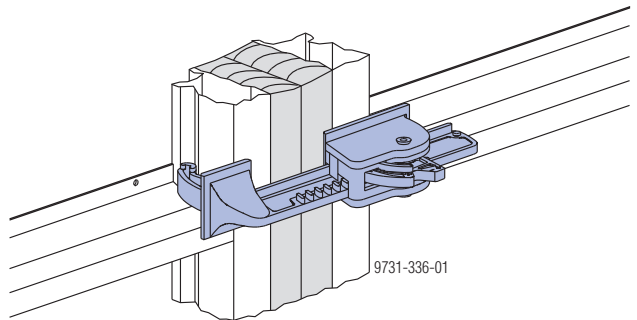
More functions

Inter-panel connections



Joining the panels using the Framax multi function clamp provides additional bracing of the gang-form (as the clamp bears directly onto the profile).

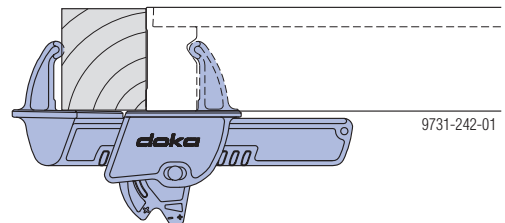
Filler connection up to 15 cm



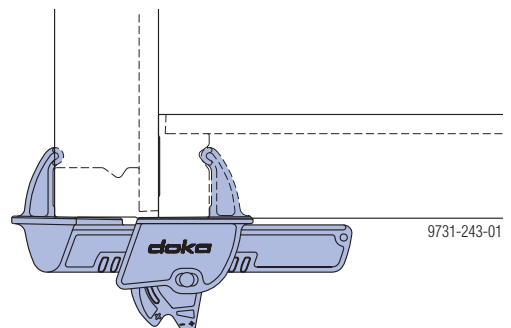
With its 15 cm clamping range, the Framax multi function clamp exactly matches the panel size-grid.

For more information, see section [Length adjustment using closures](#).

Squared timber connection up to 20 cm



Corner connection for foundations

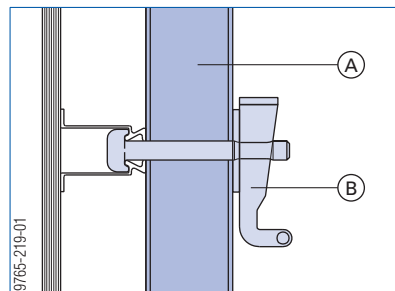


Bracing the panels

Framax universal waling

How to attach

using the Framax wedge clamp



A Framax universal waling

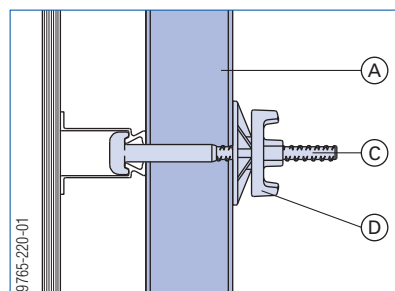
B Framax wedge clamp



NOTICE

Do not oil or grease wedge-clamped joints.

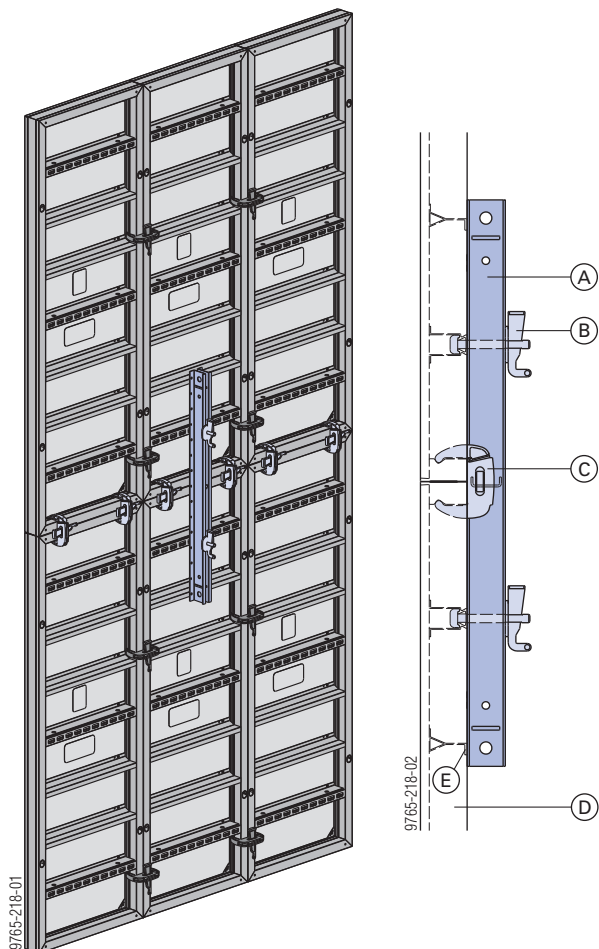
using the Framax universal fixing bolt and Super plate



A Framax universal waling

C Framax universal fixing bolt

D Super plate 15.0



A Framax universal waling 1.50m

B Framax wedge clamp

C Framax quick acting clamp RU

D Alu-Framax Xlife panel

E Cross profile as bearing surface for universal waling

With **closures**, the universal walings bring the gang-forms firmly into alignment and transfer the form-tie forces to the framed panels.

Using additional universal walings gives gang-forms better rigidity, especially in higher **vertically stacked configurations**. This makes it possible to pick up and set down large gang-forms by crane without any problems. The additional universal walings are also useful for transferring the loads from platforms.

Framax universal waling:

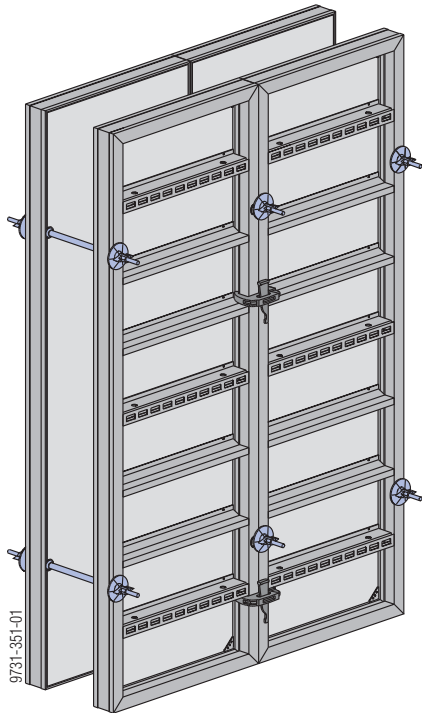
Permissible moment (for vertical stacking of panels):
4.3 kNm

Due to the permissible tensile load of 12 kN in the function profile, even stiffer components such as Multi-purpose walings WS10 Top50 are also subject to:

Permissible moment: 4.3 kNm

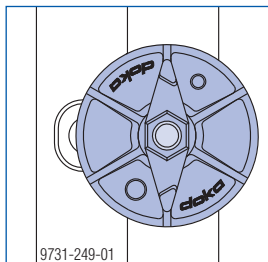
Tie rod system

Placing form ties in the frame profile



NOTICE

- Fix a form tie in every anchoring sleeve that is not covered by a super plate.
- Always tie in the larger (wider) of the two panels.
- For exceptions, see sections:
 - [Length adjustment using closures](#)
 - [Vertical stacking of panels](#)



WARNING

Delicate rod steel!

- Never weld or heat tie rods.
- Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.

Note:

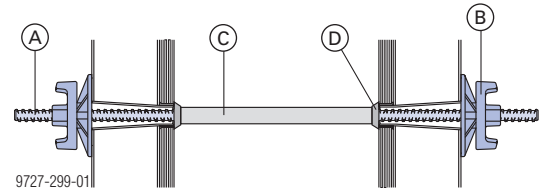
Seal off unused anchoring sleeves with **Universal plugs R20/25**.



Tie-rod wrench 15.0/20.0

For turning and holding the tie rods.

The Doka tie rod system 15.0

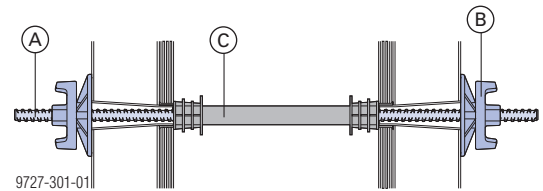


- A** Tie rod 15.0mm
- B** Super plate 15.0
- C** Plastic tube 22mm
- D** Universal cone 22/10mm

Note:

The Plastic tubes 22mm left in the concrete are sealed off with **Plugs 22mm**.

As an alternative to the plastic tube with universal cone, Doka also offers a **distance piece** designed as an all-in-one form-tie distance tube.



- A** Tie rod 15.0mm
- B** Super plate 15.0
- C** Distance piece (ready-to-use for certain wall thicknesses)

The plugs for sealing the ends of each distance piece are supplied with it.

Note:

Doka also offers cost-effective solutions for creating watertight form-tie points.



For more information, see the User Information booklet 'Doka form ties for special requirements'.

Tie rod 15.0mm:

Permissible load-bearing capacity, allowing a 1.6 : 1 safety factor against failure: 120 kN

Permissible load-bearing capacity to DIN 18216: 90 kN

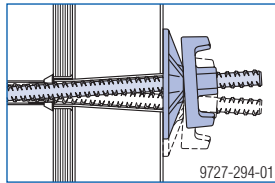


The Friction type ratchet SW27 or Box spanner 27 0.65m can be used for **low-noise releasing and tightening** of the following form-tie components:

- Super plate 15.0
- Wing nut 15.0
- Star grip nut 15.0

Inclined and height-mismatched positioning

The large, conical form-tie sleeves allow the panels to be inclined on one or both sides, and be offset vertically.



Limit-values when super plates are used		
Conical on one side	Conical on both sides	Height mismatch
max. 4°	max. 2 x 4.5°	max. 1.9cm per 10cm of wall thickness

Note:

Secure inclined panels against uplift.

Inclined and mismatched positioning are not possible with panels placed longside horizontal.

Length adjustment using closures

Closures: 0 - 15 cm

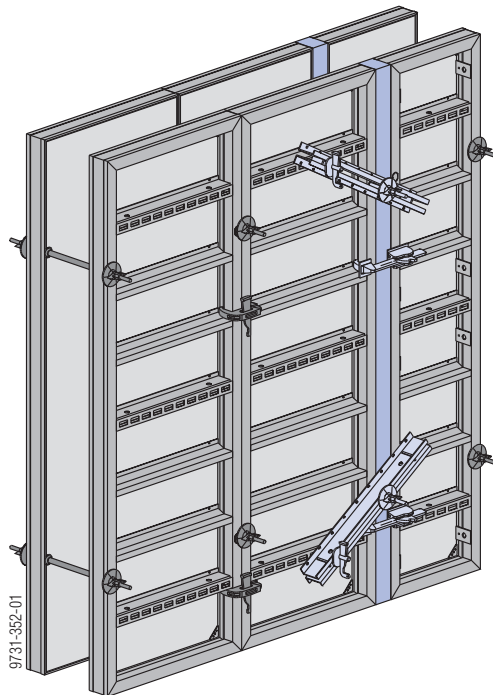
with fitting timber and Framax multi function clamp

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

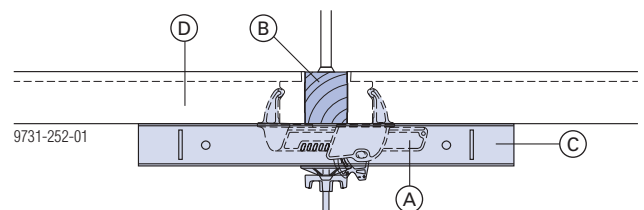
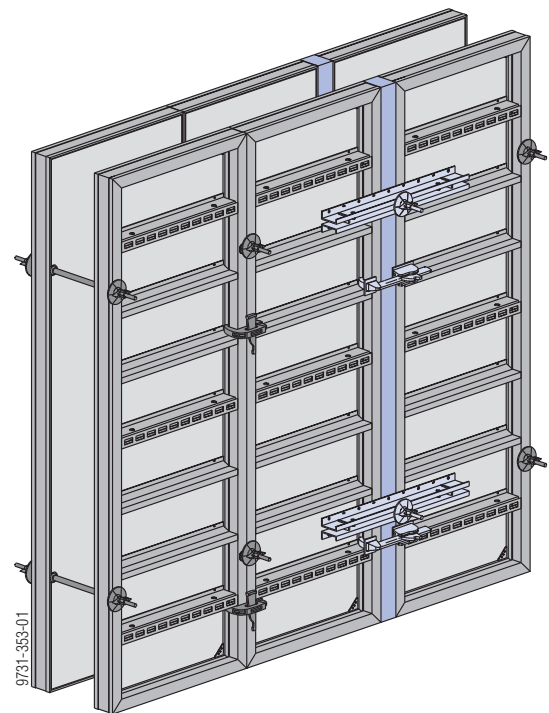
Universal waling:

Perm. moment: 5.2 kNm

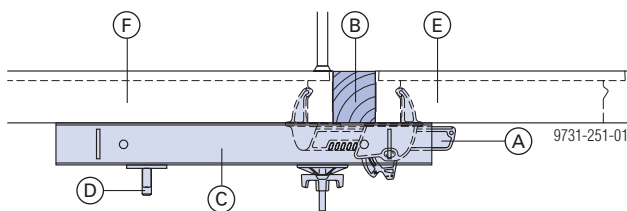
Tie through frame profile



Ties through fitting timber



- A Framax multi function clamp
- B Fitting timber
- C Framax universal waling (for closures of up to 5 cm in width, no universal walings are needed)
- D Alu-Framax Xlife panel



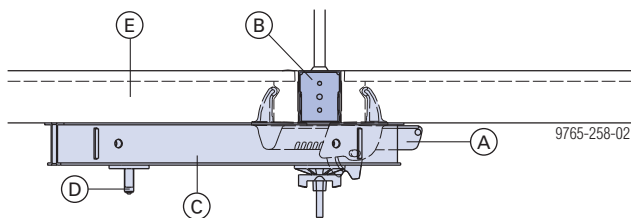
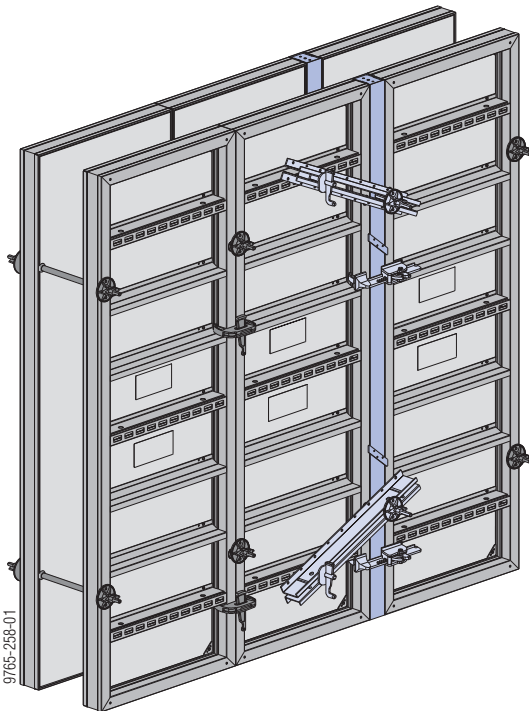
- A Framax multi function clamp
- B Fitting timber
- C Framax universal waling
- D Framax wedge clamp
- E Alu-Framax Xlife panel (max. width 60cm)
- F Alu-Framax Xlife panel

with Framax alu closure and Framax multi function clamp

By combining Framax alu closures 5cm and 10cm with Framax fitting timbers, closures are possible in a 1 cm grid.

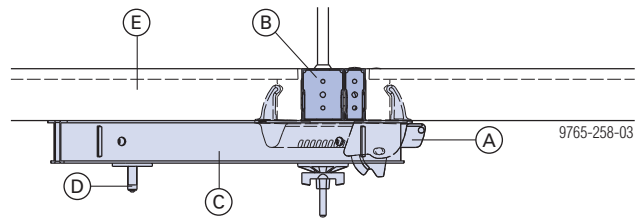
Note:

Seal off unneeded form-tie sleeves in the alu closures with **Universal plugs R20/25**.



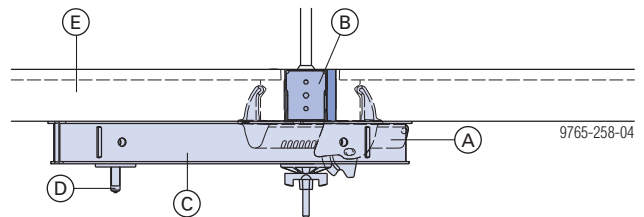
- A Framax multi function clamp
- B Framax alu closure
- C Framax universal waling (for closures of up to 5 cm in width, no universal walings are needed)
- D Framax wedge clamp
- E Alu-Framax Xlife panel

Example: Closure width of 15 cm



- A Framax multi function clamp
- B Framax alu closure 10cm + 5cm
- C Framax universal waling
- D Framax wedge clamp
- E Alu-Framax Xlife panel

Example: Closure width of 12 cm

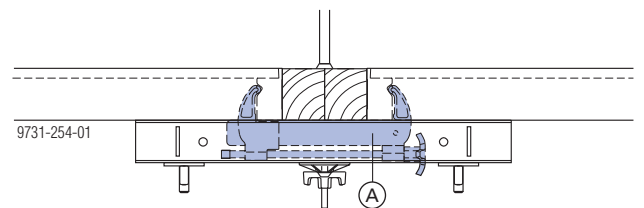


- A Framax multi function clamp
- B Framax alu closure 10cm + fitting timber 2cm
- C Framax universal waling
- D Framax wedge clamp
- E Alu-Framax Xlife panel

Closures: 0 - 20 cm

with Framax fitting timber and Framax adjustable clamp

Framax adjustable clamp:
Permitted tensile force: 10.0 kN



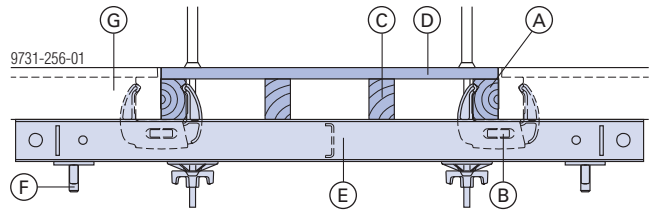
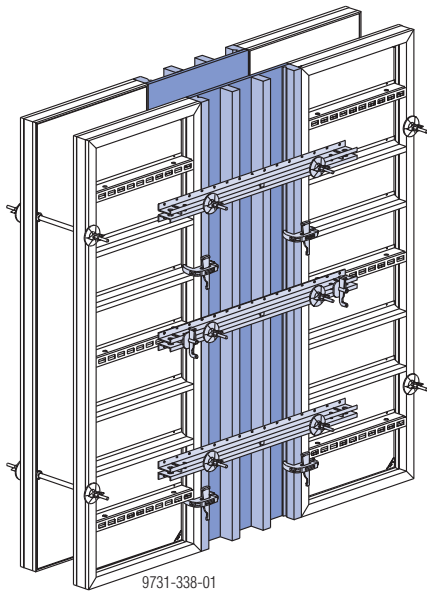
- A Framax adjustable clamp

Note:

Fit the Framax adjustable clamp in the same position as the Framax multi function clamp

Closures: 17 - 80 cm

with Framax moulded timber, formwork sheet

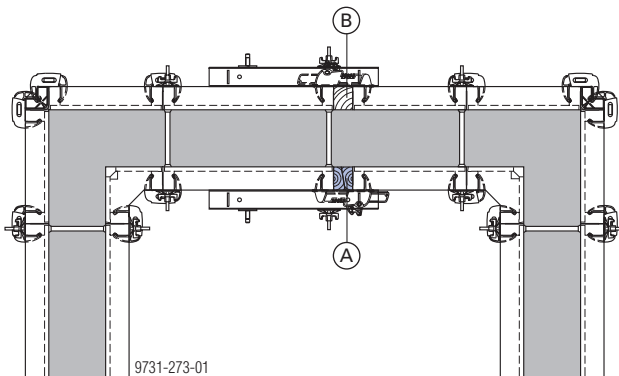


- A** Framax moulded timber
- B** Framax quick-acting clamp RU
- C** Squared timber
- D** Formwork sheet
- E** Framax universal waling
- F** Framax wedge clamp
- G** Alu-Framax Xlife panel

Panel height	Closure range	Universal waling		Tie through closure	
		0.90m	1.50m	horizontal	vertical
2.70m	up to 30 cm	3		1	2 (top and bottom)
	up to 80 cm		3	2	3
3.00m	up to 30 cm	3		1	2 (top and bottom)
	up to 65 cm	2	1	2	3

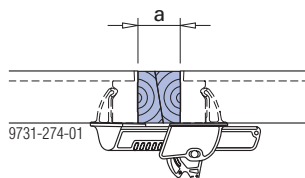
Facilitating stripping with the stripping timber

The diagonally cut stripping timber makes quick work of striking inside formwork in narrow cross-sections (e.g. lift shafts or stair-wells, etc.).



A Inside - stripping timber

B Outside - fitting timber

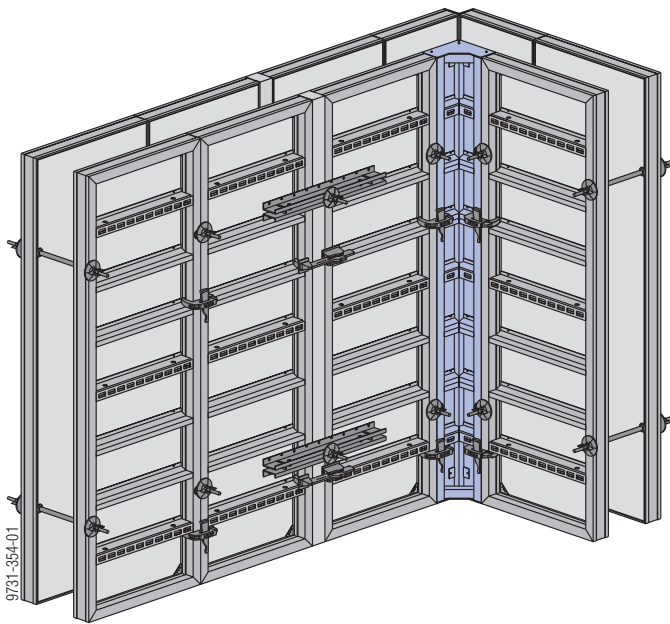


a ... 10 cm

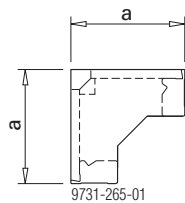


The Framax stripping timber is available in lengths of 2.85 m (for panel height 2.70 m) and 3.45 m (for panel height 3.00 m). The projection beyond the end of the panels makes the stripping timbers easier to remove.

90 degree corners



The corner solutions are based on the strong, torsionally rigid **Alu-Framax Xlife inside corner**.



a ... 30 cm

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

- with a Framax outside corner
- with an Alu-Framax Xlife universal panel

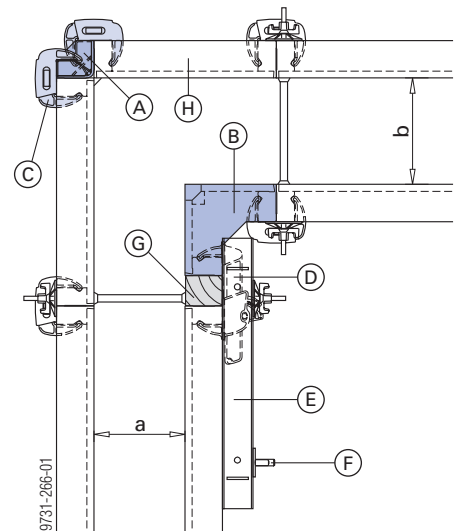
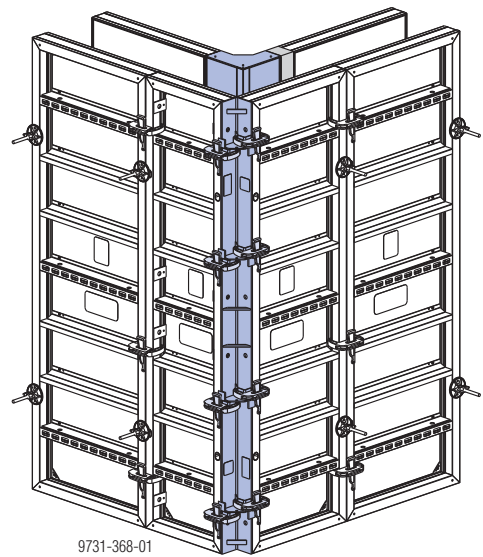
Note:

For details regarding additional inter-panel connections on outside corners (for increased tensile loads) see section [Inter-panel connections for increased tensile loads](#).

with Framax outside corner

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

Wall thickness	Permitted fresh-concrete pressure
up to 40 cm	60 kN/m ²
up to 60 cm	50 kN/m ²



a ... 30 cm
b ... 35 cm

- A Framax outside corner
- B Alu-Framax Xlife inside corner
- C Framax quick acting clamp RU
- D Framax multi function clamp
- E Framax universal waling
- F Framax wedge clamp
- G Fitting timber
- H Alu-Framax Xlife panel



When there is a **closure on both sides** of the inside corner, bracing can be achieved economically with the **universal corner waling**.

Required number of quick acting clamps RU:

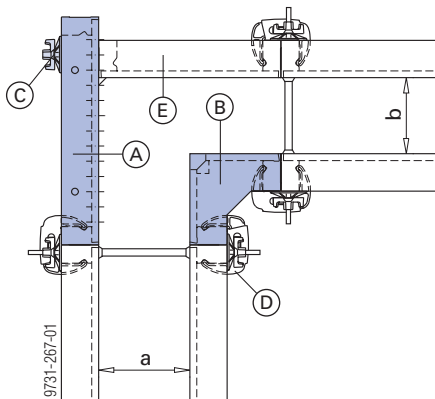
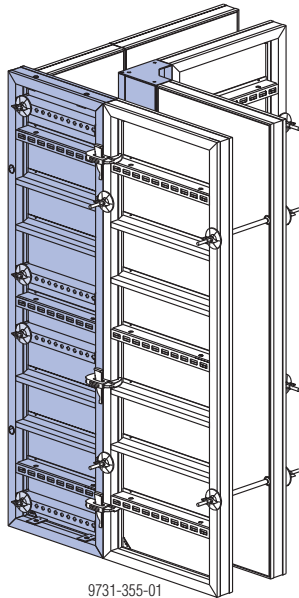
Height of outside corner	Number of clamps
0.90m	4
2.70m	8
3.00m	10

with Alu-Framax Xlife universal panel

When this panel is used, a wall-thickness grid with 5 cm increments is available.

Note:

The Alu-Framax Xlife universal panel can be used only in combination with panels that are provided with cross boreholes (Alu-Framax Xlife panel 55cm or 60cm, or a second universal panel).



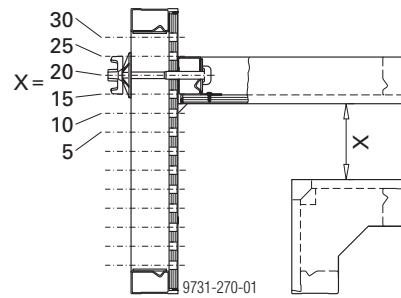
a ... 30 cm
b ... 25 cm

- A** Alu-Framax Xlife universal panel
- B** Alu-Framax Xlife inside corner
- C** Framax universal fixing bolt + Super plate 15.0
- D** Framax quick acting clamp RU
- E** Panel with cross boreholes (Alu-Framax Xlife panel 0.55 or 0.60m, or Alu-Framax Xlife universal panel)

Required numbers of universal fixing bolts + Super plates 15.0:

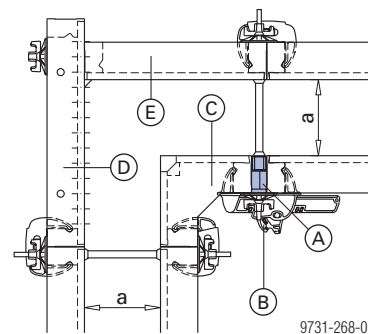
Universal panel 0.75x0.90m	2
Universal panel 0.75x2.70m	4
Universal panel 0.75x3.00m	4

Achievable wall thicknesses in 5 cm grid:



Framax alu closure

Used mainly in corner zones, the Framax aluminium closures 5cm and 10cm stand out for their high strength and long lifespan.



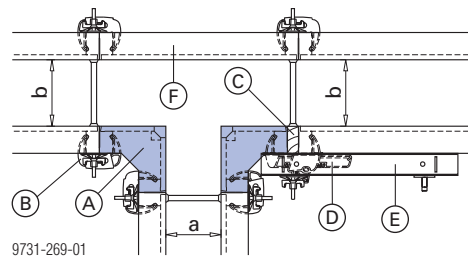
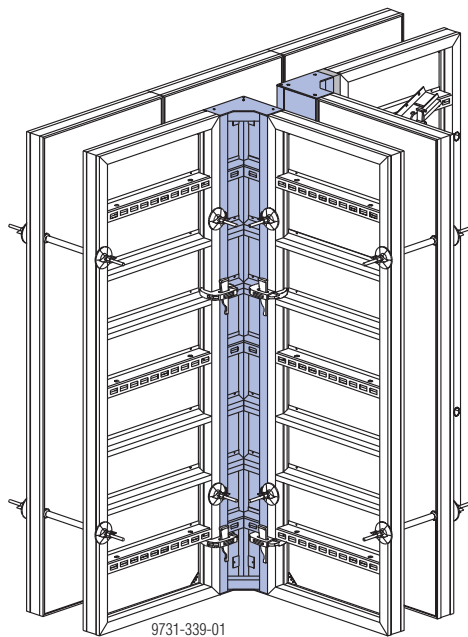
a ... 25 cm

- A** Framax aluminium closure 5cm
- B** Framax multi function clamp
- C** Alu-Framax Xlife inside corner
- D** Alu-Framax Xlife universal panel
- E** Panel with cross holes (Alu-Framax Xlife panel 0.55 or 0.60m, or Alu-Framax Xlife universal panel)

Note:

When the aluminium closures are used, no universal walings are needed.

Example: T-junction



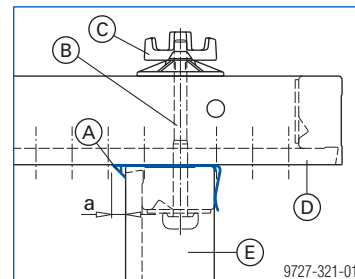
a ... 25 cm
b ... 30 cm

- A** Alu-Framax Xlife inside corner
- B** Framax quick acting clamp RU
- C** Fitting timber
- D** Framax multi function clamp
- E** Framax universal waling
- F** Alu-Framax Xlife panel

Edges

with Framax frontal triangular ledge

The Framax frontal triangular ledge can be slipped over the front end of the panel without being nailed and is used with the universal panel to form outside corners (integral slot grid for universal fixing bolts). It is also possible to form edges using the Framax triangular ledge, of course.

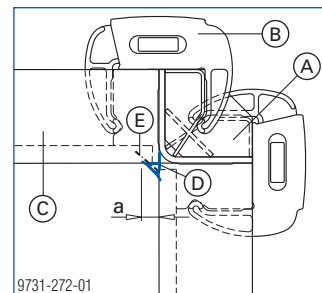


a ... 20 mm

- A** Framax frontal triangular ledge or Framax triangular ledge 2.70m
- B** Framax universal fixing bolt
- C** Super plate 15.0
- D** Alu-Framax Xlife universal panel
- E** Alu-Framax Xlife panel (0.55 or 0.60m) or Alu-Framax Xlife universal panel

with the Framax triangular ledge

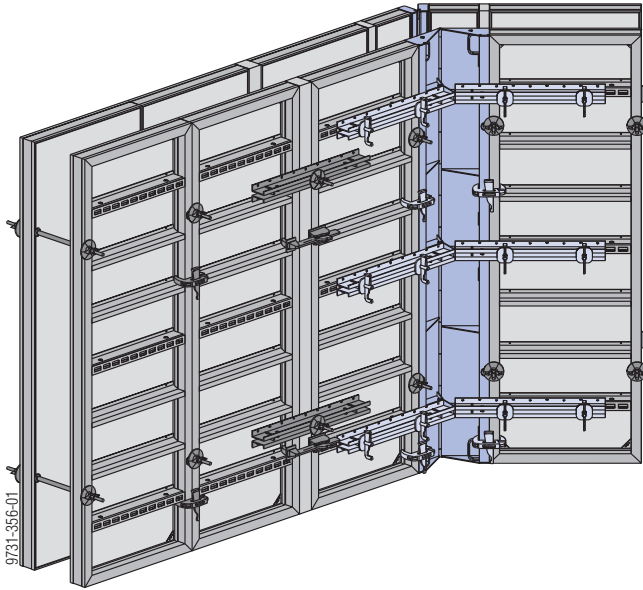
Where outside corners are formed using the Framax outside corner, the Quick acting clamps used for the interconnection mean that the Framax triangular ledge has to be used.



a ... 20 mm

- A** Framax outside corner
- B** Framax quick acting clamp RU
- C** Alu-Framax Xlife panel
- D** Framax triangular ledge
- E** Wire nail 22x40

Acute & obtuse-angled corners



Acute and obtuse angles are solved using the hinged inside and outside corners.

Note:

For angles of less than 120°, no universal walings are needed in the inside corner.



NOTICE

With closures, provide additional universal walings in accordance with section [Length adjustment using closures](#).

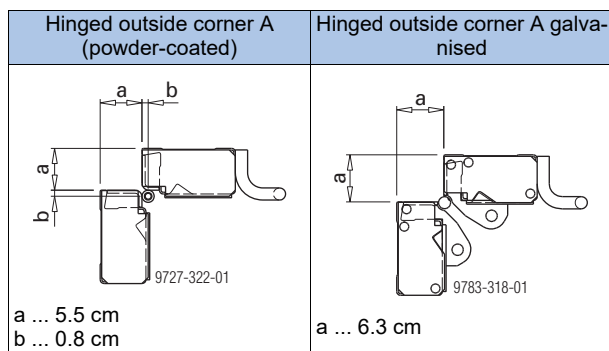
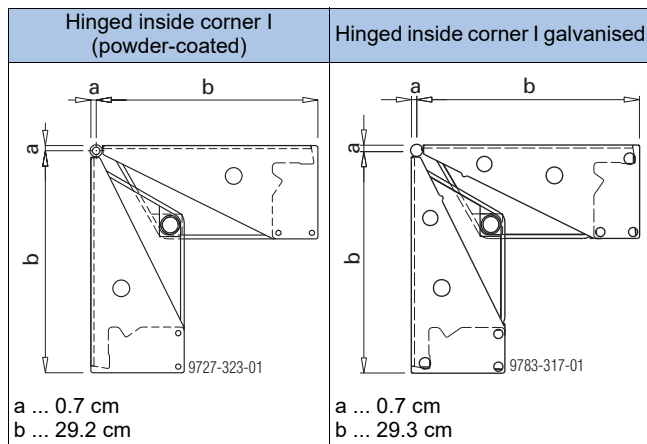
Number of clamps needed in the hinged outside corner:

Panel height	Number of clamps
0.90 m	4
2.70 m	8
3.00 m	10



NOTICE

For details regarding additional inter-panel connections on outside corners (for increased tensile loads) see section [Inter-panel connections for increased tensile loads](#).



Note:

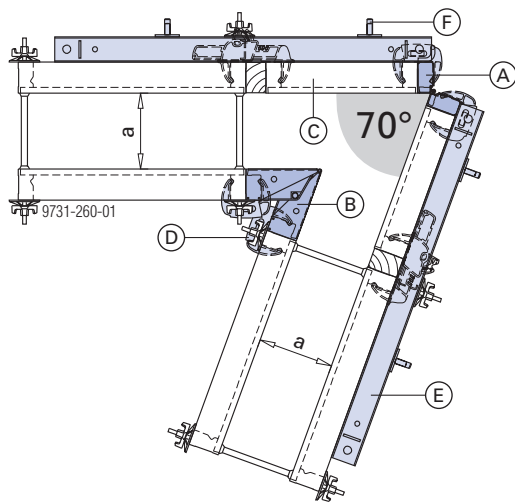
The Framax hinged outside corner A galvanised cannot be combined with the Framax hinged outside corner A (powder-coated).

Number of universal walings in the outside and inside corner:

Panel height	Number of universal walings
0.90 m	4
2.70 m	6
3.00 m	6

Position of the universal walings:
In every support level of the Hinged inside corner I.

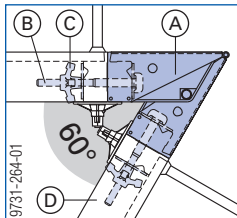
70° (60°) - 135° angles, with hinged corners I + A



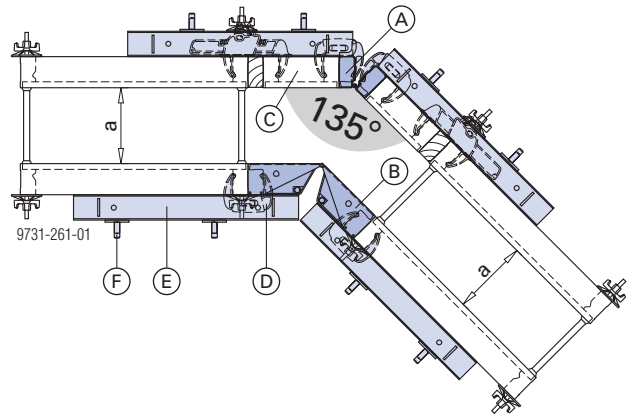
a ... 30 cm

- A Framax hinged outside corner A
- B Framax hinged inside corner I
- C Alu-Framax Xlife panel 0.60m
- D Framax quick acting clamp RU
- E Framax universal waling 1.50m
- F Framax wedge clamp

Where **universal fixing bolts** are used (only with panels 55 and 60 cm in width) instead of the quick acting clamp RU in the inside corner, an angle of 60° is also possible.



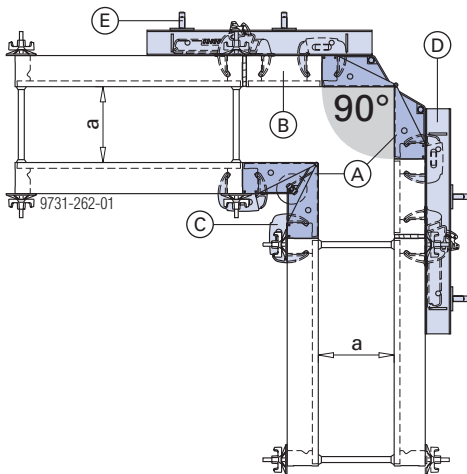
- A Framax hinged inside corner I
- B Framax universal fixing bolt
- C Star grip nut 15.0 G
- D Alu-Framax Xlife panel (55 or 60 cm wide)



a ... 30 cm

- A Framax hinged outside corner A
- B Framax hinged inside corner I
- C Alu-Framax Xlife panel 0.30m
- D Framax quick acting clamp RU
- E Framax universal waling
- F Framax wedge clamp

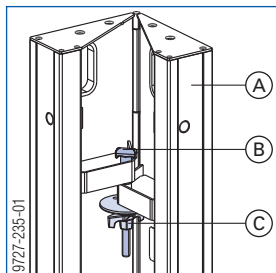
90° - 180° angles, with hinged inside corner I only



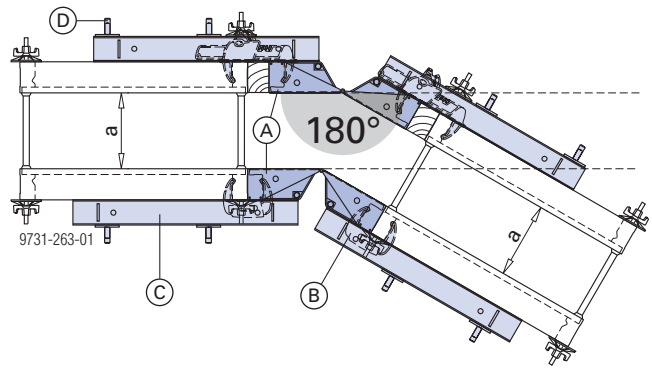
a ... 30 cm

- A** Framax hinged inside corner I
- B** Alu-Framax Xlife panel 0.30m
- C** Framax quick acting clamp RU
- D** Framax universal waling
- E** Framax wedge clamp

The hinged corner I can be fixed at a 90° angle using a universal fixing bolt and super plate 15.0.

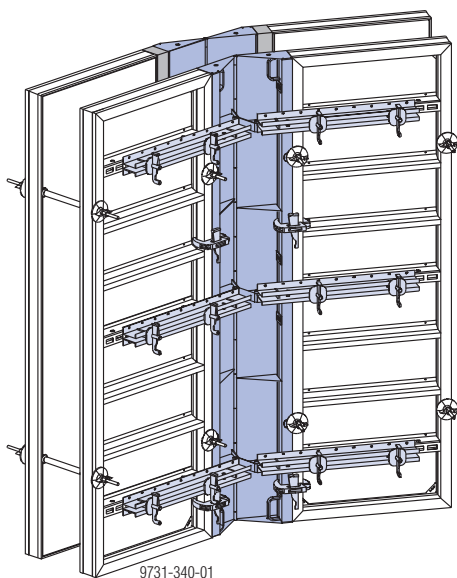


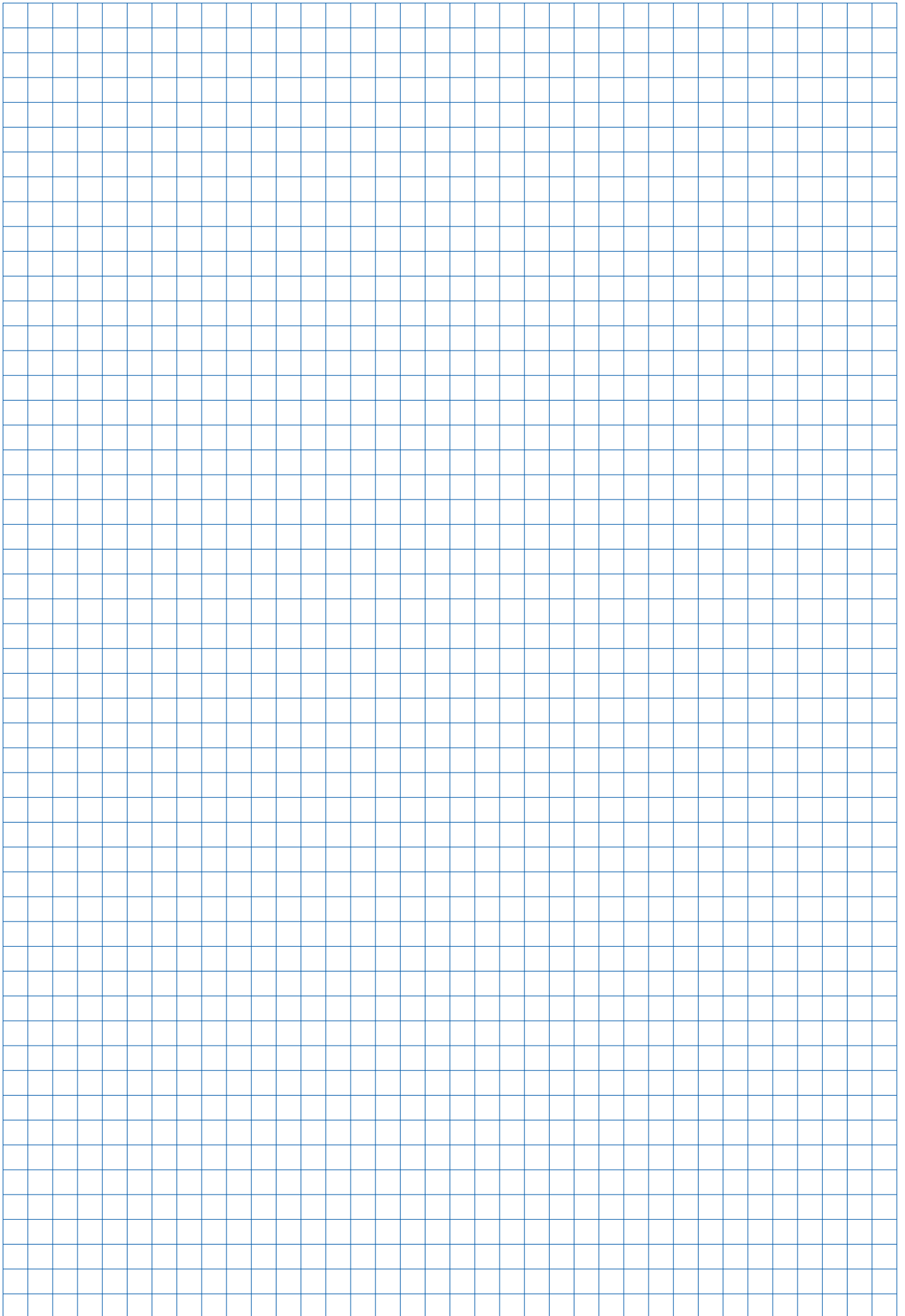
- A** Framax hinged inside corner I
- B** Framax universal fixing bolt
- C** Super plate 15.0



a ... 30 cm

- A** Framax hinged inside corner I
- B** Framax quick acting clamp RU
- C** Framax universal waling
- D** Framax wedge clamp





Stop-end formwork

There are **3 ways** of forming **stop-ends**:

- with universal panel
- with stop-end waler tie
- with universal waling

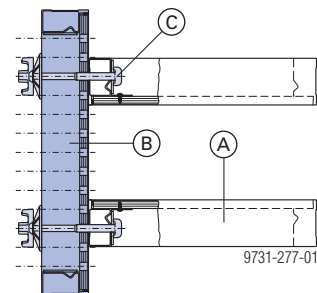
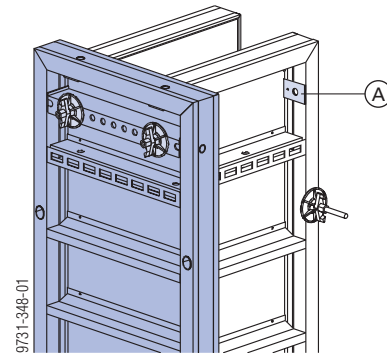
Note:

For details regarding additional inter-panel connections at stop-ends (for increased tensile loads) see section [Inter-panel connections for increased tensile loads](#).

with universal panels

The continuous **5 cm hole-grid** of the Alu-Framax Xlife universal panels can be used to form stop-ends for **wall thicknesses of up to 45 cm**.

The universal panels are attached using universal fixing bolts and super plates placed through the cross boreholes of the Alu-Framax Xlife panels 0.55 and 0.60m or universal panels.



A Only panel with cross boreholes (Alu-Framax Xlife panel 0.55 or 0.60m, or Alu-Framax Xlife universal panel)

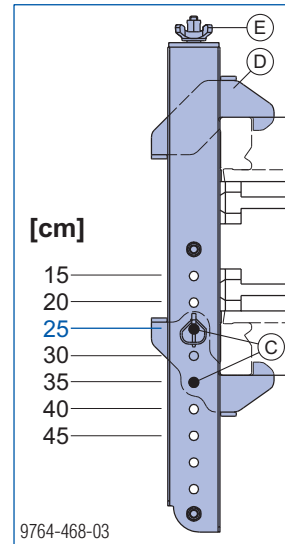
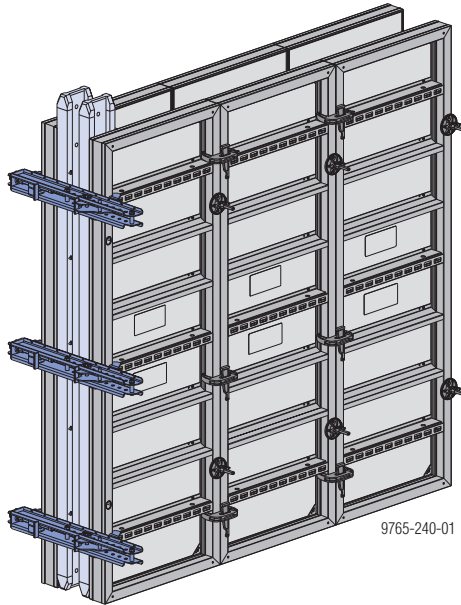
B Alu-Framax Xlife universal panel

C Super plate 15.0 + Framax universal fixing bolt

Required numbers of universal fixing bolts + Super plates 15.0:

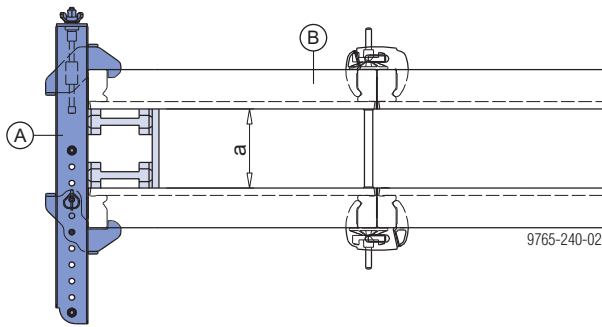
Universal panel 0.75x0.90m	4
Universal panel 0.75x2.70m	8
Universal panel 0.75x3.00m	8

with stop-end waler ties



- C Twin pins
- D Screwjack clamp
- E Star grip nut

The Frami stop-end waler tie lets you form stop-ends steplessly, from wall thicknesses of 15 cm to 45 cm.



a ... 15 cm to 45 cm

- A Framax stop-end waler tie 15-45cm
- B Alu-Framax Xlife panel

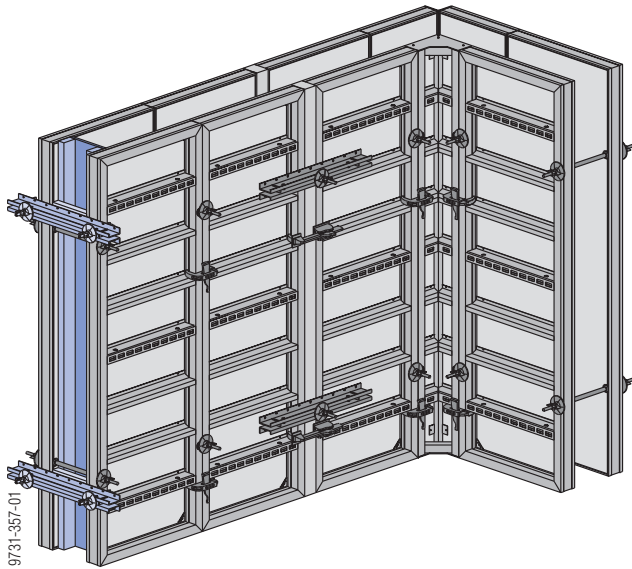
How to mount:

- ▶ Fix the required wall thickness with twin pins.
- ▶ Position the stop-end waler tie on the formwork.
- ▶ Fine-adjust the screwjack clamp with the star grip nut, and tighten it.

Number and positions of Framax stop-end waler ties

Panels longside vertical		Panels longside horizontal	
2.70m	3.00m	0.30 - 0.60m	0.75 - 0.90m
3	4	1	2

with universal walings



Universal walings make it possible to **form stop-ends continuously across any thickness of wall.**

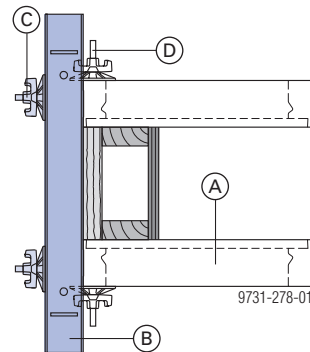
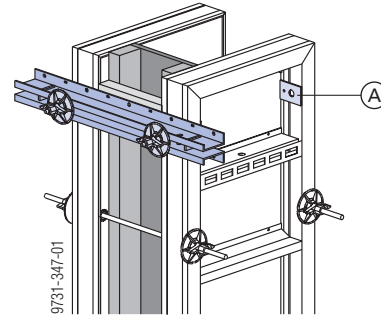
Framax universal waling:
permitted moment: 5.2 kNm

There are **2 possible ways** of fastening the universal walings:

- with universal fixing bolts
- with stop-end ties

Universal fixing bolts

The universal walings are attached using universal fixing bolts and super plates placed through the cross boreholes of the Alu-Framax Xlife panels 0.55 or 0.60m, or Alu-Framax Xlife universal panels.

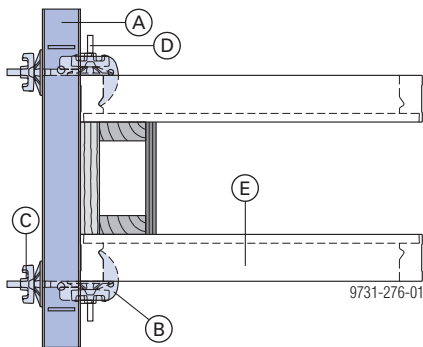
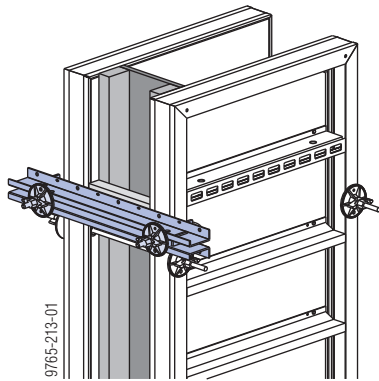


- A** Panel with cross boreholes (Alu-Framax Xlife panel 0.55 or 0.60m, or Alu-Framax Xlife universal panel)
- B** Framax universal waling
- C** Super plate 15.0 + Framax universal fixing bolt
- D** Doka tie rod system 15.0

Framax universal fixing bolt:
perm. tensile force in the sleeve: 15.0 kN

Stop-end ties

The universal walings or multi-purpose walings are fastened using Framax stop-end ties and super plates. This enables you to form **stop-ends continuously, even across large thicknesses of wall.**



- A Framax universal waling or Multi-purpose waling WS10 Top50
- B Framax stop-end tie (clamping range: 9 - 13 cm)
- C Super plate 15.0
- D Doka tie rod system 15.0
- E Alu-Framax Xlife panel

Position of the stop-end ties:

- Framax stop-end ties should not be spaced any closer than in every other panel-field, in each case half-way between the two cross profiles.
- To ensure uniform load transfer, the stop-end ties should be as close as possible to the centre point between two cross profiles.

Framax stop-end tie:

Permissible tensile force: 15.0 kN

Multi-purpose waling WS10 Top50:

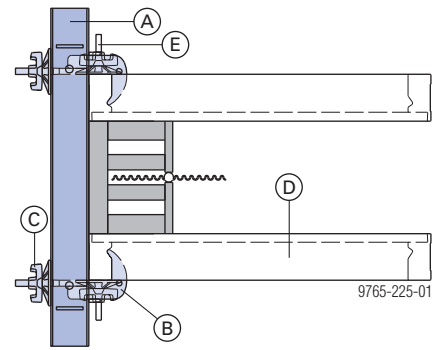
Permissible moment: 12.3 kNm

Number of universal walings / multi-purpose walings:

wall thickness	Panels upright	
	2.70m	3.00m
up to 30 cm	2	2
up to 40 cm	2	3
up to 45 cm	3	3
up to 50 cm	3	4
up to 60 cm	4	4

wall thickness	Panels on their sides	
	up to 0.45 m	more than 0.45m
up to 60 cm	1	2

Stop-ends with joint-sealing tapes



- A Framax universal waling or Multi-purpose waling WS10 Top50
- B Framax stop-end tie
- C Super plate 15.0
- D Alu-Framax Xlife panel
- E Doka tie rod system 15.0

Inter-panel connections for increased tensile loads

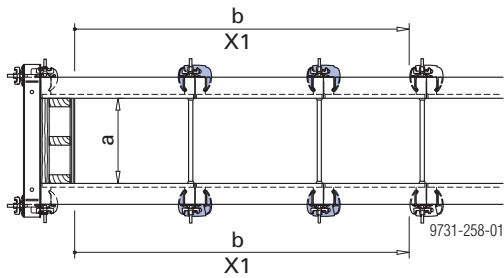
As a rule, only **2 clamps** are needed per **2.70 m** and **3 clamps per 3.00 m** formwork height as a tension link between the panels.

However, where **increased tensile loads** need to be sustained near outside corners and stop-ends, **extra inter-panel connectors are needed**.

Near stop-ends

Wall thickness from 40 to 60 cm:

- For each panel joint up to 1.95 m
 - 1 additional clamp



a ... 40 cm to 60 cm

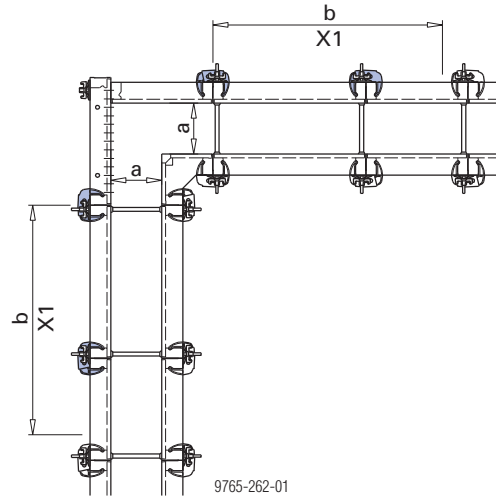
b ... 1.95 m

X1 ... 1 additional clamp

Near outside corners

Wall thickness up to 40 cm:

- For each panel joint up to 1.35 m
 - 1 additional clamp



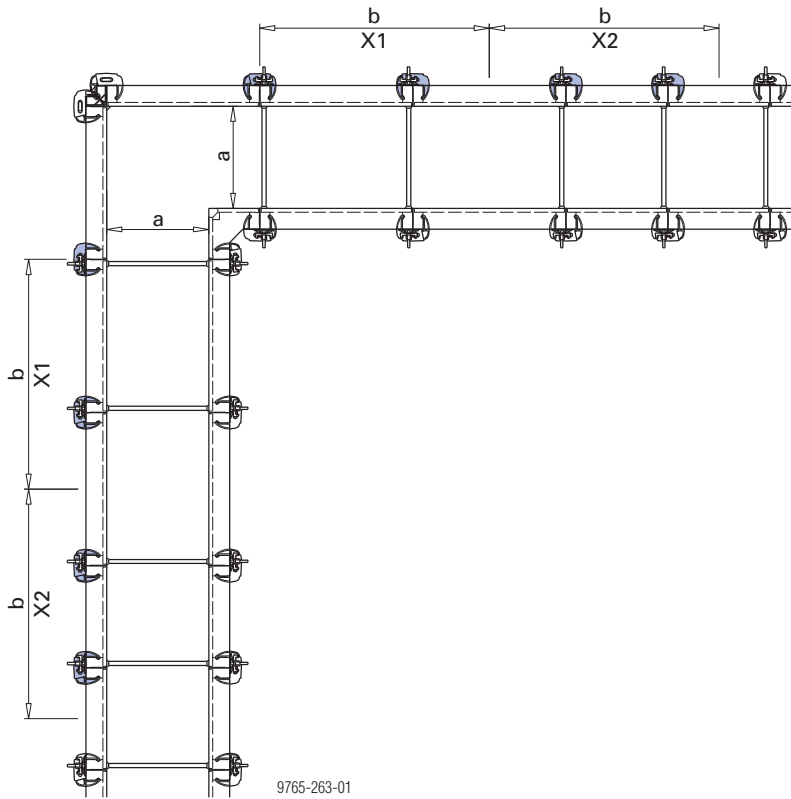
a ... up to 40 cm

b ... 1.35 m

X1 ... 1 additional clamp

Wall thickness up to 60 cm:

- For each panel joint up to 1.35 m
 - 2 additional clamps
- For each panel joint between 1.35 m and 2.70 m
 - 1 additional clamp



a ... up to 60 cm

b ... 1.35 m

X1 ... 2 additional clamps

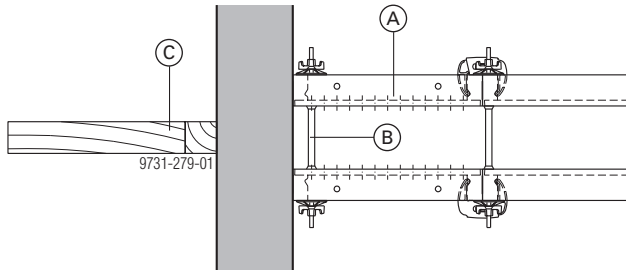
X2 ... 1 additional clamp

Wall junctions, offsets and steps

Connecting to existing walls

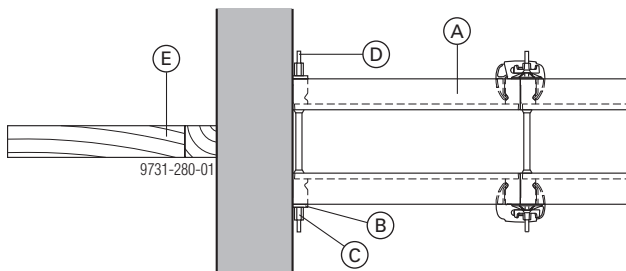
Right-angled connections

with an Alu-Framax Xlife universal panel



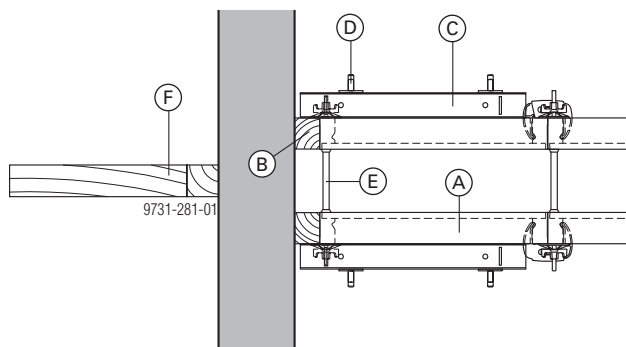
- A** Alu-Framax Xlife universal panel
- B** Doka tie-rod system 15.0
(in the universal panel, vertically a form tie is needed in each hole)
- C** In-place timber brace

with Alu-Framax Xlife panel and pressure plate 6/15



- A** Alu-Framax Xlife panel
- B** Pressure plate 6/15
- C** Hexagon nut 15.0
- D** Tie rod 15.0mm
- E** In-place timber brace

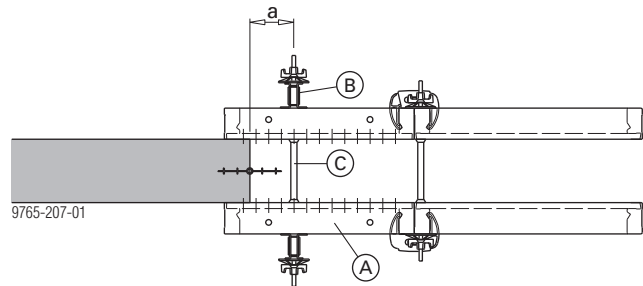
with Alu-Framax Xlife panel and squared timber



- A** Alu-Framax Xlife panel
- B** Squared timber (min. 3.5 cm up to max. 20 cm)
- C** Framax universal waling
(not necessary with squared timbers up to 5 cm wide)
- D** Framax wedge clamp
- E** Doka tie rod system 15.0
- F** In-place timber brace

In-line connections

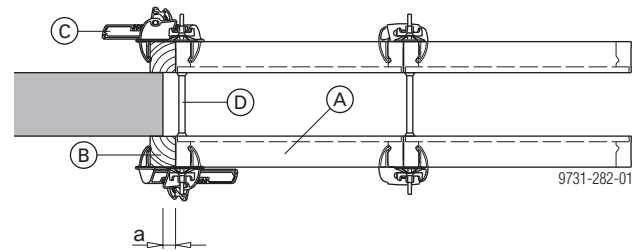
with an Alu-Framax Xlife universal panel



a ... max. 20.0 cm

- A** Alu-Framax Xlife universal panel
- B** Framax universal waling 1.50m
- C** Doka tie-rod system 15.0
(in the universal panel, vertically a form tie is needed in each hole)

with Alu-Framax Xlife panel and squared timber

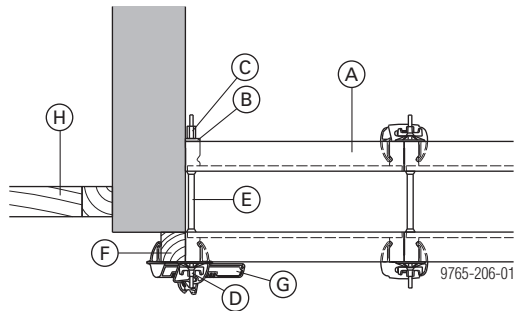


a ... max. 5 cm

- A** Alu-Framax Xlife panel
- B** Squared timber
- C** Framax multi function clamp
- D** Doka tie rod system 15.0

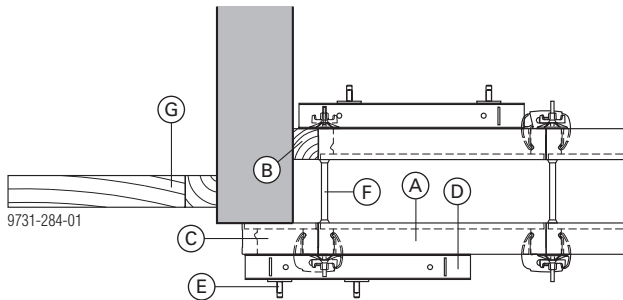
Corner connections

without closure



- A Alu-Framax Xlife panel
- B Framax pressure plate 6/15
- C Hexagon nut 15.0
- D Super plate 15.0
- E Tie rod 15.0mm
- F Squared timber
- G Framax multi function clamp
- H In-place timber brace

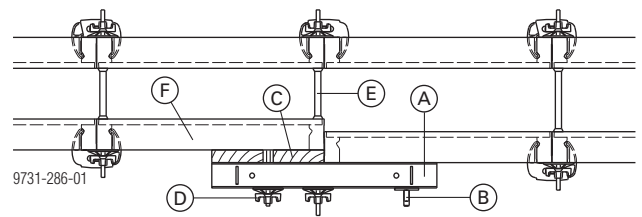
with closure



- A Alu-Framax Xlife panel
- B Squared timber (min. 3.5 cm up to max. 20 cm)
- C Alu-Framax Xlife panel 0.30m
- D Framax universal waling
(not needed if the squared timber is less than 5 cm wide)
- E Framax wedge clamp
- F Doka tie rod system 15.0
- G In-place timber brace

Wall offsets

one-sided wall offset up to max. 12 cm

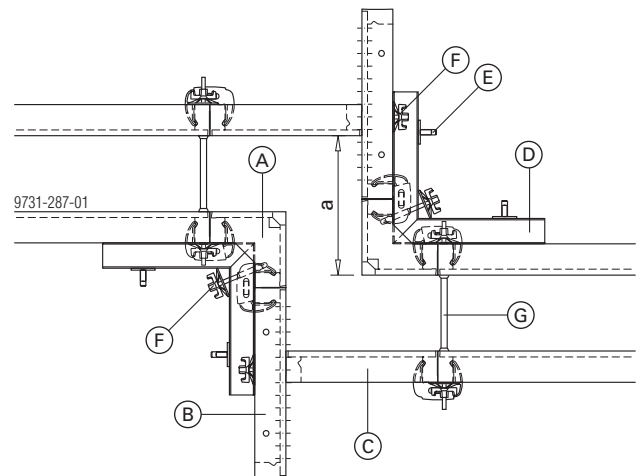


- A Framax universal waling
- B Framax wedge clamp
- C Squared timber
- D Super plate 15.0 + Framax universal fixing bolt 10-25cm
- E Doka tie rod system 15.0
- F Alu-Framax Xlife panel

Note:

Where the sections of wall are short (high longitudinal tension), shoring is necessary.

Wall steps

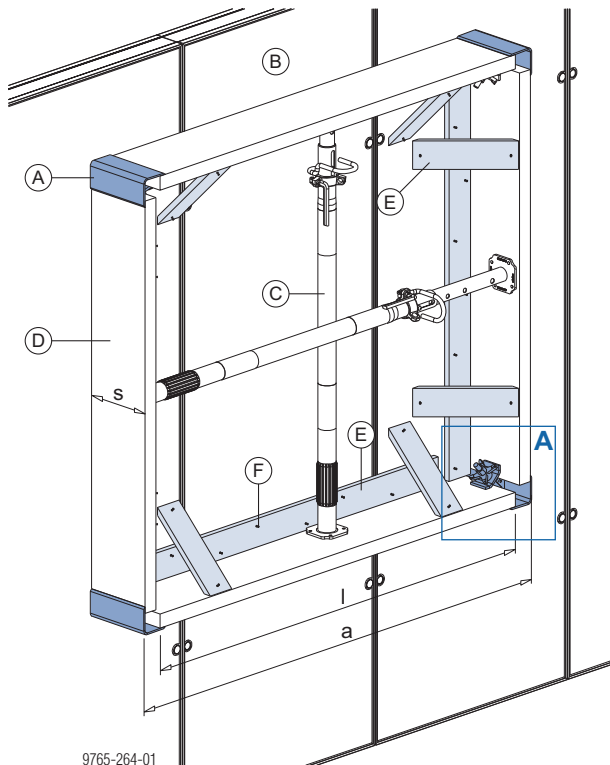


a ... 35 to 90 cm

- A Alu-Framax Xlife inside corner
- B Alu-Framax Xlife universal panel
- C Alu-Framax Xlife panel 0.55 or 0.60m
- D Framax universal corner waling
- E Framax wedge clamp
- F Super plate 15.0 + Framax universal fixing bolt
- G Doka tie rod system 15.0

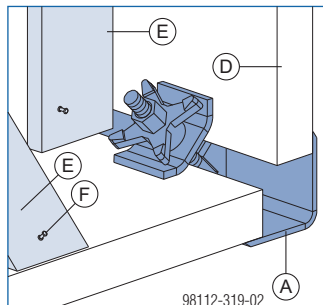
Window and door openings

Window and door box-outs can be formed quickly and stripped out non-destructively with **box-out clamps**. Planks are fixed in the box-out clamps by means of the integrated star grip nuts.



9765-264-01

Close-up A:



98112-319-02

a ... clear width of opening
 l ... length of plank = a minus 12 cm
 s ... plank width = wall thickness

- A Box-out clamp
- B Alu-Framax Xlife panel
- C Doka floor prop
- D Plank (wall thickness/2-5 cm)
- E Board (10/3 cm)
- F Double-headed nail

Assembly:

- ▶ Place the box-out clamps on the ground, fit planks into them and tighten the star grip nuts.
- ▶ Fasten the box-outs to the wall formwork with boards 10/3 cm and nails.
- ▶ Brace vertically and horizontally with suitable floor props (as statically required).

Vertical stacking of panels

Positions of the necessary connectors, form-tie components and accessories for:

- Lifting and setting down
- Crane-handling
- Pouring platform
- Pouring
- Wind loads



NOTICE

If 'hybrid' gang-forms (containing both Alu-Framax Xlife + Framax Xlife panels) are lifted and reset by crane, they must be given **additional stiffening reinforcement**.

Framax quick acting clamp RU:

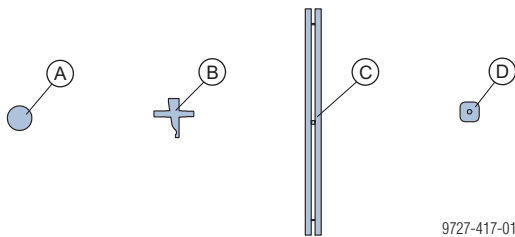
Permissible tensile force: 15.0 kN
 Permissible shear force: 4.0 kN
 Permissible moment: 0.25 kNm

Framax multi function clamp:

Permissible tensile force: 15.0 kN
 Permissible shear force: 6.0 kN
 Permissible moment: 0.45 kNm
 Values apply only when mounted on profile.

Framax universal waling:

Permissible moment (for vertical stacking of panels): 4.3 kNm
 Due to the permissible tensile load of 12 kN in the function profile, even stiffer components such as Multi-purpose walings WS10 Top50 are also subject to:
 Permissible moment: 4.3 kNm



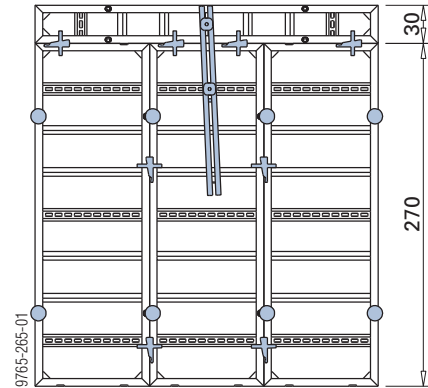
- A Tie rod + Super plate
- B Framax quick acting clamp RU
- C Framax universal waling
- D Framax wedge clamp

Alu-Framax Xlife panel 2.70m

Note:

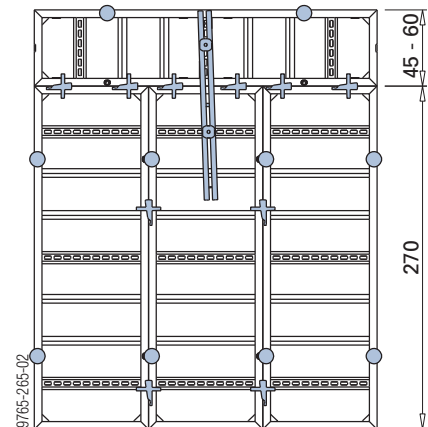
Framax multi-function clamps can be used instead of Framax quick-acting clamps RU for vertical stacking!

Formwork height: 300 cm



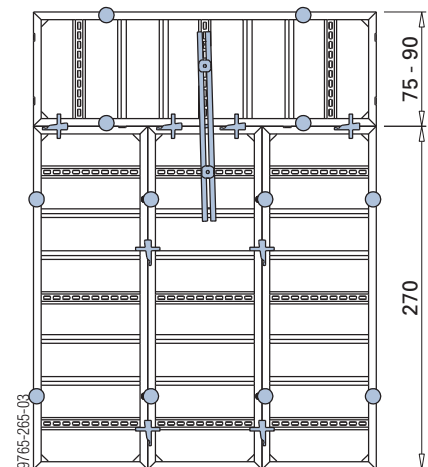
Universal waling only needed if pouring platforms are to be used.

Formwork height: 315 and 330 cm



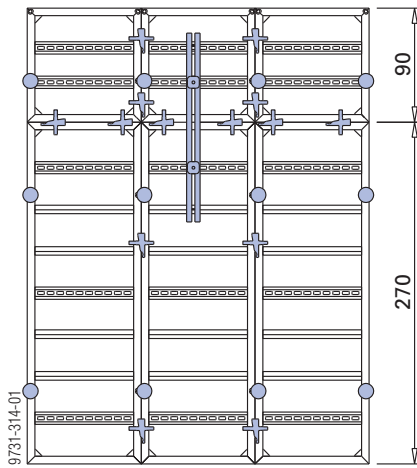
Universal waling only needed if pouring platforms are to be used.

Formwork height: 345 and 360 cm



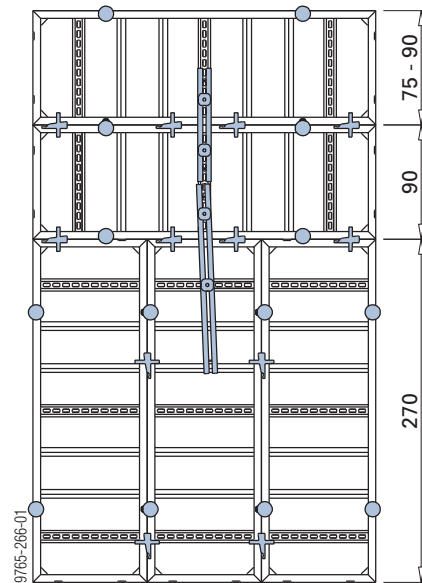
Universal waling only needed if pouring platforms are to be used.

Formwork height: 360 cm

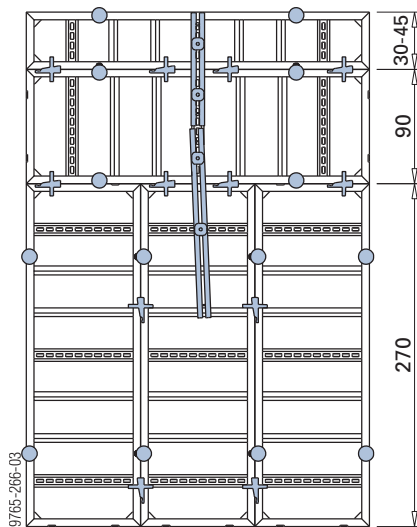


Universal waling only needed if pouring platforms are to be used.

Formwork height: 435 and 450 cm

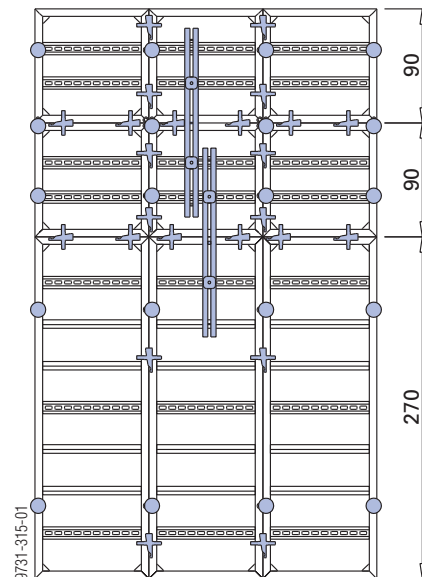


Formwork height: 390 and 405 cm



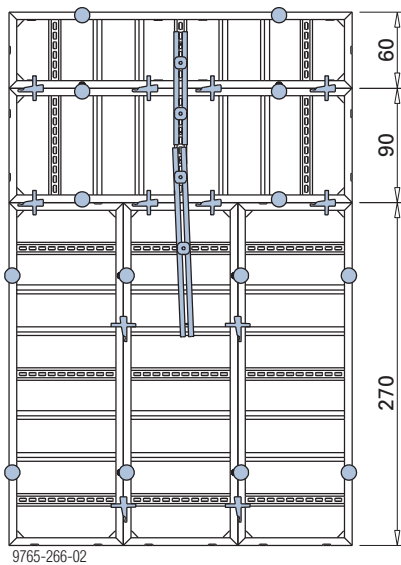
Topmost universal waling needed only if pouring platforms are to be used.

Formwork height: 450 cm



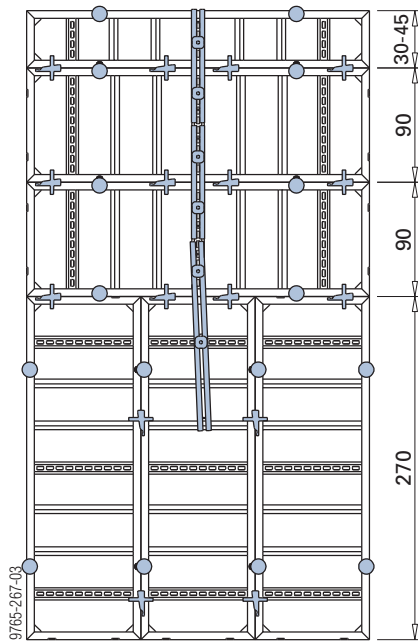
Universal walings are needed on every third panel (in terms of the width).
When universal clamps are used, the bottommost universal waling is needed only if pouring platforms are to be used

Formwork height: 420 cm



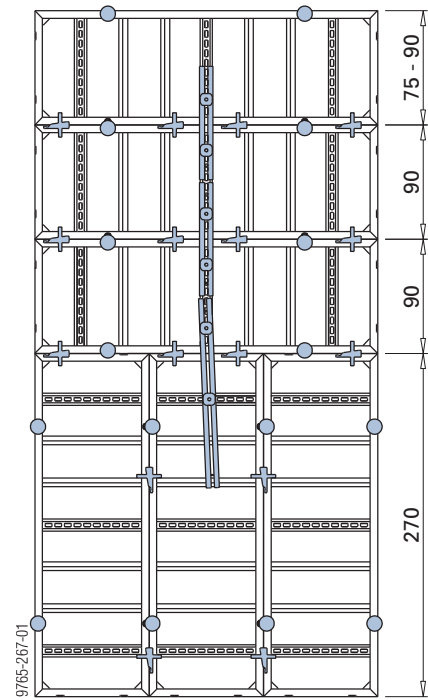
Topmost universal waling needed only if pouring platforms are to be used.
Without this universal waling, 6 clamps are needed at the topmost inter-panel joint.

Formwork height: 480 and 495 cm

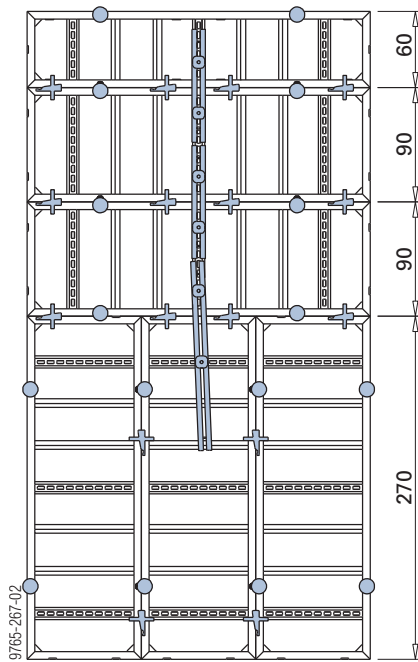


Topmost universal waling needed only if pouring platforms are to be used.

Formwork height: 525 and 540 cm

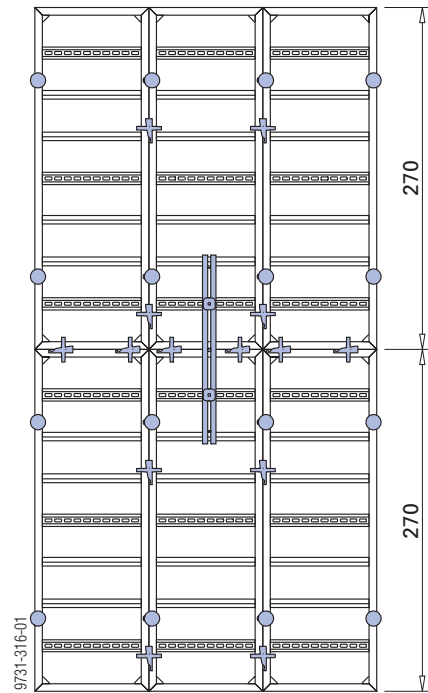


Formwork height: 510 cm



Topmost universal waling needed only if pouring platforms are to be used.
Without this universal waling, 6 clamps are needed at the topmost inter-panel joint.

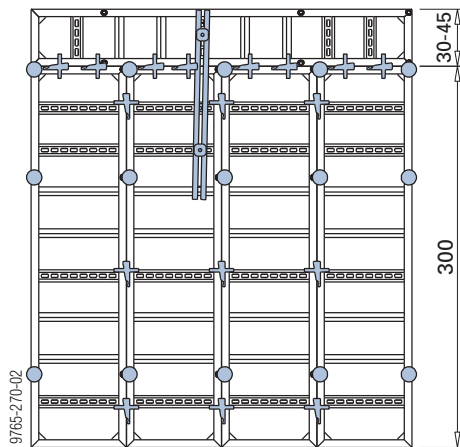
Formwork height: 540cm



A universal waling is needed on every third panel.
When universal clamps are used, the universal waling is needed only if pouring platforms are to be used.

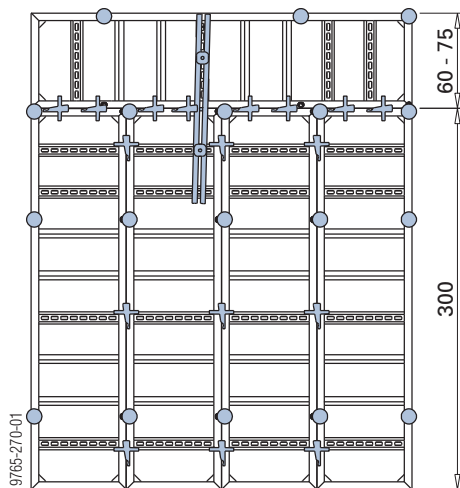
Alu-Framax Xlife panel 3.00m

Formwork height: 330 and 345 cm



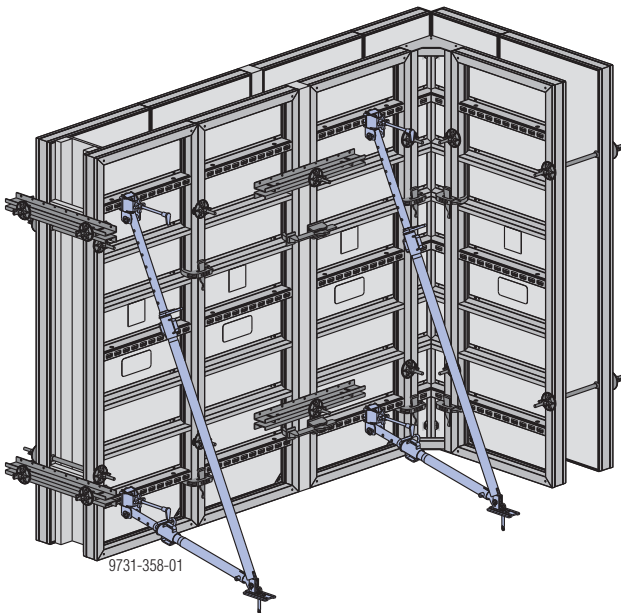
Universal waling only needed if pouring platforms are to be used.

Formwork height: 360 and 375 cm



Universal waling only needed if pouring platforms are to be used.

Plumbing accessories



Plumbing accessories brace the formwork against wind loads and make it easier to plumb and align the formwork.



WARNING

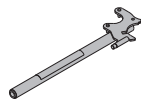
Risk of the formwork tipping over!

- ▶ Ensure stability of the formwork panels in **every** phase of the construction work!
 - ▶ Observe all applicable safety regulations!
 - ▶ If **high wind speeds** are likely, and when work finishes for the day or before prolonged work-breaks, always take extra precautions to fix the formwork in place.
- Suitable precautions:**
- set up the opposing formwork
 - place the formwork against a wall
 - anchor the formwork to the ground (e.g. using Framax floor fixing plates)
- ▶ The safety pin is only for rough adjustment of the plumbing accessory. Do not attempt to remove or release the safety pin under load.



Universal dismantling tool

For easy operation of the spindle nuts.



Number of struts per 2.70 m width of gang-form:

Formwork height [m]	Panel strut	
	340	540
4.05	1 ^{*)}	
5.40		1
Max. prevailing anchoring load: $F_k = 13.5 \text{ kN}$ ($R_d = 20.3 \text{ kN}$)		

^{*)} Up to a height of 3.30 m, the spacing of the struts can be extended to 4.05 m apart.

The values apply for a wind pressure of $w_e = 0.65 \text{ kN/m}^2$. This results in a peak velocity pressure of $q_p = 0.5 \text{ kN/m}^2$ (102 km/h) where $c_{p, net} = 1.3$. The greater wind loads encountered at exposed formwork-ends must be restrained by additional plumbing acces-

sories (e.g. struts or pipe-braces). In cases where higher wind pressure is encountered, the number of struts must be determined by static calculation.



For more information, see the Calculation Guide 'Wind loads to the Eurocodes', or contact Doka.

Note:

Every gang-form must be supported by **at least 2 plumbing accessories**.

Example:

Where the formwork height is 5.10 m, the following are needed for every 5.40 m wide gang-form:

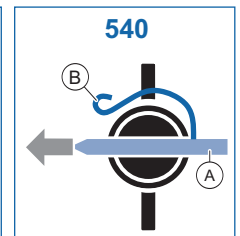
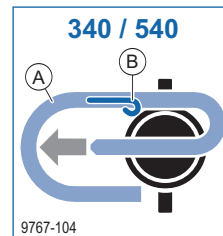
- 2 Panel struts 540

Pre-assembly

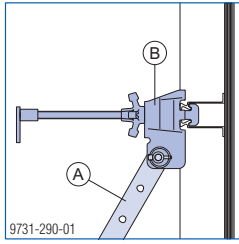
- ▶ Fix the plumbing accessory to the formwork and to the ground (see connection options below for details).
- ▶ Precision adjustment of the plumbing strut with adjusting nut.



- The safety pin (A) must be fully inserted into the plumbing accessory and secured in this position by the locking spring (B).
- The function of the locking spring (B) must be ensured.



Connection in the function profile



- A Panel strut 340 IB or 540 IB
- B Prop head EB

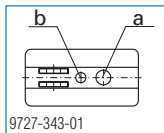
Animation:

<https://player.vimeo.com/video/268536814>

Fixing to the ground

- ▶ Anchor the plumbing accessories in such a way as to resist tensile and compressive forces!

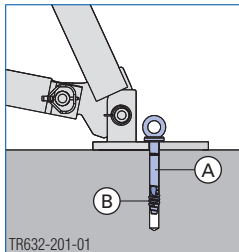
Drilled holes in the footplate of the panel strut:



- a ... Ø 26 mm
- b ... Ø 18 mm (suitable for Doka express anchors)

Anchoring the footplate

The **Doka express anchor** can be re-used many times over.



- A Doka express anchor 16x125mm
- B Doka coil 16mm

Doka express anchor 16x125mm:

Concrete strength class: min. C20/25

Cube compressive strength of the concrete during loading: $f_{ck,cube,current} = \text{min. } 15 \text{ N/mm}^2$ (corresponds to B15)



Follow the directions in the 'Doka express anchor 16x125mm' User Information booklet!

Required load-bearing capacity of alternative anchoring elements:

$R_d \geq 20.3 \text{ kN}$ ($R_k \geq 13.5 \text{ kN}$)

Follow the manufacturers' applicable fitting instructions.

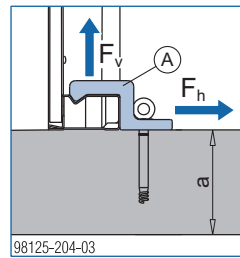
Fixing the framed formwork panel to the ground

with floor fixing plates

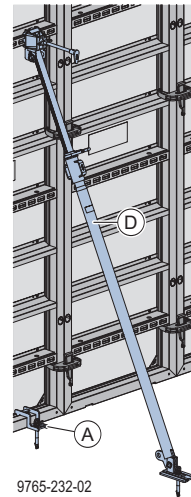
The Framax floor fixing plate is used to fix and secure framed formwork panels:

- As safeguard against lift-out by the wind.
- When panel struts are used without adjusting struts (plumbing struts).

Example: Use with plumbing strut



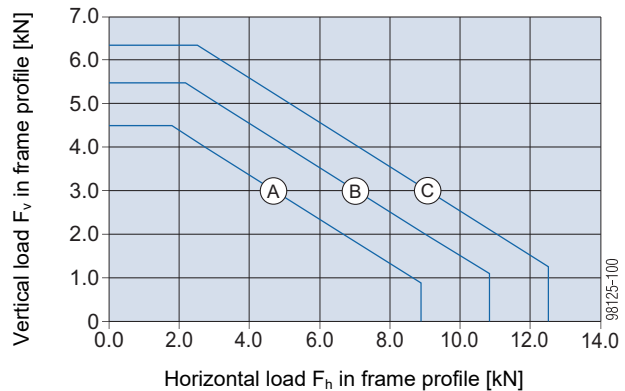
a ... min. 18 cm



Distance from edge to panel outside edge: min. 15 cm

- A Framax floor fixing plate
- D Plumbing strut 340 IB or 540 IB

Install a Framax floor fixing plate underneath each plumbing strut.

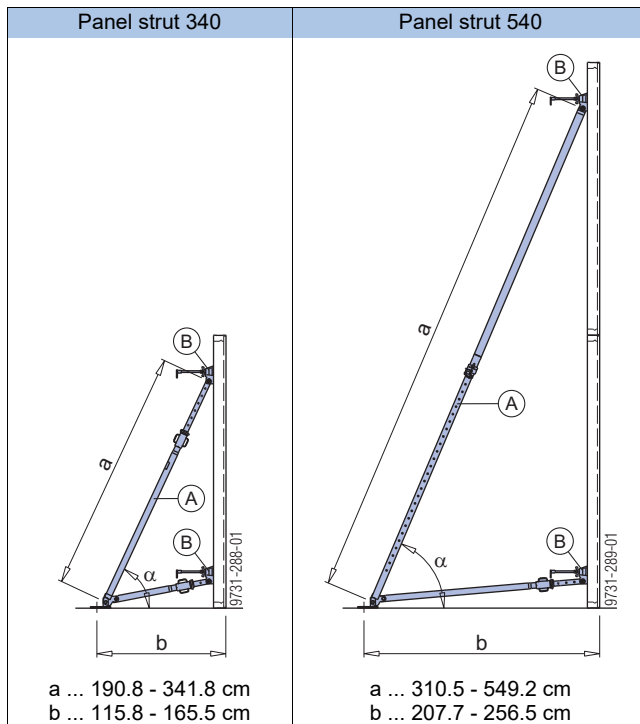


	Cube compressive strength $f_{ck,cube,current}$ of the foundation slab during loading	Max. anchoring load	
		F_{exist}	F_d
(A)	10 N/mm ² (corresponds to B10)	9.2 kN	13.8 kN
(B)	15 N/mm ² (corresponds to B15)	11.2 kN	16.8 kN
(C)	20 N/mm ² (corresponds to B20)	12.9 kN	19.4 kN

Panel struts

Product features:

- Can be extended in 8 cm increments
- Fine adjustment by screw-thread
- All parts are captive, including the inner tube which has a safety stop to prevent dropout

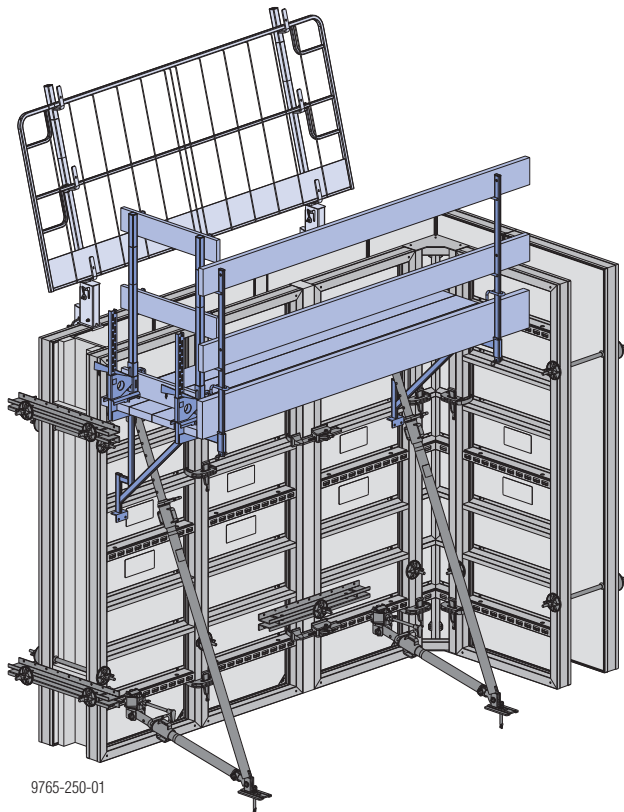


α ... approx. 60°

A Panel strut 340 IB / 540 IB

B Prop head EB

Pouring platforms with single brackets



Precondition for use:

- Observe all applicable safety regulations.
- Only fit pouring platforms to formwork structures of adequate stability ensuring that the expected loads can be taken.
- Ensure that the formwork gang is sufficiently rigid.
- Brace the formwork in a windproof manner when erecting it or when it is temporarily placed in the standing position.

Note:

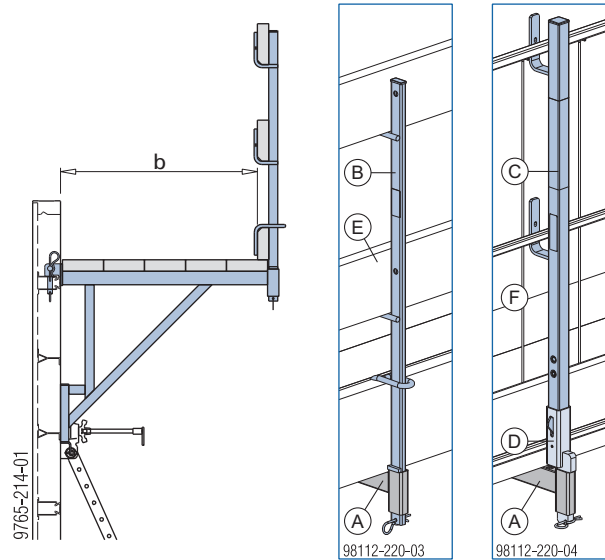
The plank and board thicknesses stated comply with the EN 338 C24 timber.

Observe all national regulations applying to deck and guardrail boards.

Framax bracket 90

Framax brackets 90 are easy to assemble by hand and provide a 90 cm wide pouring platform.

Handrail post variants:



b ... 90 cm

- A Framax bracket 90 EP
- B Handrail post 1.00m
- C Handrail post XP 1.20m
- D Bracket adapter XP FRR 50/30cm
- E Guardrail board (or scaffold tube)
- F Protective grating XP 1.20m (or guardrail boards)

Permissible service load: 1.5 kN/m² (150 kg/m²)

Load Class 2 to EN 12811-1:2003

Max. influence width: 2.00 m



NOTICE

The brackets must be secured against accidental lift-out.

Deck-boards and guardrail boards: Per 1 metre length of platform, 0.9 m² of deck-boards and 0.6 m² of guardrail boards are needed (provided on site).

Board thicknesses for centre-to-centre spans up to 2.50 m:

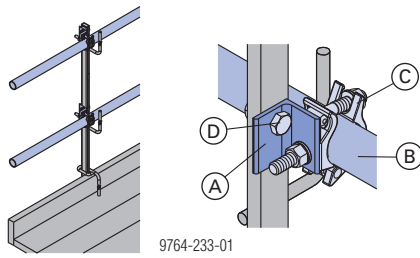
- Deck-boards min. 20/5 cm
- Guardrail boards min. 15/3 cm

Bolting items required for securing the deck-boards (fasteners per bracket):

- 5 x cup square bolt DIN 603 M10x120
4.6 galvanised
- 5 x spring washer DIN 127 A10
- 5 x hexagon nut ISO 4032 M10 8 galvanised

Fixing the guardrail boards: use nails

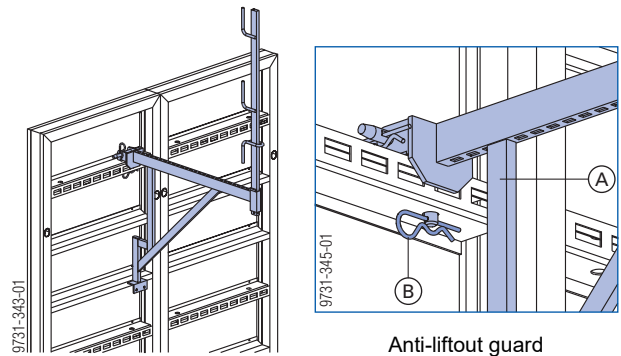
Using scaffold tubes



Tools required: Open-end spanner 22 for mounting the couplers and scaffold tubes.

- A** Scaffold tube connection
- B** Scaffold tube 48.3mm
- C** Screw-on coupler 48mm 50
- D** 1 x hexagon bolt ISO 4017 M14x40 8.8 galvanised +
1 x hexagon nut ISO 4032 M14 8 galvanised
(Bolting items required)

Possible ways of fixing to upright panels



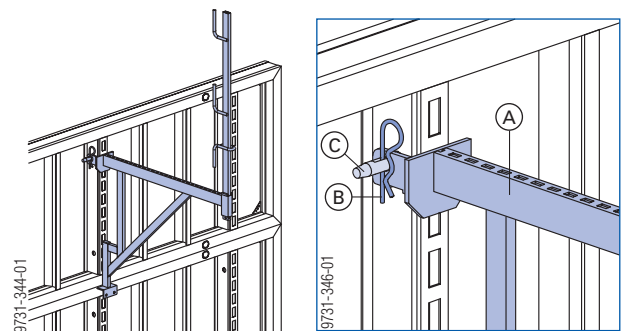
In the cross profile

- A** Framax bracket 90 EP
- B** Spring cotter

Note:

Where brackets need to be fixed to the middle cross profile of upright Alu Framax Xlife universal panels 0.90m, 2.70m and 3.00m (2008 models onward), this can also be done in the left-hand borehole.

Possible ways of fixing to horizontally placed panels



In the cross profile

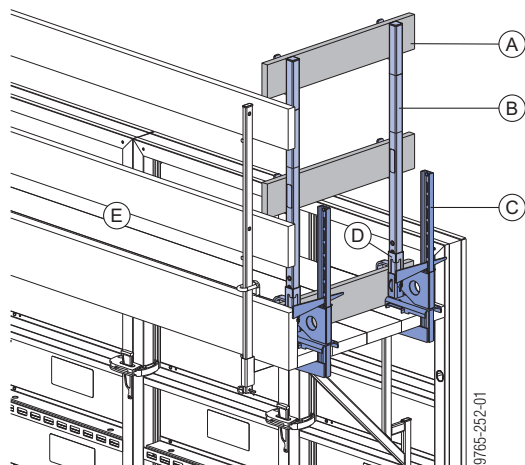
Anti-liftout guard

- A** Framax bracket 90 EP
- B** Spring cotter
- C** Wedge bolt RA 7.5

Sideguards on exposed platform-ends

On pouring platforms that do not completely encircle the structure, suitable sideguards must be placed across exposed end-of-platform zones.

Xsafe edge protection XP



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

B Handrail post XP 1.20m

C Railing clamp XP 40cm

D Toeboard holder XP 1.20m

E Pouring platform

How to mount:

- ▶ Fasten Railing clamps XP onto the decking of the pouring platform, by tightening the wedge (clamping range 2 to 43 cm).
- ▶ Working from below, push a Toeboard holder XP 1.20m onto the Handrail post XP 1.20m.
- ▶ Push the Handrail post XP 1.20m into the post-holding fixture on the Railing clamps XP until the locking mechanism engages.
- ▶ Fix guard-rail boards to the handrail post plates with nails (diam. 5 mm).

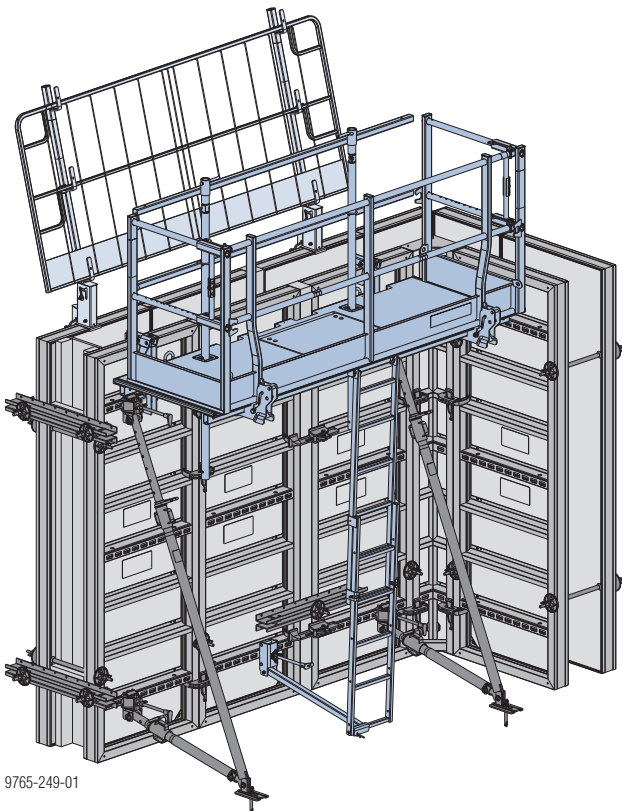
Handrail clamp S



Follow the directions in the "Handrail clamp S" User information!

Pouring platforms

If a crane is available on the site, then ready-assembled pouring platforms can also be used.



Precondition for use:

- Observe all applicable safety regulations.
- Only fit pouring platforms to formwork structures of adequate stability ensuring that the expected loads can be taken.
- Ensure that the formwork gang is sufficiently rigid.
- Brace the formwork in a windproof manner when erecting it or when it is temporarily placed in the standing position.



NOTICE

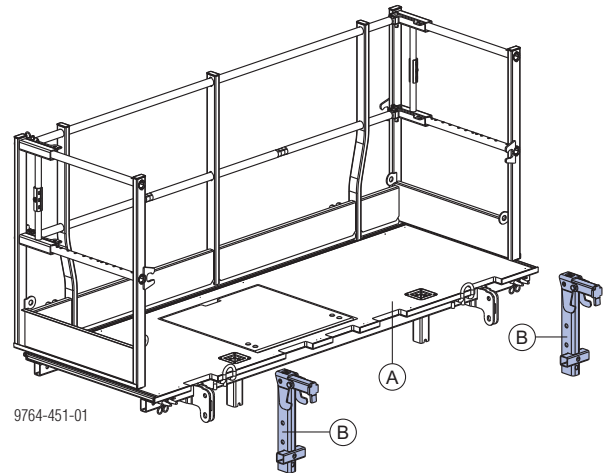
- If the formwork is lifted with the pouring platform still mounted to it, the platform must be secured so that it cannot slip to either side.
- When vertical stacking with horizontal panels, these panels have to be anchored at the top as well if pouring platforms are to be used!

Xsafe plus platform

These pre-assembled, fold-out working platforms with their integral side railings, self-closing man-hole lids and integrable ladders are ready for immediate use and greatly improve workplace safety.

Note:

For detailed information on platform sizes, handling and accessories, see the 'Xsafe platform system plus' User Information booklet.



A Xsafe plus platform

B Xsafe plus lifting adapter Framax (2 per platform)

Permissible service load: 1.5 kN/m² (150 kg/m²)

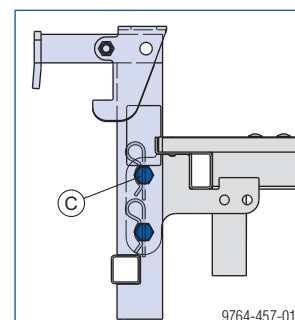
Load Class 2 to EN 12811-1:2003

Preconditions for using the Xsafe plus platform with the Xsafe plus lifting adapter Framax:

- max. one platform level
- max. vertical stacking configuration where the gang-form is assembled face-down on the ground and has a width of 2.70 m:
2.70m + 0.90m and
3.00m + 0.75m
- where panels are vertically stacked, a universal walling is needed on the panel joint

Installing the lifting adapter onto the platform:

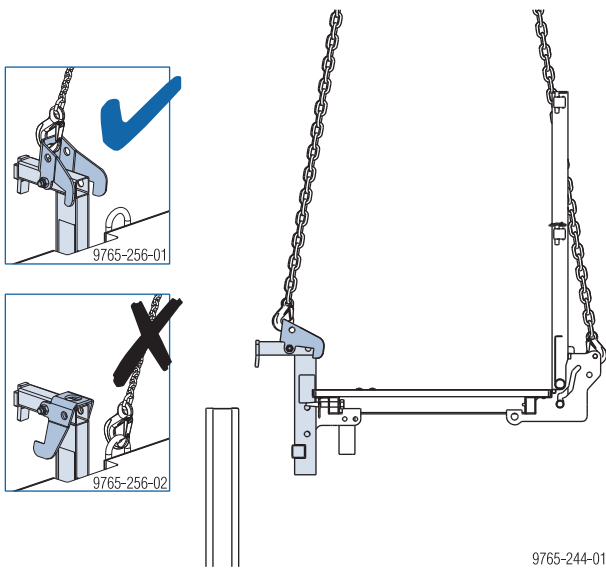
- Use Connecting pins 10cm and Spring cotters 5mm to install the lifting adapters to the platform.



C Connecting pin 10cm and Spring cotter 5mm of the Xsafe plus platform

Lifting the platform onto the formwork:

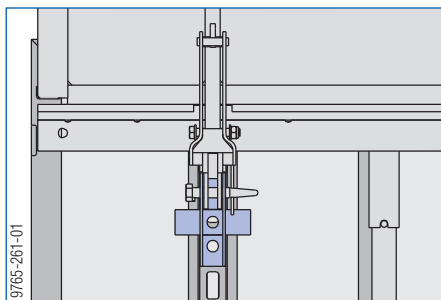
- ▶ Attach a 4-part lifting chain (e.g. Doka 4-part chain 3.20m) to the platform and hoist it towards the formwork.



- ▶ Fix the platform to the top of the formwork.

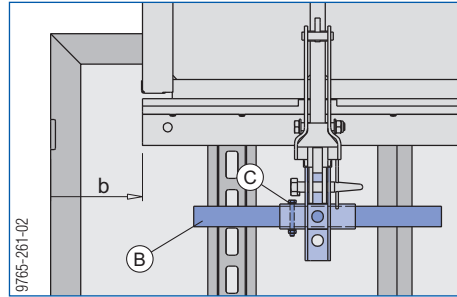
Note:

On **horizontal panels**, install the platform so that it is perfectly aligned with the panel (bearing profile of the lifting adapter is resting on the cross profile of the panel).



If under exceptional circumstances the platform is mounted at an offset to the outer edge of the panel, the bearing profile of the lifting adapter has to be widened.

- ▶ Push a hollow section into the bearing profile and secure it with a screw to prevent it dropping out.



b ... offset

B Hollow section 40x40x2, L=550 mm, with Ø 10 mm borehole (site-provided)

C Hexagon bolt M8x65 + hexagon nut M8

Consequently, the bearing profile of the lifting adapter is resting on two cross profiles of the panel.

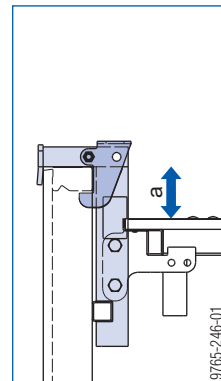
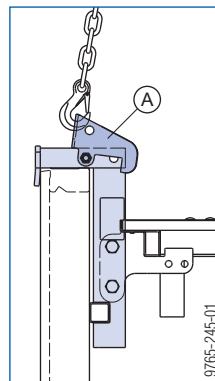
- ▶ Detach the 4-part lifting chain.

The securing hooks latch into place automatically.



Do a sight-check to make sure that the securing hooks have latched into place!

The platform is now secured against accidental lift-out.



a ... 13 cm

A Securing hook

The level of the floor planking is 13 cm below the top edge of the formwork. This means that there is a 'boundary' on the side facing the formwork.

Lifting the platform off the formwork:

- ▶ Attach a 4-part lifting chain to the platform and raise it.

When the platform is raised by the 4-part lifting chain on the securing hook, the platform is automatically unlocked.

Extending the platform to either side

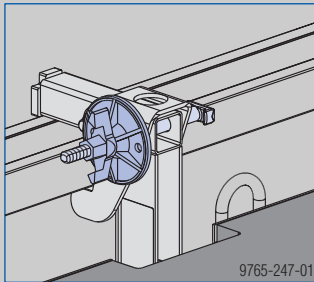
The platform can be lengthened at either end by using the **Xsafe plus platform extension 0.60m**.



CAUTION

Platforms with platform extensions can tip up. Falling hazard!

- ▶ Do not step onto the **platform extension** until the safety hooks have been fixed in place.
- ▶ **Fix the safety hooks** of both lifting adapters with Framax universal fixing bolts and Super plates 15.0.



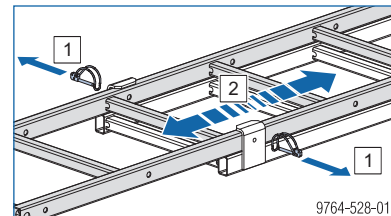
Xsafe plus telescopic ladder

Length adjustment of telescopic ladder

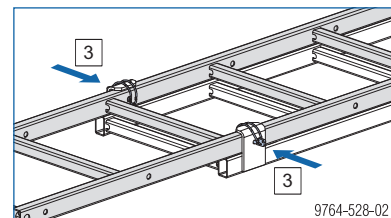
Extension range of the Xsafe plus telescopic ladder: **155 to 271 cm**

Adjust the telescopic ladder to the required length:

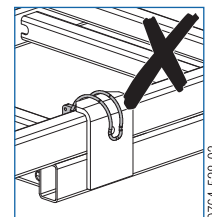
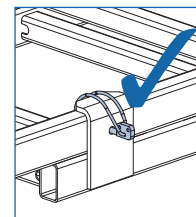
- 1) Remove both linch pins.
- 2) Telescope the ladder to the required length.



- 3) Reinsert both linch pins **from the outside toward the inside**.

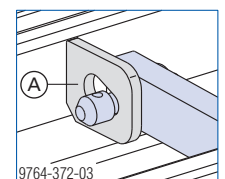
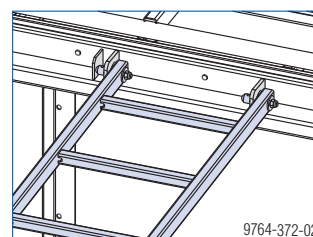


Before stepping on the ladder, check that the linch pins are correctly installed.



9764-528-03

Connecting the ladder to the Xsafe plus platform



A Integrated ladder connection on the Xsafe plus platform

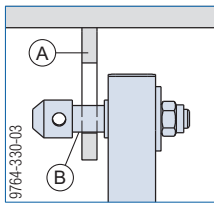
The integrated ladder connection secures the ladder against accidental lift-out.

Note:

If desired, the ladder can also be secured with a linch pin as well.

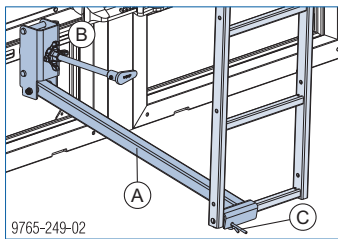


The groove in the ladder pin (B) must be engaged in the hole of the ladder connection (A)!



Connecting the ladder to the formwork

Connection to the formwork:



- A Xsafe plus ladder starter piece
- B Function profile of the Alu-Framax Xlife panel
- C Spring cotter of the Xsafe plus ladder starter piece

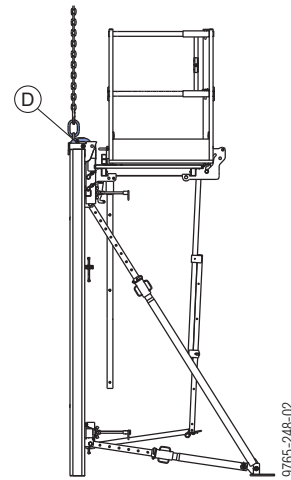
Animation:

<https://player.vimeo.com/video/256374934>

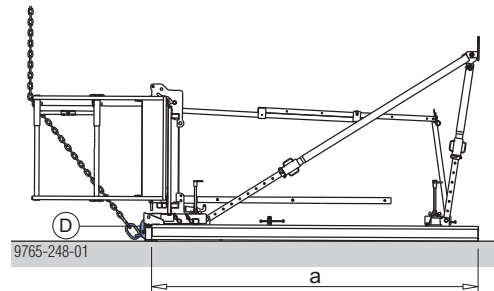
Moving the formwork and the platform in one piece

The **Framax lifting hook** makes it possible to raise and reposition the formwork + Xsafe plus platform in one piece.

Repositioning:



Lifting / laying down:



a ... max. 2.70m + 0.90m or max. 3.00m + 0.75m

- D Framax lifting hook



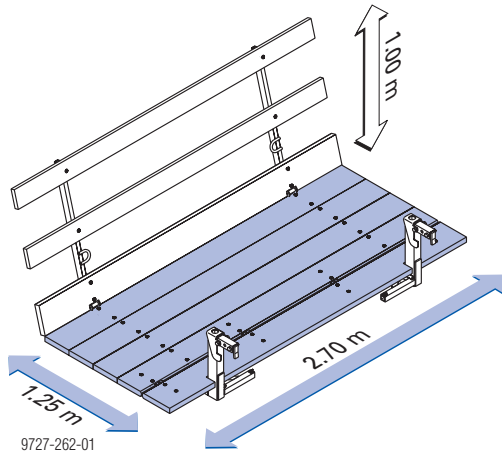
CAUTION

It is not permitted to raise formwork units with heights of >2.70m+0.90m or >3.00m+0.75m into the vertical, or to lay them down into the horizontal!

➤ In these cases, remove the platform before lifting / laying down the formwork.

Framax pouring platform U 1.25/2.70m

A pre-assembled, foldable, ready-to-use platform, 1.25 m wide, for convenient and safe working.



Permitted service load: 1.5 kN/m² (150 kg/m²)
Load Class 2 to EN 12811-1:2003



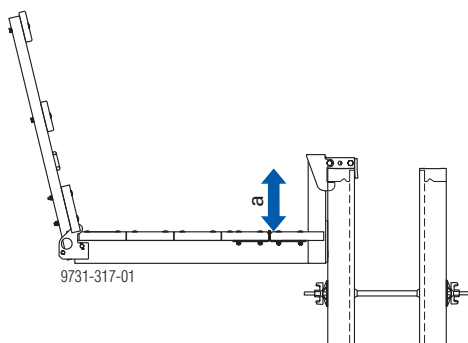
NOTICE

Planks can be used to bridge decking-to-decking gaps up to 50 cm for length adaptation. Minimum plank overlap 25 cm.



Other possible areas of use for the Framax pouring platform U:

- Framed formwork Framax Xlife
 - Large-area formwork Top 50 (with Top50 adapter for Framax pouring platform U)
 - Wall formwork FF20 (with FF20 adapter for Framax pouring platform U)
- The level of the floor planking is 30 cm below the top edge of the formwork. This means that there is a 'boundary' on the side facing the formwork.

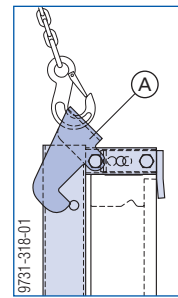


a ... 30 cm

Lifting the platform onto the formwork:

- ▶ Attach a four-part lifting chain (e.g. Doka 4-part chain 3.20m) to the pouring platform and hoist it towards the formwork.

- ▶ Fix the pouring platform to the top of the formwork.

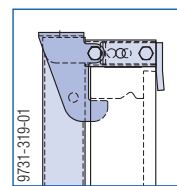


A Safety hook

- ▶ Detach the four-part lifting chain. The safety hooks latch into place automatically.



Do a sight check to make sure that the safety hooks have latched into place!



The pouring platform is now secured against accidental lift-out.

Lifting the platform off the formwork:

- ▶ Attach a four-part lifting chain to the pouring platform and raise it. When the pouring platform is raised by the four-part lifting chain on the safety hook, the platform is automatically unlocked.

Moving the formwork and the platform in one piece

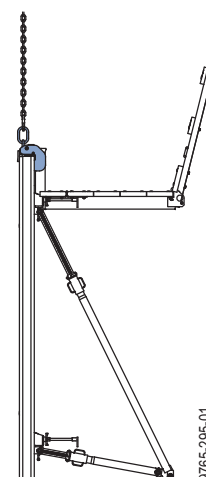
The **Framax lifting hook** allows the formwork to be repositioned together with the pouring platform.



NOTICE

It is not permissible to lift up or lay the formwork down flat together with the pouring platform!

Repositioning:



Sideguards on exposed platform-ends

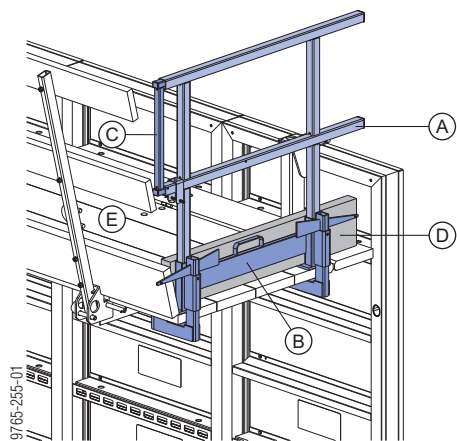
On pouring platforms that do not completely encircle the structure, suitable sideguards must be placed across exposed end-of-platform zones.

Note:

The plank and board thicknesses stated comply with the EN 338 C24 timber.

Observe all national regulations applying to deck and guardrail boards.

Side handrail clamping unit T



- A Side handrail clamping unit T
- B Clamping part
- C Integrated telescopic handrail
- D Guard-rail board min. 15x3 cm (site-provided)
- E Pouring platform

How to mount:

- Fasten the clamping component to the floor planking of the pouring scaffold, using the wedge (clamping range 4 to 6 cm).
- Slot in the railing.
- Extend the telescopic railing to the desired length and secure it.
- Insert toeboard (guard-rail board).

Opposing guardrail

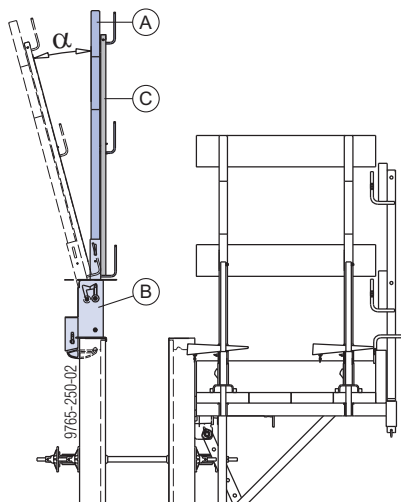
If there are work platforms mounted on one side of the formwork only, then a fall-protection barrier must be mounted to the opposing formwork.

Note:

The plank and board thicknesses stated comply with the EN 338 C24 timber..

Observe all national regulations applying to deck and guardrail boards.

Xsafe edge protection XP

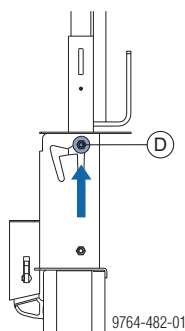


α ... 15°

- A Handrail post XP 1.20m
- B Framax adapter XP
- C Protective grating XP or guardrail boards

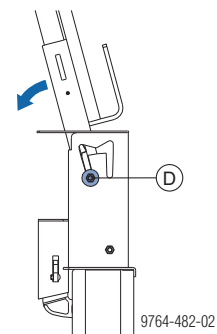
If necessary (e.g. to enlarge the available work-space during pouring), the safety barrier can be tilted outward by 15°.

► Push up the safety bolt on the adapters XP until the spring snaps into place (allow for overlap between protective gratings and guardrail boards).



- D Safety bolt

► Tilt the safety barrier outward.



- D Safety bolt

The safety bolt now automatically drops and secures the tilted barrier unit.



Do a sight-check to make sure that the safety bolt is in the correct position!

Types of safety barrier:

	Protective grating XP	Guardrail boards
Handrail post XP 1.20m		
Handrail post XP 0.60m		

- a ... 143 cm
- b ... 93 cm
- c ... at least 100 cm
- d ... 103 cm
- e ... 106 cm

- E Handrail post XP 1.20m
- F Handrail post XP 0.60m
- G Protective grating XP 1.20m
- H Protective grating XP 0.60m
- I Platform decking
- J Guardrail board min. 15 cm (site-provided)

**NOTICE**

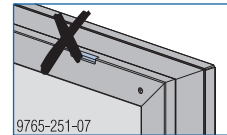
- Note the necessary minimum distance of 100 cm from platform decking to top of railing!
- When Handrail posts XP 1.20m and guard-rail boards are used to construct the safety barrier, it is not permissible to install guard-rail boards in the top railing shackles!

Assembly

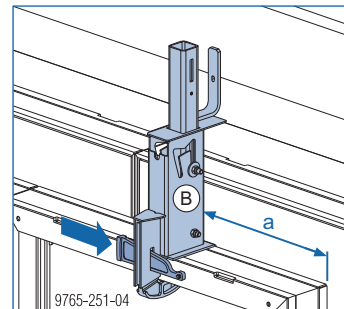
The counter railing can be mounted to both upright and face-down (ground-assembled) gang-forms.

**NOTICE**

- ▶ Do not position the Framax adapter XP directly over a lifting edge!



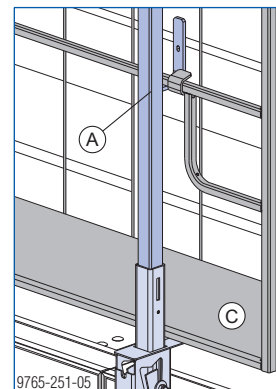
- ▶ Mount the Framax adapter XP on the frame profile and fix it in place with the wedge.



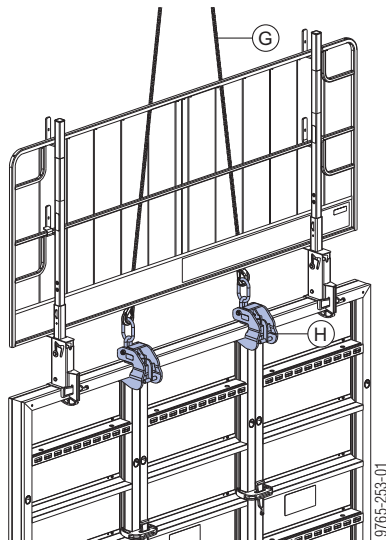
a ... approx. 35 cm (position of the two endmost Framax adapters XP on a gang-form)

B Framax adapter XP

- ▶ Push the Handrail post XP into the post-holding fixture on the Framax adapter until the locking mechanism engages.
- ▶ Fit on a Protective grating XP or guardrail boards.
- ▶ Use Velcro® fasteners 30x380mm to secure the Protective gratings XP to the Handrail posts XP, and use nails (Ø 5 mm) to secure guardrail boards.

**A Handrail post XP 1.20m****C Protective grating or guardrail boards**

Lifting by crane

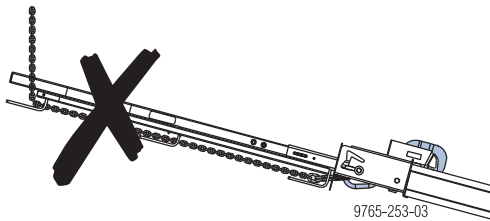


G Doka 4-part chain 3.20m

H Framax lifting hook

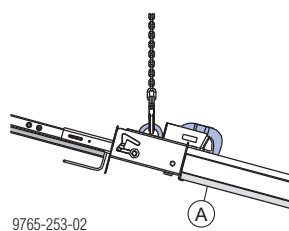
When lifting gang-forms together with counter railings assembled from the Xsafe edge protection XP, remember the following points:

- The guard rails must be in the vertical position when the gang-form is raised or laid down.
- Elastic deformation of the guard rails may occur because the 4-part chain is resting against the protective grating or guardrail boards while the gang-form is being lifted.
- When a gang-form is lifted, repositioned or laid down, the 4-part chain must not be led around the protective grating or the guardrail board.

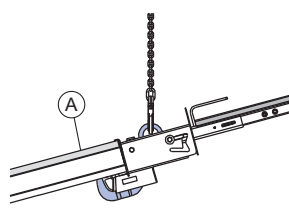


Make sure that the 4-part chain is in the right position:

- Placing down onto the form-ply side
- Picking up from this position

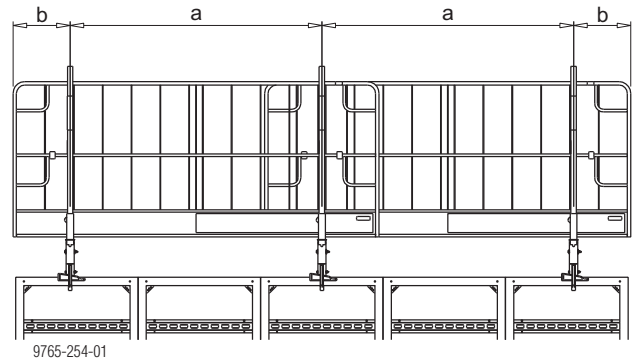


- Placing down onto the back-face of the formwork (e.g. for cleaning the form-facing)
- Picking up from the cleaning position
- Repositioning the upright gang-form



A Form-ply side

Structural design



a ... centre-to-centre span

b ... cantilever

Note:

The wind conditions likely to be encountered in Europe, in accordance with EN 13374, are largely recognised by the peak velocity pressure $q=0.6 \text{ kN/m}^2$ (highlighted in the tables).

Permissible span (a)

		Peak velocity pressure q [kN/m ²]			
		0.2	0.6	1.1	1.3
Permissible centre-to-centre span	Protective grating XP	2.5 m		-	
	Guardrail board 2.4 x 15 cm	1.9 m			
	Guardrail board 3 x 15 cm	2.7 m		2.6 m	
	Guardrail board 4 x 15 cm	3.3 m	3.1 m	2.6 m	

Permissible cantilever (b)

		Peak velocity pressure q [kN/m ²]			
		0.2	0.6	1.1	1.3
Permissible cantilever	Protective grating XP	0.6 m		0.4 m	-
	Guardrail board 2.4 x 15 cm	0.5 m			
	Guardrail board 3 x 15 cm	0.8 m			
	Guardrail board 4 x 15 cm	1.4 m			

Ladder system

The Ladder system XS permits safe vertical access to and from the intermediate platforms and pouring platforms:

- when attaching/detaching the formwork to/from the crane tackle
- when opening/closing the formwork
- when placing the reinforcement
- during pouring

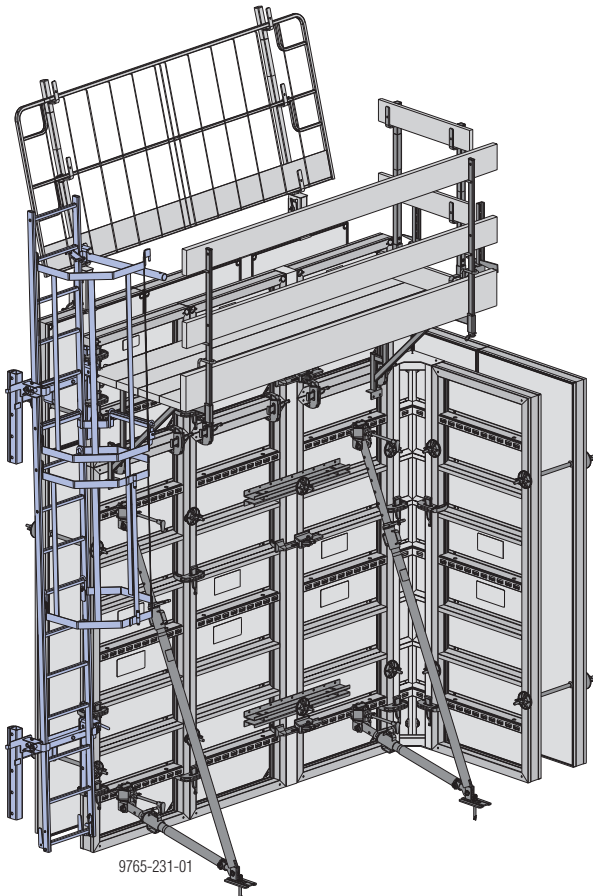
Note:

The Ladder system XS must be implemented in such a way that all national regulations are complied with.



WARNING

- ▶ The Ladders XS may only be used as part of the XS system, and must NOT be used separately (as "lean-to" ladders).



Assembly

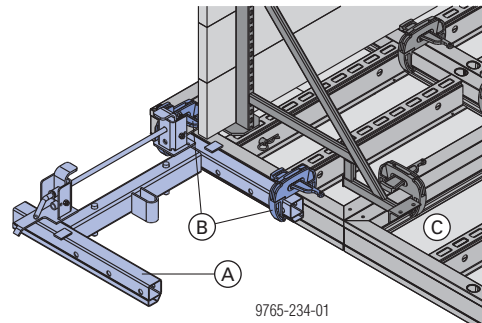
Preparing the formwork

- ▶ Pre-assemble gang-forms face-down on a prepared flat area (see the section headed [Inter-panel connections](#)).
- ▶ Install platforms and panel struts on the laid-flat panel (see the sections headed [Pouring platforms](#) and [Plumbing accessories](#)).

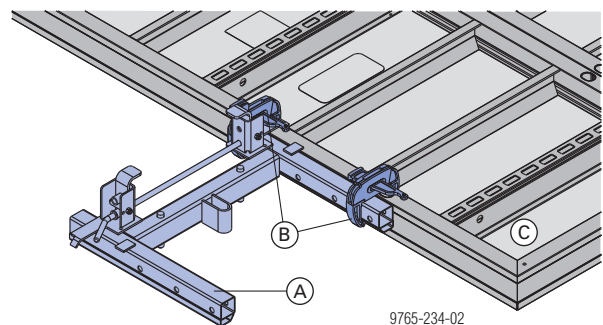
Attaching connectors to the formwork

- ▶ Place the Connector XS Wall formwork against the frame profile near the top of the formwork.
- ▶ Fasten the Connector XS Wall formwork to the frame profile using two Quick acting clamps RU.
- ▶ Mount a Connector XS Wall formwork near the bottom of the formwork, in the same way.

Top "Connector XS Wall formwork"



Bottom "Connector XS Wall formwork"



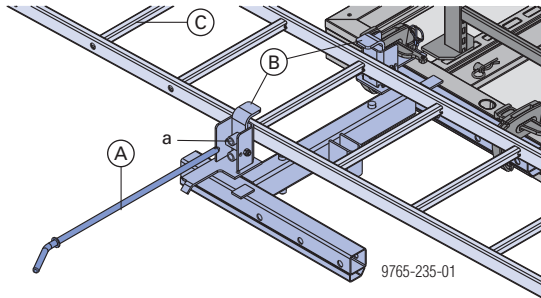
- A Connector XS Wall formwork
- B Quick acting clamp RU
- C Alu-Framax Xlife

- ▶ For formwork heights above 5.85 m, an extra Connector XS Wall formwork must be attached in the same way near the middle of the formwork (i.e. approx. half-way up). This extra connector prevents the ladder swaying when site crew climb up or down it.

Fixing the ladder

to the top "Connector XS Wall formwork"

- ▶ Pull out the push-in bolt, and pivot the two safety hooks out of the way.
- ▶ Place the System ladder XS 4.40m onto the Connector XS, with the hooking brackets facing downwards.
- ▶ Close the safety hooks.
- ▶ Insert the push-in bolt into whichever rung of the ladder is suitable for the height of the formwork, and secure it with a linch pin.

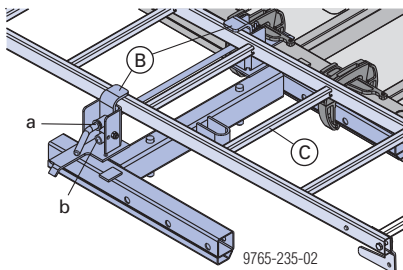


- in the front position (a)

- A** Push-in bolt
- B** Safety hooks
- C** System ladder XS 4.40m

to the bottom "Connector XS Wall formwork"

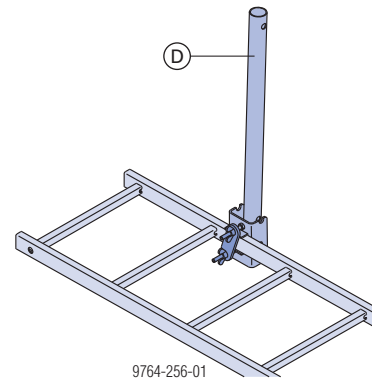
- ▶ Pull out the push-in bolt, pivot both safety hooks out of the way, and place the ladder onto the Connector XS.
- ▶ Close the safety hooks, re-insert the push-in bolt and secure it with a linch pin.



- in the front position (a) for one single ladder
- in the rear position (b) in the telescoping zone (for 2 ladders)

- B** Safety hooks
- C** Ladder XS

- ▶ Mount the Securing barrier XS to the ladder, with fixing hooks and wing-nuts.



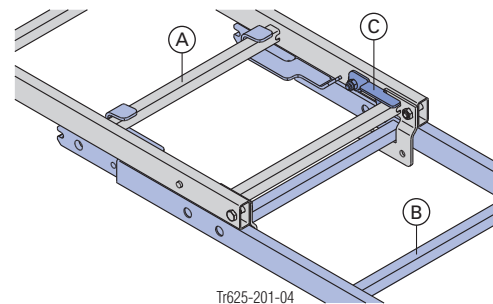
D Securing barrier XS

The components needed for mounting the Securing barrier XS are captively attached to it.

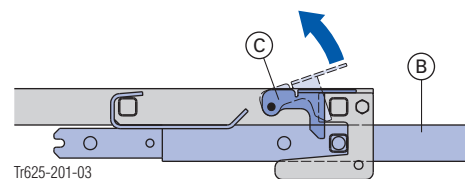
Ladder system XS for heights above 3.75 m

Telescoping ladder extension (for adjusting to ground level)

- ▶ To telescope the ladders past one another, lift the safety latch on the ladder and fix the Ladder extension XS 2.30m onto the desired rung of the other ladder.



Close-up

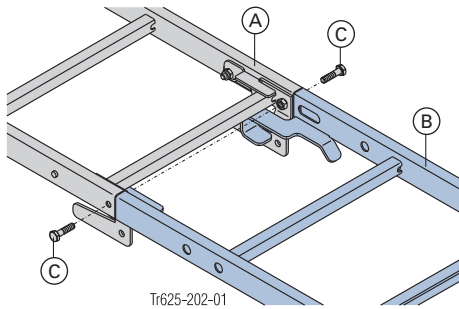


- A** System ladder XS 4.40m
- B** Ladder extension XS 2.30m
- C** Safety latch

A telescoping joint between two Ladder extensions XS 2.30m can be made in the same way.

Permanently fixed ladder extension

- ▶ Insert the Ladder extension XS 2.30m into the uprights of the System ladder XS 4.40m, with its hooking brackets facing downwards, and fasten it. Tighten the screws only **slightly!**



Bolts (C) are included in the scope of supply of the System ladder XS 4.40m and the Ladder extension XS 2.30m.

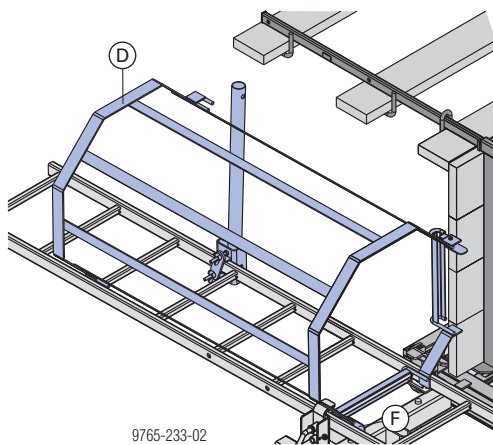
- A System ladder XS 4.40m
- B Ladder extension XS 2.30m
- C Hexagon bolt M10x40

Two Ladder extensions XS 2.30m can be fixed together in the same way.



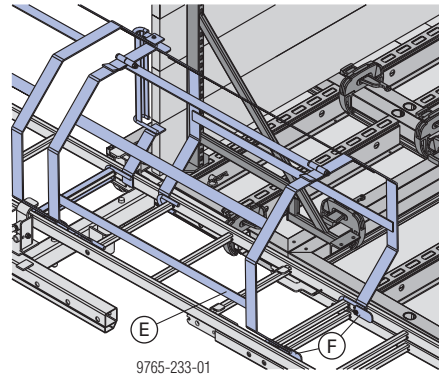
NOTICE

- ▶ Always observe all relevant safety regulations applying to the use of the ladder cage in the country in which you are operating (e.g. in Germany: BGV D 36).
- ▶ Attach the Ladder cage exit XS (the bottom of the cage must always be at the same height as the platform). The safety latches prevent the cage from being accidentally lifted out.



- D Ladder cage exit XS
- F Safety latch (anti-liftout guard)

- ▶ Attach the Ladder cage XS to the next available rung. Attach further ladder cages, in each case to the next available rung.

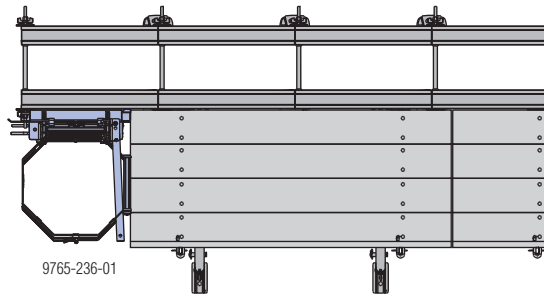


- E Ladder cage XS
- F Safety latches (anti-liftout guard)

Connection in the function profile

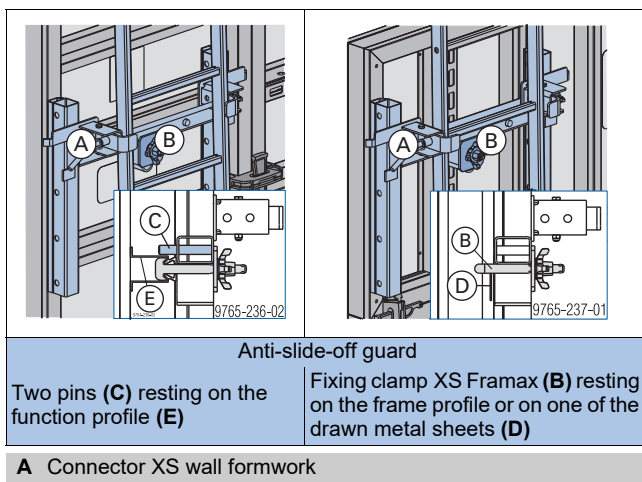
Mounting the Ladder system XS to the function profile makes it an integral part of the gang-form.

Plan view



Installation:

- Fix the Connector XS wall formwork to the function profile with a Fixing clamp XS Framax.



Items needed

Connector + ladder	Formwork height	
	2.70-3.75 m	>3.75-5.40 m
Connector XS wall formwork	2	2
Quick acting clamp RU or Fixing clamp XS Framax ¹⁾	4	4
System ladder XS 4.40m	1	1
Ladder extension XS 2.30m	0	1

¹⁾ When connected in the function profile

Ladder cage	Formwork height		
	2.70-3.15 m	>3.15-4.05 m	>4.05-5.40 m
Ladder cage exit XS ²⁾	1	1	1
Securing barrier XS ²⁾	1	1	1
Ladder cage XS 1.00m ²⁾	0	1	2

²⁾ This does not take account of any intermediate exits.

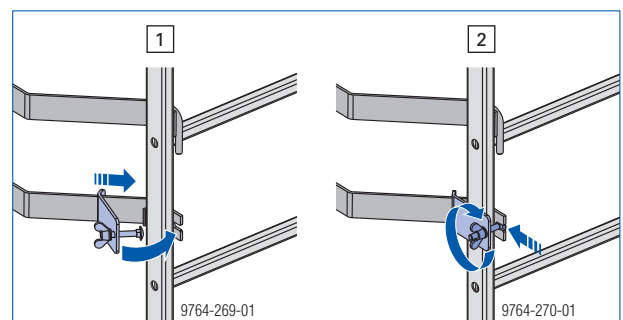
Exit onto an intermediate platform

Note:

- The number of Connectors XS wall formwork and ladder components is shown in the table [Items needed](#).
- For each additional exit, one 'Ladder cage exit XS' and one 'Securing barrier XS' are required.
- Any over-large openings above the intermediate exit must be reduced with a Ladder cage XS 0.25m.

Mounting the Ladder cage XS 0.25m

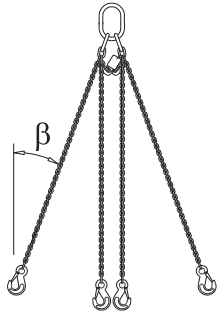
- Hook the ladder cage into an empty rung and secure it against accidental lift-out.



Lifting by crane

Safe crane-handling of Alu-Framax Xlife is possible using the **Doka 4-part chain 3.20m** and the **Framax lifting hook**. The lifting hook locks automatically after being hung into place.

Doka 4-part chain 3.20m



CE

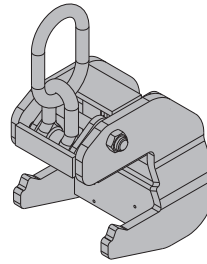
- ▶ Attach the Doka 4-part chain 3.20m to the Framax lifting hooks.
- ▶ Hang the remaining chain-lengths back in place.

Permissible working load limit (2-part chain):
Up to 30° sling angle β 2400 kg.



Follow the Operating Instructions!

Framax lifting hook



CE

Permissible working load limit:

1000 kg / Framax lifting hook

(area of formwork that can be lifted using 2 lifting hooks is approx. 30 m²)



Follow the Operating Instructions!

Securing the lifting hooks against sliding from side to side



NOTICE

Position the lifting hooks so that they cannot slide from side to side.

- over **inter-panel joints**
- over **function profiles** (single panels installed on their side)

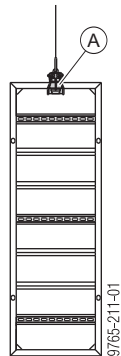
For other suitable positions see section [Position of the lifting hooks.](#)

Position of the lifting hooks

Note:

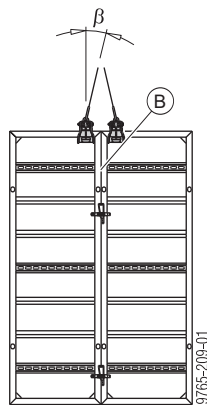
The positions of the lifting hooks shown here also apply for vertically stacked gang-forms.

Single panel:



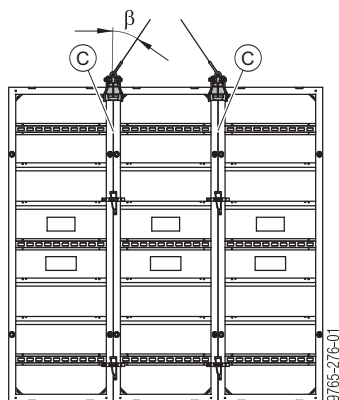
A Middle of the frame profile

Gang-form - two panels upright:



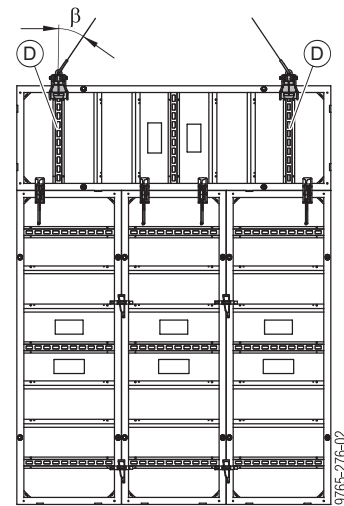
B Frame profile

Gang-form - three (or more) panels upright:



C Inter-panel joint

Gang-form - panel on its side (vertically stacked):

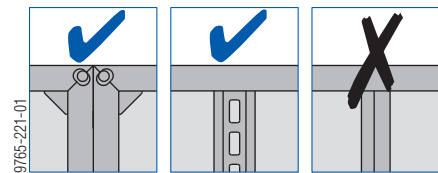


D Function profile



WARNING

▶ On single Alu-Framax panels incorporated in the horizontal, the lifting hook must **not be placed over a cross profile**.



Assembling tool

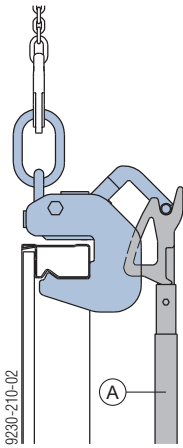
For operation of the lifting hook on upright formwork by operator on ground level.



CAUTION

Risk of the lifting hook falling when operated with assembling tool!

- ▶ With the crane, position the lifting hook level with the lifting point.



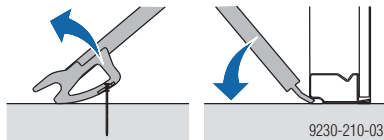
Formwork height

A Framax telescopic assembling tool (telescopes from 230 to 400 cm)	2.70 - 5.40m
Framax assembling tool	2.70 - 3.30m



In addition to operation of the lifting hook, the **Framax assembling tool** also offers the following functions:

- Pulling out double-headed nails
- Plumbing and aligning the formwork



Transporting, stacking and storing

Bundling the panels

- 1) Place sleepers (W x H approx. 8.0 x 10.0) under the cross-profile.
- 2) Strap the sleepers (hardwood blocking) and the bottom panel together with strapping tape.



WARNING

The smooth surface of the powder-coated panels reduces the sticking friction.

- It is strictly forbidden to lift stacks of panels without inserting Framax stacking cones (2 cones per layer) first!

Exception: Stacking cones are not required if the stack is lifted using the "Framax transport gear".

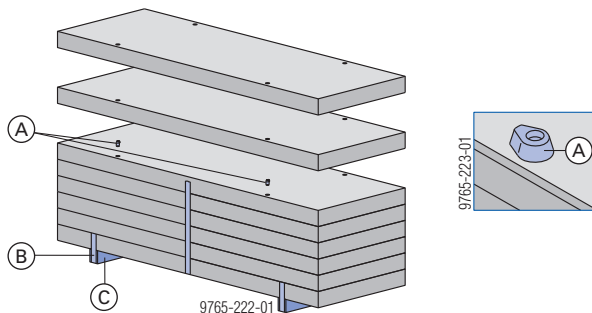
- 3) Insert Framax stacking cones. The stacking cones secure the panels against slippage.



CAUTION

- Stack max. 8 panels on top of one another (results in a stack height, incl. sleepers, of approx. 110 cm).

- 4) Strap the whole stack together tightly with strapping tape.



A Framax stacking cones

B Strapping tape

C Sleeper

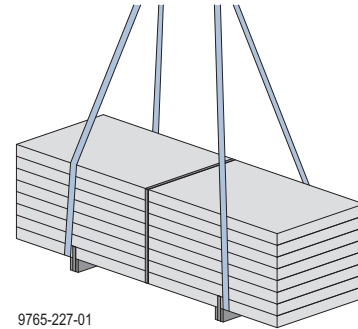
Animation:

<https://player.vimeo.com/video/267970071>

Transporting the panels

Dokamatic lifting strap 13.00m

The Lifting strap 13.00m is a practical tool for **unloading and loading trucks**, and for **lifting and setting down individual stacks of panels**.



Dokamatic lifting strap 13.00m:

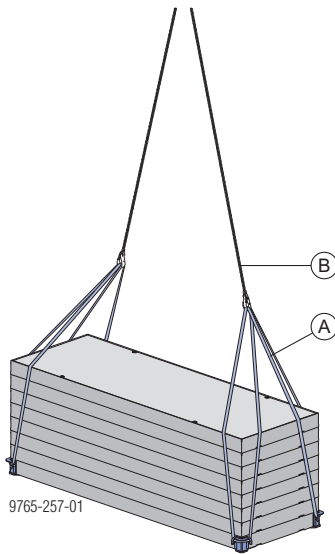
Permissible working load limit 2000 kg / lifting strap



Follow the Operating Instructions!

Framax transport gear

For safe crane transport of individual stacks of panels at construction sites, depots etc.



- A** Framax transport gear (consisting of 4 round slings)
- B** Chain suspension gear or Doka 4-part chain 3.20m

The four round slings of the transport gear hold the stack together on all four sides, in such a way that it is impossible for individual panels to slip out.

Benefits:

- Spring-loaded slinging hooks reach from underneath into the beads of the panel frame and prevent the transport gear accidentally detaching itself when the cable tension slackens.
- The automatic length compensation feature of the Framax transport gear ensures that the load is distributed evenly.
- The Framax transport gear can be suspended and detached by just one person working on their own.
- There is no need for anti-slippage protection using Framax stacking cones here.

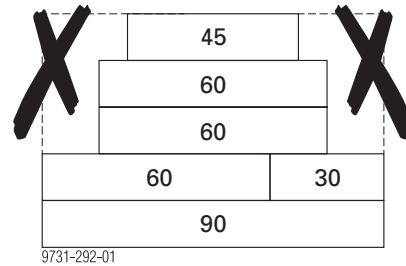
Framax transport gear

Permissible working load limit: 2000 kg / 4 round slings



NOTICE

- Max. stack height: 8 panels (incl. sleepers)
- The bottom layer of the stack may only consist of one panel.
- The stacks must always be of panels of equal width.
- The top layers may also consist of 'half-width' panels. The important thing here is that every panel must be held by at least two round slings and that no 'gaps' may be left open between panels.
- It is forbidden to transport stacks where the edges of the panels are not all in alignment!



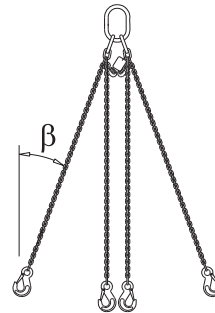
Follow the Operating Instructions!

Doka 4-part chain 3.20m

The Doka 4-part chain 3.20m is a multi-functional slinging means:

- used with the integrated **eye hooks** for hoisting formwork, platforms and multi-trip packaging containers.

For more information, see section [Lifting by crane](#).



The Doka 4-part chain 3.20m can be adjusted to the centre-of-gravity position by shortening the length of individual chains.

The load is distributed evenly across the chains (automatic load compensation).

Permissible working load limit:

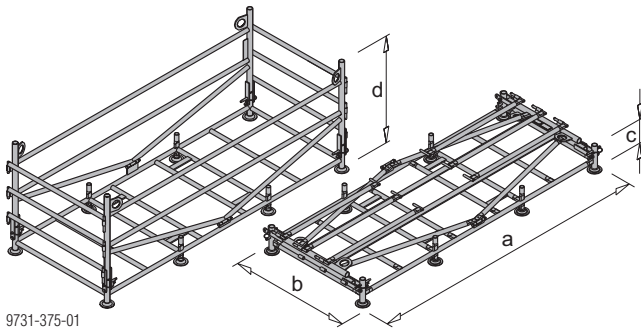
	Sling angle β			
	0°	0°-30°	30°-45°	45°-60°
Using one chain	1400 kg	-	-	-
Using two chains	-	2400 kg	2000 kg	1400 kg
Using all four chains	-	3600 kg	3000 kg	2120 kg



Follow the Operating Instructions!

Alu-Framax pallet

Storage unit and transport container, foldable and stackable, for Alu-Framax panels.



9731-375-01

- a ... 280 cm
- b ... 117 cm
- c ... 26 cm
- d ... 107 cm

Permissible load-bearing capacity: 1200 kg
Permissible imposed stacking load: 5200 kg

Using Alu-Framax pallets as storage units

Max. number of units on top of one another

Outdoors (on the site)	Indoors
Neither empty (unfolded) pallets nor full ones are allowed	Floor gradients up to 1%
	6



NOTICE

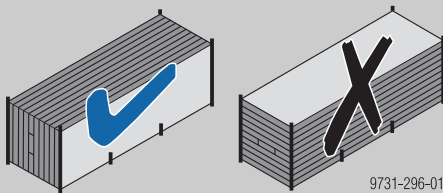
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.



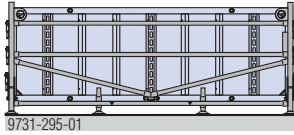
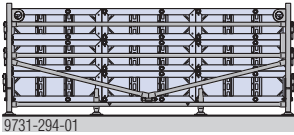
WARNING

If panels were stacked flat, they might slip out of the pallet (between the horizontal braces) when in transit!

- Only stack panels in the upright!



9731-296-01

Panel height of 2.70m		Panel height of 0.90m	
			
9731-295-01		9731-294-01	
Panel	N° of panels	Panel	N° of panels
0.90x2.70m	8	0.90x0.90m	24
0.30x2.70m	24	0.30x0.90m	72

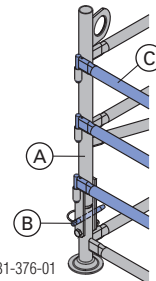
Using Alu-Framax pallets as transport devices

Lifting by crane

- Before attaching the lifting chain, check that:



- The vertical profile (A) must be secured with a Spring locked connecting pin 16mm (B)
- All bolt-in tubes (C) must be bolted onto the vertical profile (A) – pallet closed!

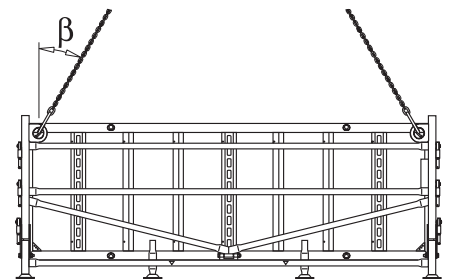


9731-376-01



NOTICE

- Multi-trip packaging items must be lifted individually.
- Secure the load in part-loaded pallets!
- Use a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted working load limit.
- Sling angle β max. 30°!



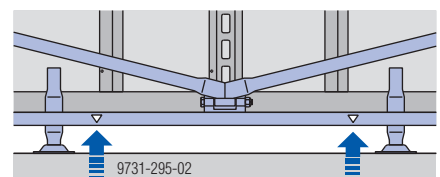
9731-295-01

Repositioning by forklift truck or pallet stacking truck



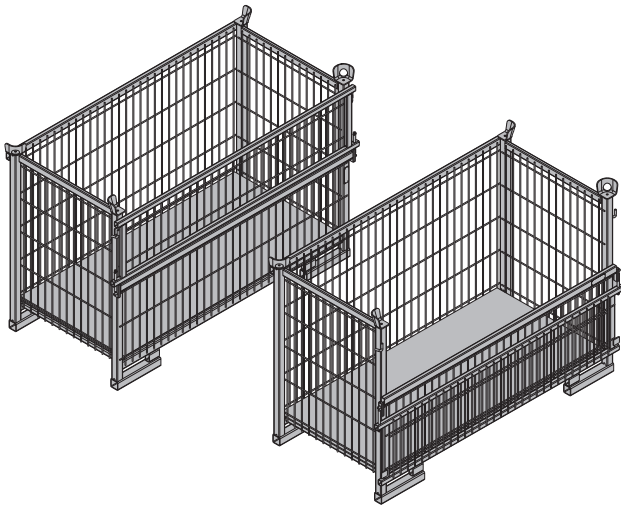
NOTICE

The forks of the stacker truck may only be placed beneath the marked points (yellow marking)!



9731-295-02

Doka skeleton transport box 1.70x0.80m



Storage and transport device for small items. To make the Doka skeleton transport box easier to load and unload, one of its sidewalls can be opened.

Permitted load-bearing capacity: 700 kg (1540 lbs)
Permitted imposed stacking load: 3150 kg (6950 lbs)

Using Doka skeleton transport boxes 1.70x0.80m as storage units

Max. n° of units on top of one another

Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
2	5
It is not allowed to stack empty pallets on top of one another!	



NOTICE

Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

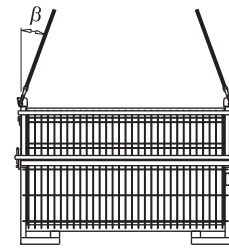
Using Doka skeleton transport boxes 1.70x0.80m as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items must be lifted individually.
- Only lift the boxes when their sidewalls are closed!
- Use suitable lifting chains:
 - e.g. Doka 4-part chain 3.20m
 - Do not exceed the permitted working load limit of the lifting chains.
- Sling angle β max. 30°!



9234-203-01

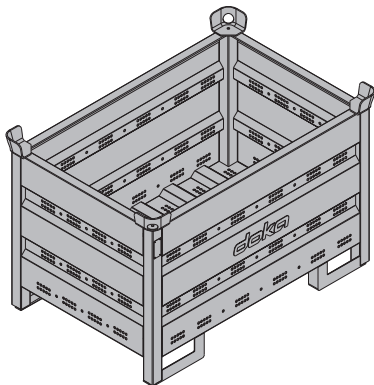
Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

Doka multi-trip transport box

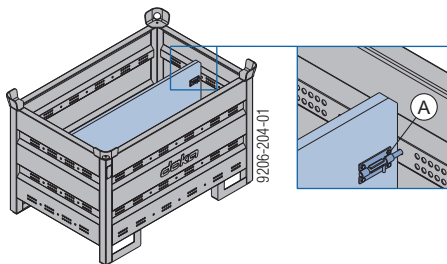
Storage and transport device for small items

Doka multi-trip transport box 1.20x0.80m



Permitted load-bearing capacity: 1500 kg (3300 lbs)
Permitted imposed stacking load: 7850 kg (17300 lbs)

Different items in the Doka multi-trip transport box can be kept separate with the **Multi-trip transport box partitions 1.20m or 0.80m**.



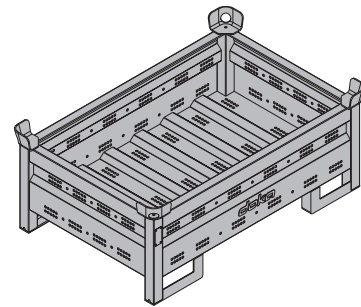
A Slide-bolt for fixing the partition

Possible ways of dividing the box

Multi-trip transport box partition	in the longitudinal direction	in the transverse direction
1.20m	max. 3	-
0.80m	-	max. 3

 9206-204-02	 9206-204-03
-----------------	-----------------

Doka multi-trip transport box 1.20x0.80mx0.41m



Permitted load-bearing capacity: 750 kg (1650 lbs)
Permitted imposed stacking load: 7200 kg (15870 lbs)

Using Doka multi-trip transport boxes as storage units

Max. n° of units on top of one another

Outdoors (on the site) Floor gradients up to 3%		Indoors Floor gradients up to 1%	
Doka multi-trip transport box 1.20x0.80m	Doka multi-trip transport box 1.20x0.80x0.41m	Doka multi-trip transport box 1.20x0.80m	Doka multi-trip transport box 1.20x0.80x0.41m
3	5	6	10
It is not allowed to stack empty pallets on top of one another!			



NOTICE

Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

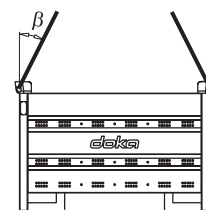
Using Doka multi-trip transport boxes as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items must be lifted individually.
- Use suitable lifting chains:
 - e.g. Doka 4-part chain 3.20m
 - Do not exceed the permitted working load limit of the lifting chains.
- Sling angle β max. 30°!



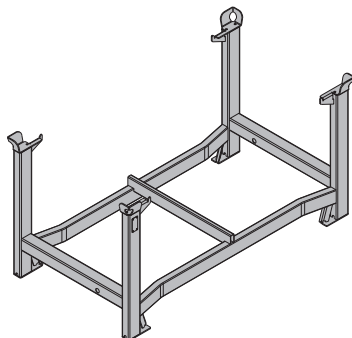
9206-202-01

Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

Doka stacking pallet 1.55x0.85m and 1.20x0.80m

Storage and transport device for long items.



Permitted load-bearing capacity: 1100 kg (2420 lbs)
 Permitted imposed stacking load: 5900 kg (13000 lbs)

Using Doka stacking pallets as storage units

Max. number of units on top of one another

Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
2	6
It is not allowed to stack empty multi-trip boxes or pallets on top of one another!	



NOTICE

- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top!
- Castor wheels or bolt-on castor sets must not be fitted to the bottom multi-trip packaging in the stack.
- Secure multi-trip packagings with installed castor wheels using the fixing brake when parking.

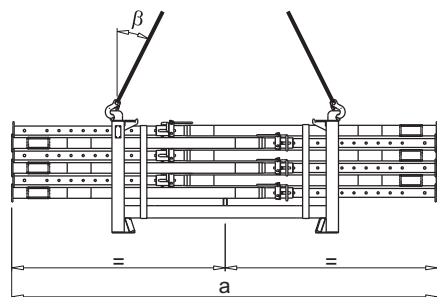
Using Doka stacking pallets as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items must be lifted individually.
- Use suitable lifting chains:
 - e.g. Doka 4-part chain 3.20m
 - Do not exceed the permitted working load limit of the lifting chains.
- Load the items centrally.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.
- Sling angle β max. 30°!



92815-224-01

	a
Doka stacking pallet 1.55x0.85m	max. 4.5 m
Doka stacking pallet 1.20x0.80m	max. 3.0 m

Repositioning by forklift truck or pallet stacking truck

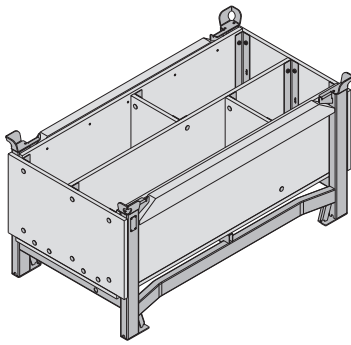


NOTICE

- Load the items centrally.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.

Doka accessory box

Storage and transport device for small items.



Permitted load-bearing capacity: 1000 kg (2200 lbs)
 Permitted imposed stacking load: 5530 kg (12190 lbs)

Doka accessory boxes as storage units

Max. number of units on top of one another

Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
3	6
It is not allowed to stack empty multi-trip boxes or pallets on top of one another!	



NOTICE

- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top!
- Castor wheels or bolt-on castor sets must not be fitted to the bottom multi-trip packaging in the stack.
- Secure multi-trip packagings with installed castor wheels using the fixing brake when parking.

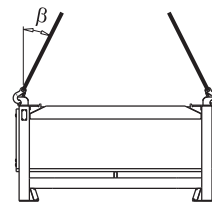
Doka accessory box as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items must be lifted individually.
- Use suitable lifting chains:
 - e.g. Doka 4-part chain 3.20m
 - Do not exceed the permitted working load limit of the lifting chains.
- When lifting units to which Bolt-on castor sets B have been attached, you must also follow the directions in the 'Bolt-on castor set B' User information booklet!
- Sling angle β max. 30°!



92816-206-01

Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

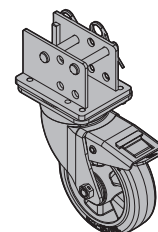
Universal castor wheel for transport pallet

The Universal castor wheel for transport pallet turns multi-trip packaging items into fast and manoeuvrable transport devices.

- 4 castor wheels needed per multi-trip packaging item.
- Compatible multi-trip packaging items:
 - Doka stacking pallets (all sizes)
 - Doka multi-trip transport box 1.20x0.80m
 - Doka skeleton transport box 1.70x0.80m
 - DokaXdek panel pallets (all sizes)
 - Superdek beam pallet 1.22x1.10m



Follow the directions in the 'Universal castor wheel for transport pallet' User Information booklet.



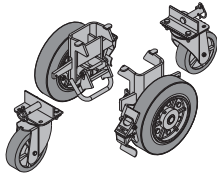
Bolt-on castor set B

The Bolt-on castor set B turns multi-trip packaging items into fast and manoeuvrable transport devices.

- Suitable for drive-through access openings > 90 cm.
- Compatible multi-trip packaging items:
 - Doka accessory box
 - Doka stacking pallets (all sizes)
 - Protective barrier Z pallets



Follow the directions in the 'Bolt-on castor set B' User Information booklet!

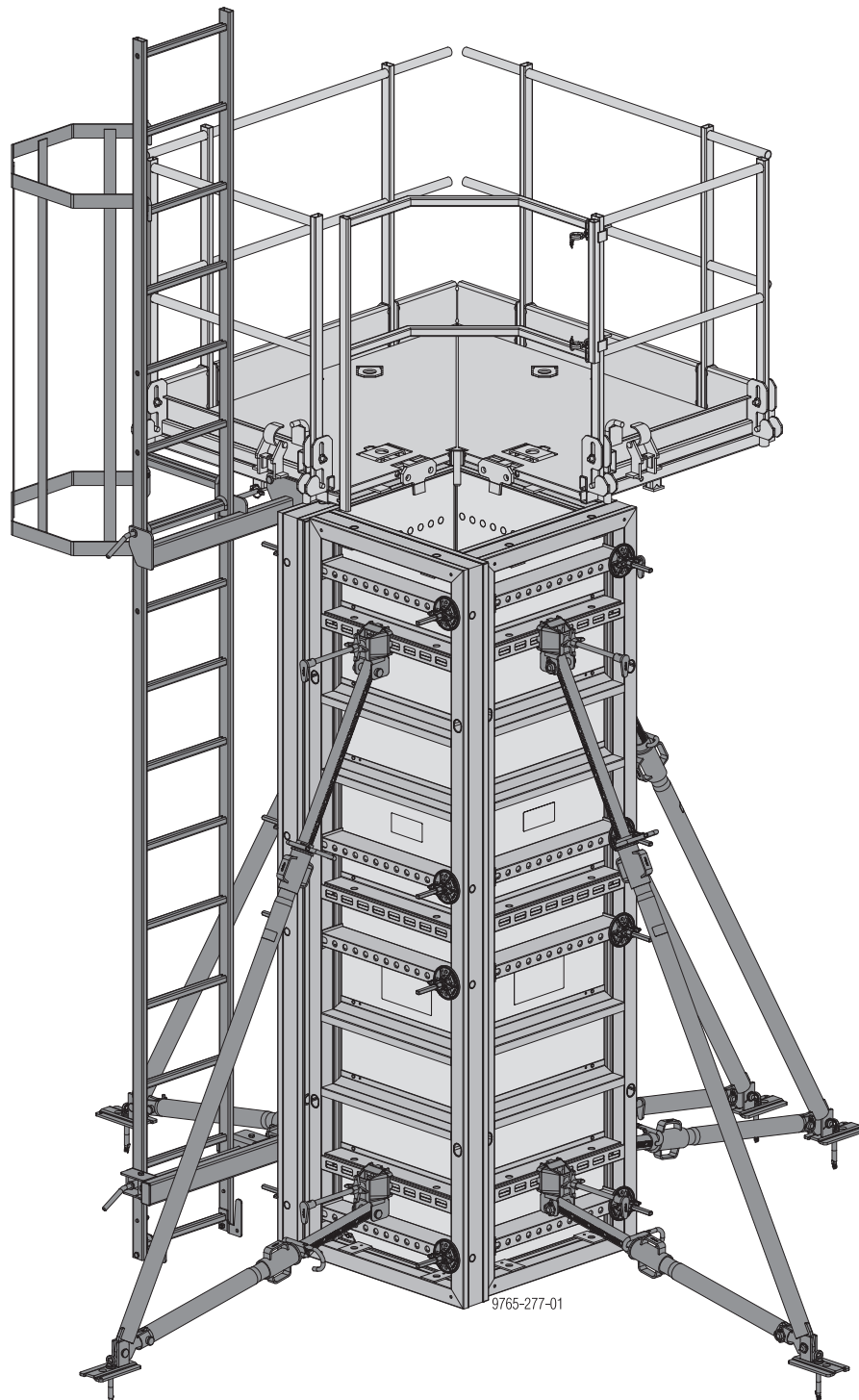


Column formwork

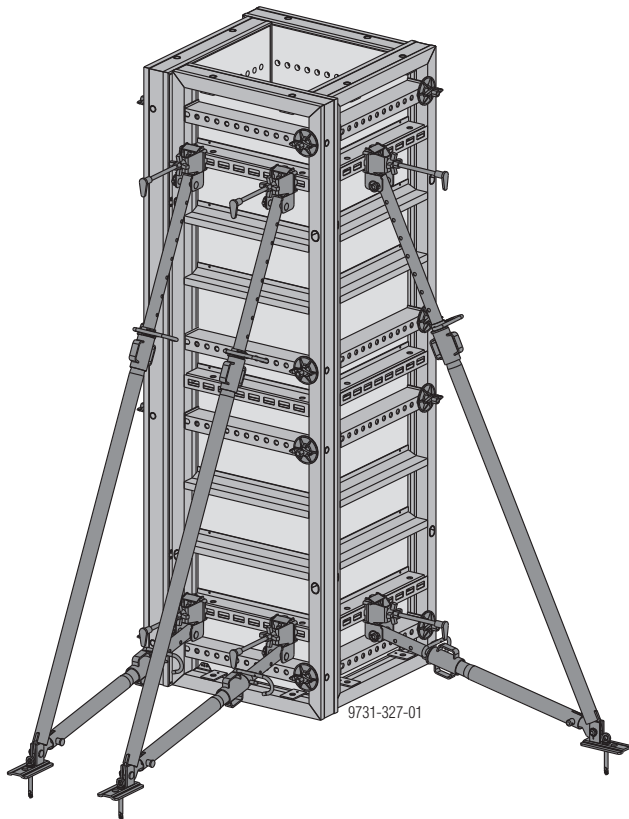
The **Alu-Framax Xlife universal panels** permit flexible accommodation to column cross-sections of up to 60 cm x 60 cm in **5 cm increments**.

However, dimensions of 30 cm and 45 cm can also be formed using ordinary **Alu-Framax Xlife panels and Framax outside corners**.

Permitted fresh-concrete pressure: 90 kN/m²



Design of column formwork



NOTICE

- To achieve exact plumbing & aligning of the column formwork, the best arrangement of the panel struts is as illustrated here.
- Always attach panel struts to free-standing formwork halves to prevent them from falling over.

Erecting and striking the formwork

Erecting:

- ▶ Position the first panel and brace it with panel struts.
- ▶ Join the second panel to the first, and attach a panel strut.
- ▶ Plumb and align this formwork-half with the panel struts.
- ▶ Add two more panels to close the formwork.

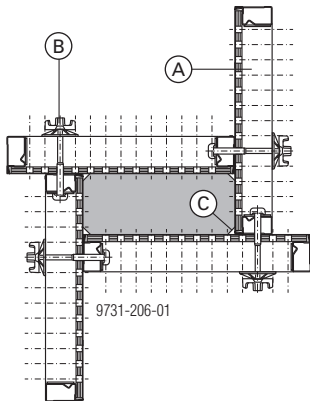
Striking:

- ▶ First remove the panels that are not attached to a panel strut, and place them face-down for intermediate storage.
- ▶ Undo the inter-panel connections of the formwork-half.
- ▶ Undo the ground anchors of the panel struts.
- ▶ Place the panels face-down for intermediate storage.

with Alu-Framax Xlife universal panel

The practical 5 cm hole-grid is ideal for forming columns. **Cross-sections of up to 60 x 60 cm.**

cross-sections in 5 cm increments



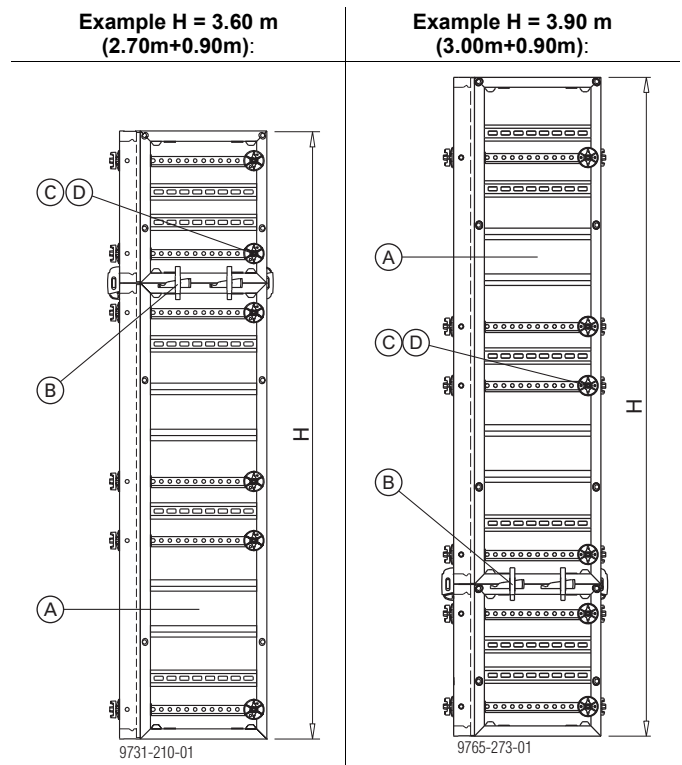
Example: Column 20 x 50 cm

- A** Alu-Framax Xlife universal panel
- B** Framax universal fixing bolt + Super plate 15.0
- C** Framax frontal triangular ledge

Note:

Seal off the unused hole-grid holes in the form-facing of the Xlife universal panels with **Framax plugs R24.5**.

Schedule of materials



Formwork height (H)	Alu-Framax Xlife universal panel (A)				Quick acting clamp RU (B)	Universal fixing bolt (C)	Super plate 15.0 (D)
	3.00m	2.70m	1.35m	0.90m			
0.90 m				4		8	8
1.35 m			4			8	8
1.80 m				8	8	16	16
2.25 m			4	4	8	16	16
2.70 m		4				16	16
3.00 m	4					16	16
3.15 m			4	8	16	24	24
3.60 m		4		4	8	24	24
3.90 m	4			4	8	24	24
4.05 m		4	4		8	24	24
4.35 m	4		4		8	24	24
4.50 m		4		8	16	32	32
4.80 m	4			8	16	32	32
4.95 m		4	4	4	16	32	32
5.25 m	4		4	4	16	32	32
5.40 m		8			8	32	32
5.70 m	4	4			8	32	32

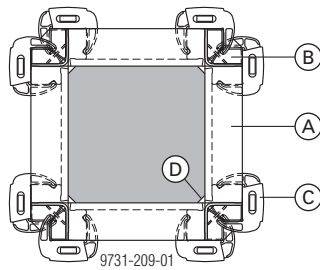
The figures in the Table give the number of items needed.

Note:

In stacking configurations, Alu-Framax Xlife universal panels 3.00m are only allowed to have other panels placed beneath them!

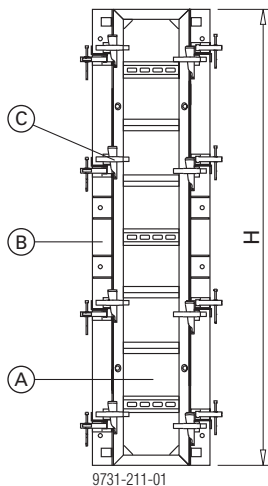
with Framax outside corners and Alu-Framax Xlife panels

Cross-sections of **30 cm** and **45 cm** can also be formed using **Framax outside corners** and **Alu-Framax Xlife panels**.



- A** Alu-Framax Xlife panel (max. 45cm)
- B** Framax outside corner
- C** Framax quick acting clamp RU
- D** Triangular ledge

Schedule of materials

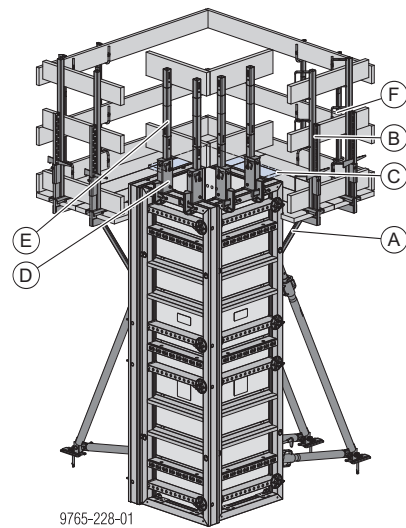


Example: Framax outside corners 2.70m with Alu-Framax Xlife panels 0.45x2.70m

Panel height (H)	Alu-Framax Xlife panel (A)			Framax outside corner (B)			Quick acting clamp RU (C)
	0.90m	2.70m	3.00m	0.90m	2.70m	3.00m	
0.90m	4			4			16
2.70m		4			4		32
3.00m			4			4	40

The figures in the Table give the number of items needed.

Pouring platform with Framax bracket 90



- A** Framax bracket 90 EP (deck-boards provided at site)
- B** Handrail clamp S (guardrail boards provided at site)
- C** Board for screwing the platform decking onto
- D** Framax adapter XP
- E** Handrail post XP 1.20m (guardrail boards provided at site)
- F** Handrail post 1.00m (guardrail boards provided at site)

Note:

Where the two planks meet, a joining board must be screwed onto the underside.

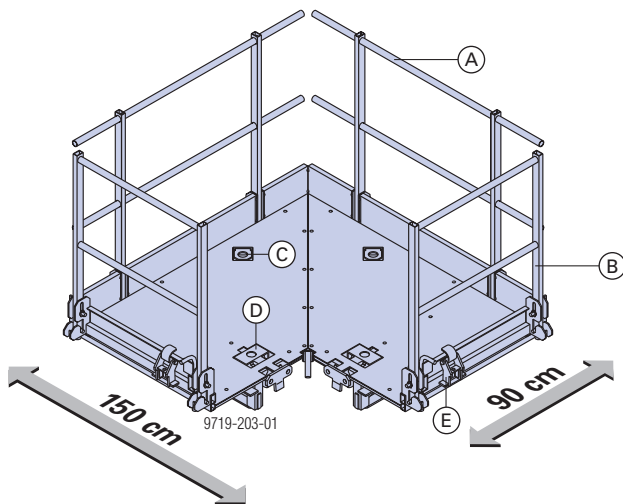
For more information on constructing pouring platforms, see section '[Pouring platforms with single brackets](#)'.

Doka column formwork platform 150/90cm

Note:

The Doka column formwork platform 150/90cm can only be used on column formwork units assembled from Framax Xlife universal panels.

Product description



A Rear railing

B Side railing

C Rear crane lifting point

D Safety hook (blue) = front crane lifting point

E Extra crane lifting point (red) in parked position

Permitted service load: 1.5 kN/m² (150 kg/m²)

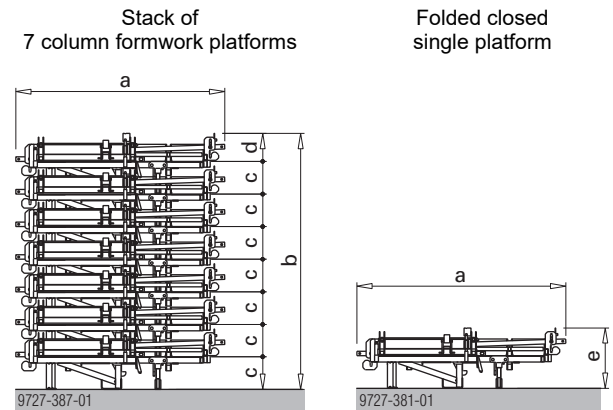
Load Class 2 to EN 12811-1:2003

The main features:

- This pre-assembled, ready-to-use platform ensures convenient and safe working on column formworks. It can be used on columns of any cross-section.
 - Alu-Framax Xlife with universal panels: 25x25cm to 60x60cm
 - Framax Xlife with universal panels: 25x25cm to 105x105cm
- The slinging points recessed into the decking make it a quick and easy job to lift the platform by crane. Only one column formwork platform can be used on each column!
- Re-attachment is fast, so the platform can be moved from formwork unit to formwork unit for the pouring operations. Consequently, one platform is sufficient for several column formwork units.
- The practical swing-out side railings make it easy to get on or off the platform. Both the side railings can be fixed in either the open or closed position.

Transporting, stacking and storing

The Doka column formwork platforms are pre-assembled and are easy to transport and store in the folded-down position - it is not possible for them to slide sideways.



a ... 183 cm

b ... 225 cm

c ... 28.6 cm

d ... 24.8 cm

e ... 53 cm



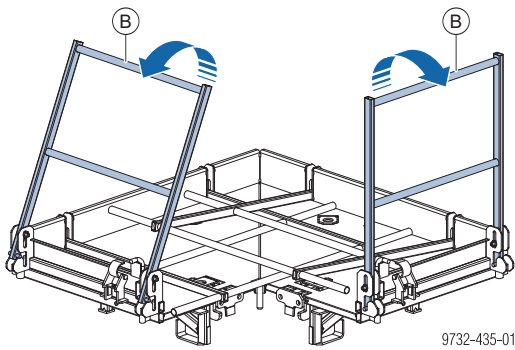
WARNING

There is a risk of the stack tipping over **in high winds**.

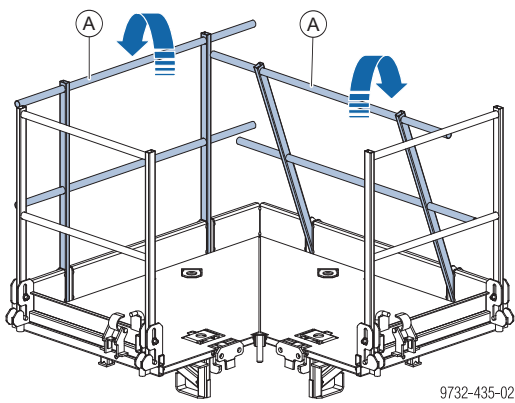
- ▶ If wind speeds are high, secure the stack additionally or reduce the stack to 3 platforms.

Basic design concept

- ▶ Tilt up the side railings. They lock into place automatically.



- ▶ Tilt up the rear railings. They lock into place automatically.



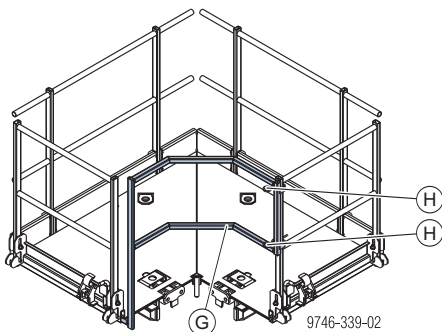
- A Rear railing
- B Side railing

The column formwork platform is now ready for use.

Note:

When folding the platform back down, first fold down the rear railings, and then the side ones.

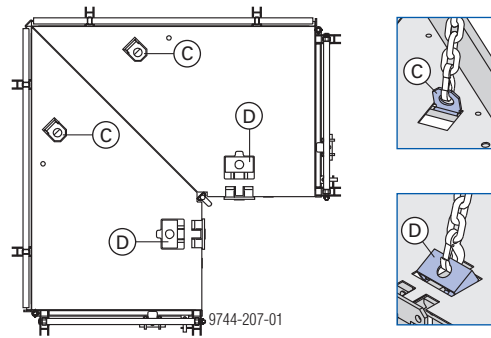
- ▶ Mount the Counter railing Col. formwork plat. 150/90cm and secure with Spring cotters 5mm.




- G Counter railing col. formwork plat. 150/90cm
- H Spring cotter 5mm

Moving the platform

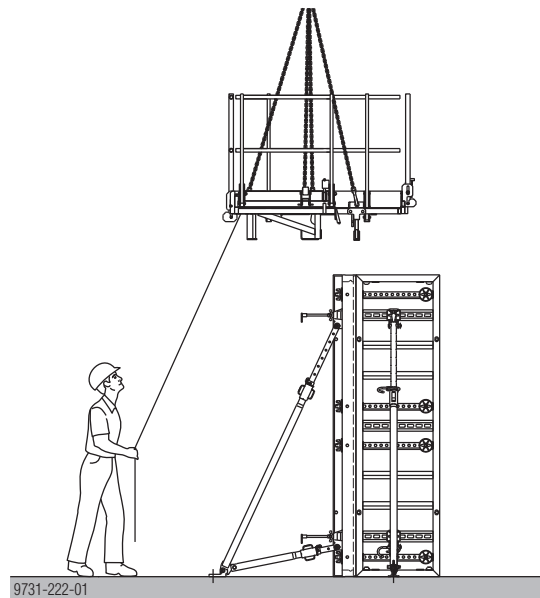
- ▶ Attach the crane to the locations shown.




- C Rear crane lifting point
- D Front crane lifting point

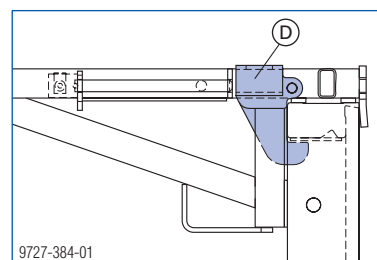
 Red extra crane lifting point in "parked" position.

- ▶ Hang the column formwork platform into place on the formwork.



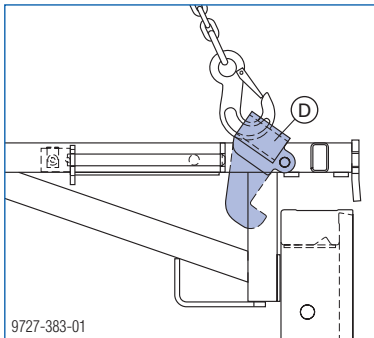
 Suspending the platform exactly in position is made much easier when guide-cables are used.

- ▶ After the column formwork platform has been hung into place on the formwork, detach the four-part lift-chain.




The safety hook (D) drops down into its starting position and automatically secures the platform against being accidentally lifted out.

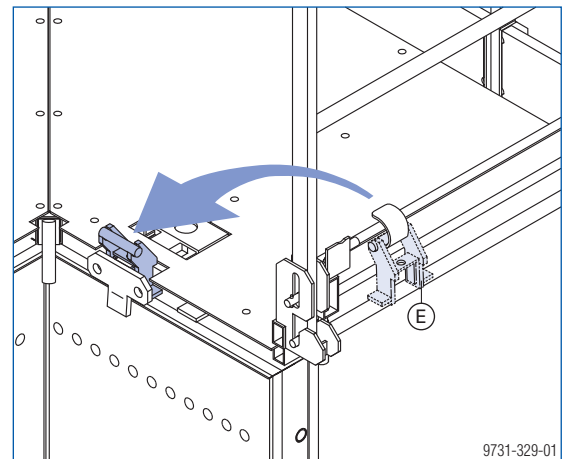
- ▶ When the platform is lifted, the lifting chain acts on the safety hook **(D)** and the platform is automatically unlocked.



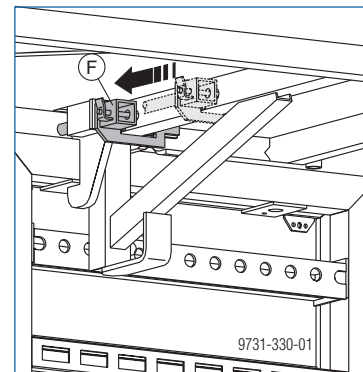
Moving the formwork and the platform in one piece

To save crane time, the Doka column formwork platform can also be repositioned jointly with the formwork:

- ▶  Only ever lift and reposition one formwork half at a time.
- ▶ Max. height of formwork that can be repositioned together with the platform: 8.10 m.
- ▶ Engage the platform on the formwork (procedure as described in section '[Moving the platform](#)').
- ▶ Move the extra crane lifting point **(E)** from the parked position to the working position. Correctly positioned = tilted forward toward the formwork.



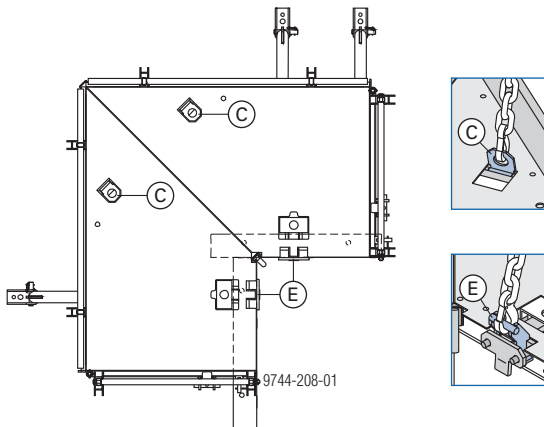
- ▶ Lock the extra crane lifting point with the slide bolt **(F)** on the underside of the platform.



Make sure the slide bolt engages in the front-most position.

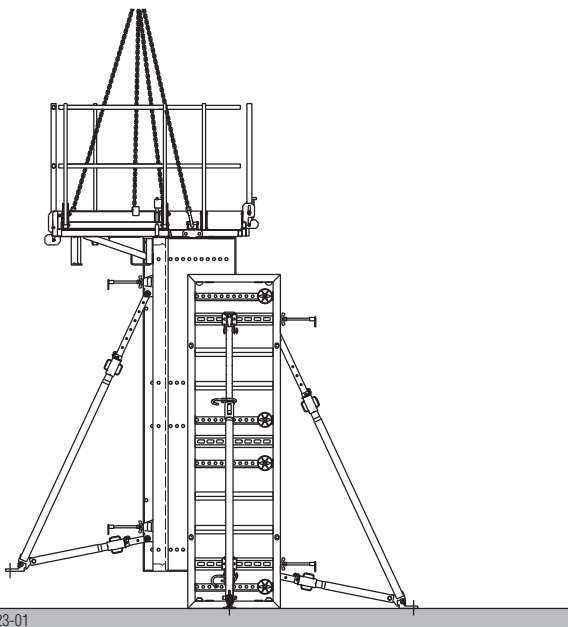
- ▶ Use additional panel struts to secure the formwork-half that has no platform mounted on it.

- ▶ Attach the crane. When the formwork and platform are to be moved in one piece, the extra crane lifting point (E) must be used.



C Rear crane lifting point

E Extra crane lifting point



The platform can stay attached to the formwork throughout this entire operation.

Separating the platform from the formwork

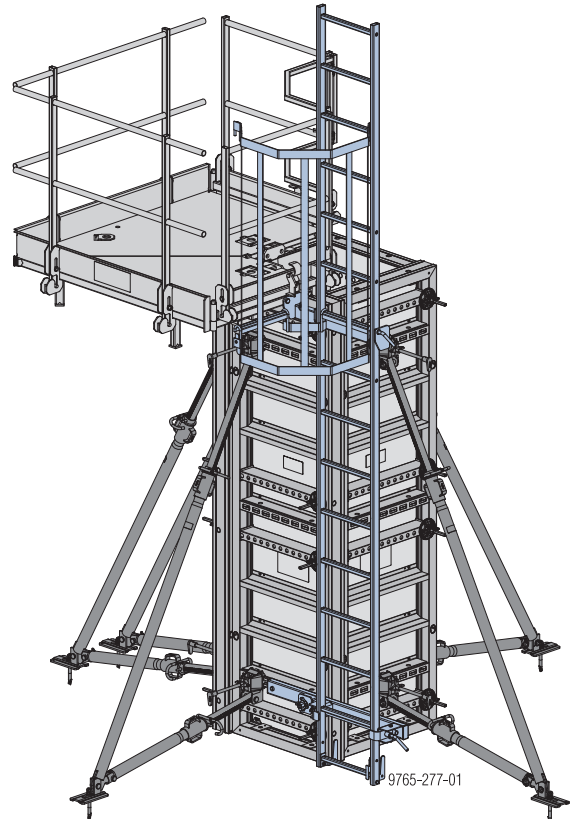
- ▶ Fix the slide bolt (F) back in the rear position and move the extra crane lifting point into the 'parked' position.
- ▶ Attach the crane to the locations shown in section [Moving the platform](#).

Ladder system

Combined with the Column formwork platform 150/90cm, the Doka Ladder system XS provides a safe and reliable way of climbing up and down column formworks.

Note:

The ladder system must be implemented in such a way that all national regulations are complied with.



For more information on attaching the ladder and on the ladder cage, see section [Ladder system](#).

Circular formwork

The quick way to form "in the round" - the Framax circular forming plates will get your framed formwork "around" any curve!

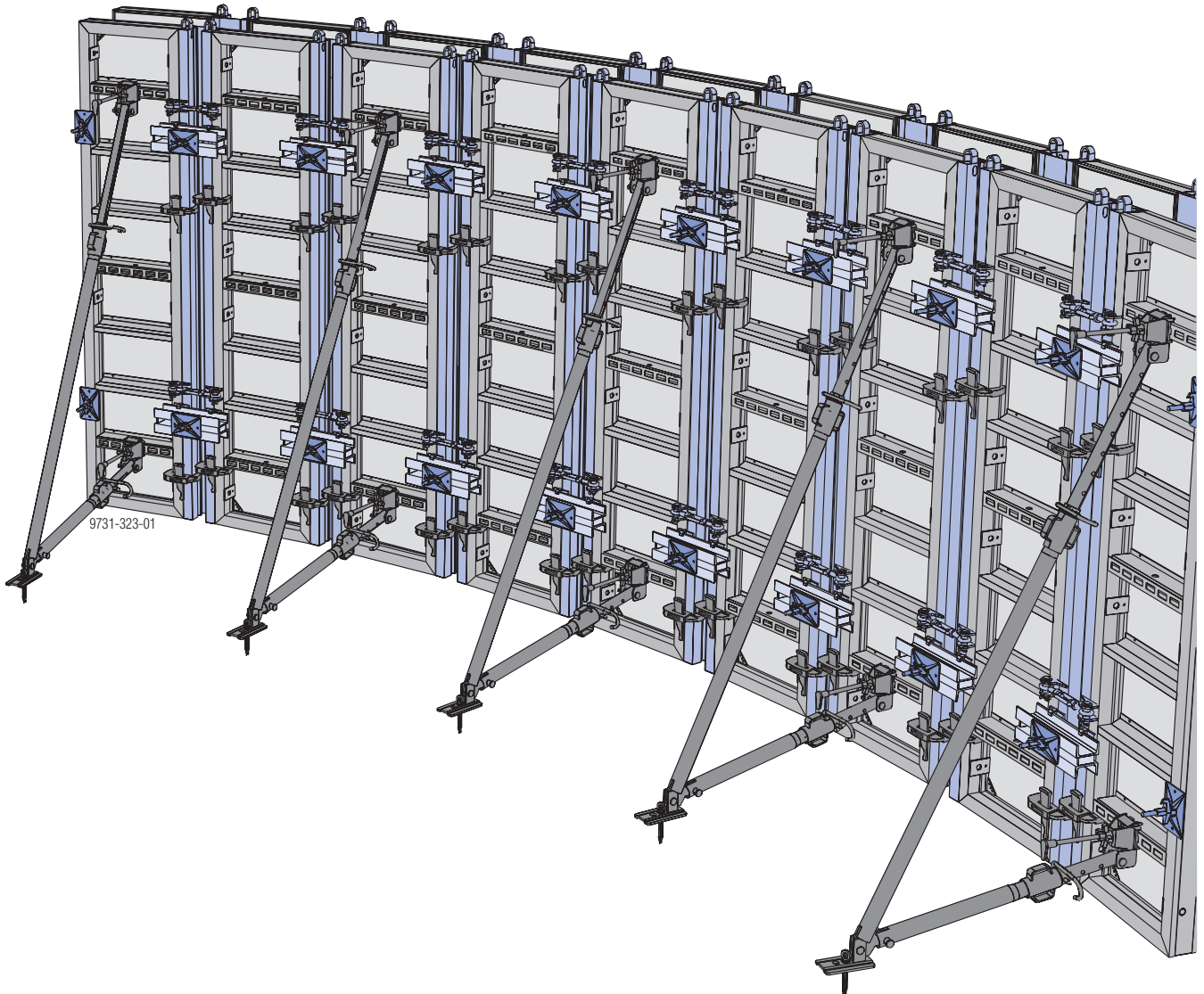
With the Framax circular forming plates and the Alu-Framax Xlife panels, "circular" (i.e. polygonal) structures can be formed.

A particularly cost-cutting factor in practice is the fact that you can use your existing Alu-Framax Xlife panels

and all accessories such as panel struts and working platforms from the Alu-Framax Xlife range.

This makes circular forming of curved concrete structures with Framax circular forming plates **universal, economical and fast.**

Perm. concrete pressure: 50 kN/m²



Design of the circular formwork

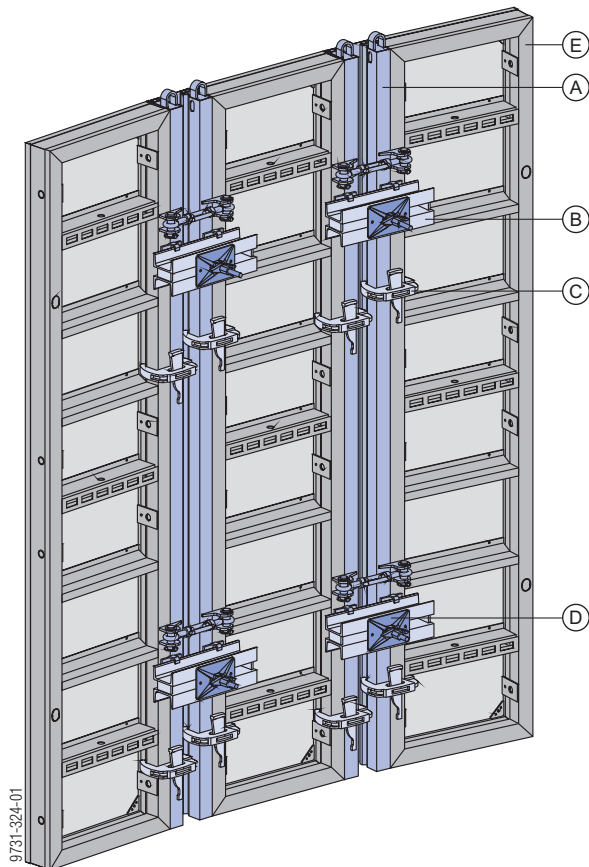
By combining the Framax circular forming plates with the Alu-Framax Xlife panels, round structures - of any radius - can be formed.



NOTICE

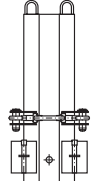
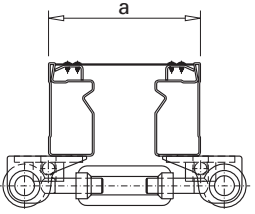
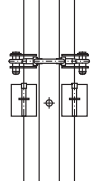
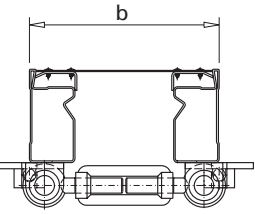
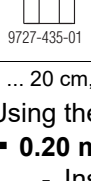
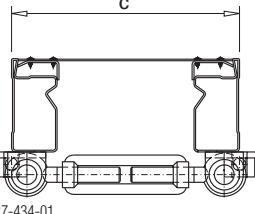
Minimum inside radius: 1.80 m

In the same way as with the wall formwork, all that is needed to connect the Framax circular forming plates to the Alu-Framax Xlife panels is the **quick acting clamp RU** - and a blow of the hammer.



- A Framax circular forming plate
- B Framax steel waling RD 0.40m
- C Framax quick acting clamp RU
- D Angle anchor plate 12/18 with Wing nut 15.0
- E Alu-Framax Xlife panel

Framax circular forming plates

Heights		Widths	
2.70 m	0.90 m	a	0.20 m
			
		b	0.25 m
			
		c	0.30 m
			
9727-435-01	9731-372-01	9727-432-01	9727-433-01
		9727-434-01	

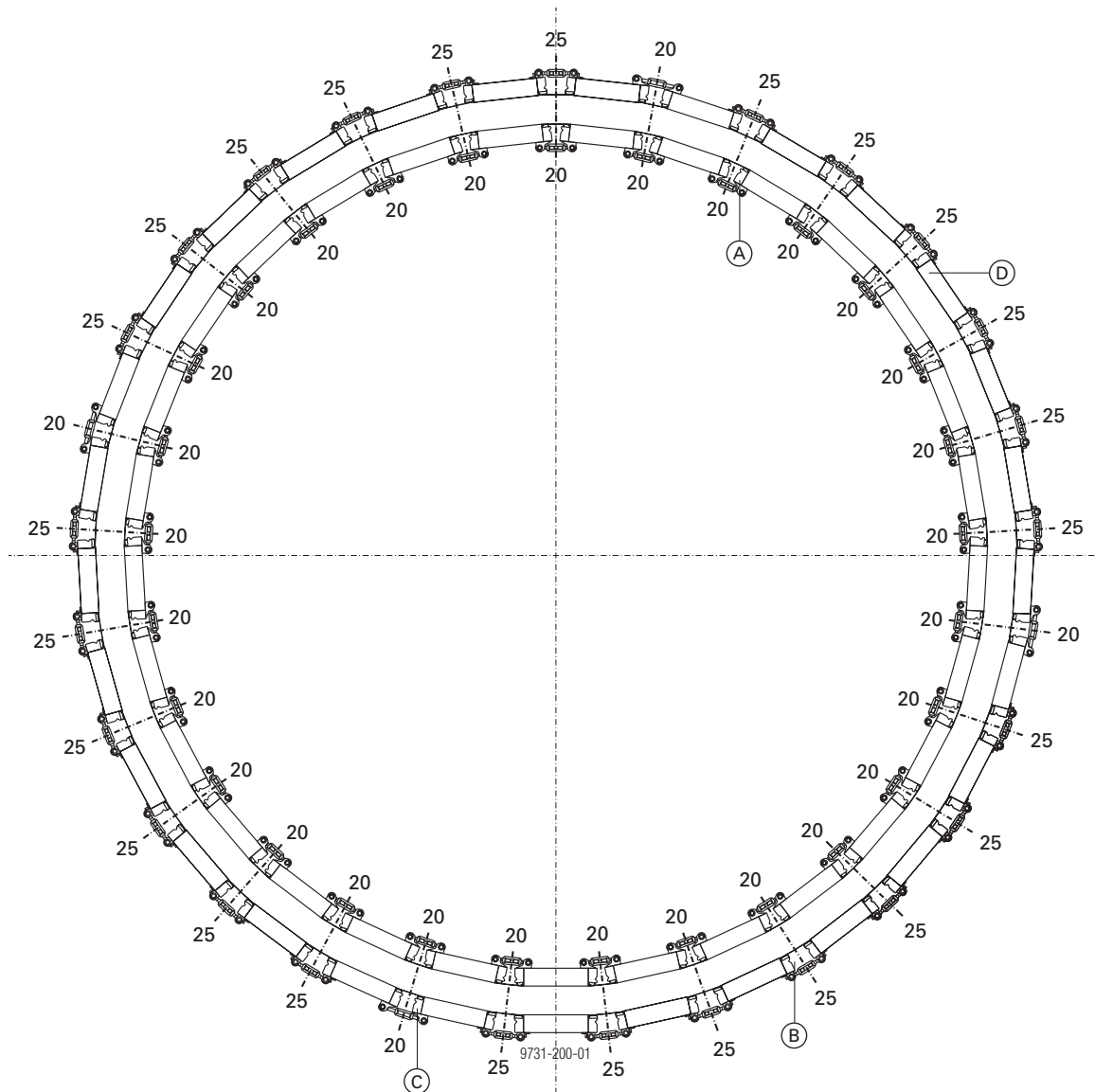
a ... 20 cm, b ... 25 cm, c ... 30 cm

Using the different widths of circular forming plate:

- **0.20 m**
 - Inside circular forming plate
 - Outside circular forming plate (for length adjustment)
- **0.25 m**
 - Outside circular forming plate
- **0.30 m**
 - Outside circular forming plate

Example of formwork

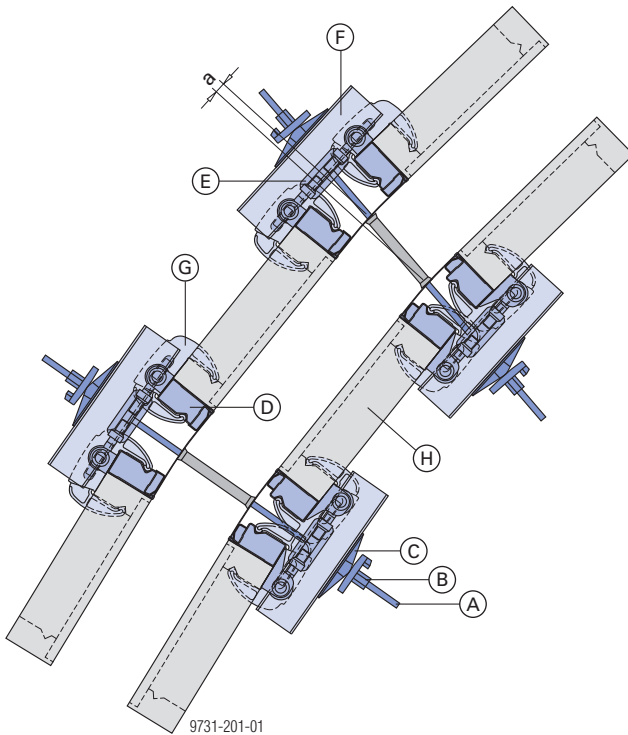
- Type of structure: Circular tank
- Inside radius of structure: 3.00 m
- Wall thickness: 0.20 m



Simplified representation, without details of form ties or panel struts.

- A** Framax circular forming plate 0.20m (for the inside formwork)
- B** Framax circular forming plate 0.25m (for the outside formwork)
- C** Framax circular forming plate 0.20m (for length adjustment, distribute evenly around circumference)
- D** Framax Xlife panel 0.45m (**Note:** same-sized panels are always used both inside and out.)

Tying the circular forming plates



a ... maximum tie-rod displacement = ± 2.5 cm

- A** Tie rod 15.0mm
- B** Wing nut 15,0
- C** Angle anchor plate 12/18
- D** Framax circular forming plate
- E** Turnbuckle
- F** Steel waling RD 0.40m
- G** Quick acting clamp RU
- H** Alu-Framax Xlife panel

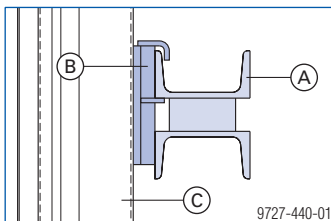
Note:

If the tie-rod displacement is any bigger than this, move up to the next size of circular forming plate.



When adjusting the Framax circular forming plates, ensure that the top and bottom turnbuckles are turned uniformly!

Close-up view showing fixing of steel waling RD 0.40m:



- A** Steel waling RD 0.40m
- B** Support and retainer for Steel waling RD 0.40m
- C** Framax circular forming plate

Closing the full-circle formwork

The remaining areas for closing a full circle can be formed in a number of different ways.



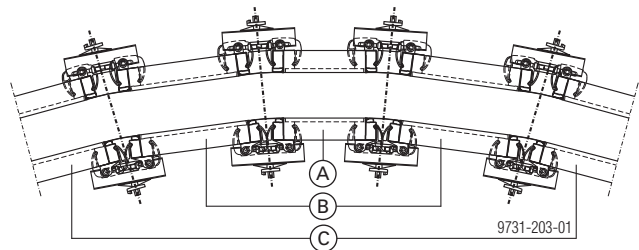
NOTICE

Around the perimeter, use panels of equal width wherever possible.

- To keep the load transferred via the Steel walings RD 0.40m as uniform as possible, adjacent panels may not have bigger width differences than those of the standard incremental width grid.
- This also applies to transition zones to straight walls, and to stop-ends.

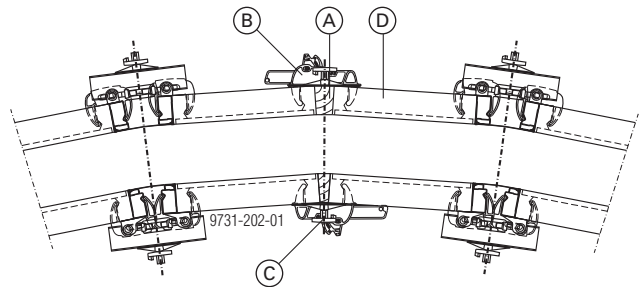
With circular formwork, it is particularly important to ensure uniform pouring.

Closure with Alu-Framax Xlife panel



- A** Alu-Framax Xlife panel e.g. 0.45m
- B** Alu-Framax Xlife panel e.g. 0.60m
- C** Alu-Framax Xlife panel e.g. 0.75m

Closures with wedged timbers

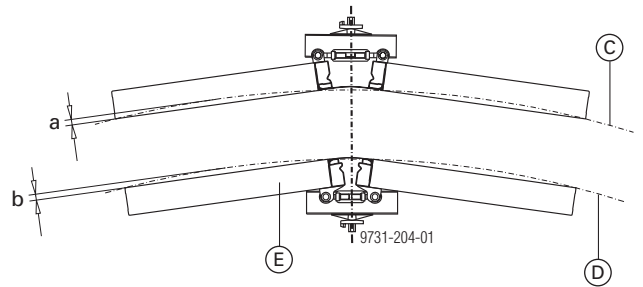


- A** Wedged timber
- B** Framax multi function clamp
- C** Angle anchor plate 12/18 + Wing nut 15.0
- D** Alu-Framax Xlife panel

Determining the max. panel width

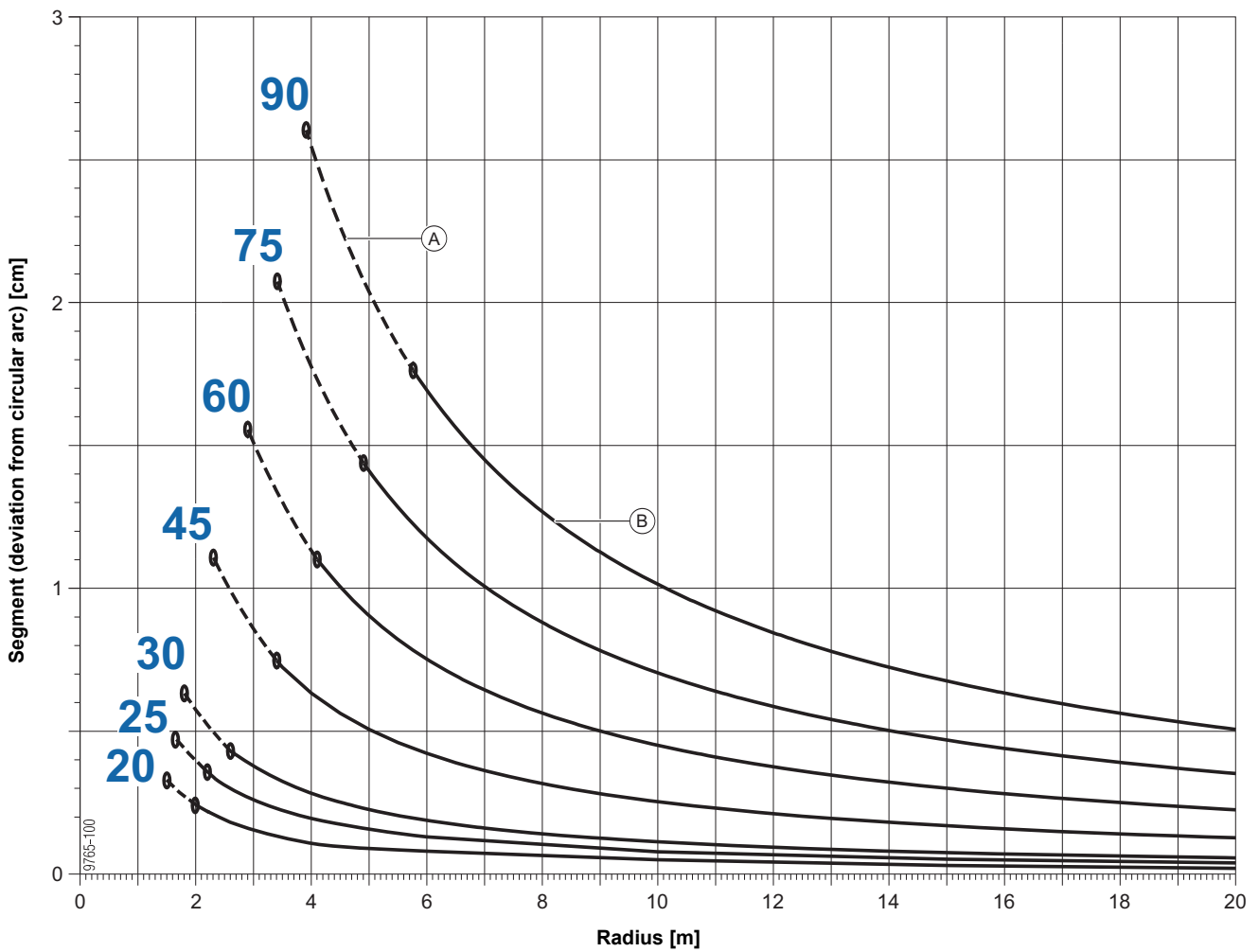
Radius segment diagram for the various widths of panel

The radius segment diagram is for determining the max. panel width as a function of the radius and the permissible deviations from the circular arc.



a ... outside segment dimension
b ... inside segment dimension

- C** Ideal circular arc (outside radius)
- D** Ideal circular arc (inside radius)
- E** Alu-Framax Xlife panel



- A** Minimum wall thickness = 20 cm
- B** Minimum wall thickness = 15 cm

Example:

- Radius: 6.0 m
 - Permissible deviation from circular arc: 1.0 cm
- => max. panel width: **60 cm**

Determining the best distribution of the panels

Example

Key data of structure:

Inside radius [cm]:	580
Outside radius [cm]:	600
Permitted deviation from circular arc [cm]:	1.0
Length of pouring section [cm]:	911 (1/4 of the inside circumference)

Panel width:

- The radius segment diagram is for determining the max. panel width as a function of the radius and the permitted deviations from the circular arc.

Panel width = 60 cm

Width of circular forming plates for inside formwork:

- As a general rule, use the Circular forming plate 0.20m with the inside formwork.

Width of circular forming plate = 20 cm

Number of circular forming plates and panels for inside formwork:

- $(\text{Length of pouring section} - \text{panel width}) / (\text{Panel width} + 20) = \dots$ $(911 - 60) / (60 + 20) = 10.64$

- Number of circular forming plates = Rounded-up result

Number of circular forming plates = 11

- Number of panels = Number of circular forming plates + 1

Number of panels = 12

Widths of circular forming plates, and numbers needed for outside formwork:

- $(\text{Outside radius} / \text{inside radius}) \times (\text{Panel width} + 20) - \text{Panel width} = \dots$ $(600 / 580) \cdot (60 + 20) - 60 = 22.76 \text{ cm}$

- Select the next smaller Circular forming plate (referred to as a 'Type A' Circular forming plate).

Width of 'Type A' Circular forming plate = 20 cm

- Calculate the difference.

Difference = $(22.76 \text{ cm} - 20 \text{ cm}) = 2.76 \text{ cm}$

- Number of Circular forming plates $\cdot (1 - (\text{Difference} / 5)) = \dots$

$11 \cdot (1 - (2.76 / 5)) = 4.93$

- Number of 'Type A' Circular forming plates = Rounded-up result

Number of 'Type A' Circular forming plates = 5

- Number of 'Type B' Circular forming plates = Number of Circular forming plates - number of 'Type A' Circular forming plates = ...

Number of 'Type B' Circular forming plates = $11 - 5 = 6$

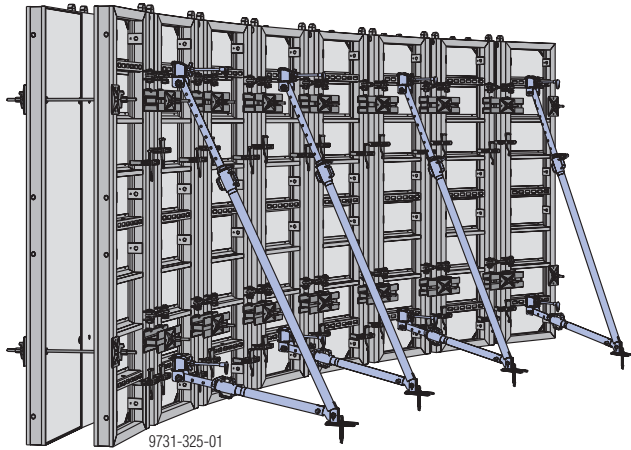
- Select the next larger Circular forming plate to be the 'Type B' Circular forming plate.

Width of 'Type B' Circular forming plate = 25 cm

Erecting and plumbing / Pouring platform / Lifting

Erecting and plumbing

Panel struts ensure that the formwork remains stable against wind loads, and make it easier to plumb and align the formwork.



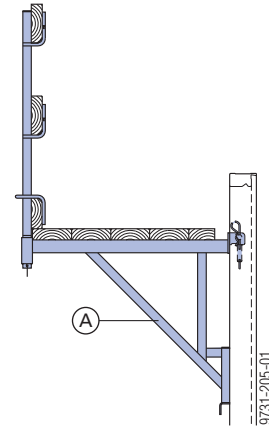
NOTICE

Ensure stability of the formwork panels in **every** phase of the construction work!
Observe all applicable safety regulations!

For more information, please see section [Plumbing accessories](#).

Pouring platform

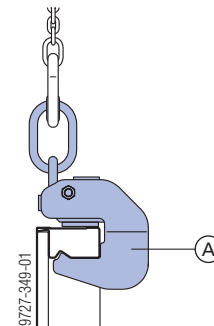
The **Framax brackets 90 (A)** can be used to make a universal pouring platform.



For more information, see section [Pouring platforms with single brackets](#).

Repositioning

Thanks to the spindle-lock, the formwork can be moved with the **Framax lifting hook (A)** even when assembled in a curved configuration.



NOTICE

- The maximum size of the unit for resetting will depend - amongst other things - on the radius that has been set.
- When resetting large gang-forms, ensure that these are sufficiently stiffened.
- Prevent oblique pull by using long lifting chains (sling angle β : max. 30°).
- Check that the slip-out guards of the Framax lifting hooks have engaged!

For more information, see section [Lifting by crane](#).



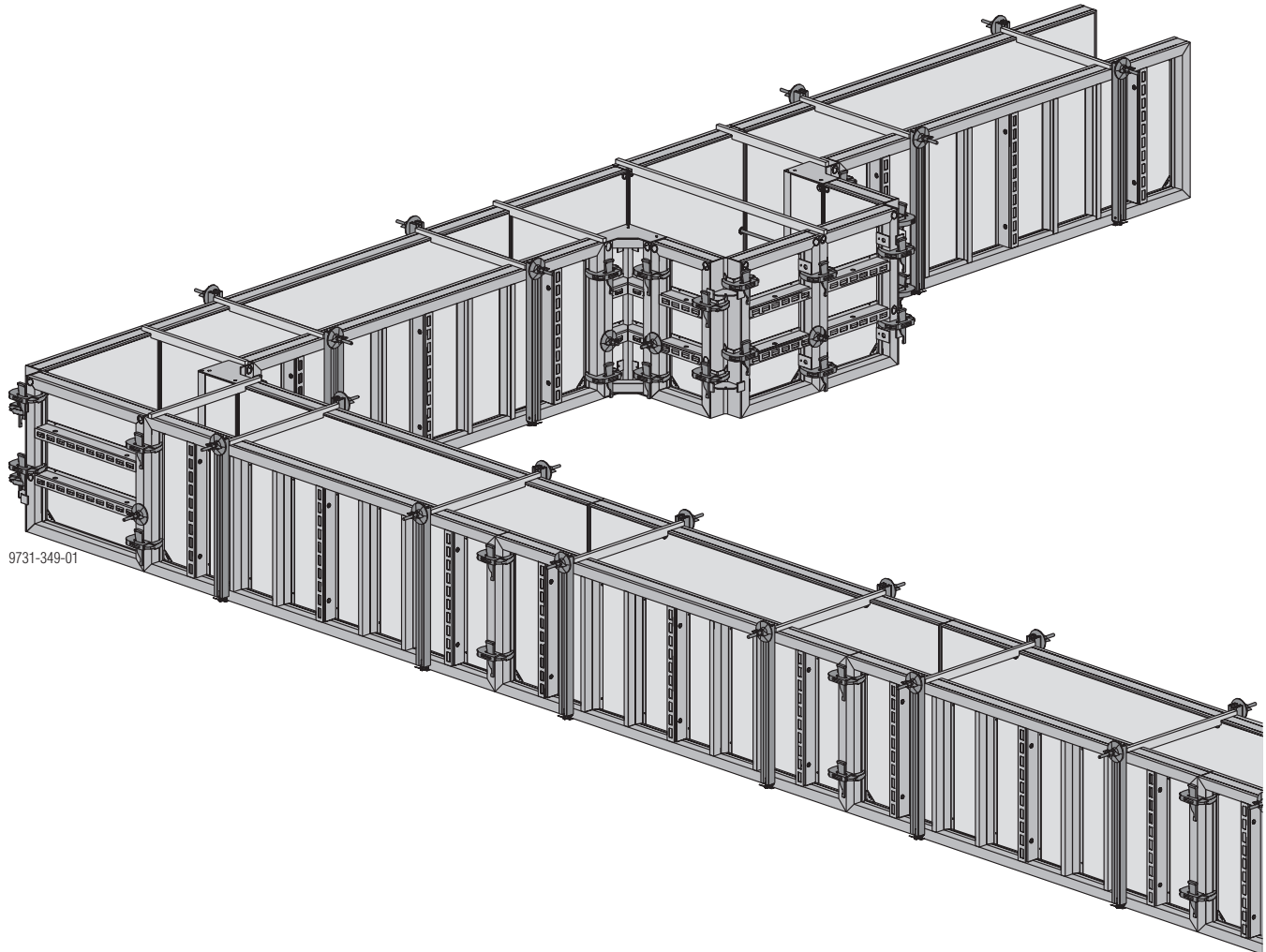
Follow the directions in the 'Framax lifting hook' Operating Instructions!

Foundation formwork

The Alu-Framax Xlife panels can also be used for foundations.

This is particularly advantageous where it is intended to continue forming (i.e. the walls) using the same panels. Foundations can be quickly formed with all Alu-Framax Xlife panels, with the panels either upright or on their

sides. The Quick acting clamp and a blow with the hammer are all it takes to join the panels. Length closures and corners are solved just as simply as in the normal wall. Practical accessories make the work very much easier.



9731-349-01

Tying the panels

Note:

Seal off unneeded form-tie sleeves with **Universal plugs R20/25**.

Tying at top

Number of form ties per panel:

	Pour height	Head anchors or tie-holder brackets
3.00m panel, longside horizontal	up to 0.75m	2
2.70m panel, longside horizontal	up to 0.90m	2
panel longside vertical		1*

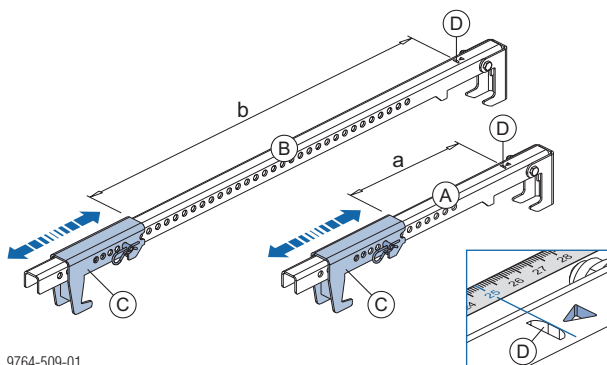
* ... only at every second panel

Framax head anchor

- Tie rod is held above panel (not in the concrete)
- Tension bracing and compression bracing using just one tool
- Wall thickness adjustable in 5-mm grid

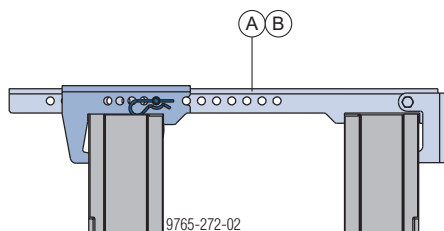
Installation of Framax head anchors:

- ▶ Position the Framax head anchor on the Alu-Framax Xlife panel.
- ▶ Telescope the Framax head anchor to the desired length 'a' (= wall thickness) and fix it in the relevant hole with a pin and spring cotter.



9764-509-01

a ... 15 - 40 cm
b ... 15 - 100 cm



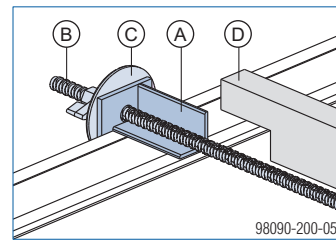
9765-272-02

- A Framax head anchor 15-40cm
- B Framax head anchor 15-100cm
- C Adjusting unit
- D Notch = measuring point

Framax head anchor:
Permitted tensile force: 10 kN
Permitted compressive force: 10 kN

Tie-holder bracket

- Tie rod is held above panel (not in the concrete)
- Form-tie spacing freely selectable



98090-200-05

- A Framax tie-holder bracket
- B Tie rod 15.0mm
- C Super plate 15.0
- D Wooden spacer

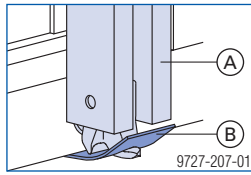
Framax tie-holder bracket:
Permissible load-bearing capacity: 15 kN

To prevent soiling of the tie rods placed across the top of the concrete, we recommend using Plastic tubes 22mm.

Tying at bottom

Foundation clamp and perforated tape

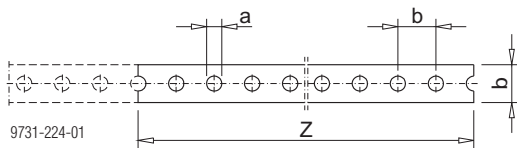
- Wall thicknesses can be formed in 5 cm grid



- A** Framax foundation clamp
- B** Doka perforated tape 50x2.0mm 25m (extendable)

Permissible load for a form-tie point with the Framax foundation clamp and Doka perforated tape is **12 kN**.

Doka perforated tape 50x2.0mm 25m

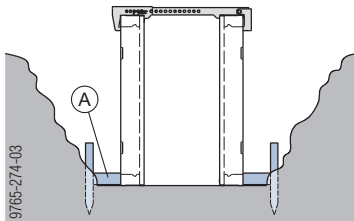


- a ... 18 mm
- b ... 50 mm
- Z ... Length of tape cut: Wall thickness + 40 cm

Foundation clamps
2 per panel

Horizontal bracing (site-provided)

In very narrow trenches, the bottom tie can be replaced by a horizontal bracing.



- A** Horizontal bracing

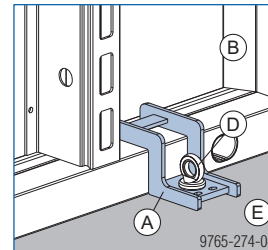
Floor fixing plate and express anchor

- No site-provided distance protector
- No form ties in the concrete
- No form ties in the area of the joint-sealing tape
- Block foundations possible



NOTICE

Use Framax floor fixing plates only on foundation slabs and concrete floor-slabs.



- A** Framax floor fixing plate
- B** Alu-Framax Xlife panel
- D** Doka express anchor 16x125mm
- E** Foundation slab / concrete floor-slab

- ▶ Engage the Framax floor fixing plate in the frame profile and fix with Doka express anchor 16x125mm.

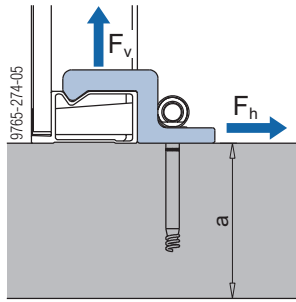


Follow the directions in the 'Doka express anchor 16x125mm' User Information booklet!



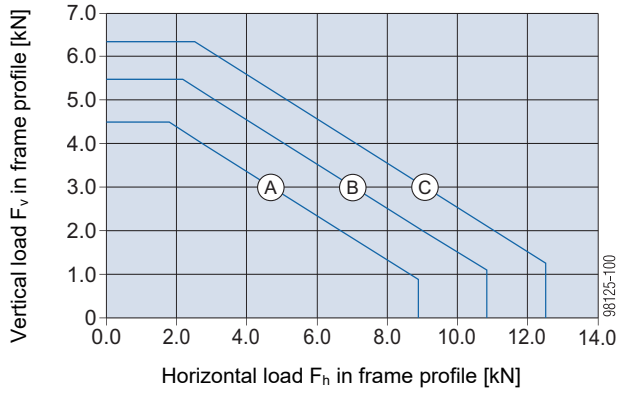
Before drilling the holes for the express anchors, temporarily secure the Framax floor fixing plates (8x12 mm slots integrated). For example with steel nails or bolts set with a compressed-air nailing gun or a bolt-setting tool.

Structural design



a ... min. 20 cm

Distance from edge to panel outside edge: min. 15 cm

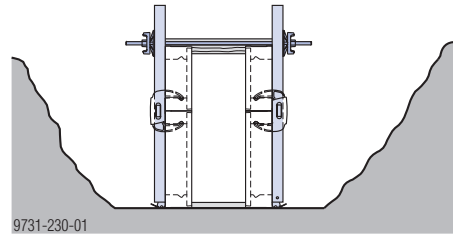
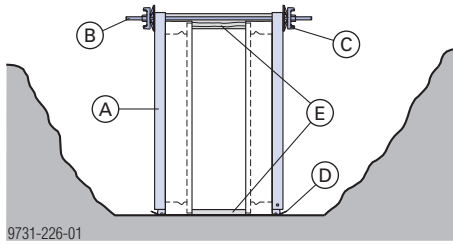
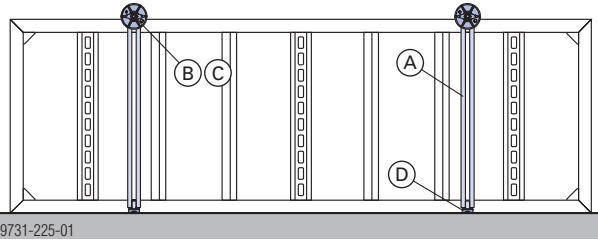


	Cube compressive strength $f_{ck, cube, current}$ of the foundation slab during loading	Max. anchoring load	
		F_{exist}	F_d
(A)	10 N/mm ² (corresponds to B10)	9.2 kN	13.8 kN
(B)	15 N/mm ² (corresponds to B15)	11.2 kN	16.8 kN
(C)	20 N/mm ² (corresponds to B20)	12.9 kN	19.4 kN

Design of the foundation formwork

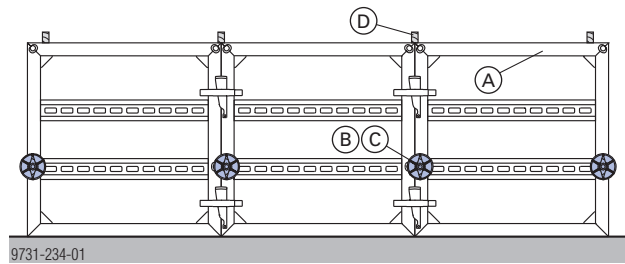
Horizontal panels

Panel 0.90x2.70m



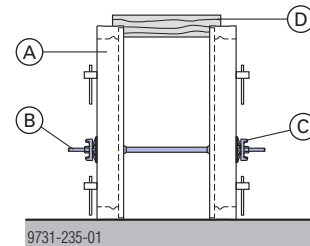
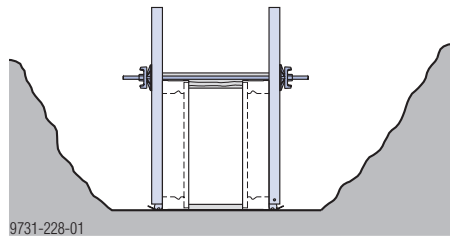
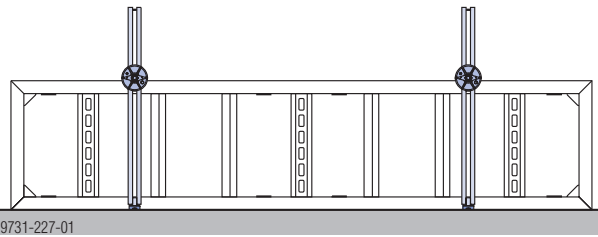
Upright 0.90 m panels

In the example below, one form-tie is sufficient for the height shown.



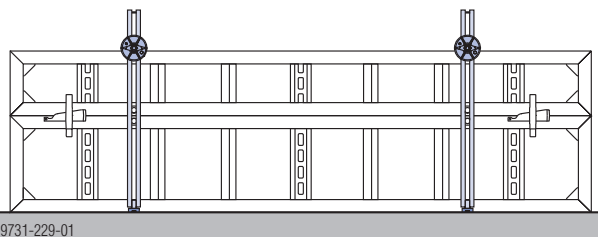
- A Framax foundation clamp
- B Tie rod 15.0mm
- C Super plate 15.0
- D Doka perforated tape
- E Wooden spacer

Panel 0.60x2.70m



- A Panel 0.90x0.90m
- B Tie rod 15.0mm
- C Super plate 15.0
- D Wooden spacer or Framax head anchor

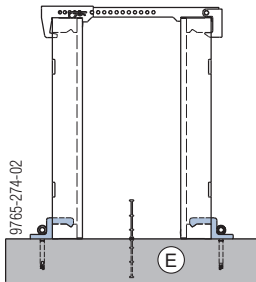
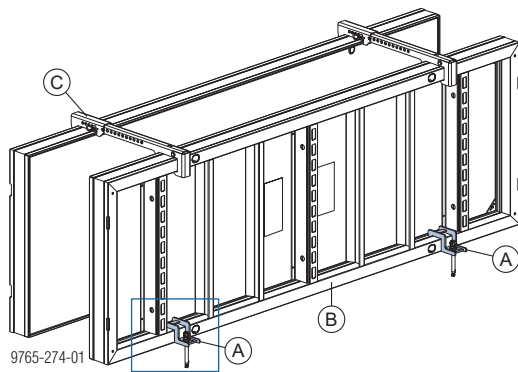
Panel 0.45x2.70m + 0.30x2.70m



NOTICE

Be sure to fit the wooden spacers exactly as shown!

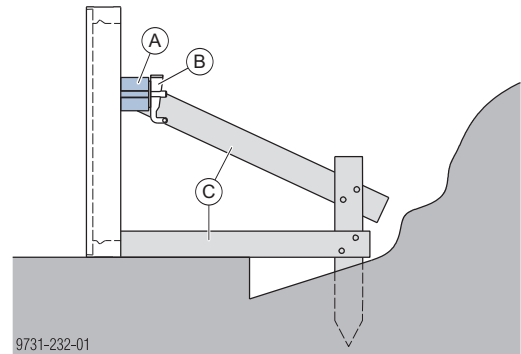
Variant with floor fixing plates and express anchors



- A Framax floor fixing plate
- B Alu-Framax Xlife panel
- C Framax head anchor
- D Doka express anchor 16x125mm
- E Foundation slab / concrete floor-slab

Shoring the panel

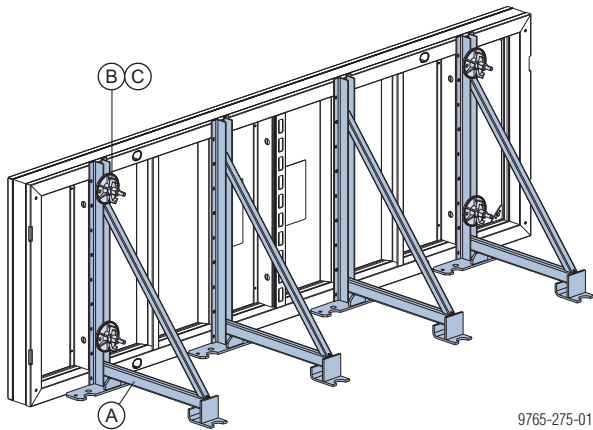
With the aid of a connecting timber and in-place timber braces, you can brace the panels so that they stand firmly.



- A Connecting timber
- B Framax wedge clamp
- C Timber brace

Slab stop-end with Supporting construction

The Supporting construction is used for erecting non-tied, single-sided formwork up to 1.20 m high (e.g. stop ends of floor slabs).



- A Supporting construction
- B Framax clamping bolt 4-8cm
- C Super plate 15.0

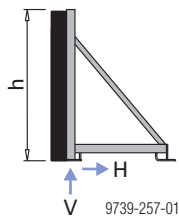


NOTICE

Transfer the vertical and horizontal forces by suitable means!

e.g.:

- 2 ground nails per Supporting construction.
- Anchoring with dowel in the blinding layer.



Pour height h [m]	Influence width [m]	Vertical force V [kN]	Horizontal force H [kN]
0.30	3.00	0.00	3.40
0.45	3.00	0.20	7.60
0.60	1.80	1.00	8.10
0.75	1.15	1.80	8.10
0.90	0.80	2.60	8.10
1.05	0.60	3.40	8.10
1.20	0.45	4.10	8.10

Support at minimum every second panel with a Supporting construction.

General

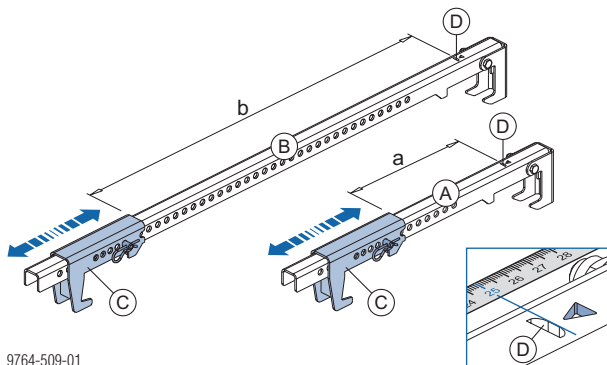
Using as downturned-beam formwork

Using **head anchors** for the **top ties** and **tie-holder brackets** for the **bottom ties** has the following effects:

- The tie-points are above and below the panel – No form ties in the concrete
- Form-tie spacing freely selectable

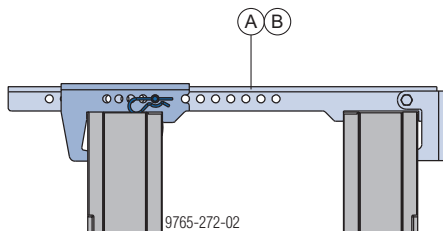
Installation of Framax head anchors:

- ▶ Position the Framax head anchor on the Alu-Framax Xlife panel.
- ▶ Telescope the Framax head anchor to the desired length 'a' (= wall thickness) and fix it in the relevant hole with a pin and spring cotter.



9764-509-01

a ... 15 - 40 cm
b ... 15 - 100 cm



- A Framax head anchor 15-40cm
- B Framax head anchor 15-100cm
- C Adjusting unit
- D Notch = measuring point

Number of ties, Alu Framax Xlife panel alongside horizontal:

Panel length	Downturned beam height	Head anchor (top)	Tie-holder bracket (bottom)
2.70m	up to 0.90m	2	
3.00m	up to 0.75m		

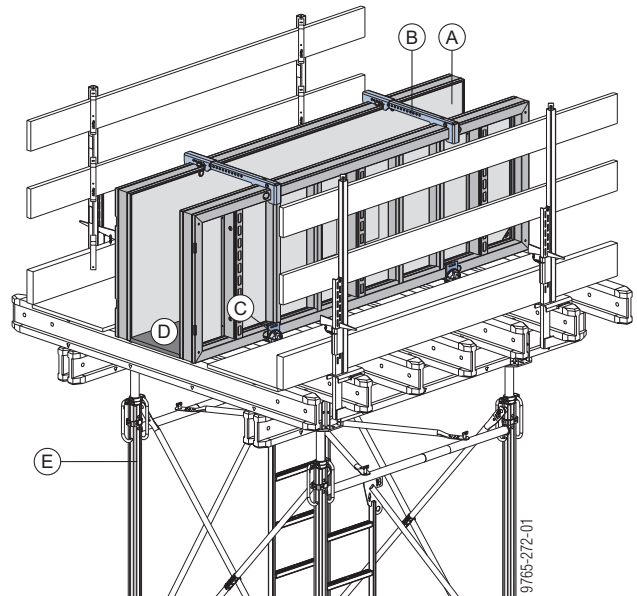
Framax head anchor:

Permissible tensile force: 10 kN
Permissible compressive force: 10 kN

Framax tie-holder bracket:

Permissible load-bearing capacity: 15 kN

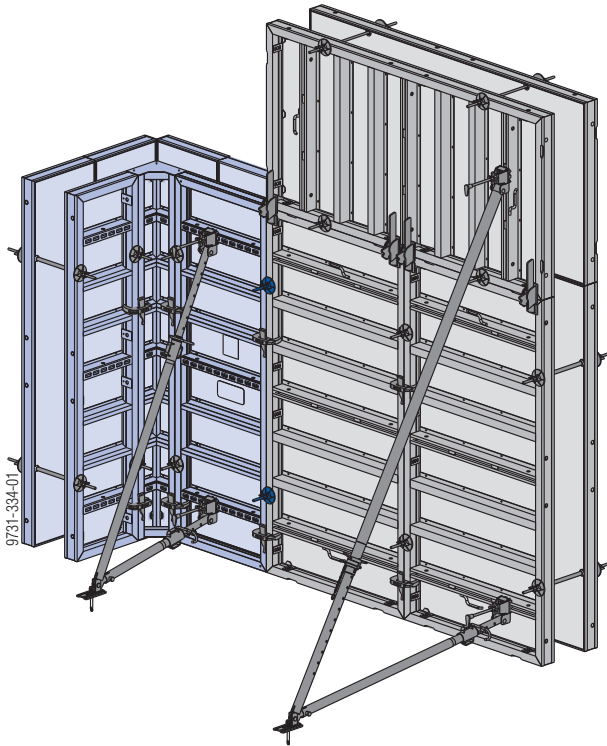
Example with 0.90x2.70m panel



Shown here without ladderways.

- A Alu-Framax Xlife panel 0.90x2.70m
- B Framax head anchor
- C Framax tie-holder bracket
- D Formwork sheet
- E Load-bearing tower (e.g. Staxo 100)

Alu-Framax Xlife in conjunction with Framax Xlife



Combining Framax Xlife with Alu-Framax Xlife makes it possible to divide up the work into areas for crane-handled and man-handled forms, facilitating scheduling and the work sequence on the site.

- **Framed formwork Alu-Framax Xlife**
 - for complicated floor plans, or where no crane is available
- **Framed formwork Framax Xlife**
 - for crane-assisted forming of large areas



NOTICE

- When you place an Alu-Framax Xlife panel next to a Framax Xlife panel, always place the form tie in the Framax Xlife panel!
- If 'hybrid' gang-forms (containing both Alu-Framax Xlife + Framax Xlife panels) are lifted and reset by crane, they must be given additional stiffening reinforcement.
- Do not exceed the permissible design values of the Alu-Framax Xlife connector components! (see section [Inter-panel connections](#))

Forming self-compacting concrete (SCC)

The **Universal panel SCC 0.45x1.50m** and **Framax Xlife universal panel SCC 0.90x2.70m** enable the placement of self-compacting concrete (SCC).



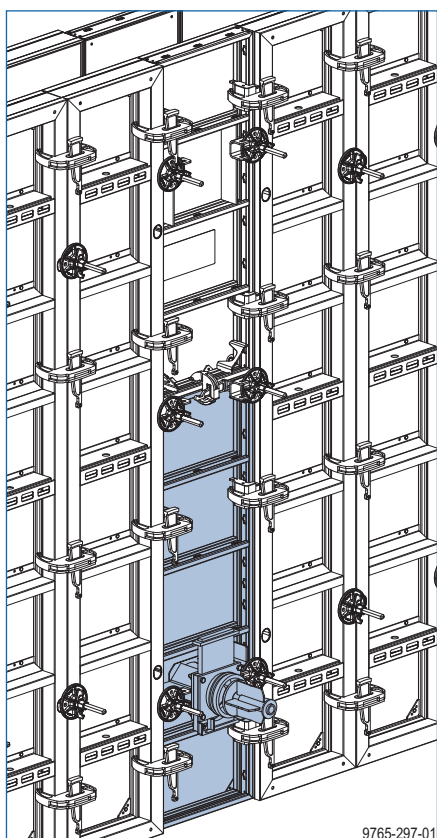
NOTICE

The connection point for self-compacting concrete (SCC) is not suitable for pouring conventional concrete!



Follow the directions in the 'Forming self-compacting concrete (SCC)' User Information booklet.

Practical example

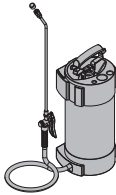


9765-297-01

Cleaning and care of your equipment

Release agents

Doka-Trenn and Doka-OptiX are applied using the Doka release-agent sprayer.



Follow the directions in the 'Doka release-agent sprayer' Operating Instructions and on the containers of release agent.



NOTICE

- Before every pour:
 - Apply release agent to the formwork sheet and the end faces **extremely thinly, evenly and in a continuous layer**.
- Make sure there are no drips of release-agent running down the formwork sheet.
- Applying too much release agent will spoil the concrete finish.



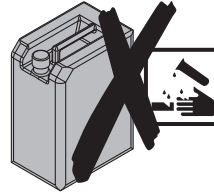
To determine the right dosage and to make sure that you are using the agent correctly, test it on less important parts of the structure first.

Cleaning



NOTICE

- Immediately after pouring:
 - Remove any blobs of concrete from the back-face of the formwork, using water (without any added sand).
- Immediately after stripping the formwork:
 - Clean the formwork with a high-pressure washer and a concrete scraper.
- Do not use any chemical cleaning agents!



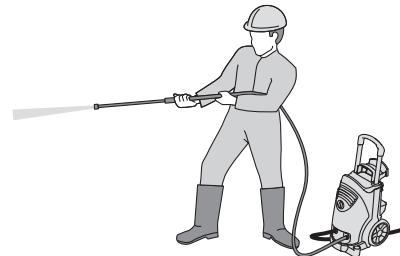
Cleaning high formwork:

Provide a service tower at a suitable cleaning location.

- Wheel-around scaffold DF (working heights of up to 3.50 m)
- Ringlock (working heights of up to 12.00 m)

Cleaning equipment

High-pressure spray cleaner

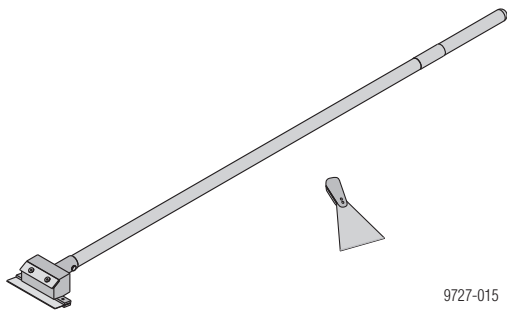


NOTICE

- Appliance pressure rating: 200 to max. 300 bar
- Keep the water-jet the correct distance from the formwork, and move it at the right speed:
 - The higher the pressure, the further away from the formwork you must keep the jet and the faster you must move it across the surface.
- Do not aim the jet at one place for too long.
- Make only moderate use of the jet around the silicone sealing strip:
 - If the pressure is too high, this will damage the silicone sealing strip.
 - Do not aim the jet at one place for too long.

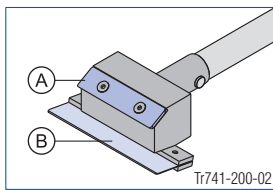
Concrete scraper

For removing any concrete remnants, we recommend using a **Double scraper Xlife** and a spatula.

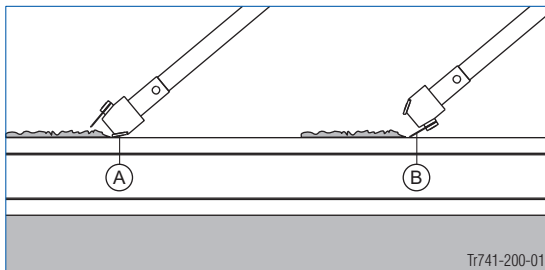


9727-015

Functional description:



Tr741-200-02



Tr741-200-01

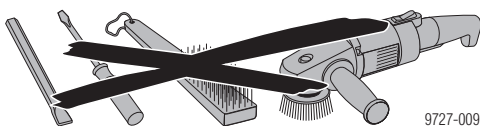
A Blade for dealing with heavy soiling

B Blade for dealing with slight soiling



NOTICE

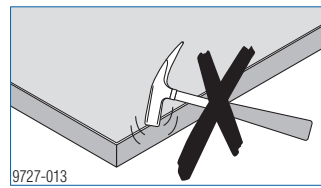
Do not use pointed or sharp objects, wire brushes, abrasive disks or cup brushes.



9727-009

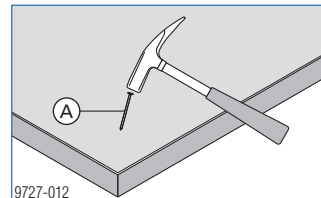
Care

- No hammer-blows to the frame profiles



9727-013

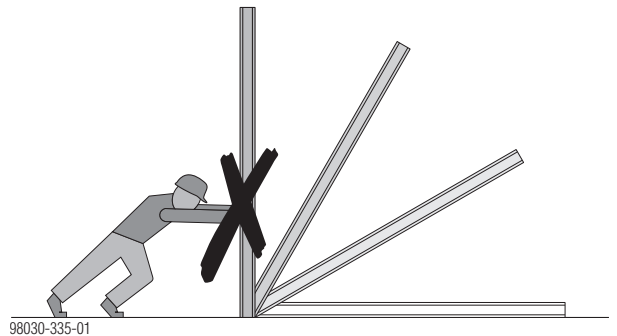
- Do not use nails on the formwork that are longer than 60 mm



9727-012

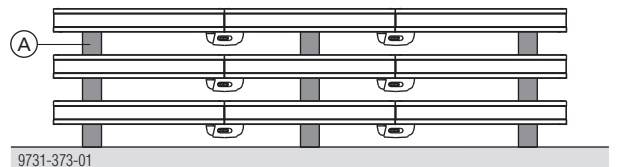
A max. l = 60 mm

- Never push over panels or allow them to fall



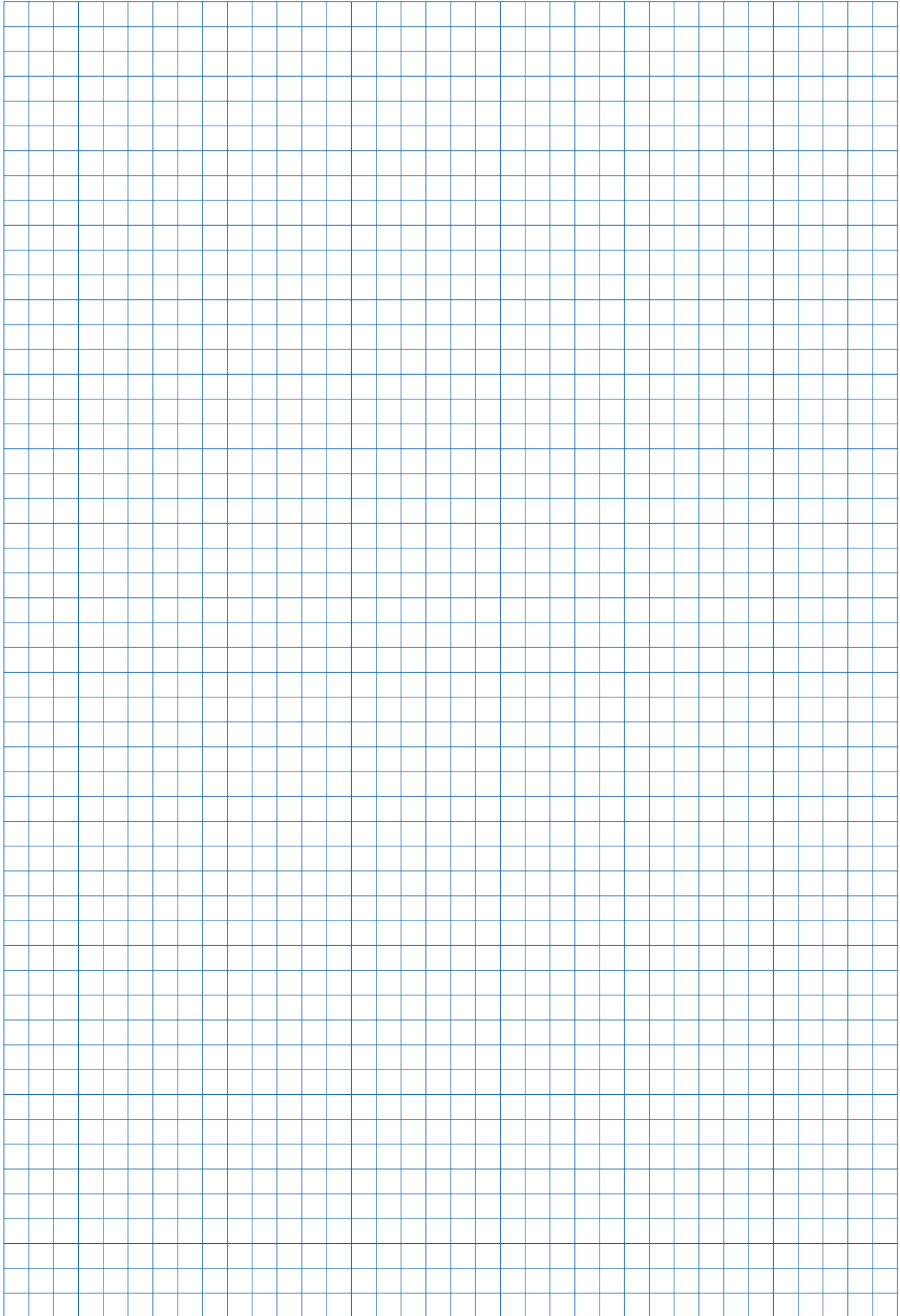
98030-335-01

- Always insert suitable, correctly aligned timber battens (A) as spacers when stacking gang-forms one on top of another.



9731-373-01

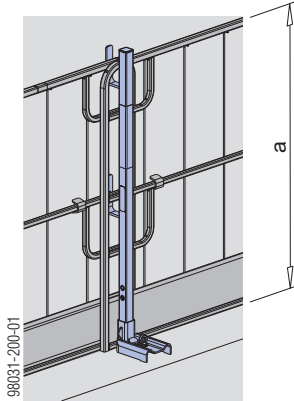
This prevents the formwork sheets from being damaged by the connector components.



Fall protection on the structure

Xsafe edge protection XP

- Attached with screw-on shoe, railing clamp, hand-rail-post shoe or Step bracket XP
- Protective grating XP, guardrail boards or scaffold tubes can be used as the safety barrier



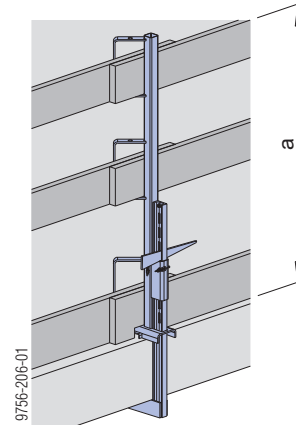
a ... > 1.00 m



Follow the directions in the 'Xsafe edge protection XP' User Information booklet.

Handrail clamp S

- Attached with integral clamp
- Guard-rail boards or scaffold tubes can be used as the safety barrier



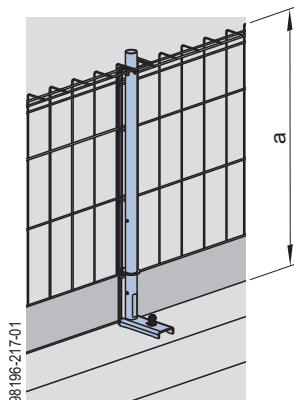
a ... > 1.00 m



Follow the directions in the "Handrail clamp S" User information!

Xsafe edge protection Z

- Attachment by integral screw-on shoe
- Protective barrier Z can be used as the safety barrier



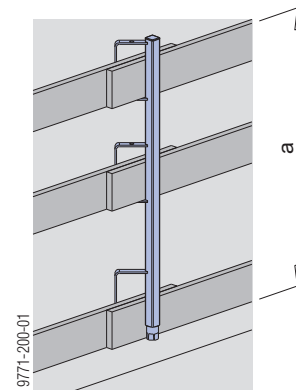
a ... > 1.17 m



Follow the directions in the 'Xsafe edge protection Z' User Information booklet.

Handrail post 1.10m

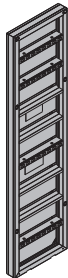


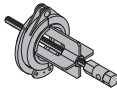
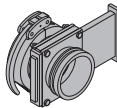
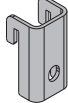
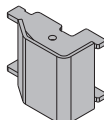

- Fixed in a Screw sleeve 20.0 or Attachable sleeve 24mm
- Guard-rail boards or scaffold tubes can be used as the safety barrier

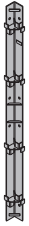


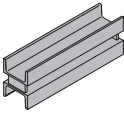

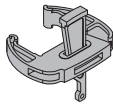

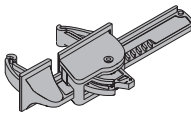

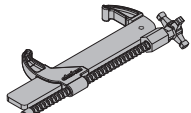
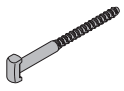
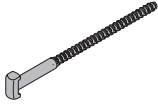
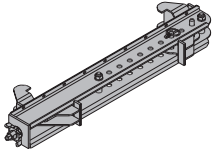


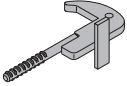
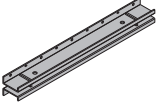
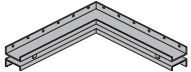
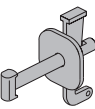
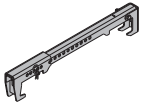
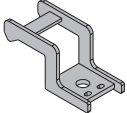
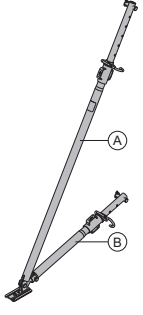
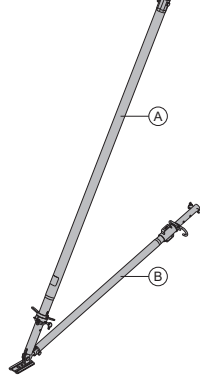
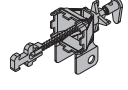
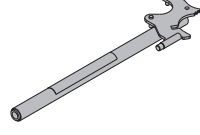



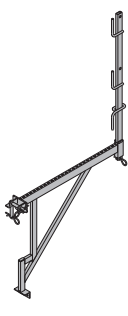
a ... > 1.00 m

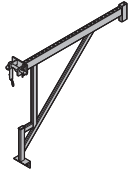
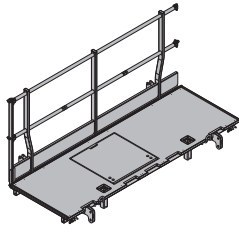
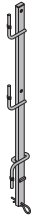
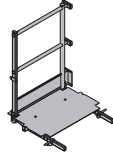
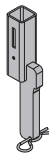
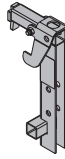

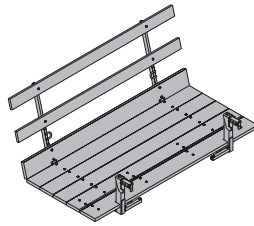

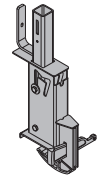

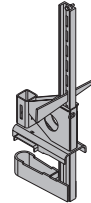
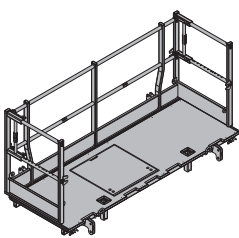
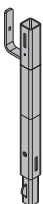


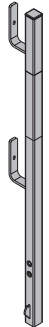



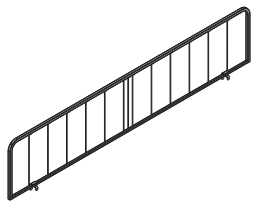

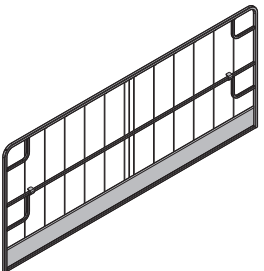
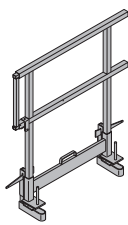
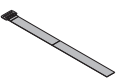
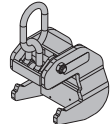
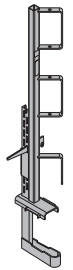



Follow the directions in the 'Handrail post 1.10m' User Information!






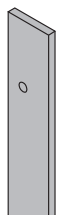

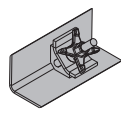
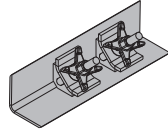

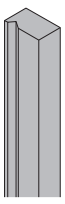



	[kg]	Article N°		[kg]	Article N°	
Alu-Framax Xlife panel HK 0.75x3.00m	63.5	588327500	 <p>Powder-coated</p> <p>On enquiry!</p>	Framax Xlife universal panel SCC 0.90x2.70m Framax Xlife-Uni-Element SCC 0,90x2,70m Galvanised, powder-coated 	170.3 588119500	
Alu-Framax Xlife panel HK 0.60x3.00m	53.0	588328500				
Alu-Framax Xlife panel HK 0.55x3.00m	50.1	588329500				
Alu-Framax Xlife panel 0.50x3.00m	47.5	588331500				
Alu-Framax Xlife panel 0.45x3.00m	42.8	588333500				
Alu-Framax Xlife panel 0.30x3.00m	33.3	588334500				
Alu-Framax Xlife panel 0.25x3.00m	30.1	588335500				
Alu-Framax Xlife panel 0.20x3.00m	27.0	588337500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.90x2.70m	68.8	588301500	 <p>Galvanised, powder-coated</p>	47.5 589446000		
Alu-Framax Xlife panel HK 0.60x2.70m	69.4	588301400				
Alu-Framax Xlife panel 0.75x2.70m	55.7	588302500				
Alu-Framax Xlife panel HK 0.75x2.70m	56.3	588302400				
Alu-Framax Xlife panel 0.60x2.70m	47.8	588304500				
Alu-Framax Xlife panel HK 0.60x2.70m	47.4	588304400				
Alu-Framax Xlife panel 0.55x2.70m	44.4	588305500				
Alu-Framax Xlife panel HK 0.55x2.70m	44.6	588305400				
Alu-Framax Xlife panel 0.45x2.70m	40.1	588306500				
Alu-Framax Xlife panel 0.30x2.70m	30.0	588308500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.50x2.70m	40.8	588307500	 <p>Galvanised</p> <p>Length: 48 cm</p> <p>Diameter: 27 cm</p>	10.0 588121000		
Alu-Framax Xlife panel 0.25x2.70m	28.0	588309500				
Alu-Framax Xlife panel 0.20x2.70m	24.9	588311500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.90x0.90m	25.6	588310500			 <p>Galvanised</p> <p>Length: 18 cm</p> <p>Width: 33 cm</p> <p>Height: 27 cm</p>	18.0 588127000
Alu-Framax Xlife panel 0.75x0.90m	21.6	588312500				
Alu-Framax Xlife panel 0.60x0.90m	17.8	588314500				
Alu-Framax Xlife panel 0.55x0.90m	17.1	588315500				
Alu-Framax Xlife panel 0.45x0.90m	15.4	588316500				
Alu-Framax Xlife panel 0.30x0.90m	11.5	588318500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.50x0.90m	15.5	588313500				
Alu-Framax Xlife panel 0.25x0.90m	10.0	588317500				
Alu-Framax Xlife panel 0.20x0.90m	8.8	588319500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.90x0.90m	25.6	588310500	 <p>Galvanised</p> <p>Height: 11 cm</p>	0.47 588492000		
Alu-Framax Xlife panel 0.75x0.90m	21.6	588312500				
Alu-Framax Xlife panel 0.60x0.90m	17.8	588314500				
Alu-Framax Xlife panel 0.55x0.90m	17.1	588315500				
Alu-Framax Xlife panel 0.45x0.90m	15.4	588316500				
Alu-Framax Xlife panel 0.30x0.90m	11.5	588318500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.50x0.90m	15.5	588313500				
Alu-Framax Xlife panel 0.25x0.90m	10.0	588317500				
Alu-Framax Xlife panel 0.20x0.90m	8.8	588319500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.90x0.90m	25.6	588310500	 <p>Galvanised</p> <p>Height: 8 cm</p>	0.6 588491000		
Alu-Framax Xlife panel 0.75x0.90m	21.6	588312500				
Alu-Framax Xlife panel 0.60x0.90m	17.8	588314500				
Alu-Framax Xlife panel 0.55x0.90m	17.1	588315500				
Alu-Framax Xlife panel 0.45x0.90m	15.4	588316500				
Alu-Framax Xlife panel 0.30x0.90m	11.5	588318500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife panel 0.50x0.90m	15.5	588313500				
Alu-Framax Xlife panel 0.25x0.90m	10.0	588317500				
Alu-Framax Xlife panel 0.20x0.90m	8.8	588319500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife universal panel HK 0.75x3.00m	70.0	588338500	 <p>Powder-coated</p> <p>Corners marked in blue</p> <p>On enquiry!</p>	Alu-Framax Xlife inside corner 3.00m Alu-Framax Xlife inside corner 2.70m Alu-Framax Xlife inside corner 0.90m Alu-Framax Xlife-Innenecke Powder-coated	52.2 588339500 50.3 588330500 18.5 588332500	
Alu-Framax Xlife-Element HK 0,75x3,00m						
Alu-Framax Xlife universal panel 0.75x2.70m	64.2	588322500				
Alu-Framax Xlife universal panel HK 0.75x2.70m	64.4	588322400				
Alu-Framax Xlife universal panel 0.75x1.35m	33.8	588324500				
Alu-Framax Xlife universal panel 0.75x0.90m	27.0	588326500				
Alu-Framax Xlife-Element						
Alu-Framax Xlife universal panel 0.75x2.70m	64.2	588322500				
Alu-Framax Xlife universal panel HK 0.75x2.70m	64.4	588322400				
Alu-Framax Xlife universal panel 0.75x1.35m	33.8	588324500				
Alu-Framax Xlife universal panel 0.75x0.90m	27.0	588326500				
Alu-Framax Xlife-Element						

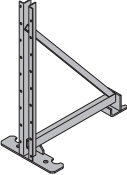


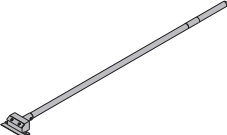

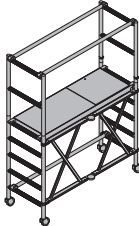

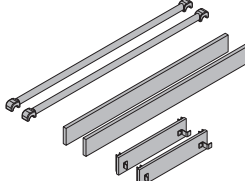
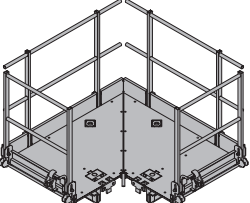
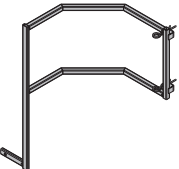

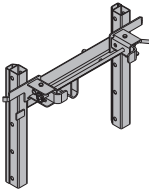

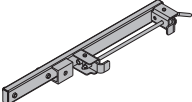
	[kg]	Article N°		[kg]	Article N°
Framax outside corner 3.00m Framax outside corner 2.70m Framax outside corner 0.90m Framax-Außenecke Galvanised 	52.2	588964500	Framax circular forming plate 0.20x2.70m Framax circular forming plate 0.25x2.70m Framax circular forming plate 0.30x2.70m Framax circular forming plate 0.20x0.90m Framax circular forming plate 0.25x0.90m Framax circular forming plate 0.30x0.90m Framax-Bogenblech Galvanised, powder-coated 	56.5	588235000
Framax hinged inside corner I galv. 2.70m Framax hinged inside corner I galv. 0.90m Framax-Scharnierecke I Galvanised, powder-coated 	105.8	588136500	Framax steel waling RD 0.40m Framax-Stahlwandriegel RD 0,40m Painted blue 	8.7	588189000
Framax hinged inside corner I 2.70m Framax hinged inside corner I 0.90m Framax-Scharnierecke I Powder-coated blue 	102.3	588136000	Framax quick acting clamp RU Framax-Schnellspanner RU Galvanised Length: 20 cm 	3.1	588153400
Framax hinged outside corner A galv. 2.70m Framax hinged outside corner A galv. 0.90m Framax-Scharnierecke A verzinkt Galvanised, powder-coated 	52.8	588942000	Framax multi function clamp Framax-Uni-Spanner Galvanised Length: 40 cm 	5.8	588169000
Framax hinged outside corner A 2.70m Framax hinged outside corner A 0.90m Framax-Scharnierecke A Powder-coated blue 	52.8	588134000	Framax adjustable clamp Framax-Ausgleichsspanner Galvanised Length: 48 cm 	5.3	588168000
			Framax universal fixing bolt 10-16cm Framax-Universalverbinder 10-16cm Galvanised Length: 26 cm 	0.6	588158000
			Framax universal fixing bolt 10-25cm Framax-Universalverbinder 10-25cm Galvanised Length: 36 cm 	0.69	583002000
			Framax stop-end waler tie 15-45cm Framax stop-end waler tie 15-75cm Framax-Stirnabschalzwinge Galvanised 	15.0	588940000
				20.6	588941000

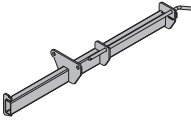
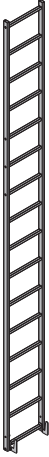
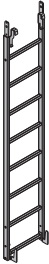
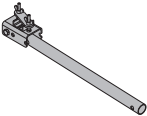
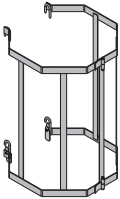
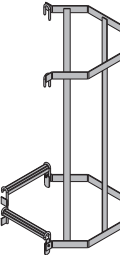
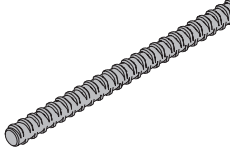

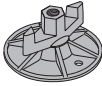





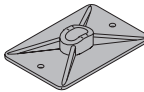

	[kg]	Article N°		[kg]	Article N°
Framax stop-end tie Framax-Stirnanker  Galvanised Length: 29 cm	1.5	588143000			
Framax universal waling 0.60m Framax universal waling 0.90m Framax universal waling 1.50m Framax-Klemmschiene  Painted blue	6.6 10.6 16.8	588689000 588150000 588148000			
Framax universal corner waling Framax-Eckklemmschiene  Painted blue Length: 60 cm Width: 60 cm	12.8	588151000			
Framax wedge clamp Framax-Spannklemme  Galvanised Length: 21 cm	1.5	588152000			
Framax head anchor 15-40cm Length: 72 - 81 cm Framax head anchor 15-100cm Length: 131 - 141 cm Framax-Kopfancker  Galvanised, powder-coated	4.2 6.1	588969000 588970000			
Framax floor fixing plate Framax-Bodenhalter  Galvanised Length: 17.6 cm Width: 7.7 cm	0.87	588628000			
Panel strut 340 IB Elementstütze 340 IB consisting of: (A) Plumbing strut 340 IB Galvanised Length: 190.8 - 341.8 cm (B) Adjusting strut 120 IB Galvanised Length: 81.5 - 130.6 cm  Galvanised Delivery condition: folded closed	24.3 16.7 7.6	580365000 588696000 588248500			
Panel strut 540 IB Elementstütze 540 IB consisting of: (A) Plumbing strut 540 IB Galvanised Length: 310.5 - 549.2 cm (B) Adjusting strut 220 IB Galvanised Length: 172.5 - 221.1 cm  Galvanised Delivery condition: folded closed	41.4 30.7 10.9	580366000 588697000 588251500			
Prop head EB Stützenkopf EB  Galvanised Length: 40.8 cm Width: 11.8 cm Height: 17.6 cm	3.1	588244500			
Universal dismantling tool Universal-Lösewerkzeug  Galvanised Length: 75.5 cm	3.6	582768000			
Doka express anchor 16x125mm Doka-Expressanker 16x125mm  Galvanised Length: 18 cm	0.31	588631000			
Doka coil 16mm Doka-Coil 16mm  Galvanised Diameter: 1.6 cm	0.009	588633000			
Information plate for express anchor Plakette Expressanker  PS Width: 8 cm Height: 7.5 cm	0.1	588630000			
Framax bracket 90 Framax-Konsole 90  Galvanised Length: 103 cm Height: 185 cm Delivery condition: railing included	12.5	588167000			

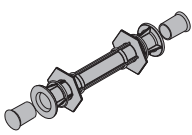
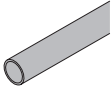



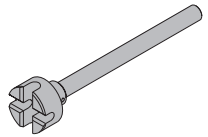
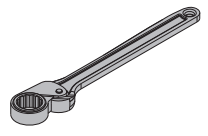
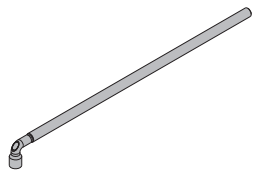
	[kg]	Article N°		[kg]	Article N°
Framax bracket 90 EP Framax-Konsole 90 EP  Galvanised Length: 103 cm Height: 84 cm	9.0	588979000	Xsafe plus platform 2.70m Xsafe plus-Bühne 2,70m  Steel parts galvanised Timber parts varnished yellow Height: 136 cm Delivery condition: folded closed	151.7	586404000
Handrail post 1.00m Geländer 1,00m  Galvanised Length: 124 cm	3.8	584335000	Xsafe plus platform extension 0.60m Xsafe plus-Bühnenverlängerung 0,60m  Galvanised Height: 120 cm Delivery condition: railing included	43.4	586418000
Bracket adapter XP FRR 50/30 Konsolenadapter XP FRR 50/30  Galvanised Height: 32 cm	2.4	586486000	Xsafe plus lifting adapter Framax Xsafe plus-Umsetzadapter Framax  Galvanised Height: 51.4 cm	6.6	586436000
Scaffold tube 48.3mm 0.50m Scaffold tube 48.3mm 1.00m Scaffold tube 48.3mm 1.50m Scaffold tube 48.3mm 2.00m Scaffold tube 48.3mm 2.50m Scaffold tube 48.3mm 3.00m Scaffold tube 48.3mm 3.50m Scaffold tube 48.3mm 4.00m Scaffold tube 48.3mm 4.50m Scaffold tube 48.3mm 5.00m Scaffold tube 48.3mm 5.50m Scaffold tube 48.3mm 6.00m Scaffold tube 48.3mmm Gerüstrohr 48,3mm  Galvanised	1.7 3.6 5.4 7.2 8.4 10.8 12.6 14.4 16.2 18.0 19.8 21.6 3.6	682026000 682014000 682015000 682016000 682017000 682018000 682019000 682021000 682022000 682023000 682024000 682025000 682001000	Framax pouring platform U 1.25/2.70m Framax-Betonierbühne U 1,25/2,70m  Steel parts galvanised Timber parts varnished yellow Delivery condition: folded closed	127.5	588377000
Scaffold tube connection Gerüstrohranschluss  Galvanised Height: 7 cm	0.27	584375000	Framax adapter XP Framax-Adapter XP  Galvanised Height: 56 cm	8.0	586475000
Screw-on coupler 48mm 50 Anschraubkupplung 48mm 50  Galvanised Width-across: 22 mm	0.8	682002000	Railing clamp XP 40cm Geländerzwinge XP 40cm  Galvanised Height: 73 cm	7.7	586456000
Xsafe plus platform 2.70m with side railing Xsafe plus-Bühne 2,70m mit Seitengeländer  Steel parts galvanised Timber parts varnished yellow Height: 136 cm Delivery condition: folded closed	189.0	586401000	Handrail post XP 0.60m Geländersteher XP 0,60m  Galvanised Height: 68 cm	5.0	586462000

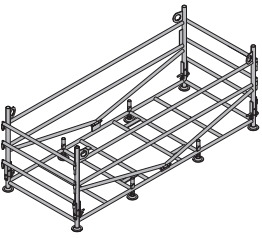

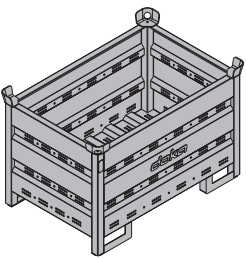
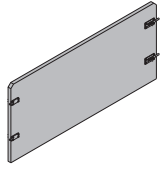
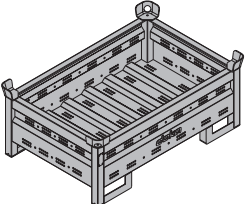
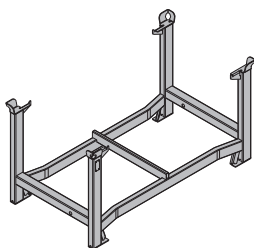
	[kg]	Article N°		[kg]	Article N°
Handrail post XP 1.20m Geländersteher XP 1,20m  Galvanised Height: 118 cm	4.1	586460000	Handrail post 1.10m Schutzgeländer 1,10m  Galvanised Height: 134 cm	5.5	584384000
Toeboard holder XP 1.20m Fußwehrhalter XP 1,20m  Galvanised Height: 21 cm	0.64	586461000	Screw sleeve 20.0 Schraubhülse 20,0  PP Yellow Length: 20 cm Diameter: 3.1 cm	0.03	584386000
Protective grating XP 2.70x0.60m Protective grating XP 2.50x0.60m Protective grating XP 2.00x0.60m Protective grating XP 1.20x0.60m Schutzgitter XP  Galvanised	10.1 9.5 8.0 5.0	586466000 586472000 586473000 586491000	Attachable sleeve 24mm Stechhülse 24mm  PVC PE Grey Length: 16.5 cm Diameter: 2.7 cm	0.03	584385000
Protective grating XP 2.70x1.20m Protective grating XP 2.50x1.20m Protective grating XP 2.00x1.20m Protective grating XP 1.20x1.20m Schutzgitter XP  Galvanised	22.2 20.5 17.4 12.0	586450000 586451000 586452000 586453000	Side handrail clamping unit T Seitenschutzgeländer T  Galvanised Length: 115 - 175 cm Height: 112 cm	29.1	580488000
Velcro fastener 30x380mm Klettverschluss 30x380mm  Yellow	0.02	586470000	Framax lifting hook Framax-Umsetzbügel  Galvanised Height: 22 cm Follow the directions in the "Operating Instructions"!	10.6	588149000
Handrail clamp S Schutzgeländerzwinde S  Galvanised Height: 123 - 171 cm	11.5	580470000	Framax stacking cone Framax-Stapelkonus  Blue Diameter: 2.3 cm	0.01	588234000
			Doka 4-part chain 3.20m Doka-Vierstrangkette 3,20m  Follow the directions in the "Operating Instructions"!	15.0	588620000
			Framax transport gear Framax-Transportgehänge  Galvanised Follow the directions in the "Operating Instructions"!	13.3	588232000

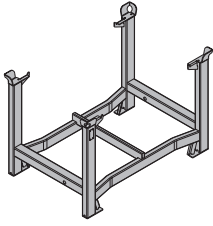
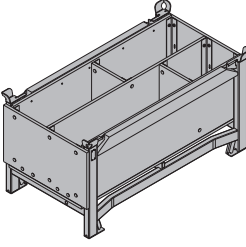
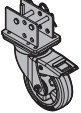
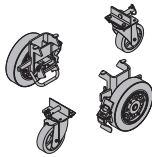
	[kg]	Article N°		[kg]	Article N°
Dokamatic lifting strap 13.00m Dokamatic-Umsetzungsgurt 13,00m  Green Follow the directions in the "Operating Instructions"!	10.5	586231000		Connecting timber Anklemmholz  Varnished yellow Width: 10 cm	0.7 176030000
Framax aluminium closure 5cm 2.70m Framax aluminium closure 10cm 2.70m Framax-Alu-Ausgleich 2,70m Powder-coated 	8.5 11.0	589226000 589227000		Framax triangular ledge 2.70m Framax-Dreikantleiste 2,70m 	0.38 588170000
Framax fitting timber 2x12cm 2.70m Framax fitting timber 3x12cm 2.70m Framax fitting timber 5x12cm 2.70m Framax fitting timber 10x12cm 2.70m Framax fitting timber 2x12cm 3.30m Framax fitting timber 3x12cm 3.30m Framax fitting timber 5x12cm 3.30m Framax fitting timber 10x12cm 3.30m Framax-Passholz Varnished yellow 	3.1 4.7 7.8 15.5 3.8 5.7 9.5 19.0	176020000 176022000 176024000 176026000 176021000 176023000 176025000 176027000		Framax frontal triangular ledge 2.70m Framax frontal triangular ledge 3.30m Framax-Stirndreikantleiste Grey 	1.7 2.0 588129000 588949000
				Box-out clamp type 1cm Aussparungsklemme Typ 1cm  Painted blue Length: 10 cm Width: 10 cm	17.4 580066000
				Box-out clamp type 2cm Aussparungsklemme Typ 2cm  Painted blue Length: 10 cm Width: 10 cm	17.4 580067000
				Framax tie-holder bracket Framax-Ankerhaltewinkel  Painted blue Width: 9 cm Height: 13 cm	1.4 588188000
Framax moulded timber 27mm 2.70m Framax moulded timber 21mm 2.70m Framax moulded timber 18mm 2.70m Framax moulded timber 27mm 3.30m Framax moulded timber 21mm 3.30m Framax moulded timber 18mm 3.30m Framax-Profilholz Varnished yellow 	7.6 8.0 8.4 9.3 9.8 10.2	176012000 176010000 176119000 176013000 176011000 176120000		Framax foundation clamp 0.90m Framax-Fundamentspanner 0,90m  Galvanised	4.9 588141000
Framax formwork stripping timb. 10x12cm 2.85m Framax formwork stripping timb. 10x12cm 3.45m Framax-Ausschalholz Varnished yellow 	16.4 19.9	176008000 176014000		Doka perforated tape 50x2.0mm 25m Doka-Lochband 50x2,0mm 25m 	17.0 588206000

	[kg]	Article N°		[kg]	Article N°
Supporting construction Abstützwinkel  <p>Galvanised Length: 66 cm Width: 37 cm Height: 91 cm</p>	10.7	588477000	Framax assembling tool Framax-Montagestange  <p>Galvanised Length: 193 cm</p>	4.2	588678000
Framax clamping bolt 4-8cm Framax-Klemmschraube 4-8cm  <p>Galvanised Length: 19 cm</p>	0.39	588107000	Double scraper Xlife 100/150mm 1.40m Doppelschaber Xlife 100/150mm 1,40m 	2.8	588674000
Universal plug R20/25 Kombi-Ankerstopfen R20/25  <p>Blue Diameter: 3 cm</p>	0.003	588180000	Wheel-around scaffold DF Mobilgerüst DF  <p>Aluminium Length: 185 cm Width: 80 cm Height: 255 cm Delivery condition: separate parts</p>	44.0	586157000
Framax plug R24,5 Framax-Abdeckstopfen R24,5  <p>Yellow Diameter: 2 cm</p>	0.003	588181000	Wheel-around scaffold DF accessory set Zubehörset Mobilgerüst DF  <p>Aluminium Timber parts varnished yellow Length: 189 cm</p>	13.3	586164000
Doka column formwork platform 150/90cm Doka-Stützenbühne 150/90cm  <p>Galvanised Length: 173 cm Width: 173 cm Height: 130 cm Delivery condition: folded closed</p>	211.8	588382000	Counter railing col. formwork plat. 150/90cm Gegengeländer Stützenbühne 150/90cm  <p>Galvanised Width: 87 cm Height: 170 cm</p>	8.0	588385000
Framax telescopic assembling tool Framax-Teleskop-Montagestange  <p>Aluminium Length: 230 - 400 cm</p>	3.8	588651000	Connector XS wall formwork Anschluss XS Wandschalung  <p>Galvanised Width: 89 cm Height: 63 cm</p>	20.8	588662000
			Fixing clamp XS Framax Befestigungsklemme XS Framax  <p>Galvanised Length: 20 cm Width-across: 27 mm</p>	1.5	588677000
			Connector XS Framax/Alu-Framax Anschluss XS Framax/Alu-Framax  <p>Galvanised Length: 115 cm</p>	11.2	588639000

	[kg]	Article N°		[kg]	Article N°
Connector XS column formwork platform Anschluss XS Stützenbühne  Galvanised Length: 123 cm	10.0	588637000			
System ladder XS 4.40m System-Leiter XS 4,40m  Galvanised	33.2	588640000			
Ladder extension XS 2.30m Leiternverlängerung XS 2,30m  Galvanised	19.1	588641000			
Securing barrier XS Sicherungsschranke XS  Galvanised Length: 80 cm	4.9	588669000			
Ladder cage XS 1.00m Ladder cage XS 0.25m Rückenschutz XS  Galvanised	16.5	588643000			
Ladder cage exit XS Rückenschutz-Ausstieg XS  Galvanised Height: 132 cm	17.0	588666000			
			Tie rod system 15.0		
			Tie rod 15.0mm galvanised 0.50m Tie rod 15.0mm galvanised 0.75m Tie rod 15.0mm galvanised 1.00m Tie rod 15.0mm galvanised 1.25m Tie rod 15.0mm galvanised 1.50m Tie rod 15.0mm galvanised 1.75m Tie rod 15.0mm galvanised 2.00m Tie rod 15.0mm galvanised 2.50m Tie rod 15.0mm galvanisedm Tie rod 15.0mm non-treated 0.50m Tie rod 15.0mm non-treated 0.75m Tie rod 15.0mm non-treated 1.00m Tie rod 15.0mm non-treated 1.25m Tie rod 15.0mm non-treated 1.50m Tie rod 15.0mm non-treated 1.75m Tie rod 15.0mm non-treated 2.00m Tie rod 15.0mm non-treated 2.50m Tie rod 15.0mm non-treated 3.00m Tie rod 15.0mm non-treated 3.50m Tie rod 15.0mm non-treated 4.00m Tie rod 15.0mm non-treated 5.00m Tie rod 15.0mm non-treated 6.00m Tie rod 15.0mm non-treatedm Ankerstab 15,0mm	0.72 1.1 1.4 1.8 2.2 2.5 2.9 3.6 1.4 0.73 1.1 1.4 1.8 2.1 2.5 2.9 3.6 4.3 5.0 5.7 7.2 8.6 1.4	581821000 581822000 581823000 581826000 581827000 581828000 581829000 581852000 581824000 581870000 581871000 581874000 581886000 581876000 581887000 581875000 581877000 581878000 581888000 581879000 581880000 581881000 581873000
					
			Super plate 15.0 Superplatte 15,0  Galvanised Height: 6 cm Diameter: 12 cm Width-across: 27 mm	0.98	581966000
			Wing nut 15.0 Flügelmutter 15,0  Galvanised Length: 10 cm Height: 5 cm Width-across: 27 mm	0.31	581961000
			Hexagon nut 15.0 Sechskantmutter 15,0  Galvanised Length: 5 cm Width-across: 30 mm	0.23	581964000
			Framax pressure plate 6/15 Framax-Druckplatte 6/15  Galvanised	0.8	588183000
			Star grip nut 15.0 G Sternmutter 15,0 G  Galvanised Width: 10 cm Height: 5 cm Width-across: 27 mm	0.43	587544000
			Rod connector 15.0 Verbindungsmuffe 15,0  Non-treated Length: 10.5 cm Diameter: 3.2 cm	0.49	581981000
			Angle anchor plate 12/18 Winkelplatte 12/18  Galvanised	1.5	581934000
					

	[kg]	Article N°
Distance piece 20cm Distance piece 25cm Distance piece 30cm Distanzhalter	0.04 0.05 0.06	581907000 581908000 581909000
 PE Grey Blue		
Plastic tube 22mm 2.50m Kunststoffrohr 22mm 2,50m	0.45	581951000
 PVC Grey Diameter: 2.6 cm		
Universal cone 22/10mm Universal-Konus 22/10mm	0.005	581995000
 Grey Diameter: 4 cm		
Plug 22mm Verschlussstopfen 22mm	0.003	581953000
 PE Grey		
Protective cap 15.0/20.0 Schutzkappe 15,0/20,0	0.03	581858000
 Yellow Length: 6 cm Diameter: 6.7 cm		
Tie-rod wrench 15.0/20.0 Ankerstabschlüssel 15,0/20,0	1.8	580594000
 Galvanised		
Friction type ratchet SW27 Freilaufknarre SW27	0.49	581855000
 Manganese-phosphated Length: 30 cm		
Box spanner 27 0.65m Steckschlüssel 27 0,65m	1.9	581854000
 Galvanised		

	[kg]	Article N°
Multi-trip packaging		
Alu-Framax pallet Alu-Framax-Palette	126.7	588396000
 Galvanised Length: 280 cm Width: 110 cm Height: 107 cm Delivery condition: folded closed		
Doka skeleton transport box 1.70x0.80m Doka-Gitterbox 1,70x0,80m	87.0	583012000
 Galvanised Height: 113 cm		
Doka multi-trip transport box 1.20x0.80m Doka-Mehrwegcontainer 1,20x0,80m	70.0	583011000
 Galvanised Height: 78 cm		
Multi-trip transport box partition 0.80m Multi-trip transport box partition 1.20m Mehrwegcontainer Unterteilung	3.7 5.5	583018000 583017000
 Steel parts galvanised Timber parts varnished yellow		
Doka multi-trip transport box 1.20x0.80x0.41m Doka-Mehrwegcontainer 1,20x0,80x0,41m	42.5	583009000
 Galvanised		
Doka stacking pallet 1.55x0.85m Doka-Stapelpalette 1,55x0,85m	41.0	586151000
 Galvanised Height: 77 cm		

	[kg]	Article N°	[kg]	Article N°
<p>Doka stacking pallet 1.20x0.80m Doka-Stapelpalette 1,20x0,80m</p>  <p>Galvanised Height: 77 cm</p>	38.0	583016000		
<p>Doka accessory box Doka-Kleinteilebox</p>  <p>Timber parts varnished yellow Steel parts galvanised Length: 154 cm Width: 83 cm Height: 77 cm</p>	106.4	583010000		
<p>Universal castor wheel for transport pallet Universal-Lenkrolle Transportgebände</p>  <p>Galvanised Height: 28.8 cm</p>	6.0	584043000		
<p>Bolt-on castor set B Anklemm-Radsatz B</p>  <p>Painted blue</p>	33.6	586168000		



Formwork & Scaffolding.
We make it work.



www.doka.com/alu-framax-xlife