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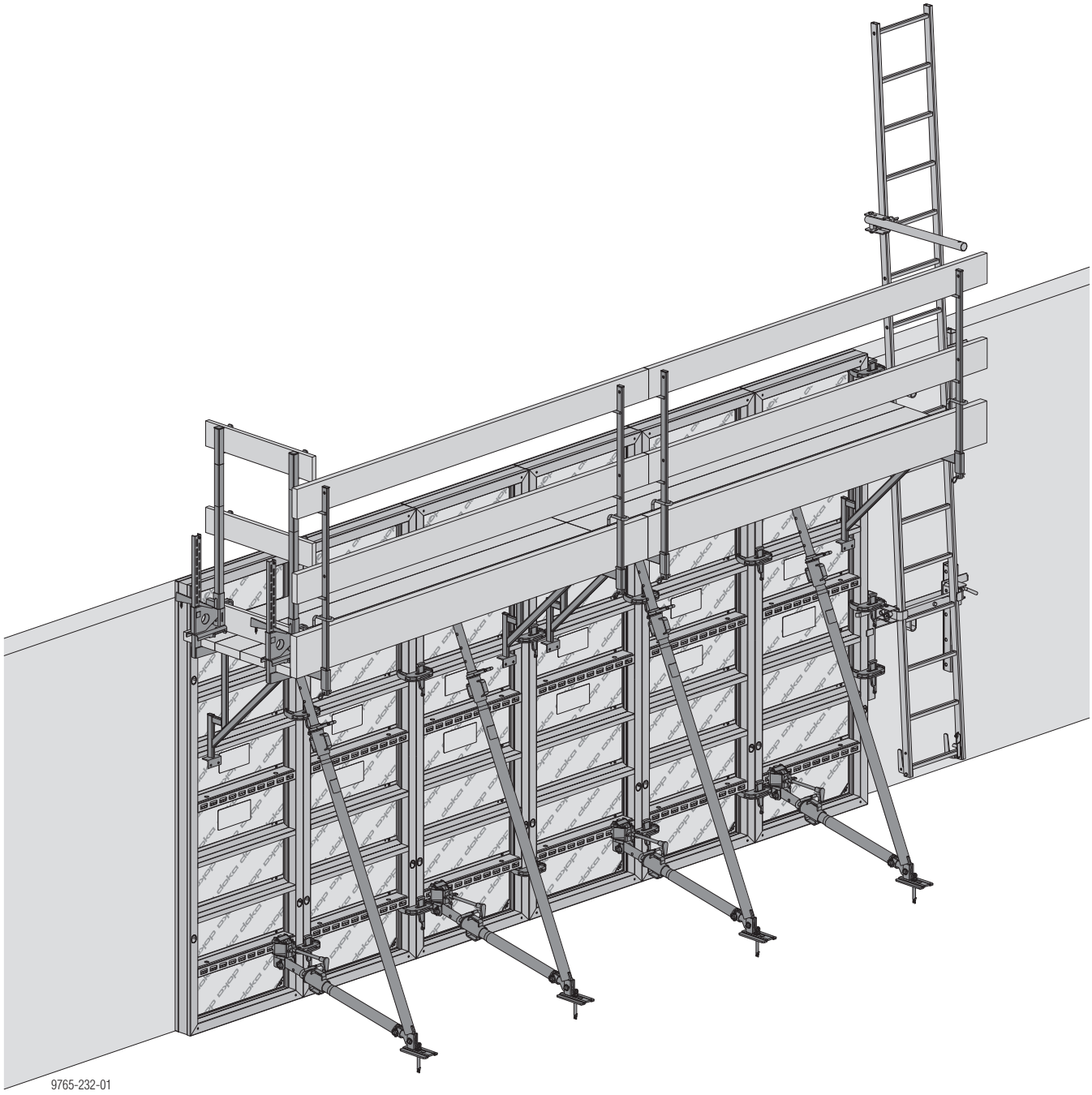
en-GB

The Formwork Experts.

Framed formwork Alu-Framax Xlife

User Information

Instructions for assembly and use (Method statement)



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doka
Alu-Framax Xlife

Contents

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 also be used as a generally valid set of Instructions for Assembly and Use (Method Statement), or it can be incorporated into a site-specific set of Instructions for Assembly and Use (Method Statement).
- **The graphics in this document or app, and also the animations and videos, depict states of partial assembly in some instances and are therefore not always complete as regards their depiction of safety equipment and measures.**
  Nevertheless, customer must ensure use in compliance with the applicable regulations of safety equipment possibly not shown in these graphics, animations and videos.
- **The individual sections contain further safety instructions and 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 sideguard 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 suitable condition. Steps must be taken to rule out the use of components that are damaged, deformed, or weakened due to wear, corrosion or rot (e.g. fungal decay).
- Mixing our formwork systems with those of other manufacturers involves risks that can lead to injury and damage to property and consequently requires separate validation.
- The equipment/system must be assembled and erected in accordance with the applicable laws, standards and rules by suitably skilled personnel of the customer's, having regard to any and all required safety inspections.
- It is not permitted to modify Doka products; any 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 out 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.
- 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.

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.

Doka services

Support in every stage of the project

- Project success assured by products and services from a single source.
- Competent support from planning through to assembly directly on site.

Project assistance from start to finish

Every single project is unique and calls for individualised solutions. When it comes to the forming operations, the Doka team can help you with its consulting, planning and ancillary services in the field, enabling you to carry out your project effectively, safely and reliably. Doka assists you with individual consulting services and customised training courses.

Efficient planning for a safe project sequence

Efficient formwork solutions can be developed economically only if there is an understanding of project requirements and construction processes. This understanding is the basis of Doka engineering services.

Optimise construction workflows with Doka

Doka offers special tools that help you in designing transparent processes. This is the way to speed up pouring processes, optimise inventories and create more efficient formwork planning processes.

Custom formwork and on-site assembly

To complement its system formwork range, Doka offers customised formwork units. And specially trained personnel assemble load-bearing towers and formwork on site.

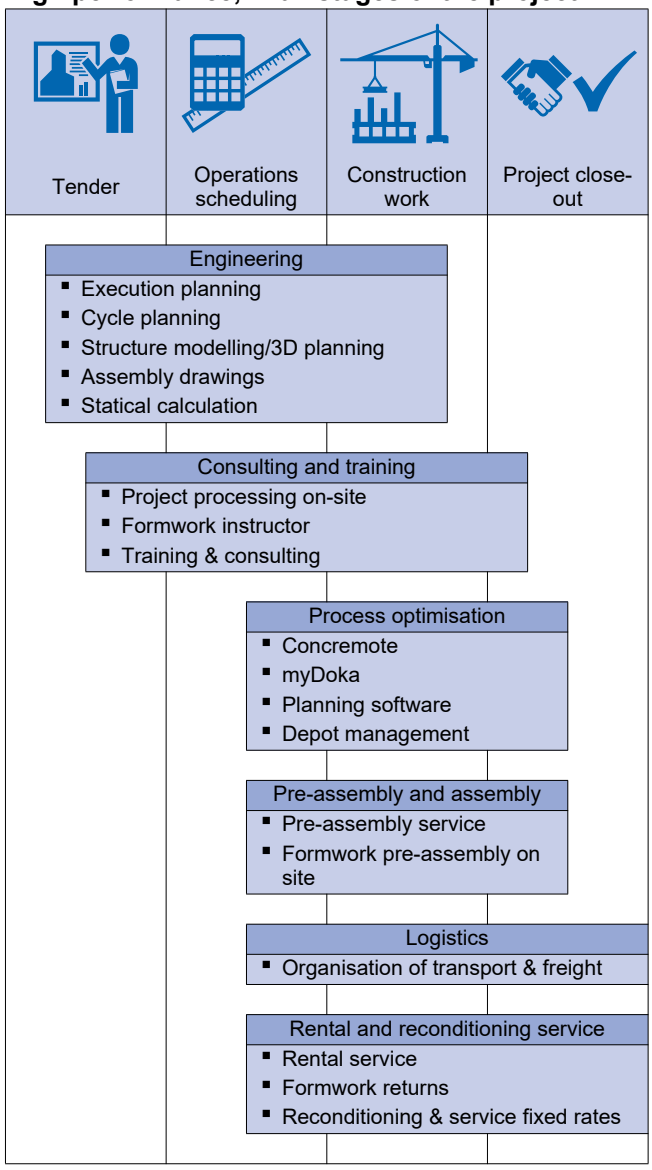
Just-in-time availability

Formwork availability is a crucial factor in realising your project on time and on budget. The worldwide logistics network puts the necessary formwork quantities on site at the agreed time.

Rental and reconditioning service

The formwork material needed for any particular project can be rented from Doka's high-performing rental park. Doka Reconditioning cleans and overhauls both client-owned equipment and Doka rental equipment.

High performance, in all stages of the project



Doka framed formwork Alu-Framax Xlife

Economical forming without a crane

With its low weight, Alu-Framax Xlife brings all the benefits of the Framed formwork Framax Xlife to craneless jobsites as well – also seamlessly combined with Framax Xlife, of course.

Extra light and super-strong

with torsion-proof hollow aluminium profiles

Framed formwork Alu-Framax Xlife

- delivers flat, plane concrete faces thanks to its sturdy aluminium frames
- can be repositioned quickly, with or without crane assistance

Reduced close-out costs

thanks to superior product quality

Extremely long service life is ensured by

- its plastic-coated Xlife sheet
- the rugged, powder-coated aluminium frame

Easy handling and planning

because of the logical system grid

- optimum adaptability to every layout
- easy planning and logistics
- a neat joint pattern

Alu-Framax Xlife and Framax Xlife are fully compatible

All accessories fit both systems

Optimise your site

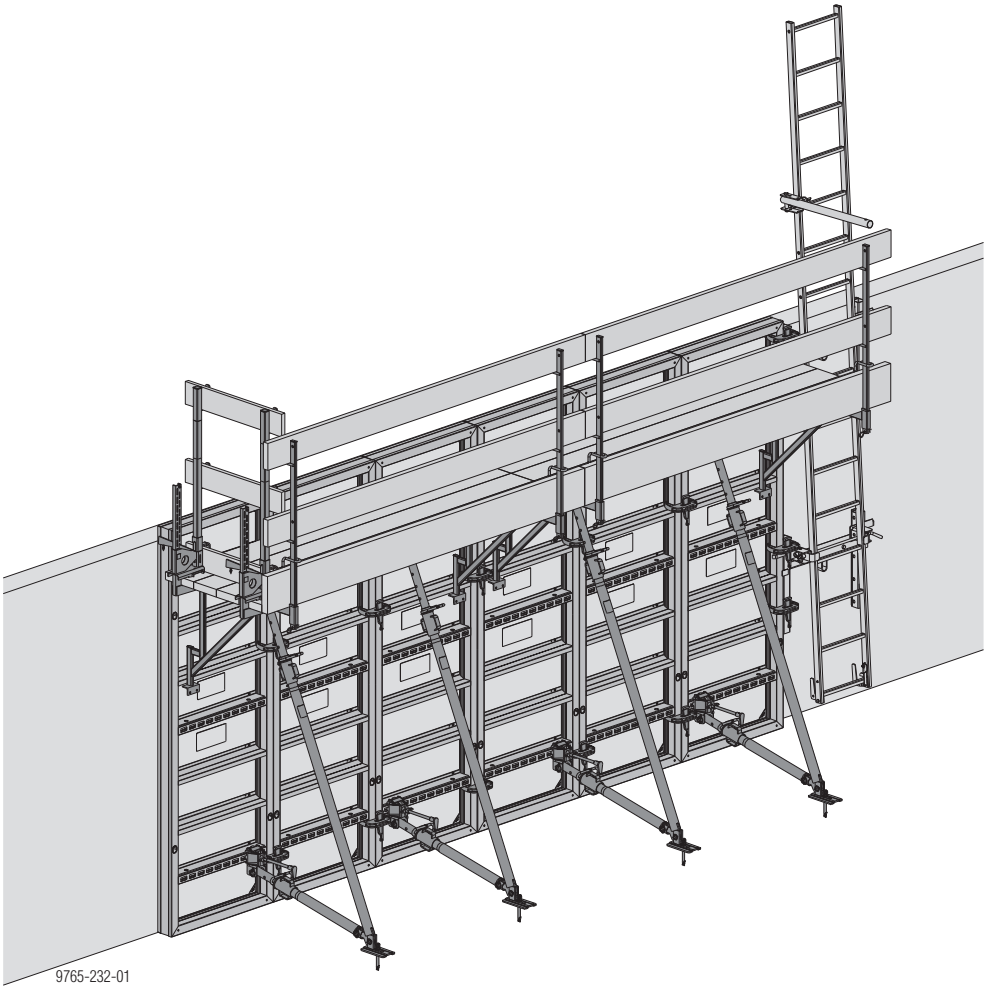
- by dividing it up into man-handled and crane-handled zones
- with simplified site logistics

High safety

at your site

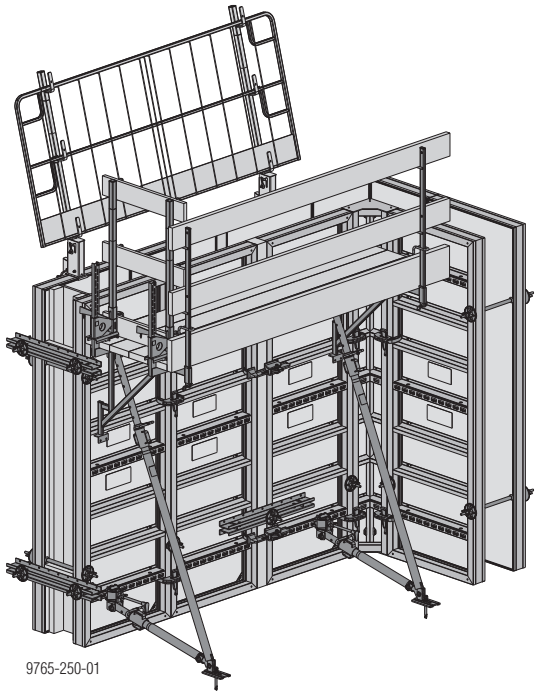
The accident risk is reduced, and legally compliant working conditions are ensured, by

- the safe ladderways of the Ladder system XS
- combining the formwork with the Platform system Xsafe plus

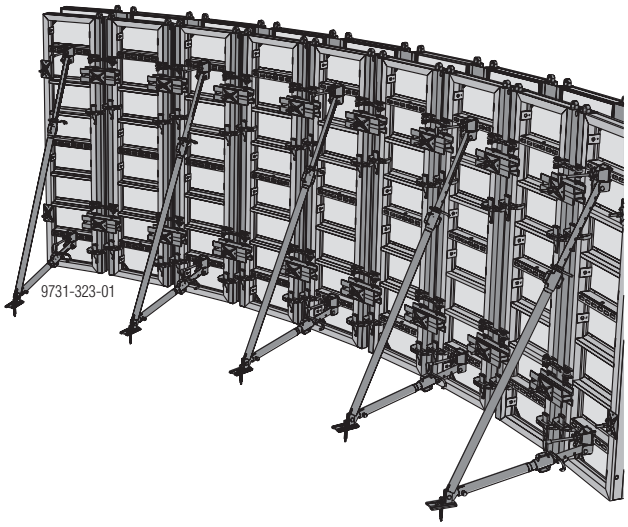


Areas of use

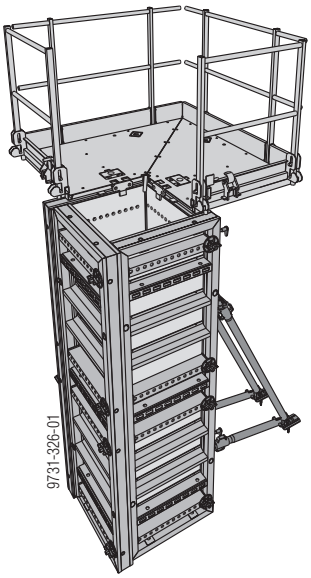
Wall formwork



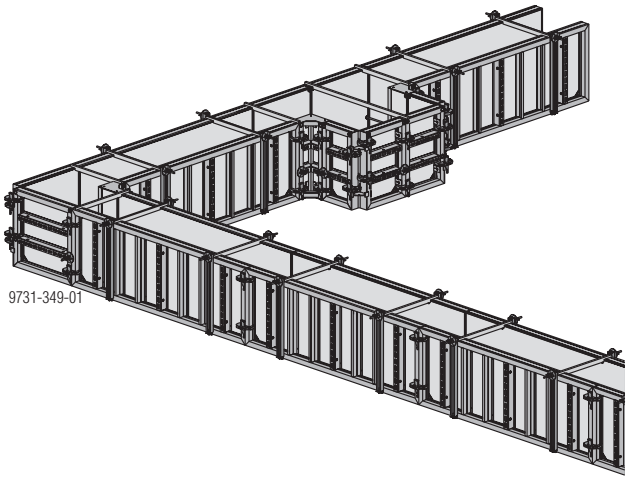
Circular formwork

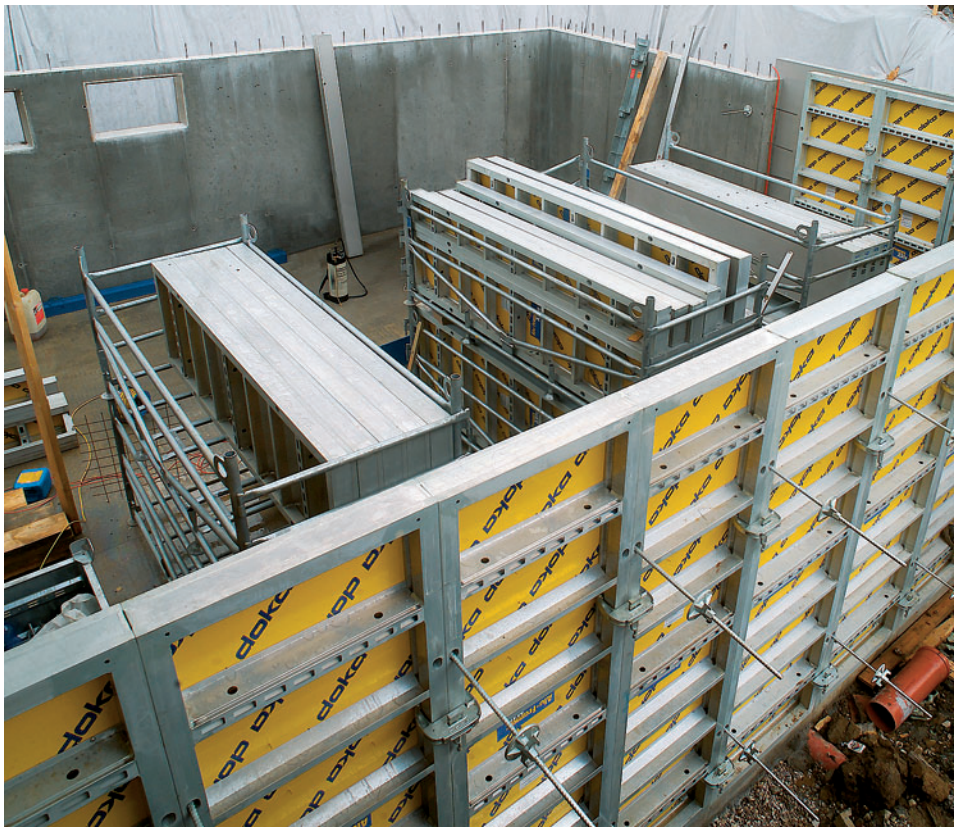


Column formwork

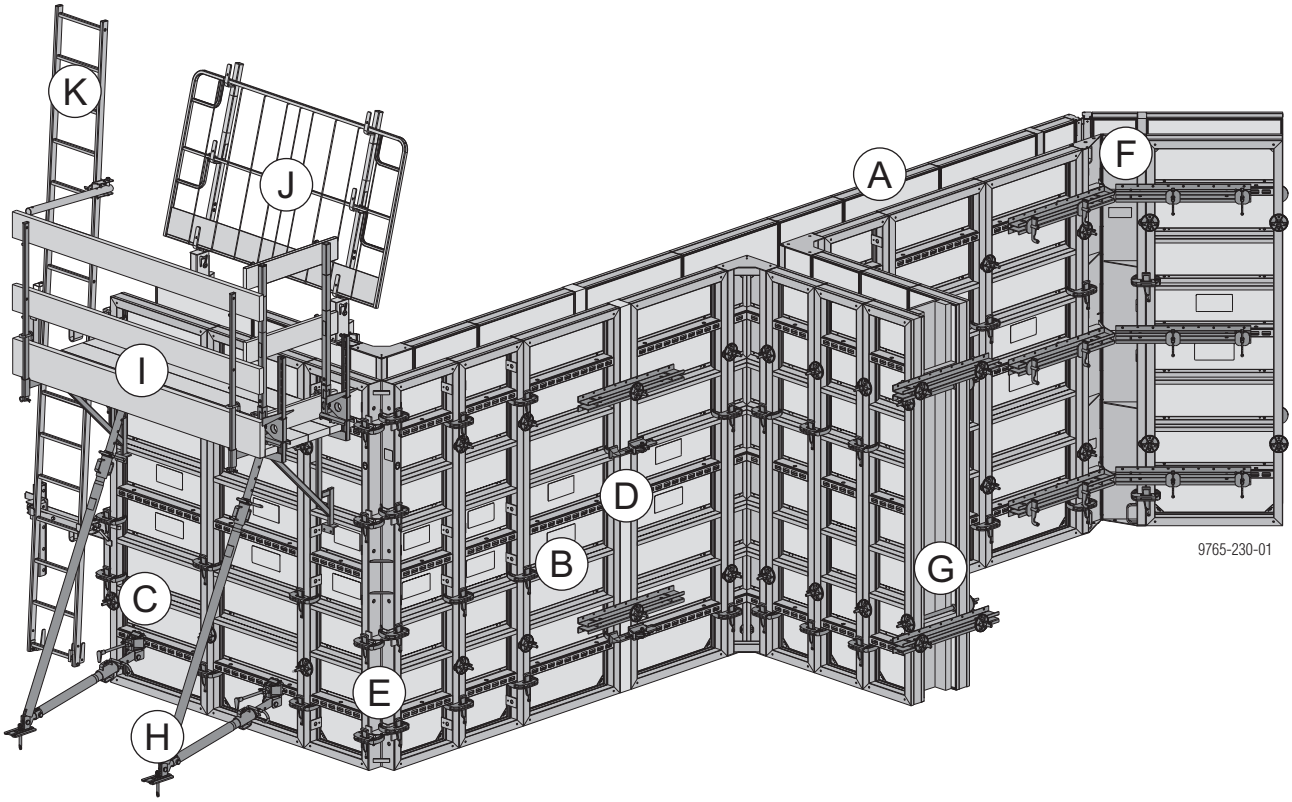


Foundation formwork





Wall formwork



A	Alu-Framax Xlife panel (Page 14)
B	Inter-panel connections (Page 17)
C	Tie rod system (Page 20)
D	Length adjustment (Page 22)
E	90 degree corners (Page 26)
F	Acute & obtuse-angled corners (Page 29)
G	Stop-end formwork (Page 32)
H	Plumbing accessories (Page 46)
I	Pouring platforms (Page 48)
J	Opposing guard-rail (Page 56)
K	Ladder system XS (Page 59)

Permitted 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

➤ For offloading panels from a truck, or lifting them on-site a stack at a time, use the Framax transport gear (see 'Transporting, stacking and storing').

Closing the formwork

➤ Spray the formwork sheet with release agent (see 'Cleaning and care of your equipment').

➤ Fix the first panel to the ground with a panel strut (see the section headed 'Plumbing accessories'). This stabilises the panel so that it cannot fall over.

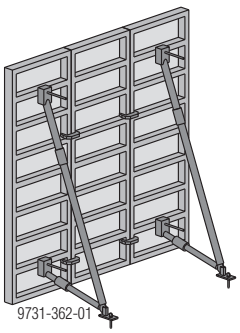
CAUTION

Never use a sledge hammer to plumb the panels!

This would damage the profiles of the panels.

➤ Use only proper plumbing tools (e.g. a special pry-bar) that cannot cause any damage!

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



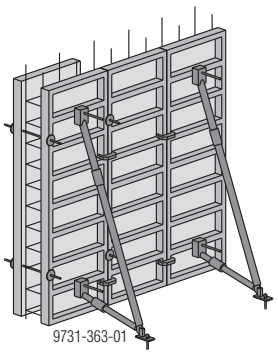
Erecting the opposing formwork:

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

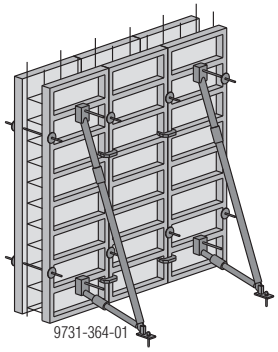
➤ Spray the formwork sheet of the opposing formwork with release agent.

➤ Set up the first panel of the opposing formwork.

➤ Fit the form ties (see the section headed '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.

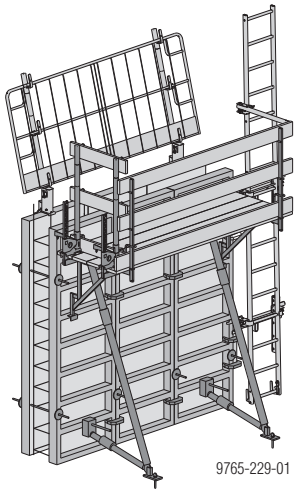


➤ Mount the pouring platform (see the section headed 'Pouring platforms with single brackets').

➤ Mount the Ladder system XS (see the section headed 'Ladder system').

➤ Mount the end-of-platform sideguards (see the section headed 'Pouring platforms with single brackets').

➤ Mount the opposing guard-rail (see the section headed 'Opposing guard-rail').



Pouring

Permitted fresh-concrete pressure: 60 kN/m²

Observe the following **guidelines**:

- The section headed 'Pressure of fresh concrete on vertical formwork – DIN 18218' in the Calculation Guide 'Doka formwork engineering'
- DIN 4235 Part 2 - 'Compacting of concrete by vibrating'

NOTICE

➤ Do not exceed the maximum permissible rate of placing.

➤ Pour the concrete.

➤ Make only moderate use of vibrators, carefully coordinating the times and locations of vibrator use.

Stripping out the formwork

NOTICE

➤ Comply with the stipulated stripping times.

➤ Remove the end-of-platform sideguards, pouring platform and opposing guard-rails.

➤ Beginning with the opposing formwork, dismount 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 the section headed 'Cleaning and care of your equipment').

Alu-Framax as a crane-moved formwork

Large gang-forms can be pre-assembled face-down on an assembly bench. For detailed instructions on installing the connectors, see the section headed 'Vertical stacking of panels'.

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

Max. load:

1000 kg / Framax lifting hook

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

NOTICE

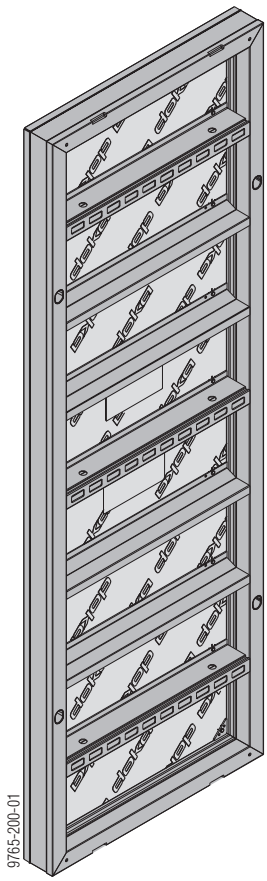
If 'hybrid' gang-forms (containing both Alu-Framax Xlife + Framax Xlife panels) are lifted and reset by crane, they must be given additional stiffening reinforcement.

Do not exceed the permitted design values of the Alu-Framax Xlife connector components! (see the section headed 'Inter-panel connections')

For more information on how to handle tall formwork, see the section headed '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.

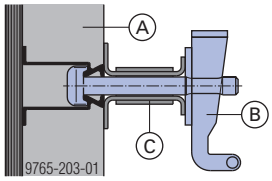
Clean concrete surfaces with the innovative Xlife sheet

The Xlife sheet consists of a **combination of a traditional plywood core and a novel and innovative plastic coating**.

This combination of materials ensures high numbers of repeat uses, with superb concrete results every time, and reduces the proneness to damage.

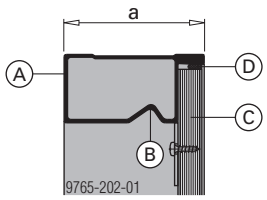
- High quality concrete finish
- Less touching-up needed
- Less cleaning work - the Xlife sheet can also be cleaned using a high-pressure spray cleaner
- Because the Xlife sheet is screwed on from the rear, this leaves no screw imprints on the concrete

Accessories are easy to fasten, in the integrated waling system



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

Dimensionally stable powder-coated aluminium frame



a ... 123 mm

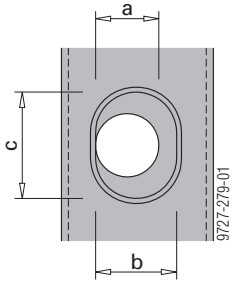
A Frame profile
B Bead for inter-panel connectors
C Xlife-sheet
D Silicone sealing strip

- 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.

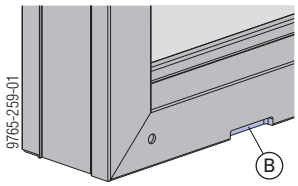
Form-tie sleeves



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 plumbing 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

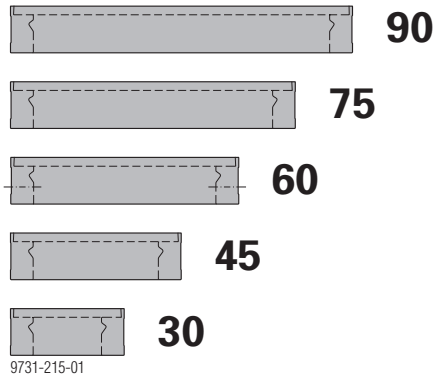
Only 2 form ties needed in the vertical. On the 2.70 m high Alu-Framax Xlife panels, only 2 form ties are required.

Only

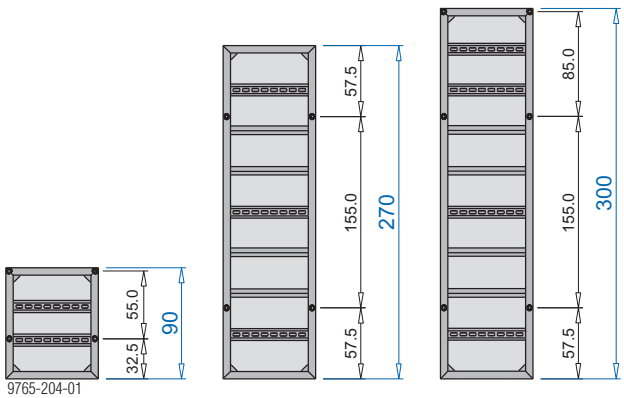
- 5 standard panel widths and
- 2 standard panel heights

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



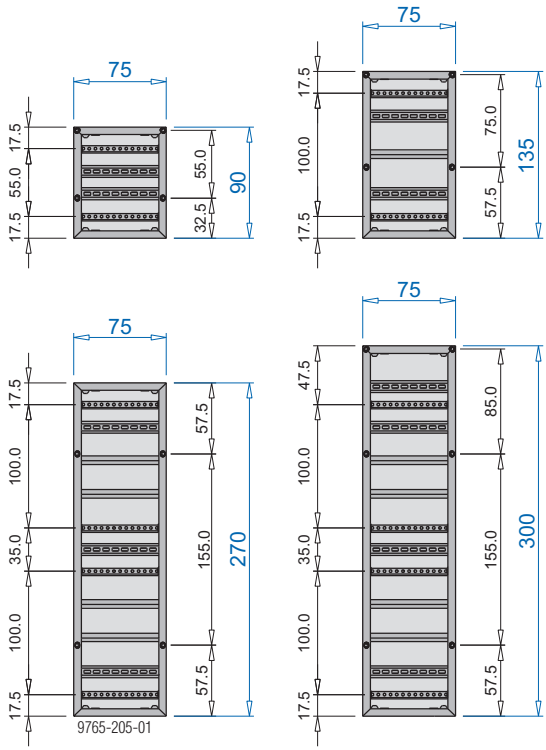
Dimensions in cm

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

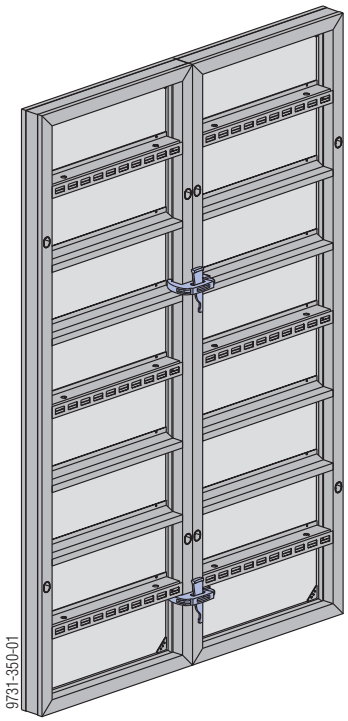
The special hole pattern makes these panels particularly suitable for efficient forming of:

- corners
- wall junctions
- stop-ends
- columns



Dimensions in cm
Panel height 3.00 m available on request.

Inter-panel connections



The Framax quick acting clamp RU and Framax multi-function clamp

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

Panels longside vertical:

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

Panels longside horizontal:

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

Note:

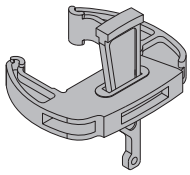
- For details regarding extra inter-panel connections on outside corners and stop-ends (for increased tensile loads) see the section headed ‘Inter-panel connections for increased tensile loads’.
- See 'Vertical stacking of panels’ for details on the positions of the Framax quick acting clamps RU and Framax multi-function clamps that are needed when vertically extending.

NOTICE

Do not oil or grease wedged connections.

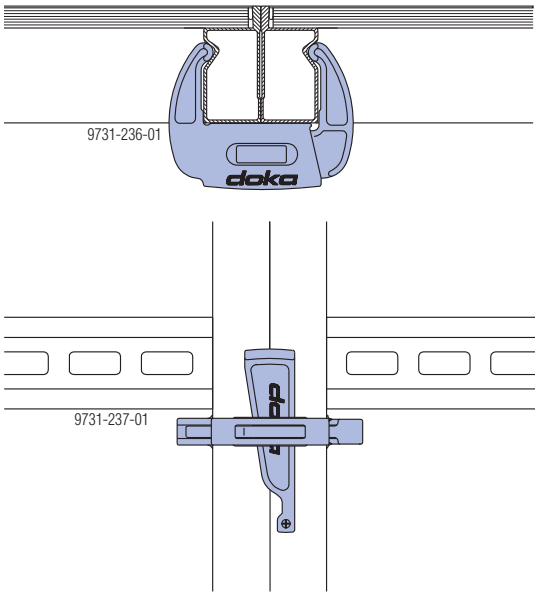
Simple inter-panel connections

with Framax quick acting clamp RU



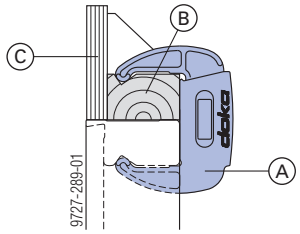
Framax quick acting clamp RU:
perm. tensile force: 15.0 kN
perm. shear force: 4.0 kN
perm. moment: 0.25 kNm

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

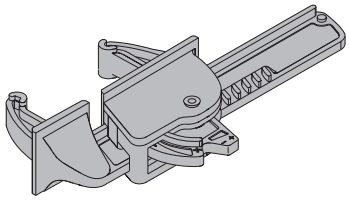
Vertical stacking with moulded timber



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

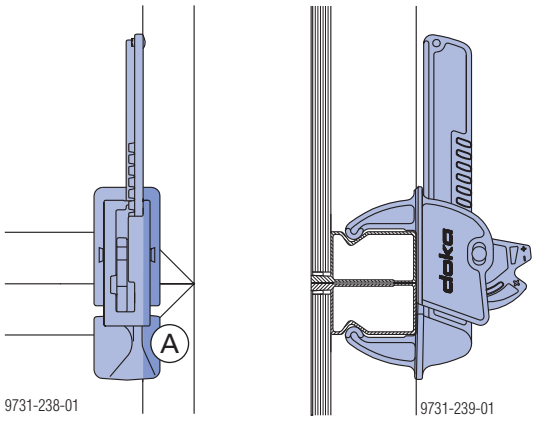
Self-aligning inter-panel connections and closures

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.

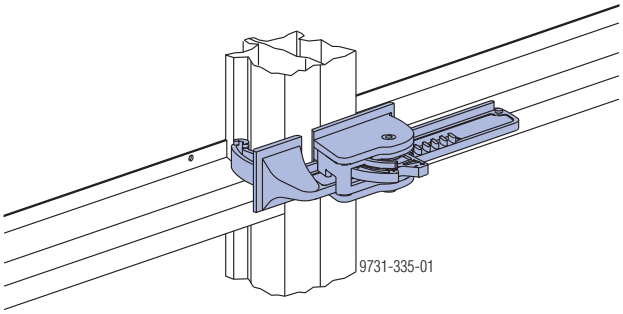
Particularly when panels are stacked in the vertical, the fact that the clamp bears directly on the profiles means that there is no need for any extra bracing of the panels with universal walings.



A Contact surface on the profile

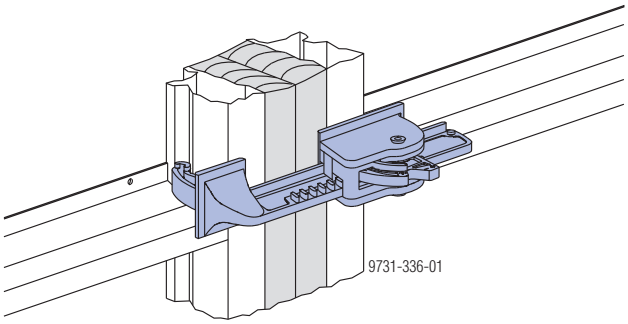
More functions

Inter-panel joints



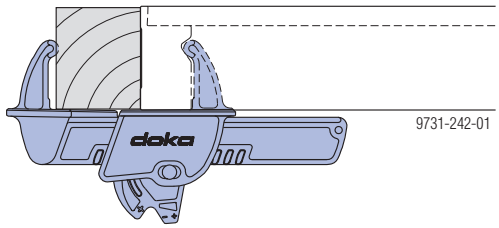
Joining the panels using the Framax multi function clamp provides additional bracing of the gang-form (as the clamp bears directly onto the profile).

Closures up to 15 cm

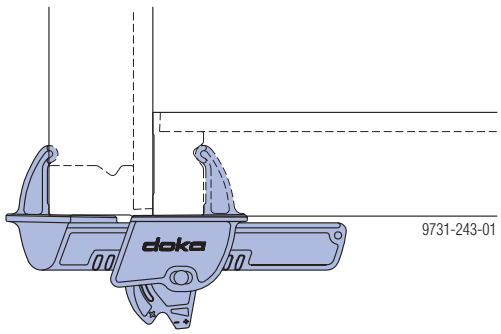


With its 15 cm clamping range, the Framax multi function clamp exactly matches the panel size-grid.
For more information, see 'Length adjustment using closures'.

Squared-timber joints up to 20 cm

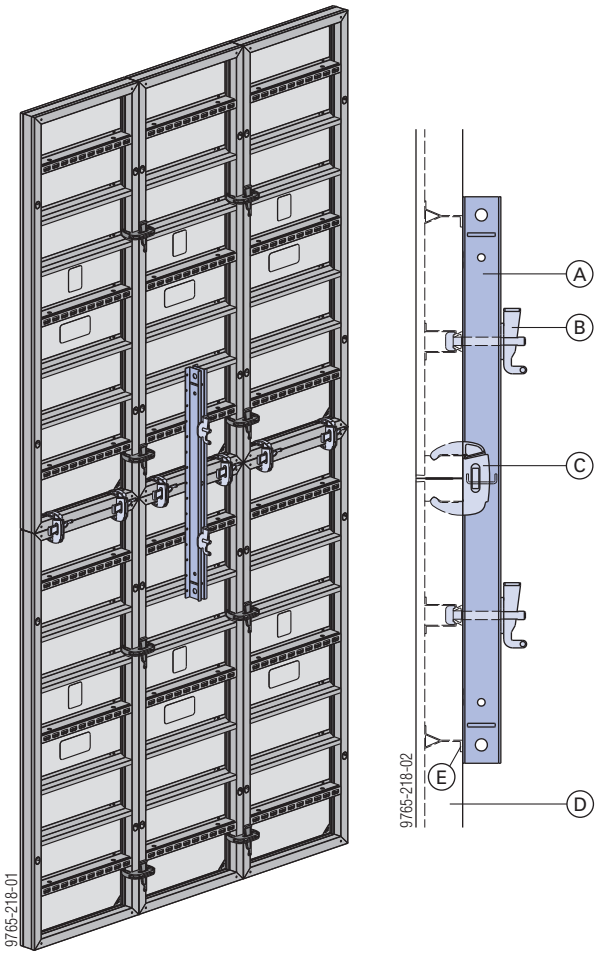


Corner joints on foundations



Bracing the panels

Framax universal waling



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:

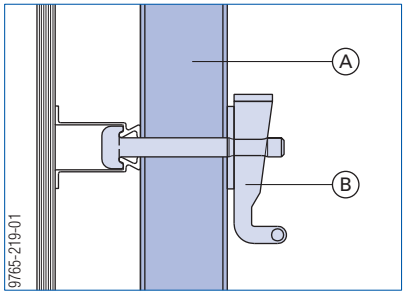
Permitted moment (for vertical stacking of panels): 4.3 kNm

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

Permitted moment: 4.3 kNm

How to attach

using the Framax wedge clamp

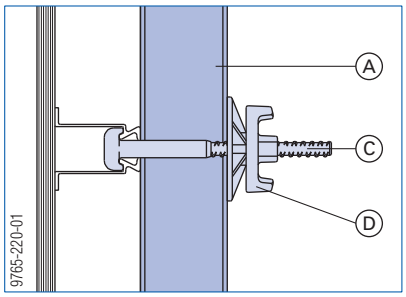


A Framax universal waling
B Framax wedge clamp

NOTICE

Do not oil or grease wedge-clamped joints.

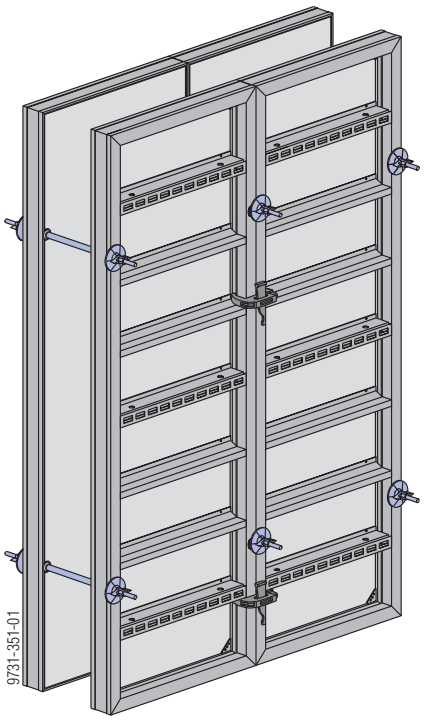
using the Framax universal fixing bolt and Super plate



A Framax universal waling
C Framax universal fixing bolt
D Super plate 15.0

Tie rod system

Placing form ties in the frame profile

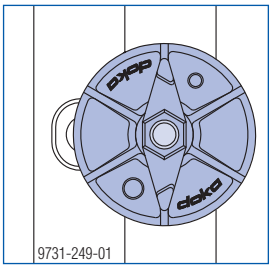


Basic rule:

Fix a form tie in every form-tie sleeve that is not covered by a super plate.

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

For exceptions, see the sections headed 'Length adjustment using closures' and/or 'Vertical stacking of panels'.

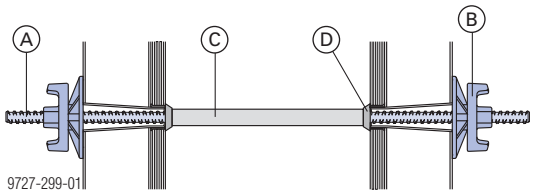


WARNING
Sensitive rod steel!
- ➤ Never weld or heat tie rods.
- ➤ Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.

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

Tie-rod wrench 15.0/20.0
For turning and holding the tie rods.

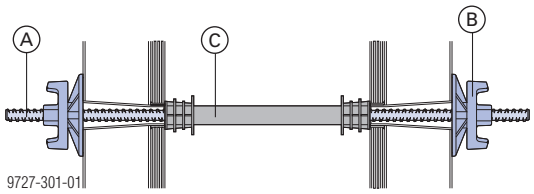
The Doka tie rod system 15.0



A	Tie rod 15.0mm
B	Super plate 15.0
C	Plastic tube 22mm
D	Universal cone 22mm

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

As an alternative to the plastic tube with universal cone, there is also 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 along with it.

Note:
Doka also offers economical solutions for creating watertight wall-ties.

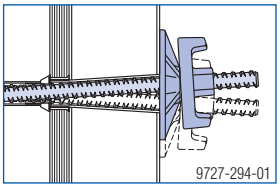
For more information, see the User Information booklet 'Doka form ties for special requirements'.

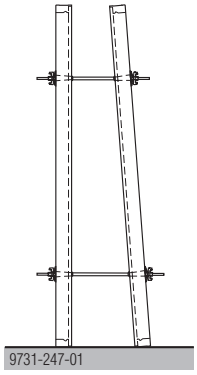
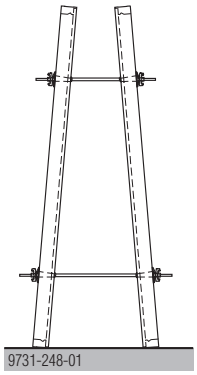
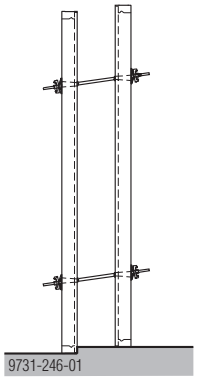
Tie rod 15.0mm:
Permitted capacity, allowing a 1.6 : 1 factor of safety against failure: 120 kN
Permitted capacity to DIN 18216: 90 kN

The friction-type ratchet SW27 or Box spanner 27 0.65m can be used for **low-noise releasing and tightening** of the following anchoring 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

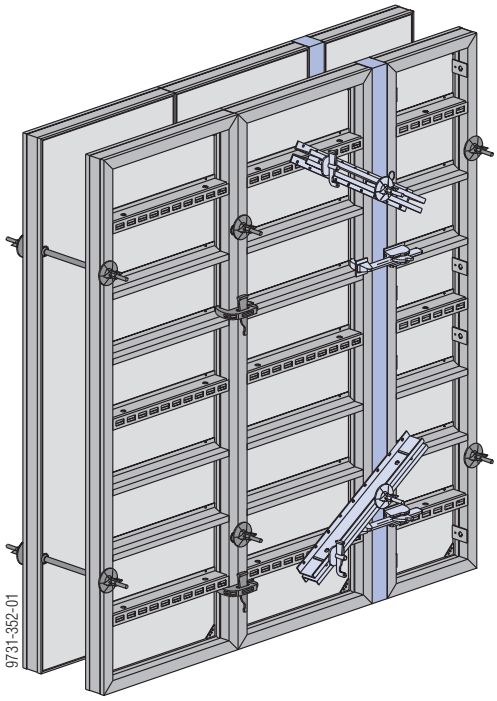
Closures: 0 - 15 cm

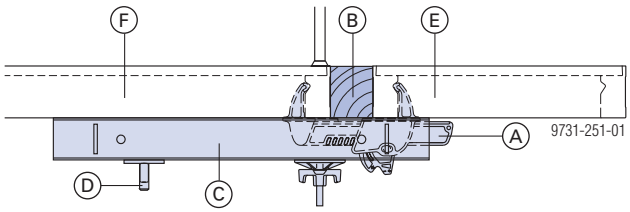
with fitting timber and Framax multi function clamp

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

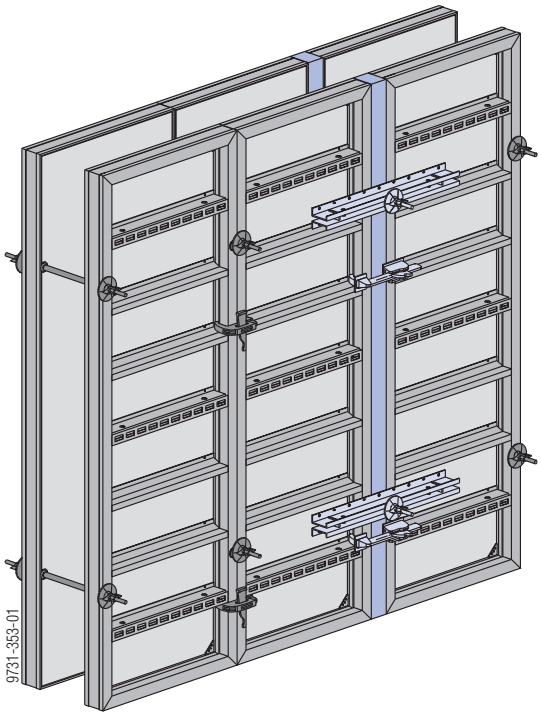
Tie through frame profile

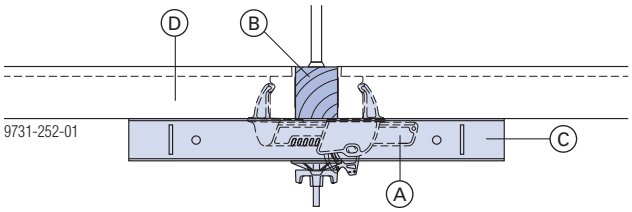




A Framax multi function clamp
B Fitting timber
C Framax universal waling
D Framax wedge clamp
E Alu-Framax Xlife panel (max. width 60cm)
F Alu-Framax Xlife panel

Ties through fitting timber



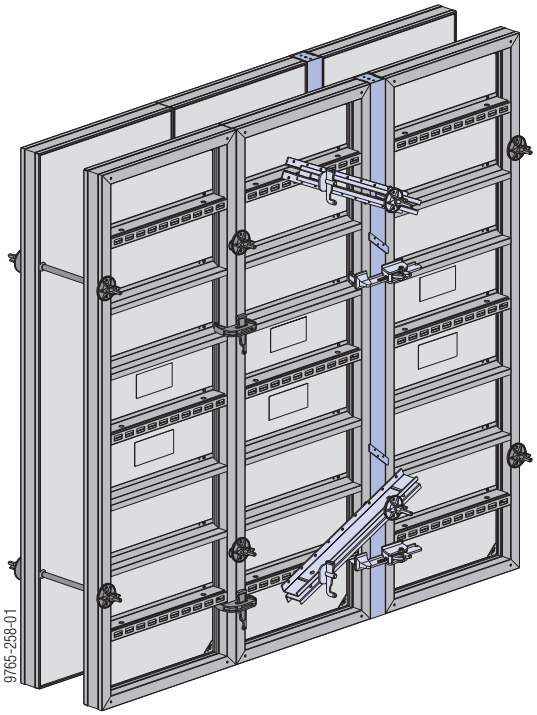


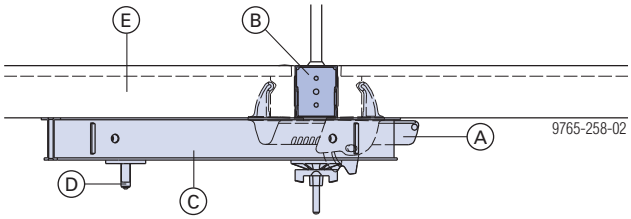
A Framax multi function clamp
B Fitting timber
C Framax universal waling (for closures of up to 5 cm in width, no universal walings are needed)
D Alu-Framax Xlife panel

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.

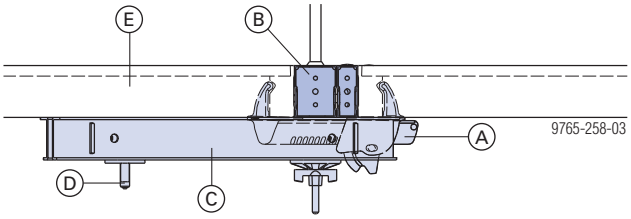
Note:
Seal off unneeded form-tie sleeves in the alu closures with **Universal plugs R20/25**.





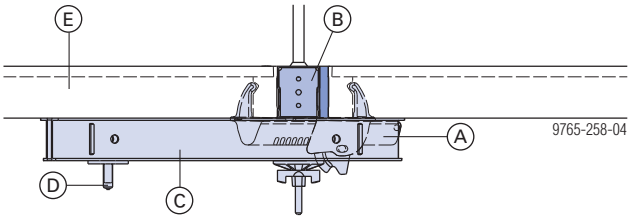
A	Framax multi function clamp
B	Framax alu closure
C	Framax universal waling (for closures of up to 5 cm in width, no universal walings are needed)
D	Framax wedge clamp
E	Alu-Framax Xlife panel

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

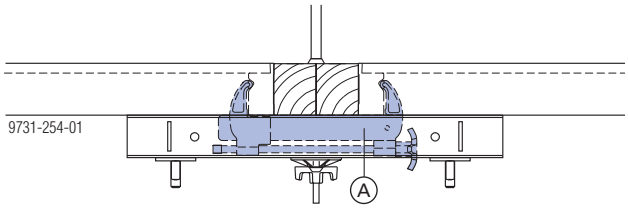


A	Framax multi function clamp
B	Framax alu closure 10cm + fitting timber 2cm
C	Framax universal waling
D	Framax wedge clamp
E	Alu-Framax Xlife panel

Closures: 0-20 cm

with Framax fitting timber and Framax adjustable clamp

Framax adjustable clamp:
Permitted tensile force: 10.0 kN

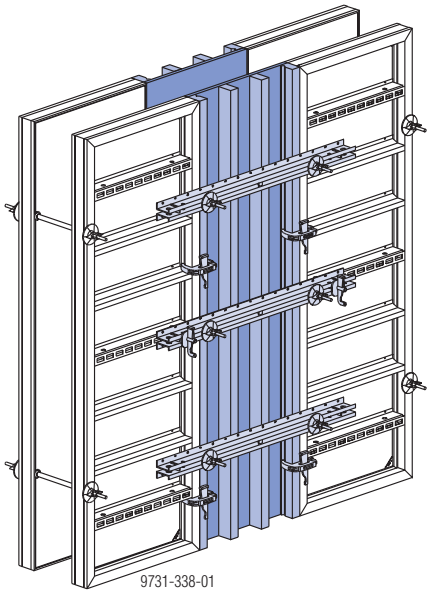


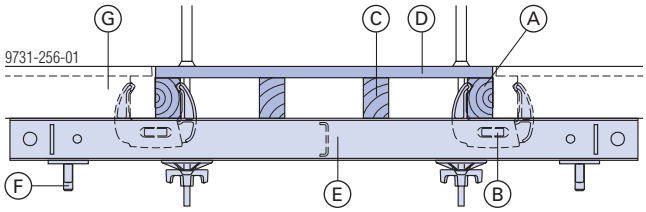
A	Framax adjustable clamp

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



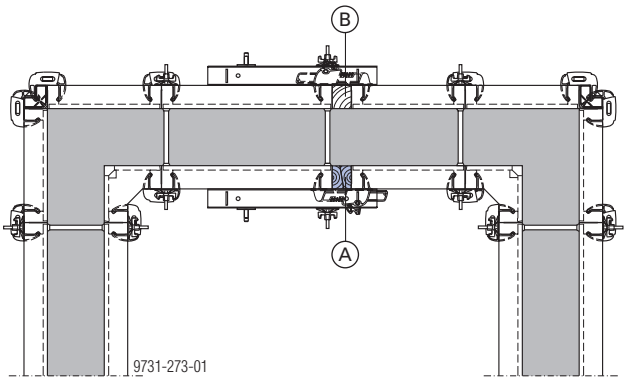


A	Framax moulded timber
B	Framax quick-acting clamp RU
C	Squared timber
D	Formwork sheet
E	Framax universal waling
F	Framax wedge clamp
G	Alu-Framax Xlife panel

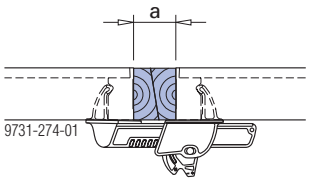
		Universal waling		Tie through closure	
Panel height	Closure range	0.90m	1.50m	horizontal	vertical
2.70m	up to 30 cm	3		1	2 (top and bottom)
	up to 80 cm		3	2	3
3.00m	up to 30 cm	3		1	2 (top and bottom)
	up to 65 cm	2	1	2	3

Facilitating stripping with the stripping timber

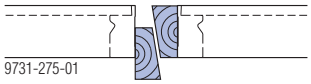
The diagonally cut stripping timber makes quick work of striking inside formwork in narrow cross-sections (e.g. lift shafts or stair-wells, etc.).



A **Inside** - stripping timber
B **Outside** - fitting timber

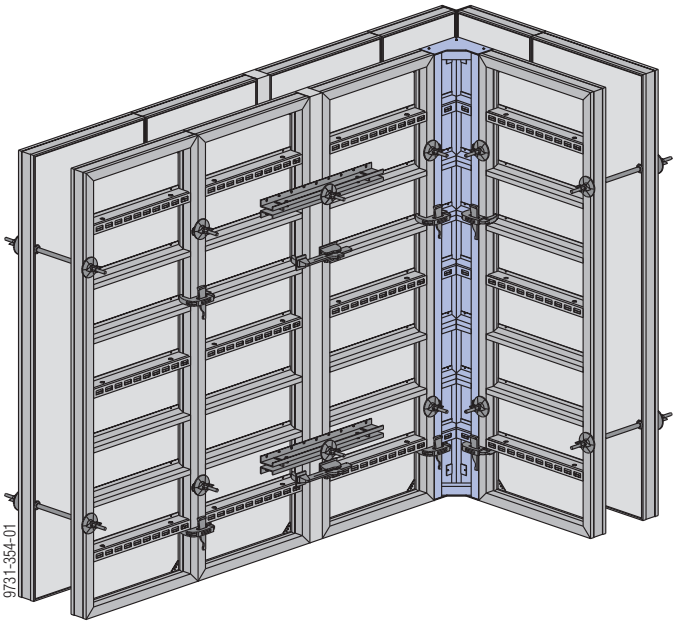


a ... 10 cm

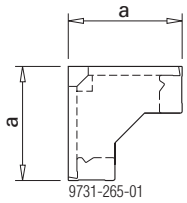


The Framax stripping timber is available in lengths of 2.85 m (for panel height 2.70 m) and 3.45 m (for panel height 3.00 m). The projection beyond the end of the panels makes the stripping timbers easier to remove.

90 degree corners



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

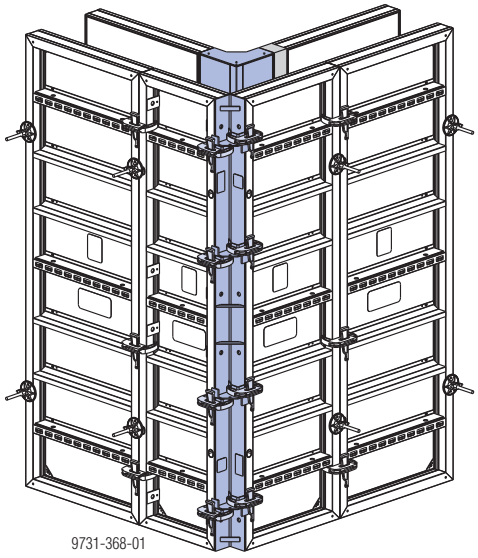
Note:

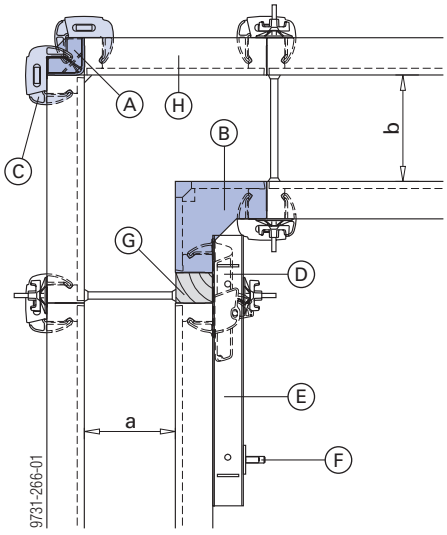
For details regarding extra inter-panel connections on outside corners (for increased tensile loads) see 'Inter-panel connections for increased tensile loads'.

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/m²
up to 60 cm	50 kN/m²





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**.

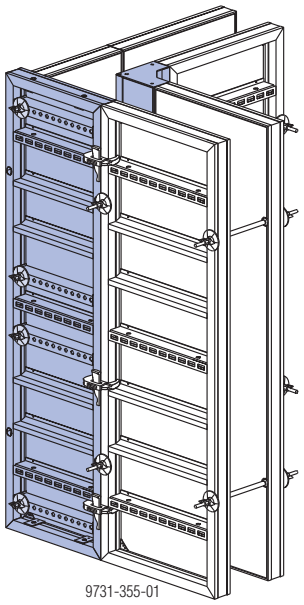
Required number of quick acting clamps RU:

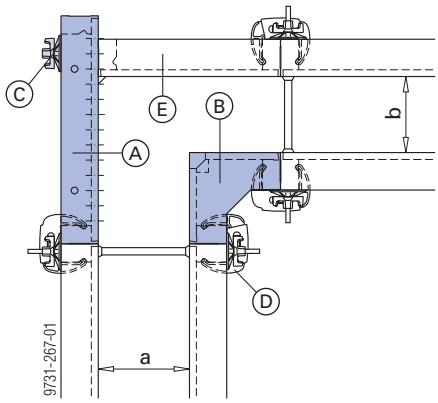
Height of outside corner	Number of clamps
0.90m	4
2.70m	8
3.00m	10

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).





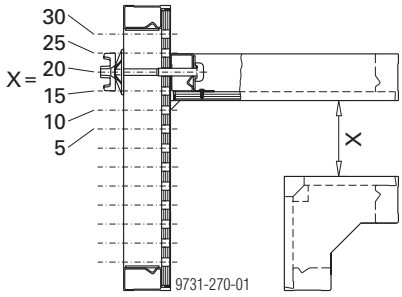
a ... 30 cm
b ... 25 cm

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:

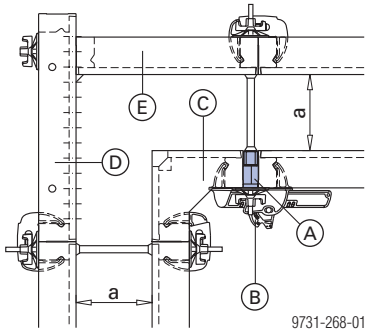
Universal panel 0.75x0.90m	2
Universal panel 0.75x2.70m	4
Universal panel 0.75x3.00m	4

Achievable wall thicknesses in 5 cm grid:



Framax steel closure plate 5cm

Used mainly in corner zones, the Framax steel closure plate 5cm stands out for its high strength and long lifespan.

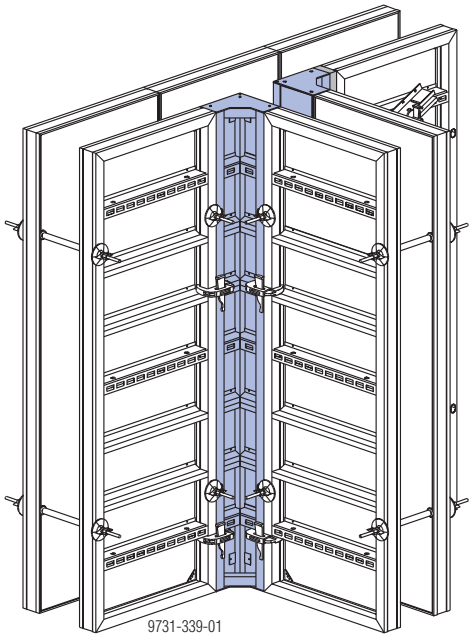


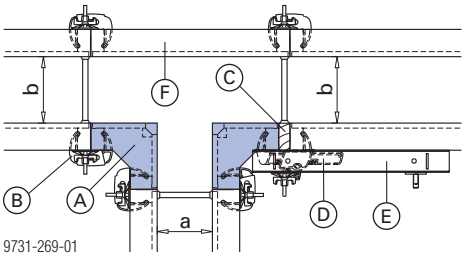
a ... 25 cm

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

Note:
When the steel closure plates are used, no universal walings are needed.

Example: T-junction





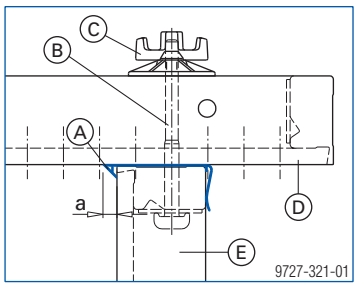
a ... 25 cm
b ... 30 cm

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.

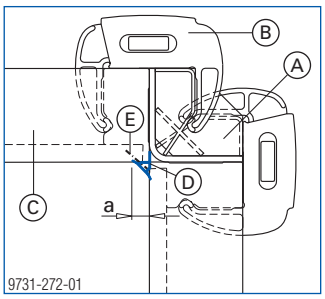


a ... 20 mm

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

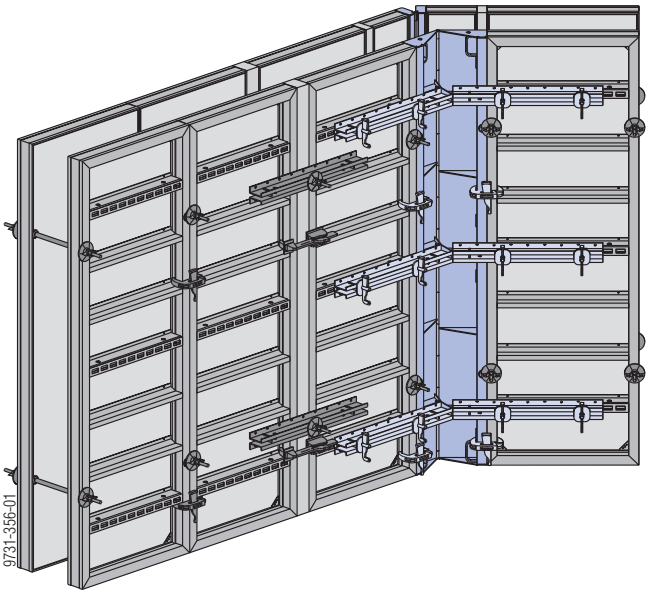
Where outside corners are formed using the Framax outside corner, the Quick acting clamps used for the interconnection mean that the Framax triangular ledge has to be used.



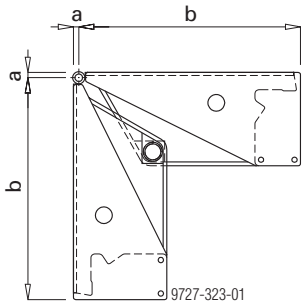
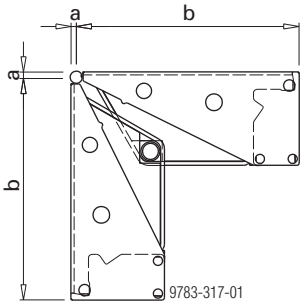
a ... 20 mm

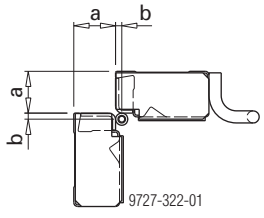
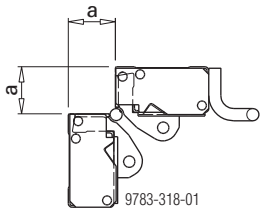
A	Framax outside corner
B	Framax quick acting clamp RU
C	Alu-Framax Xlife panel
D	Framax triangular ledge
E	Wire nail 22x40

Acute & obtuse-angled corners



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

Hinged inside corner I (powder-coated)	Hinged inside corner I (galvanised)
 a ... 0.7 cm b ... 29.2 cm	 a ... 0.7 cm b ... 29.3 cm

Hinged outside corner A (powder-coated)	Hinged outside corner A (galvanised)
 a ... 5.5 cm b ... 0.8 cm	 a ... 6.3 cm

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 outside and inside corners:

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.

Note:

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

NOTICE

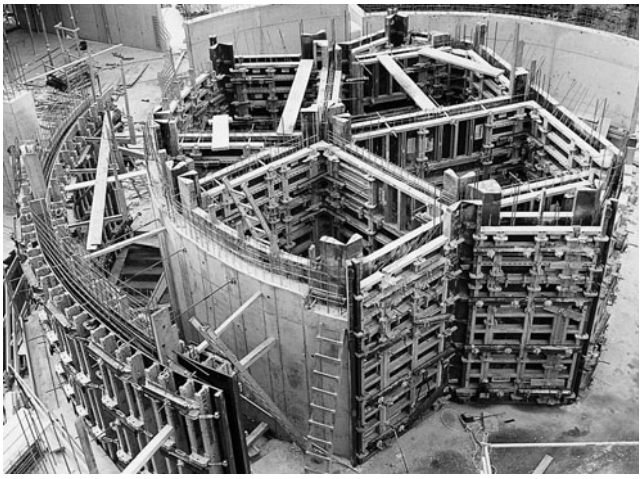
With closures, provide additional universal walings in accordance with the section headed 'Length adjustment using closures'.

Number of clamps needed in the hinged outside corner:

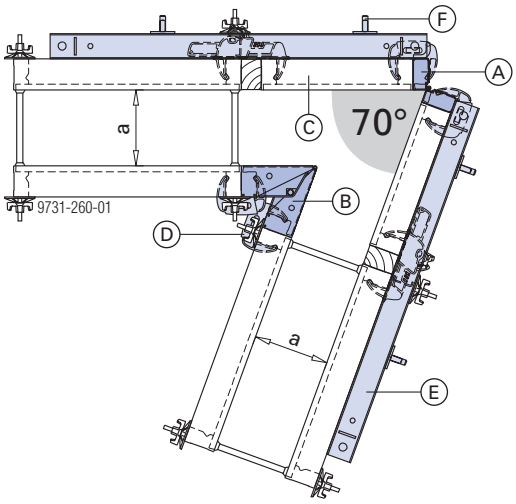
Panel height	Number of clamps
0.90 m	4
2.70 m	8
3.00 m	10

NOTICE

For details regarding extra inter-panel connections on outside corners (for increased tensile loads) see 'Inter-panel connections for increased tensile loads'.



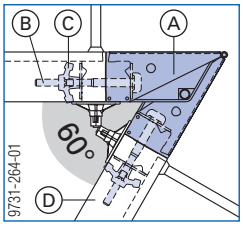
70° (60°) - 135° angles, with hinged corners I + A



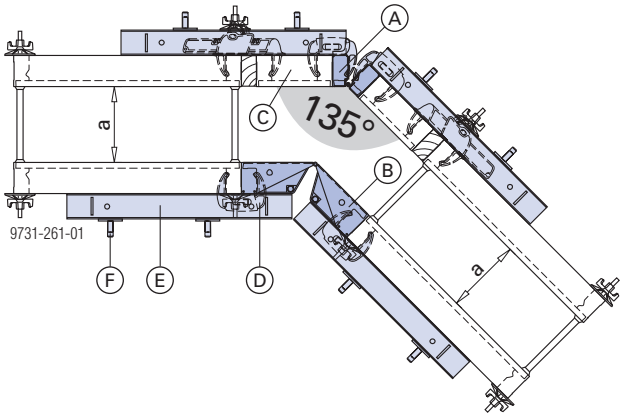
a ... 30 cm

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.



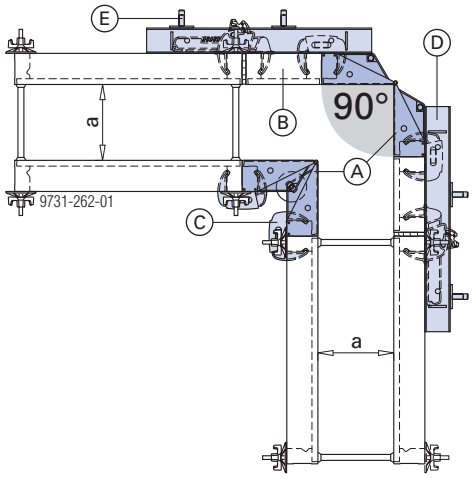
A	Framax hinged inside corner I
B	Framax universal fixing bolt
C	Star grip nut 15.0 G
D	Alu-Framax Xlife panel (55 or 60 cm wide)



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

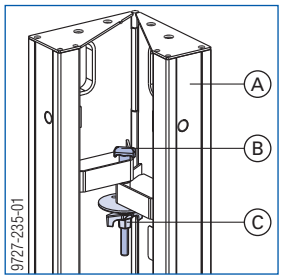
90° - 180° angles, with hinged inside corner I only



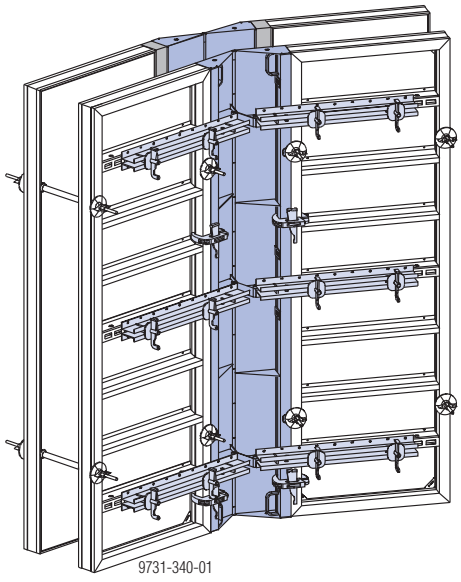
a ... 30 cm

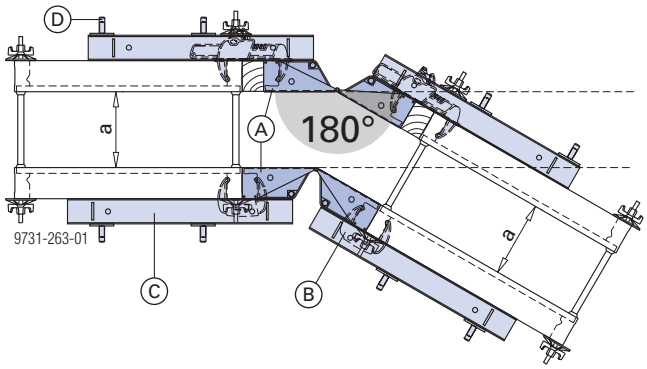
A	Framax hinged inside corner I
B	Alu-Framax Xlife panel 0.30m
C	Framax quick acting clamp RU
D	Framax universal waling
E	Framax wedge clamp

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 possible ways** of **forming stop ends**:

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

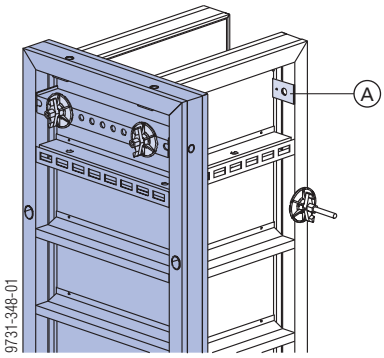
Note:

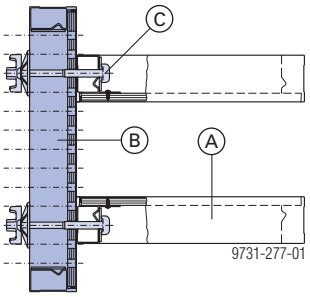
For details regarding extra inter-panel connections on stop-ends (for increased tensile loads) see 'Inter-panel connections for increased tensile loads'.

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.



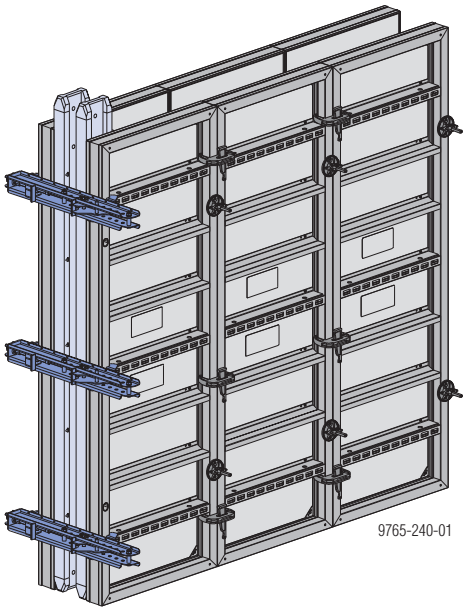


A	Only panel with cross boreholes (Alu-Framax Xlife panel 0.55 or 0.60m, or Alu-Framax Xlife universal panel)
B	Alu-Framax Xlife universal panel
C	Super plate 15.0 + Framax universal fixing bolt

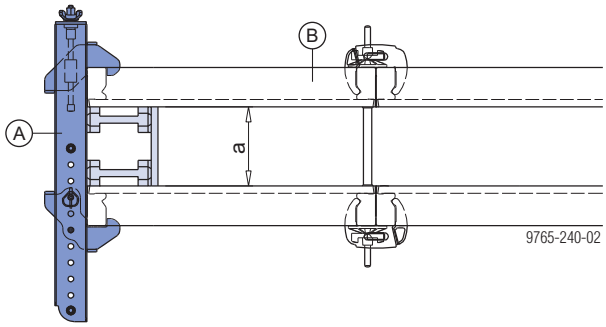
Required numbers of universal fixing bolts + Super plates 15.0:

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

with stop-end waler ties



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

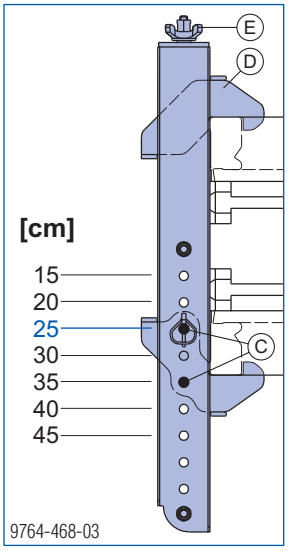


a ... 15 cm to 45 cm

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

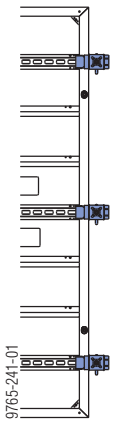
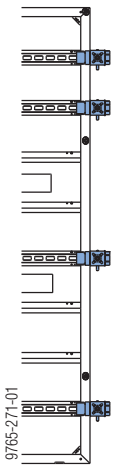
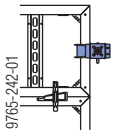
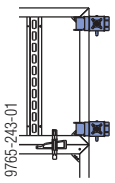
How to mount:

- ➤ 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.

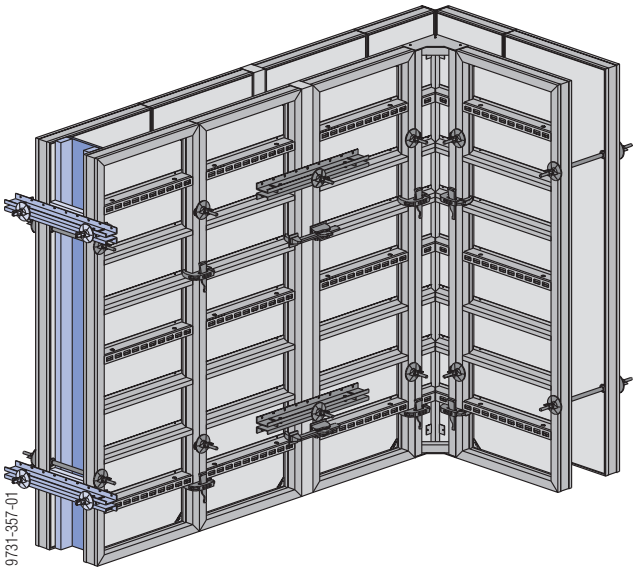


C Twin pins
D Screwjack clamp
E Star grip nut

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**.

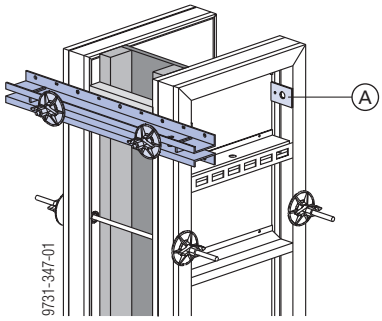
Framax universal waling:
permitted moment: 5.2 kNm

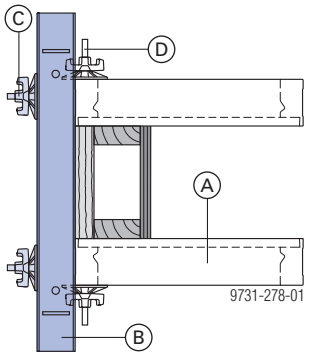
There are **2 possible ways** of **fastening the universal walings**:

- 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.



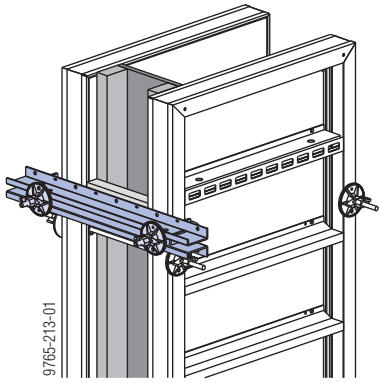


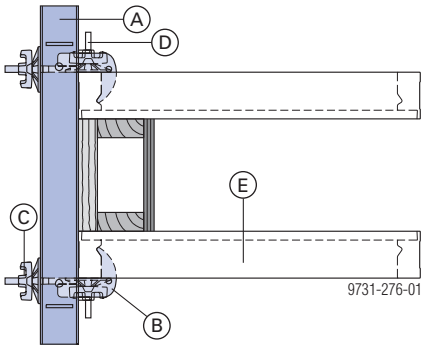
A	Panel with cross boreholes (Alu-Framax Xlife panel 0.55 or 0.60m, or Alu-Framax Xlife universal panel)
B	Framax universal waling
C	Super plate 15.0 + Framax universal fixing bolt
D	Doka tie rod system 15.0

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:
Permitted tensile force: 15.0 kN

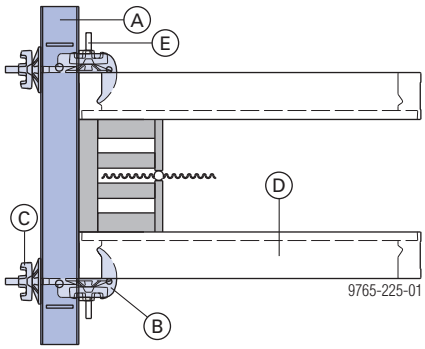
Multi-purpose waling WS10 Top50:
Permitted moment: 12.3 kNm

Number of universal walings / multi-purpose walings:

Wall thickness	Panels longside vertical 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 longside horizontal up to 0.45m	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

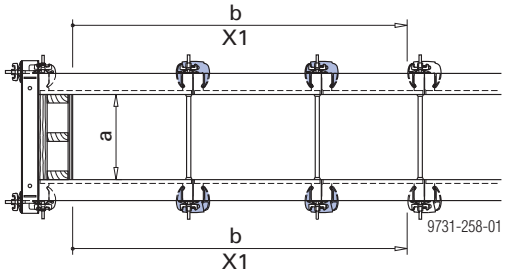
Inter-panel connections for increased tensile loads

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

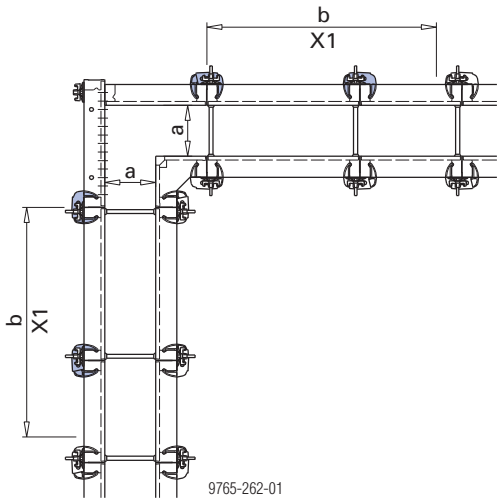


a ... 40 cm up to 60 cm
b ... 1.95 m
X1 ... 1 additional clamp

Near outside corners

Wall thickness up to 40 cm:

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

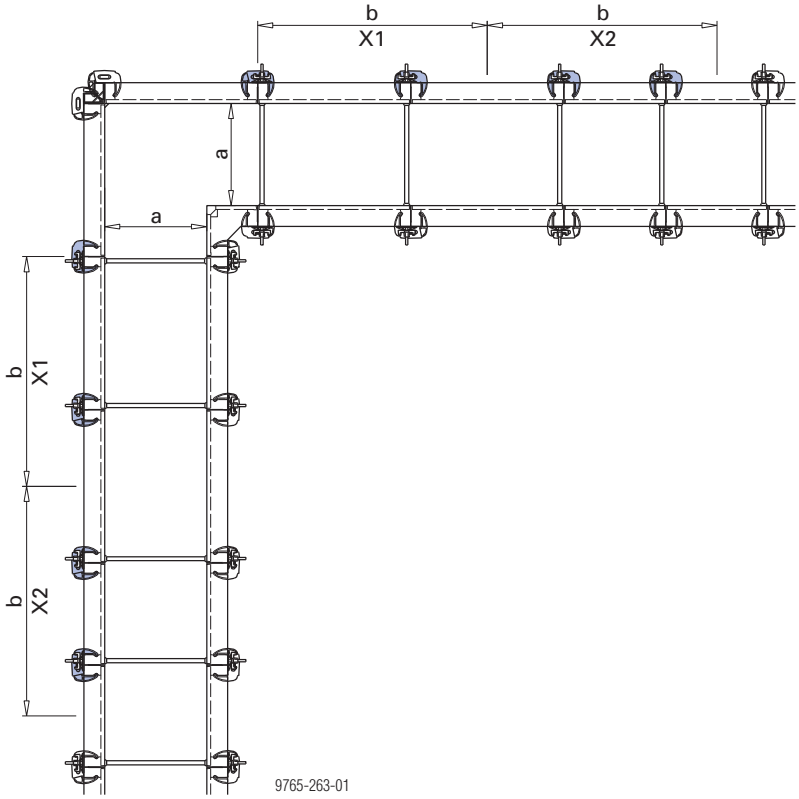


a ... up to 40 cm
b ... 1.35 m
X1 ... 1 additional clamp

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



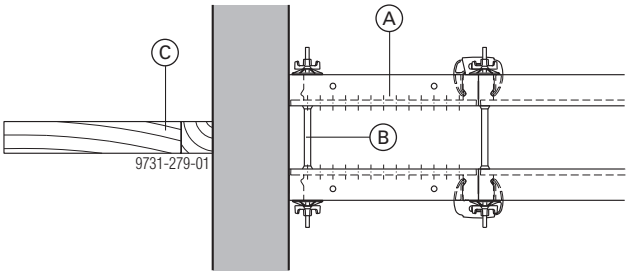
a ... up to 60 cm
b ... 1.35 m
X1 ... 2 additional clamps
X2 ... 1 additional clamp

Wall junctions, offsets and steps

Connecting to existing walls

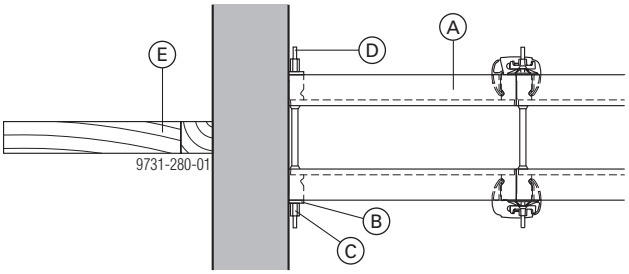
Right-angled connections

with an Alu-Framax Xlife universal panel



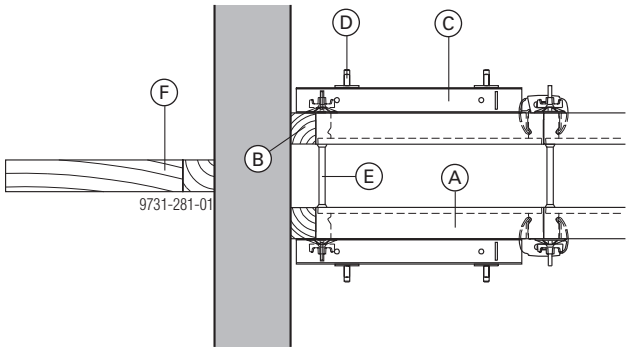
A	Alu-Framax Xlife universal panel
B	Doka tie-rod system 15.0 (in the universal panel, vertically a form tie is needed in each hole)
C	In-place timber brace

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

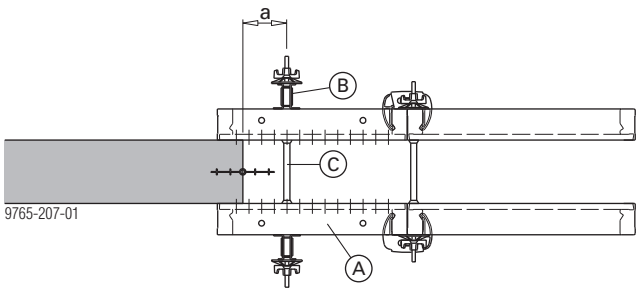
with Alu-Framax Xlife panel and squared timber



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

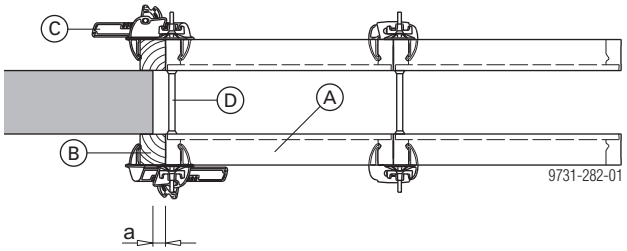
with an Alu-Framax Xlife universal panel



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

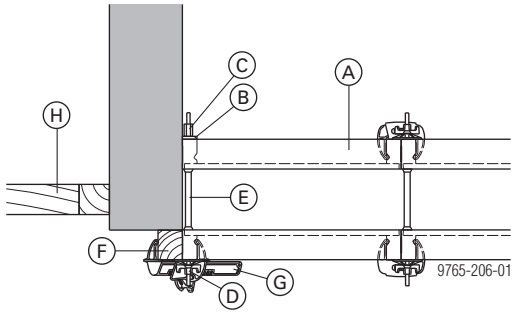


a ... max. 5 cm

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

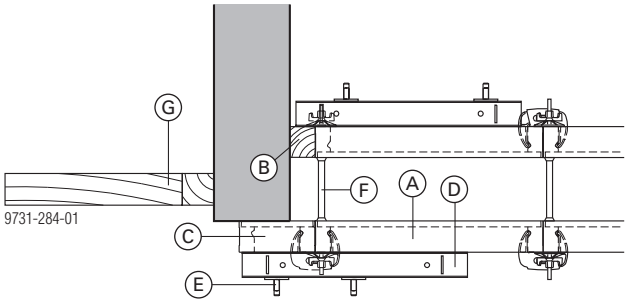
Corner connections

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

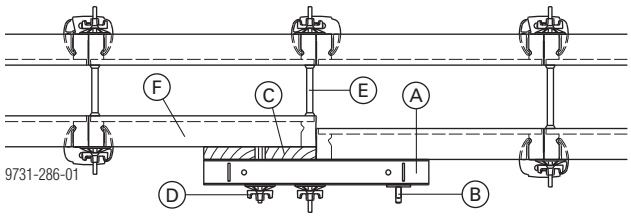
with closure



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

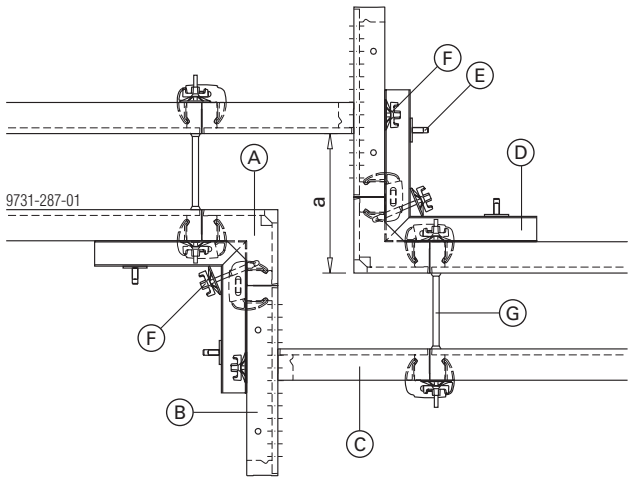
one-sided wall offset up to max. 12 cm



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

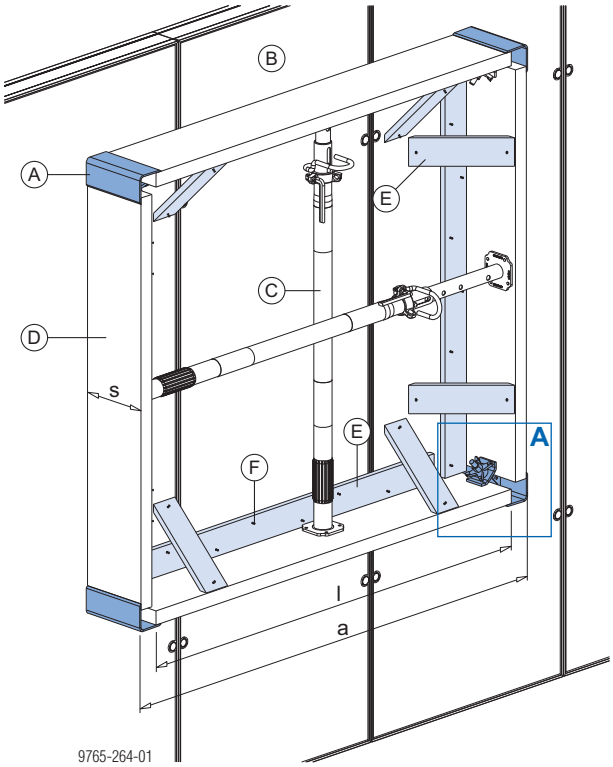


a ... 35 to 90 cm

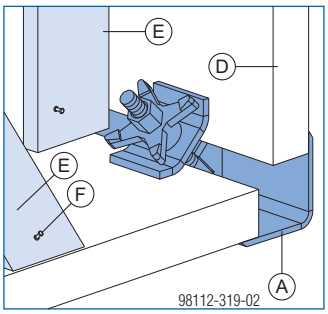
A	Alu-Framax Xlife inside corner
B	Alu-Framax Xlife universal panel
C	Alu-Framax Xlife panel 0.55 or 0.60m
D	Framax universal corner waling
E	Framax wedge clamp
F	Super plate 15.0 + Framax universal fixing bolt
G	Doka tie rod system 15.0

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.



Close-up A:

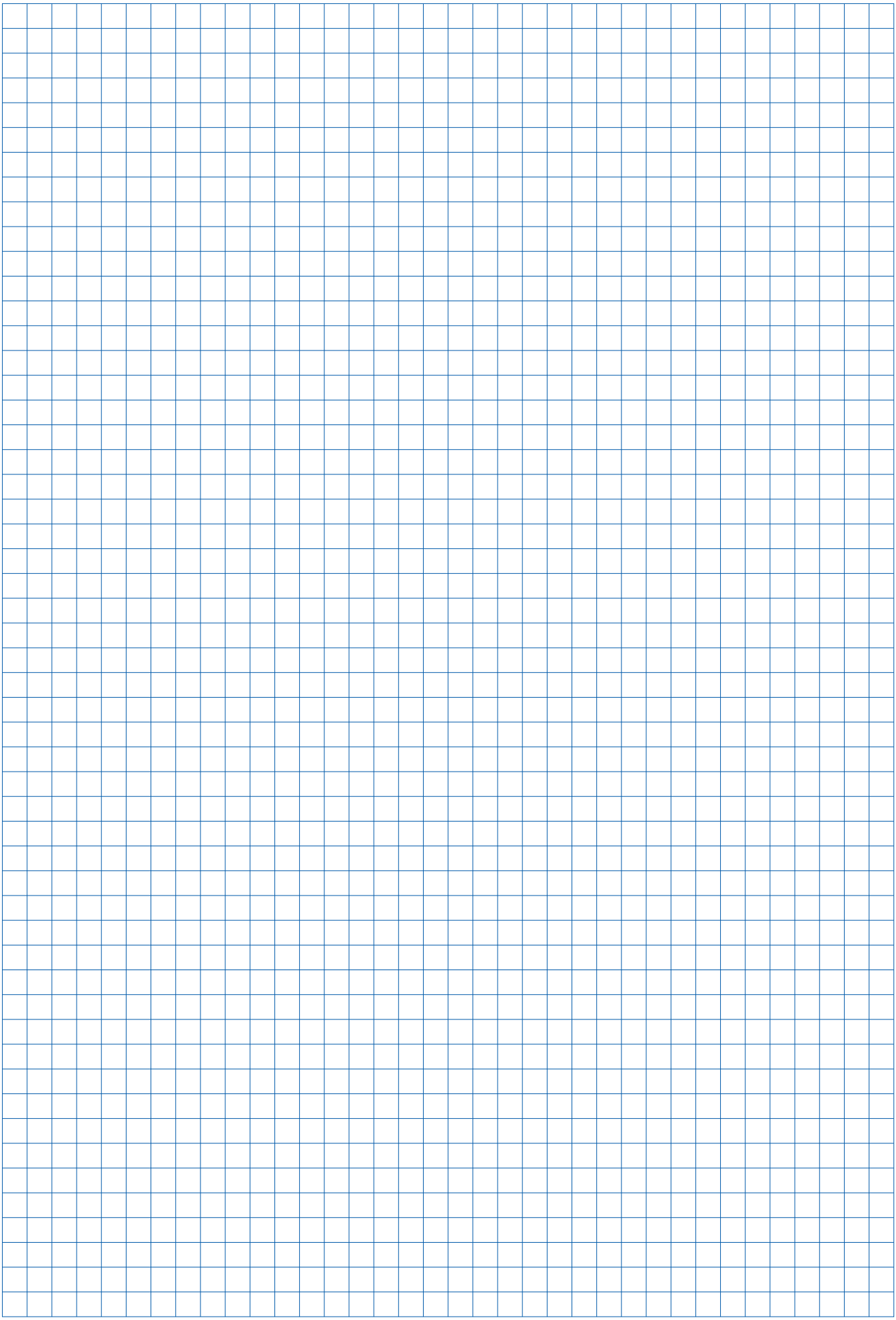


a ... clear width of opening
l ... length of plank= a minus 12 cm
s ... plank width = wall thickness

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 interconnecting and form-tie components and accessories needed for:

- Lifting and setting down
- Lifting by crane
- Pouring platform
- Pouring
- Wind loads

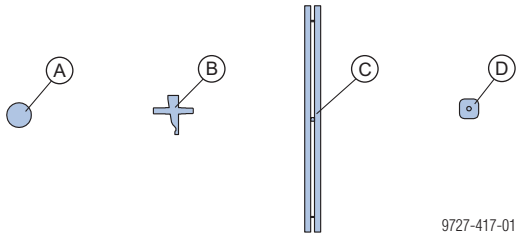
NOTICE

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

Framax multi function clamp:
Permitted tensile force: 15.0 kN
Permitted shear force: 6.0 kN
Permitted moment: 0.45 kNm
Values apply only when mounted on profile.

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

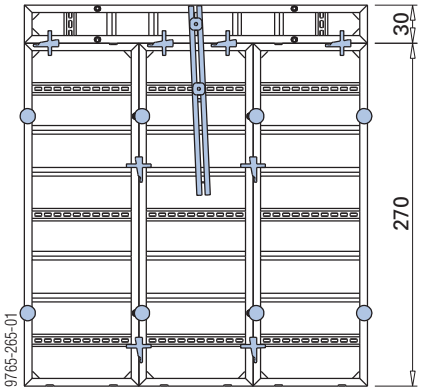


A Tie rod + Super plate
B Framax quick acting clamp RU
C Framax universal waling
D Framax wedge clamp

Alu-Framax Xlife panel 2.70m

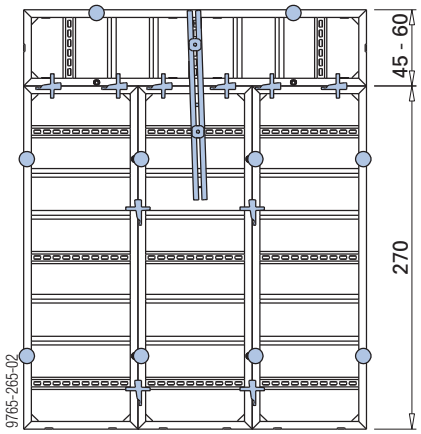
Note:
Framax multi-function clamps can be used instead of Framax quick-acting clamps RU for vertical stacking!

Formwork height: 300 cm



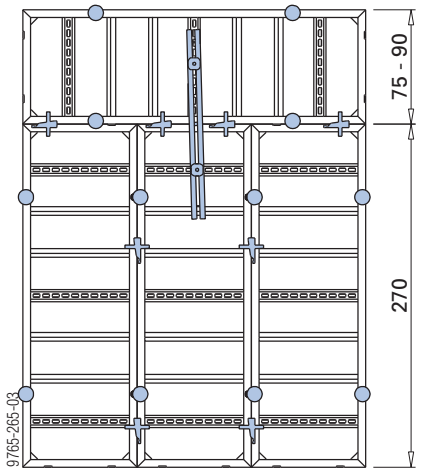
Universal waling only needed if pouring platforms are to be used.

Formwork height: 315 and 330 cm



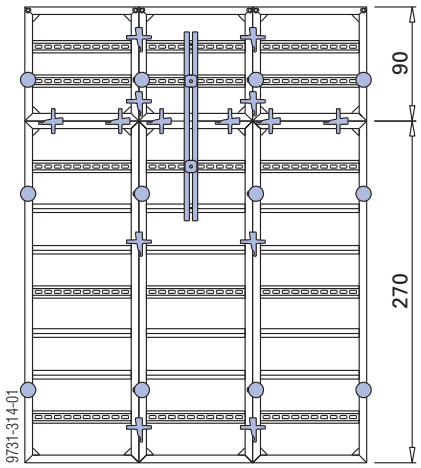
Universal waling only needed if pouring platforms are to be used.

Formwork height: 345 and 360 cm



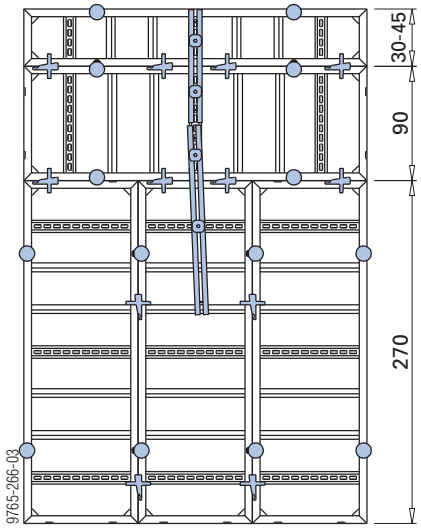
Universal waling only needed if pouring platforms are to be used.

Formwork height: 360 cm



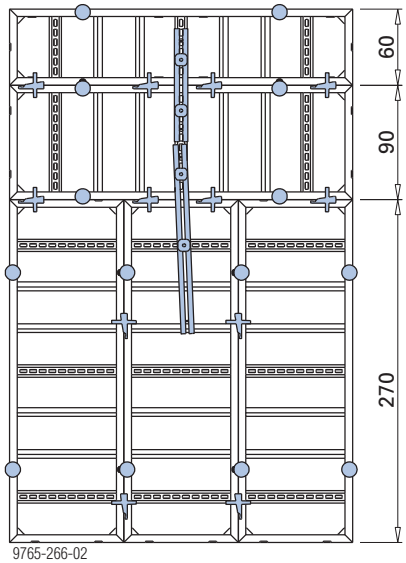
Universal waling only needed if pouring platforms are to be used.

Formwork height: 390 and 405 cm



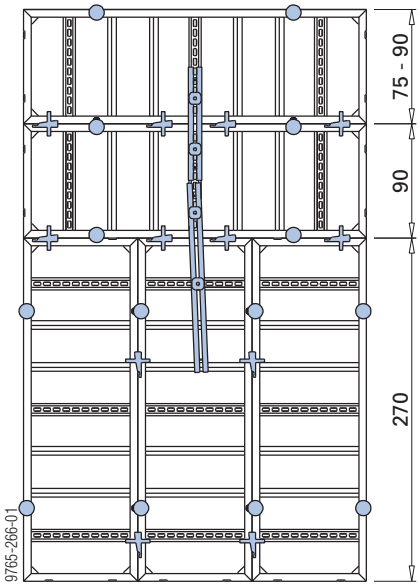
Topmost universal waling needed only if pouring platforms are to be used.

Formwork height: 420 cm

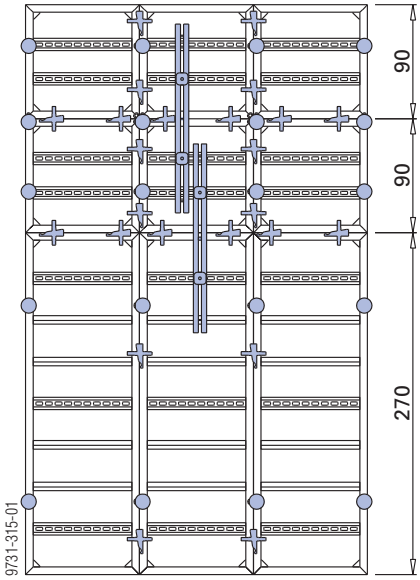


Topmost universal waling needed only if pouring platforms are to be used.
Without this universal waling, 6 clamps are needed at the topmost inter-panel joint.

Formwork height: 435 and 450 cm

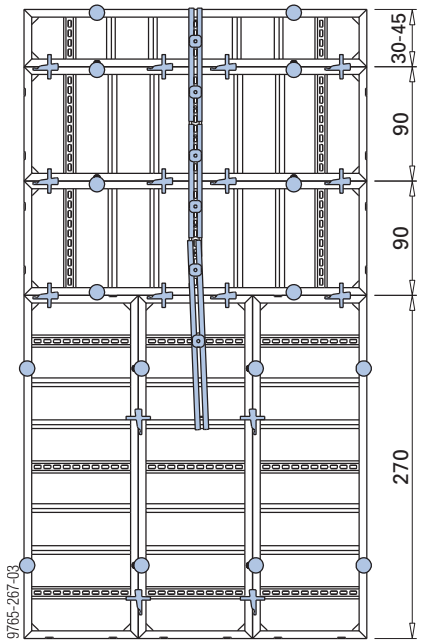


Formwork height: 450 cm



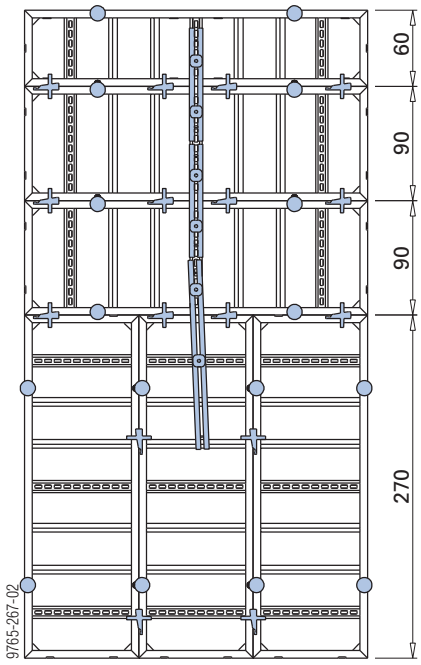
Universal walings are needed on every third panel (in terms of the width).
When universal clamps are used, the bottommost universal waling is needed only if pouring platforms are to be used

Formwork height: 480 and 495 cm



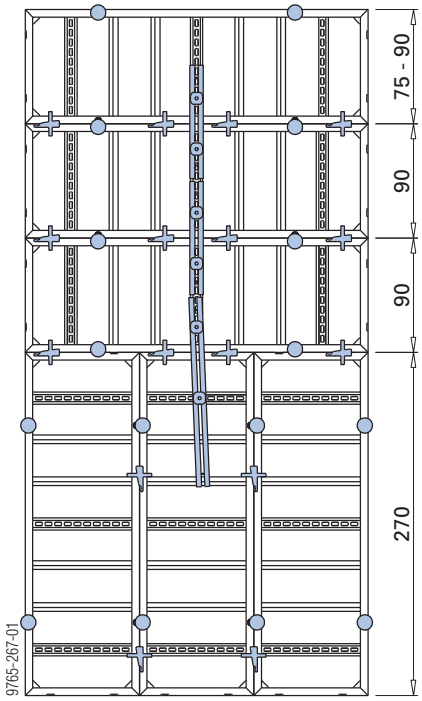
Topmost universal waling needed only if pouring platforms are to be used.

Formwork height: 510 cm

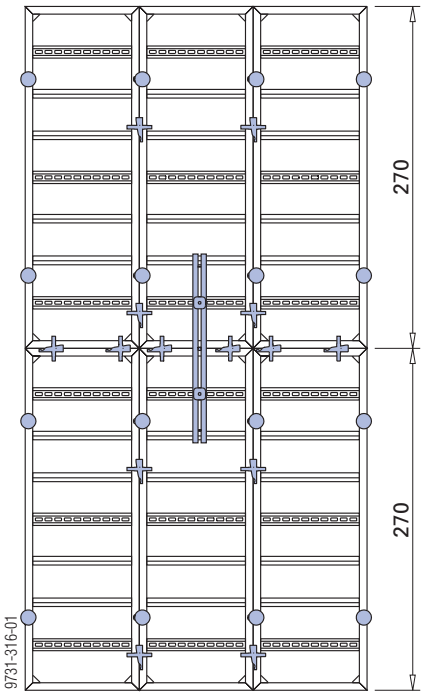


Topmost universal waling needed only if pouring platforms are to be used.
Without this universal waling, 6 clamps are needed at the topmost inter-panel joint.

Formwork height: 525 and 540 cm



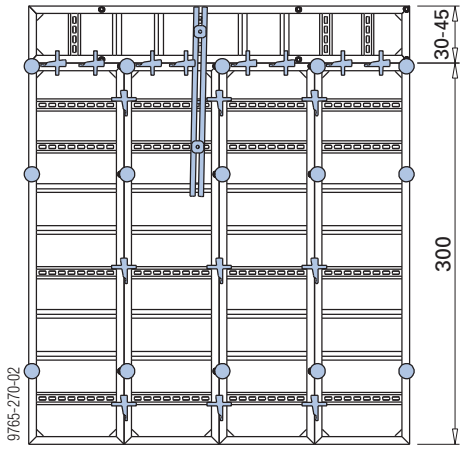
Formwork height: 540cm



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.

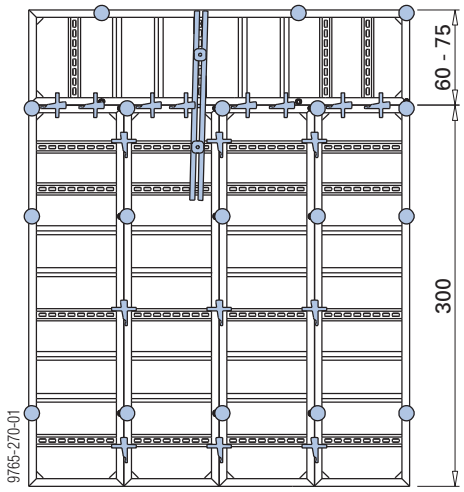
Alu-Framax Xlife panel 3.00m

Formwork height: 330 and 345 cm



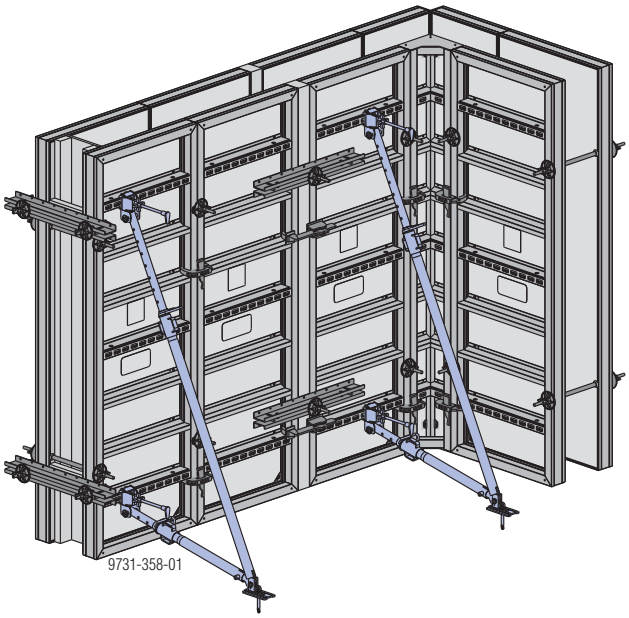
Universal waling only needed if pouring platforms are to be used.

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.

NOTICE

Formwork panels must be held stable **in every phase** of construction work!

Observe all applicable safety regulations!

CAUTION

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

➤ 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

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. anchoring load: F_k = **13.5 kN** (R_d = **20.3 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 where the wind pressure w_e = 0.65 kN/m². This results in an impact pressure q_p = 0.5 kN/m² (102 km/h) where $c_{p, net}$ = 1.3. The greater wind loads encountered at exposed formwork-ends must be constructionally sustained by additional plumbing accessories (e.g. struts or pipe-braces). In cases where higher wind pressure is encountered, the number of struts must be determined by statical calculation!

For more information, see the Calculation Guide 'Wind loads to the Eurocodes', or consult your Doka technician!

Note:

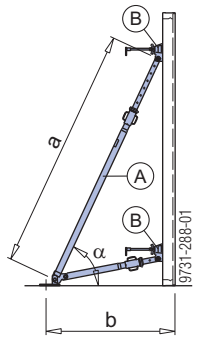
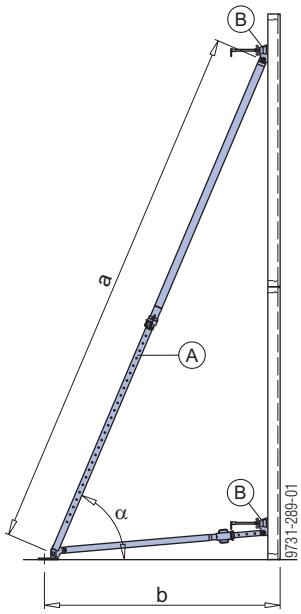
Every gang-form must be supported by **at least 2 plumbing accessories**.

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

Panel struts

Product features:

- Can be telescoped in 8 cm increments
- Fine adjustment by screw-thread
- All parts are captively integrated - including the telescopic tube (has safety stop to prevent dropout)

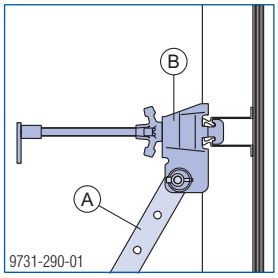
Panel strut 340	Panel strut 540
	
a ... 190.8 - 341.8 cm b ... 115.8 - 165.5 cm	a ... 310.5 - 549.2 cm b ... 207.7 - 256.5 cm

α ... approx. 60°

A Panel strut 340 IB or 540 IB

B Prop head EB

Connection in the waling profile



A Panel strut 340 IB or 540 IB

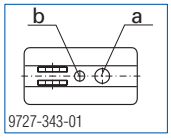
B Prop head EB

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!

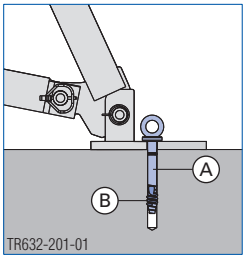
Holes in footplate of the Panel strut:



a ... diam. 26 mm
b ... diam. 18 mm

Anchoring the footplate

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



A Doka express anchor 16x125mm

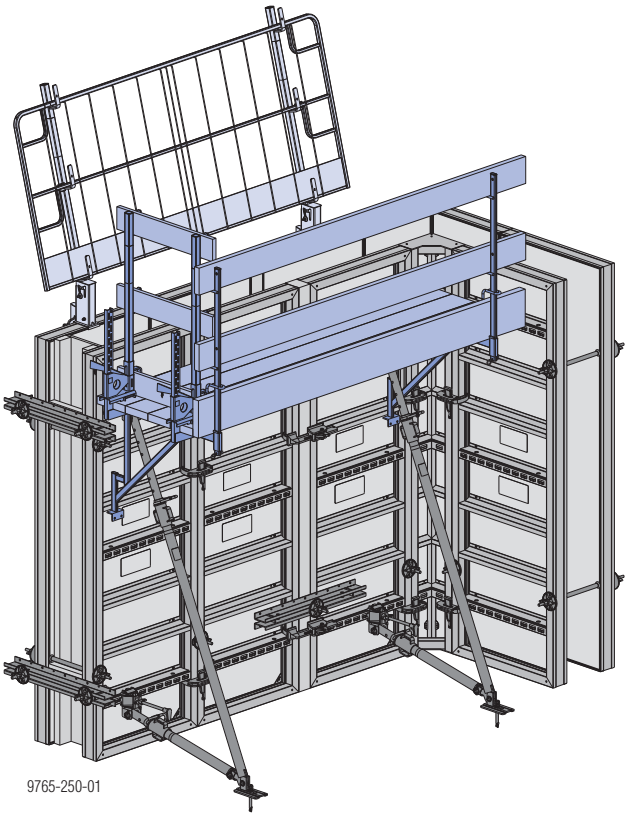
B Doka coil 16mm

Characteristic cube compressive strength of the concrete ($f_{ck,cube}$):
min. 15 N/mm² (C12/15 grade concrete)

Follow the Fitting Instructions!

Required safe working load of alternative anchors for foot-plates:
$R_d \geq 20.3$ kN ($F_{permissible} \geq 13.5$ kN)
Follow the manufacturers' applicable fitting instructions.

Pouring platforms with single brackets



Precondition for use

Observe all applicable safety rules.

Engage pouring platforms only to formwork structures of adequate stability to ensure that the expected loads can be taken.

Make sure that the formwork gang is sufficiently rigid.

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

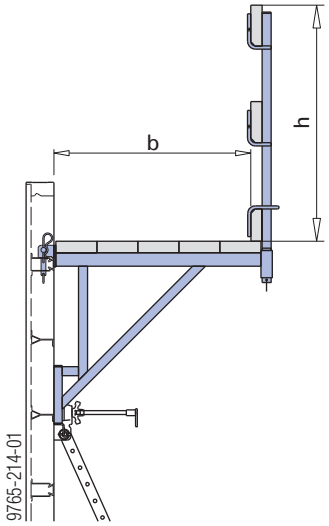
Note:

The plank and board thicknesses given here comply with the C24 category to EN 338.

Observe all national regulations applying to deck-boards and guardrail boards.

Framax bracket 90

With the Framax bracket 90, pouring platforms with a platform width of 90 cm can be assembled. These pouring platforms can easily be assembled by hand.



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

Permitted 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 (site-provided).

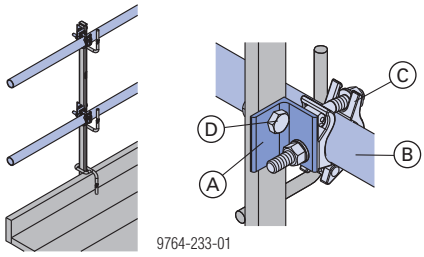
Board thicknesses for centre-to-centre spans up to 2.50 m:

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

Fastening the deck-boards: with 5 square bolts M10x120 per bracket (not included in scope of supply).

Fastening the guardrail boards: with nails

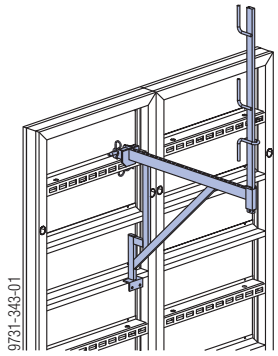
Using scaffold tubes



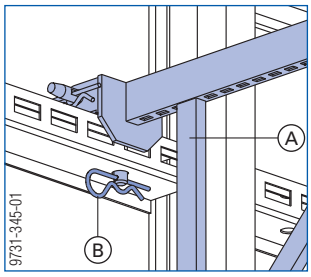
Tools: Fork wrench 22 for mounting the couplers and scaffold tubes.

A	Scaffold tube connection
B	Scaffold tube 48.3mm
C	Screw-on coupler 48mm 50
D	Hexagon bolt M14x40 + hexagon nut M14 (not included with product)

Possible ways of fixing to upright panels



in the cross profile

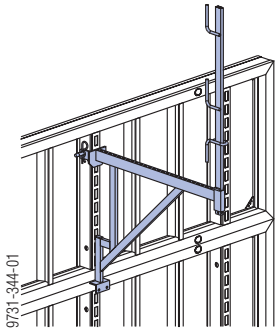


Anti-liftout guard

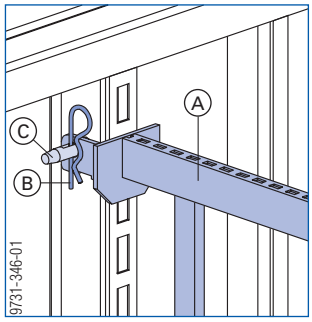
A Framax bracket 90
B Spring cotter

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



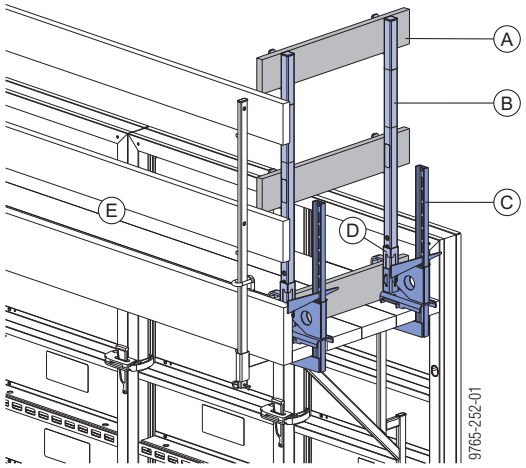
Lift-out guard

A Framax bracket 90
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.

Edge protection system 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:

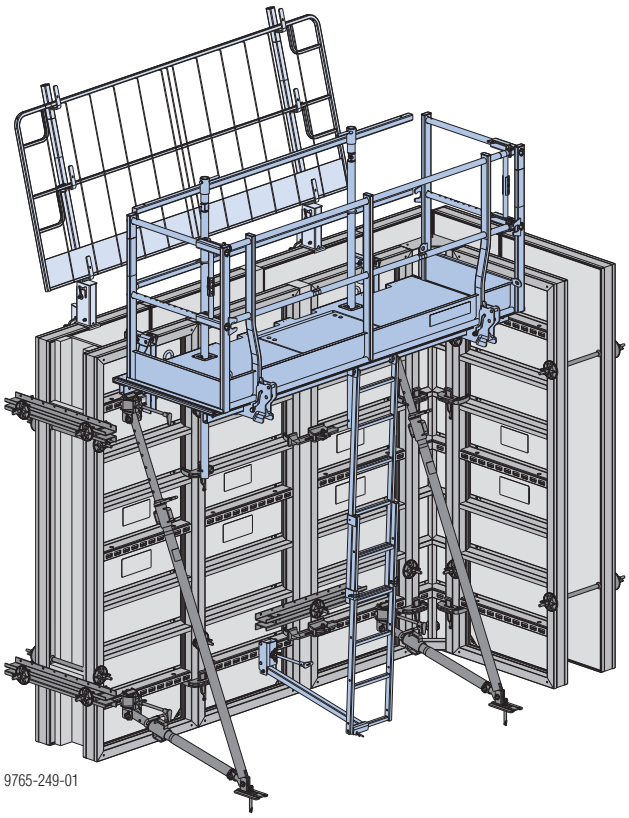
- ➤ Fasten Railing clamps XP onto the decking of the pouring platform, by tightening the wedge (clamping range 2 to 43 cm).
- ➤ Working from below, push a Toeboard holder XP 1.20m onto the Handrail post XP 1.20m.
- ➤ Push the Handrail post XP 1.20m into the post-holding fixture on the Railing clamps 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 rules.

Engage pouring platforms only to formwork structures of adequate stability to ensure that the expected loads can be taken.

Make sure that the formwork gang is sufficiently rigid.

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

NOTICE

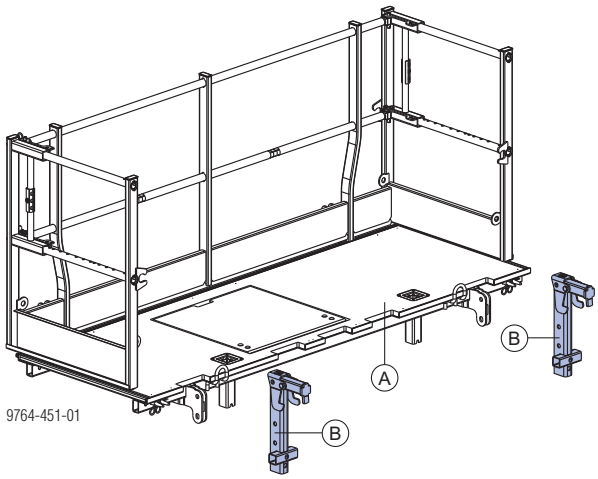
- If the formwork is lifted with the pouring platform still mounted to it, the platform must be secured so that it cannot slip to either side.
- When vertical stacking with horizontal panels, these panels have to be anchored at the top as well if pouring platforms are to be used!

Xsafe plus platform

These pre-assembled, fold-out working platforms with their integral side railings, self-closing manhole 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 'Platform system Xsafe plus' User Information booklet.



A Xsafe plus platform

B Xsafe plus lifting adapter for Framax (2 per platform)

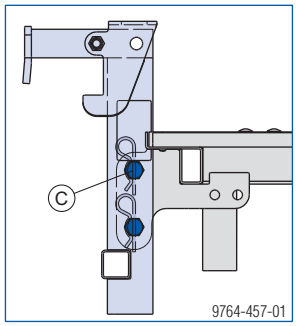
Permitted service load: 1.5 kN/m² (150 kg/m²)
Load Class 2 to EN 12811-1:2003

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

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

Mounting the lifting adapter onto the platform:

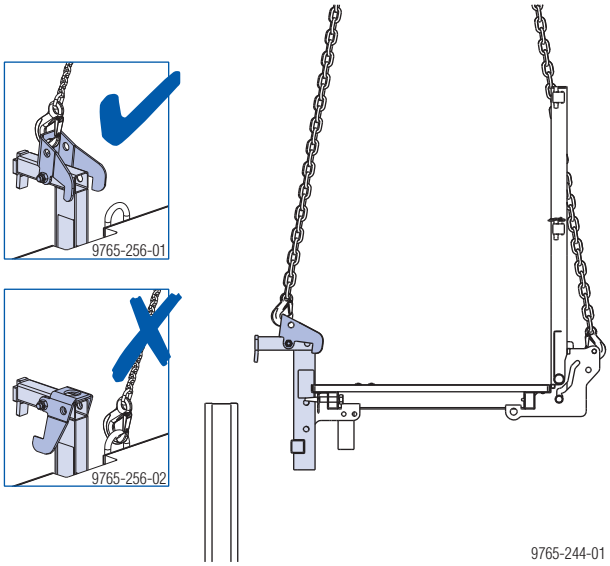
➤ Use a Connecting pin 10cm and Spring cotter 5mm to mount the lifting adapter to the platform.



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

Lifting the platform onto the formwork:

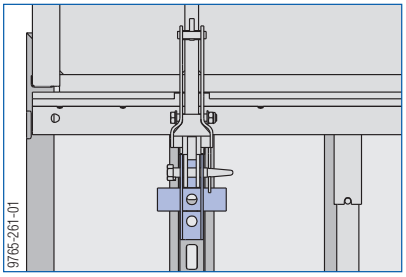
➤ Attach a four-part lifting chain (e.g. Doka 4-part chain 3.20m) to the platform and hoist it towards the formwork.



➤ Fix the platform to the top of the formwork.

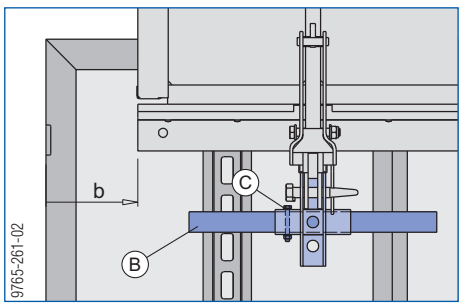
Note:

On **horizontal panels**, mount 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 diam. 10 mm borehole (site-provided)

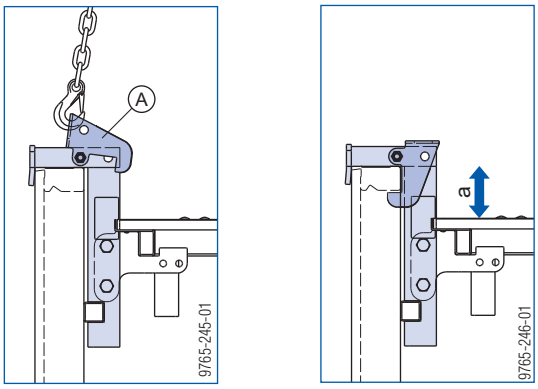
C Hexagon bolt M8x65 + hexagon nut M8

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

➤ Detach the 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 platform is now secured against accidental lift-out.



a ... 13 cm

A Safety 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 four-part lifting chain to the platform and raise it.
When the platform is raised by the four-part lifting chain on the safety 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**.

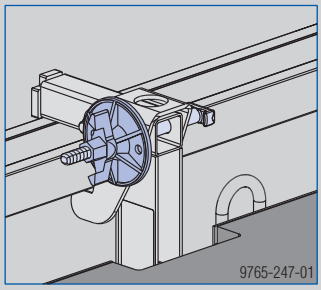
CAUTION

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.

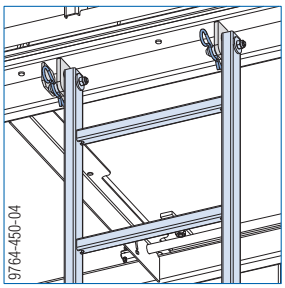


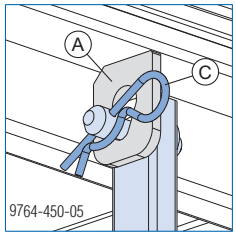
Xsafe plus telescopic ladder

Connection to the Xsafe plus platform:

➤ Hook the Xsafe plus telescopic ladder into the integrated ladder connection.

➤ Secure with Spring cotters 5mm.

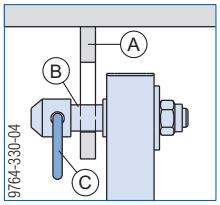




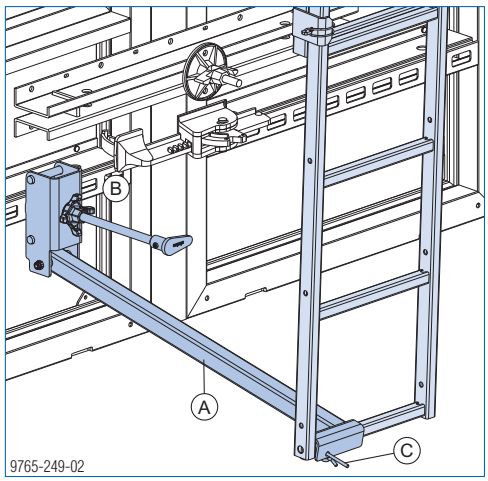
A Integrated ladder connection on the Xsafe plus platform

C Spring cotter 5mm

- The groove in the ladder pin **(B)** must be engaged in the hole of the ladder connection **(A)** !
- The ladder must be secured with Spring cotters 5mm **(C)** !



Connection to the formwork:



A Xsafe plus ladder starter piece

B Waling profile of the Alu-Framax Xlife panel

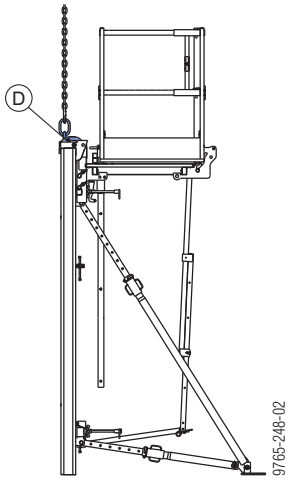
C Spring cotter of the Xsafe plus ladder starter piece

Animation: https://player.vimeo.com/video/256374934

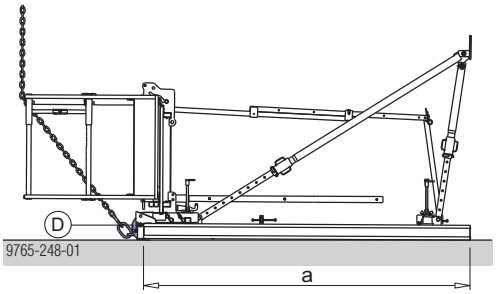
Moving the formwork and the platform in one piece

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

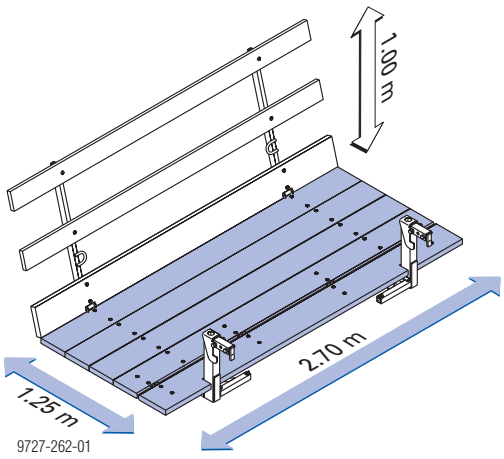
CAUTION

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

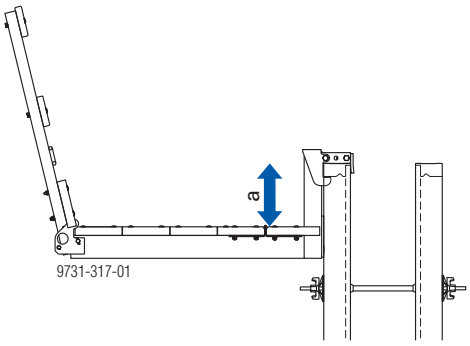
NOTICE

- It is not permissible to lay the formwork down flat together with the pouring platform!
- 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.

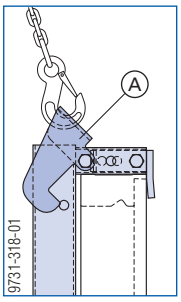


a ... 30 cm

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.

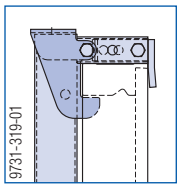
➤ Fix the pouring platform to the top of the formwork.



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!



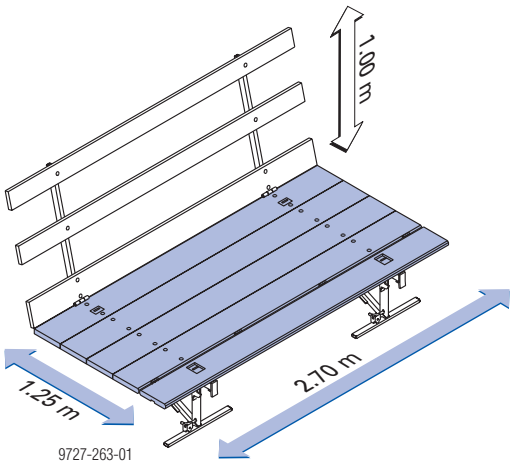
The pouring platform is now secured against accidental lift-out.

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.

Framax pouring platform O 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

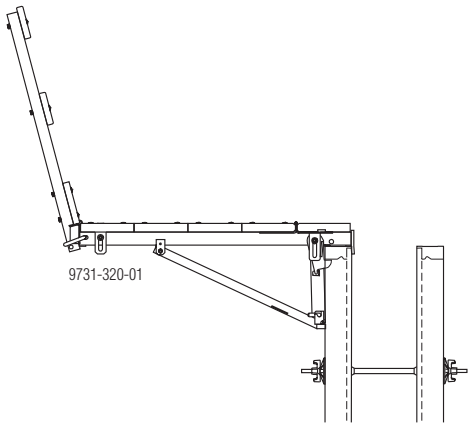
NOTICE

- It is not permissible to lay the formwork down flat together with the pouring platform!
- 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 O:

- Framed formwork Framax Xlife
- Large-area formwork Top 50 and Wall formwork FF20 - with Top50 adapter for Framax pouring platform O

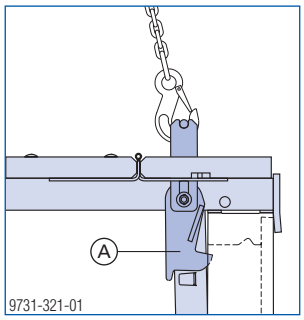
The level of the floor planking is above the top edge of the formwork.



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.

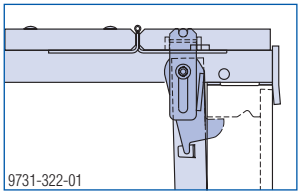
➤ Fix the pouring platform to the top of the formwork.



A Safety hook

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

Perform a sight-check of the crane-hoisting points recessed into the decking.



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 crane suspension hook, the platform is automatically unlocked.

Sideguards on exposed platform-ends

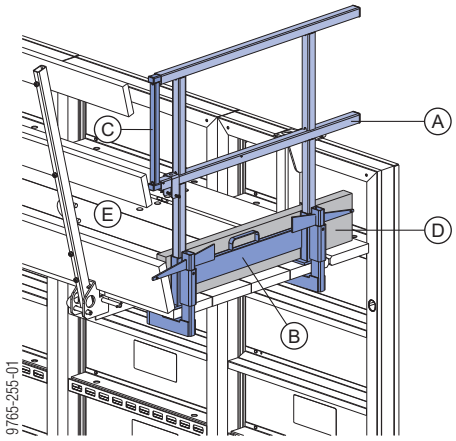
On pouring platforms that do not completely encircle the structure, suitable sideguards must be placed across exposed end-of-platform zones.

Note:

The plank and board thicknesses given here comply with the C24 category of EN 338.

Observe all national regulations applying to deck-boards and guard-rail 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 guard-rail

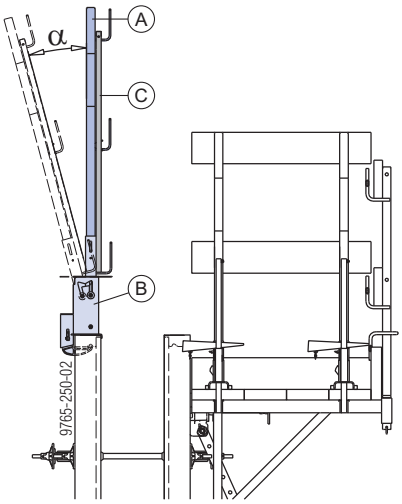
If there are work platforms mounted on one side of the formwork only, then a fall-protection barrier must be mounted to the opposing formwork.

Note:

The plank and board thicknesses given here comply with the C24 category of EN 338.

Observe all national regulations applying to deck-boards and guard-rail boards.

Edge protection system XP



α ...15°

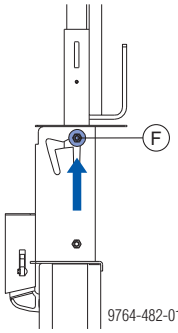
A Handrail post XP 1.20m

B Framax adapter XP

C Protective grating XP or guard-rail boards

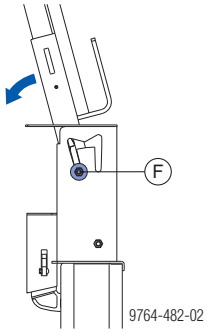
If necessary (e.g. to enlarge the available work-space during pouring), the safety barrier can be tilted outward by 15°.

➤ Push up the safety bolt on the Adapters XP until the spring snaps into place (allow for overlap between protective gratings and/or guard-rail boards).



F Safety bolt

➤ Tilt the safety barrier outward.

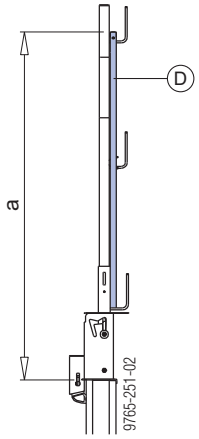
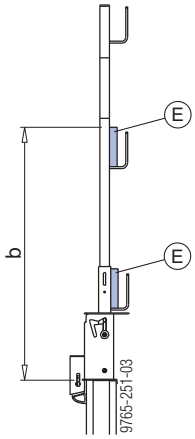


F Safety bolt

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	Guard-rail boards
	

a ... 143 cm
b ... 103 cm

D Protective grating XP

E Guard-rail board

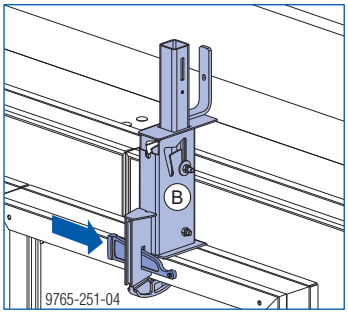
NOTICE

When guard-rail boards are used to make the safety barrier, it is not allowed to fit guard-rail boards in the top handrail-post plates.

Assembly

The opposing guard-rail can be mounted to both upright and face-down (ground-assembled) gang-forms.

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

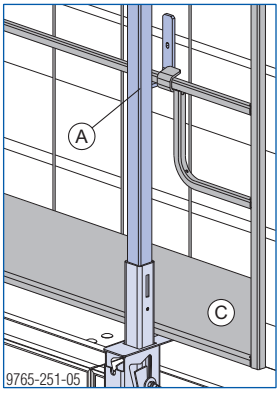


B Framax adapter XP

➤ Push the Handrail post XP 1.20m into the post-holding fixture on the Framax adapter XP until the locking mechanism engages.

➤ Fit on a Protective grating XP or guard-rail boards.

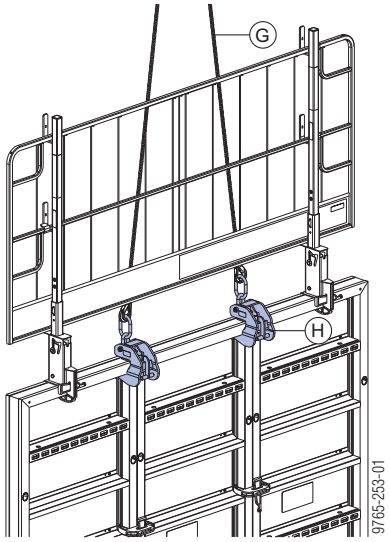
➤ Fix the Protective grating XP to the Handrail post XP with Velcro® fasteners 30x380mm, or fix on the guard-rail boards with nails (diam. 5 mm).



A Handrail post XP 1.20m

C Protective grating or guard-rail boards

Lifting by crane

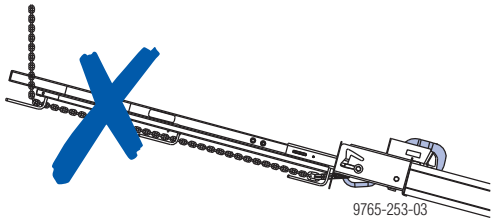


G Doka 4-part chain 3.20m

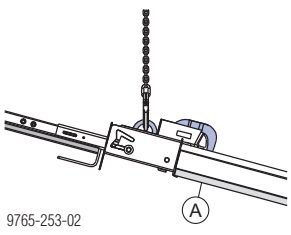
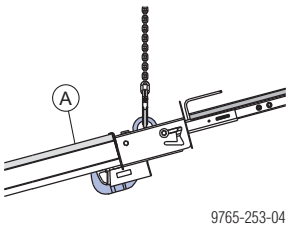
H Framax lifting hook

When lifting gang-forms together with opposing guard-rails assembled from the Edge protection system 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 guard-rail 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 guard-rail board.

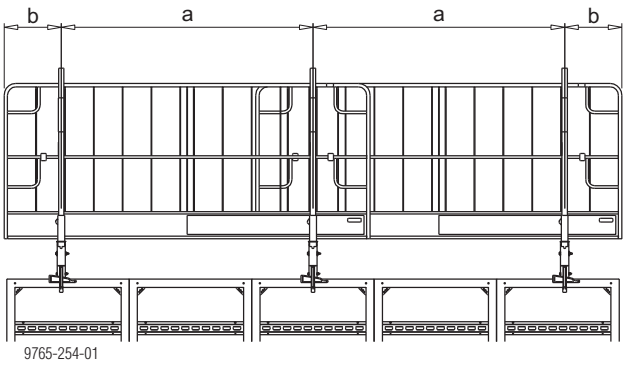


Make sure that the 4-part chain is in the right position:

▪ 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 ... support centres
b ... cantilever

Note:
The wind conditions likely to be encountered in Europe, in accordance with EN 13374, are largely recognised by the dynamic pressure q=0.6 kN/m² (highlighted in the tables).

Permitted support centre (a)

		Dynamic pressure q [kN/m²]			
		0.2	**0.6**	1.1	1.3
Permitted support centre	Protective grating XP	**2.5 m**			-
	Guard-rail board 2.4 x 15 cm	**1.9 m**			
	Guard-rail board 3 x 15 cm	**2.7 m**			2.6 m
	Guard-rail board 4 x 15 cm	**3.3 m**		3.1 m	2.6 m

Permitted cantilever (b)

		Dynamic pressure q [kN/m²]			
		0.2	**0.6**	1.1	1.3
Permitted cantilever	Protective grating XP	**0.6 m**		0.4 m	-
	Guard-rail board 2.4 x 15 cm	**0.5 m**			
	Guard-rail board 3 x 15 cm	**0.8 m**			
	Guard-rail board 4 x 15 cm	**1.4 m**			

Ladder system

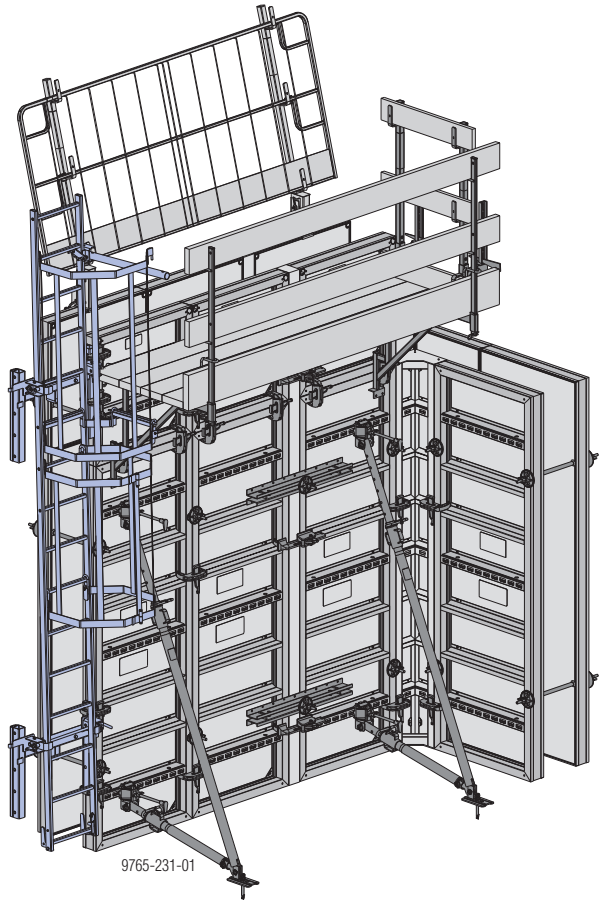
The Ladder system XS permits safe vertical access to and from the intermediate platforms and pouring platforms:

- 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 elements face-down on an assembly bench (see 'Inter-panel connections').

➤ Only mount the platforms and panel struts to the element when this is in the flat position (see 'Pouring platforms' and 'Plumbing accessories').

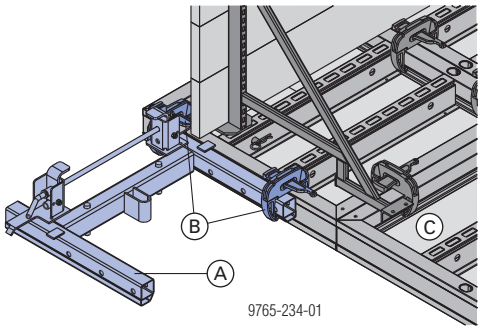
Attaching connectors to the formwork

➤ Place the Connector XS Wall formwork against the frame profile near the top of the formwork.

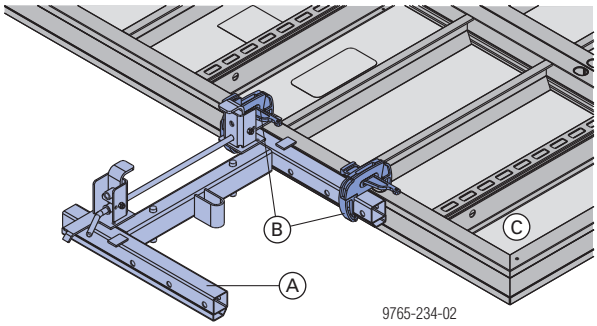
➤ Fasten the Connector XS Wall formwork to the frame profile using two Quick acting clamps RU.

➤ 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

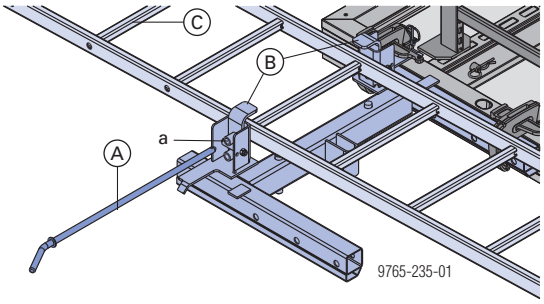
to the top "Connector XS Wall formwork"

➤ 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.



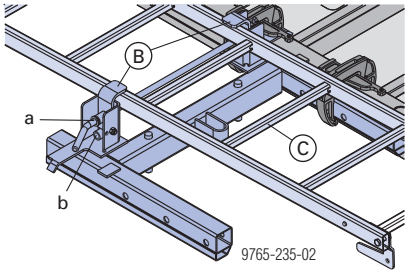
- in the front position (a)

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.

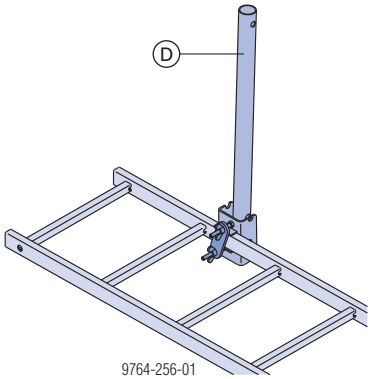
➤ Close the safety hooks, re-insert the push-in bolt and secure it with a linch pin.



– 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.



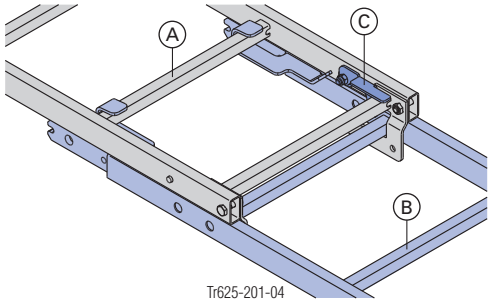
D	Securing barrier XS

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

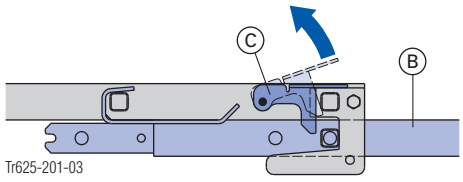
Ladder system XS for heights above 3.75 m

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

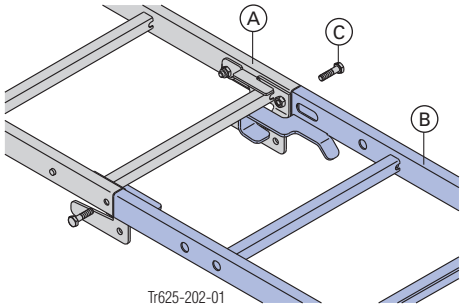


A	System ladder XS 4.40m
B	Ladder extension XS 2.30m
C	Safety latch

A telescoping join 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 **very slightly**!



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

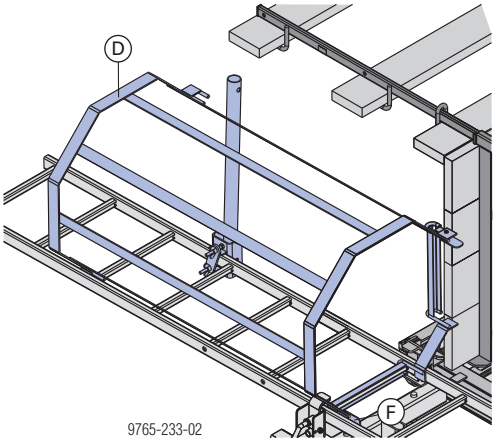
A System ladder XS 4.40m
B Ladder extension XS 2.30m
C Screws, width-across 17 mm

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

NOTICE

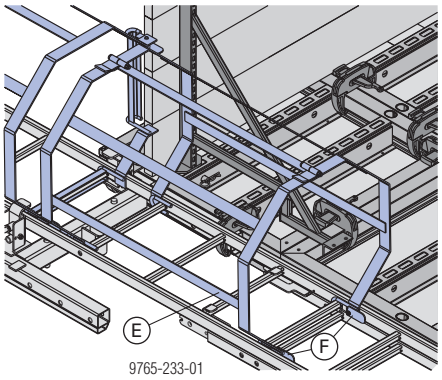
➤ Always observe all relevant safety regulations applying to the use of the Ladder cage XS in the country in which you are operating (e.g. in Germany: BGV D 36).

➤ 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

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

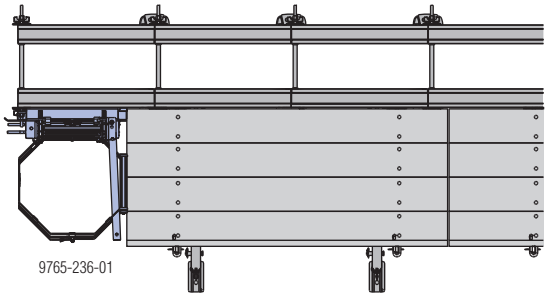


E Ladder cage XS
F Safety latches (lift-out guard)

Connection in the waling profile

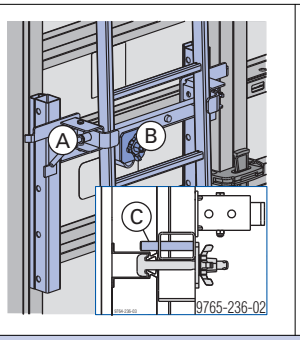
Mounting the Ladder system XS to the waling profile makes it an integral part of the gang-form.

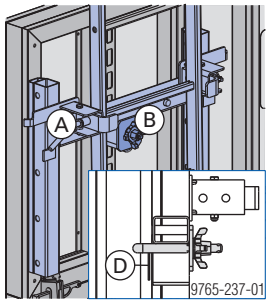
Plan view



How to mount:

➤ Fix the Connector XS Wall formwork to the waling profile with a Fixing clamp XS Framax.





Anti-slide-off protection	
Two bolts resting on the waling profile **(C)**	"Fixing clamp XS Framax" resting on the frame profile or on one of the drawn metal sheets **(D)**

A Connector XS Wall formwork

B Fixing clamp XS Framax

Items needed

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

[1)] When connected in the waling profile

Ladder cage	Formwork height 2.70-3.15 m	Formwork height >3.15-4.05 m	Formwork height >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.

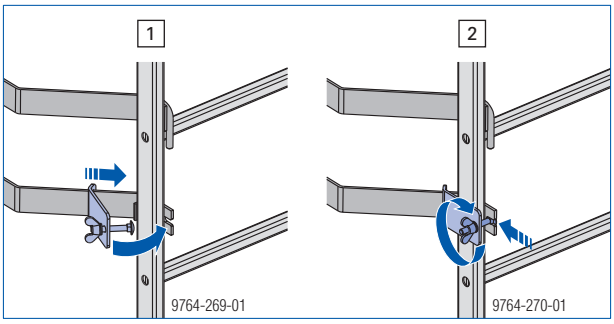
Exit onto an intermediate platform

Basic rule:

- The number of "Connectors XS wall formwork" and ladder components is shown in the "Items needed" table.
- 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

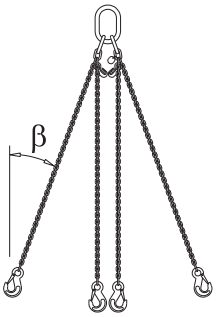
➤ Hook the ladder cage into an empty rung and secure it against accidental lift-out.



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

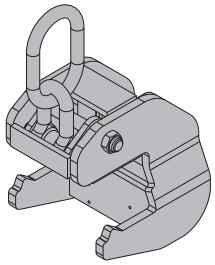
➤ Attach the Doka 4-part chain 3.20m to the Framax lifting hooks.

➤ Hang the remaining chain-lengths back in place.

Max. load-bearing capacity (as 2-part chain):
Up to 30° spread angle β 2400 kg.

Follow the directions in the Operating Instructions!

Framax lifting hook



CE

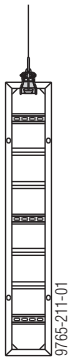
Max. load:
1000 kg / Framax lifting hook
(feasible formwork area with 2 lifting hooks = approx. 30 m²)

Follow the directions in the Operating Instructions!

Positioning the lifting hooks

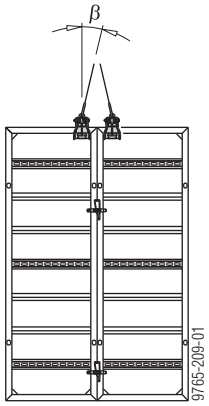
Single panels

Position the Framax lifting hook in the middle of the frame profile.



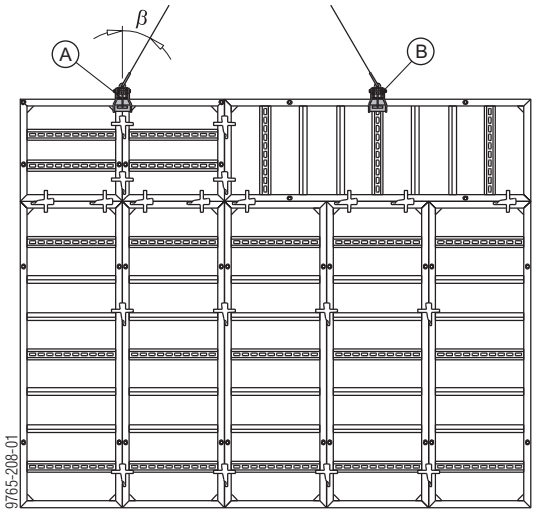
Two upright panels

Make sure that the Framax lifting hook fits tightly to the frame profile, to prevent the hook sliding from side to side.



Gang-form

- Always position the Framax lifting hook over the inter-panel join **(A)** , to prevent the hook sliding from side to side.
  - **Exception:** On single panels incorporated in the horizontal, the lifting hook must be placed over a waling profile **(B)** .

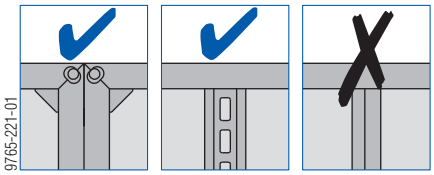


A As used on upright panels

B As used on horizontal panels

WARNING

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



- Suspend the gang-form symmetrically (centre-of-gravity position).
- Spread angle β max. 30°!

How to operate the lifting hook

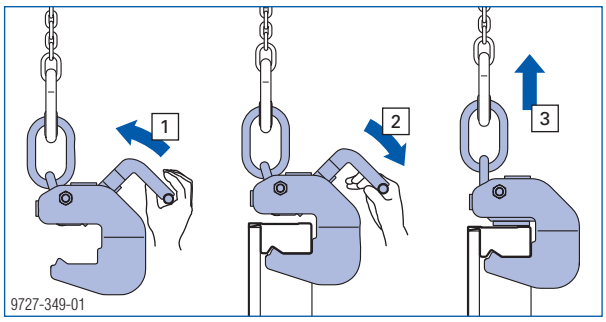
1) Raise the handle (locking lever) as far as it will go.

2) Push the lifting hook onto the frame profile as far as the rear stop, and close the handle (spring-loaded).

Do a sight-check to make sure that there is a secure form-fit between the lifting hook and the frame profile!

The handle must be closed!

3) When the panels are lifted by the crane, a load-dependent locking mechanism is activated.



Striking and repositioning the panels

Before lifting: Remove any loose items from the formwork and platforms, or secure them firmly.

WARNING

The formwork tends to adhere to the concrete. When stripping the formwork, do not try to break concrete cohesion using the crane!

Risk of crane overload.

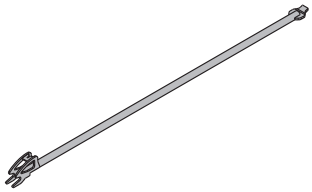
➤ Use suitable tools such as timber wedges or a special pry-bar to detach the formwork from the concrete.

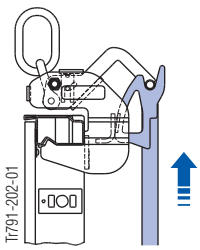
➤ Lift the gang-form to its new location (guide with tag-lines if necessary).

Framax 3-in-1 pole tool

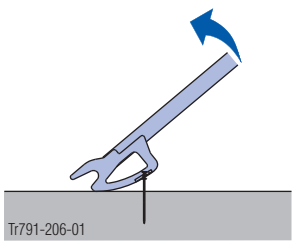
The Framax 3-in-1 pole tool has **three handy functions**:

For operating the lifting hook from ground level (up to a formwork height of 3.30 m)

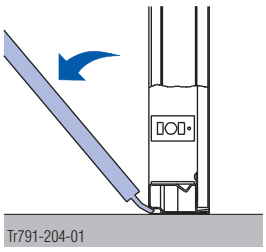




Pulling out double-headed nails



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!

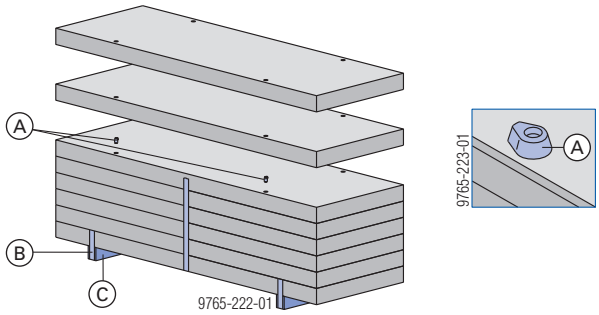
Exception: Stacking cones are not required if the stack is lifted using the "Framax transport gear".

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.



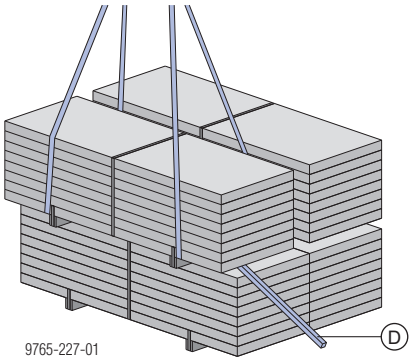
A Framax stacking cones
B Strapping tape
C Sleeper

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 **loading and offloading lorries (trucks)**, and for **lifting and setting down stacks of panels**.



With closely stacked bundles of panels:

➤ lever-up the bundle of panels (e.g. with a squared timber **(D)**), to make a space for threading in the slings.
Caution!
When doing this, always make sure that the bundle of panels remains stable!

WARNING

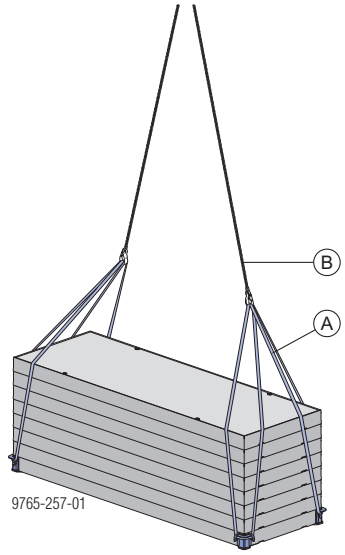
➤ The Lifting straps 13.00 m may only be used as shown here if there is no risk of the straps sliding towards one another, or of the load being displaced.

Max. load: 2000 kg

Follow the directions in the Operating Instructions!

Framax transport gear

For safe crane transport of stacked 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.

Advantages:

- 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 easily be suspended and detached by just one person working on their own.

Max. load: 2000 kg (20 kN) / 4 round slings

NOTICE

Max. stacking height: 8 panels (incl. sleepers)

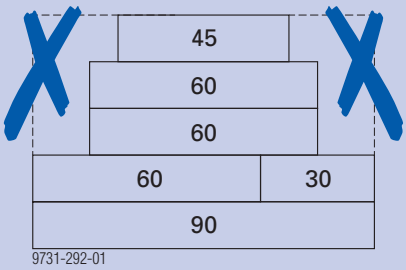
Precondition for use

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!

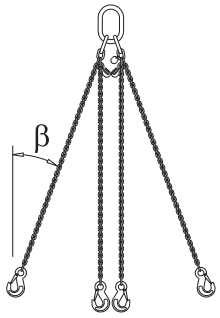


Follow the directions in the Operating Instructions!

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.



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

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

Max. load-bearing capacity (as 4-part chain):
Up to 30° spread angle β 2910 kg.
Up to 45° spread angle β 2360 kg.
Up to 60° spread angle β 1700 kg.

Max. load-bearing capacity (as 2-part chain):
Up to 30° spread angle β 2400 kg.

Follow the directions in the Operating Instructions!

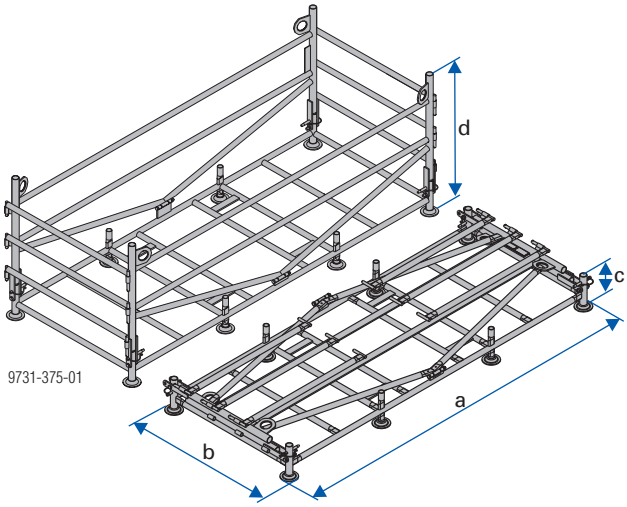
For further information, see the section headed 'Lifting by crane'.

Utilise the benefits of Doka multi-trip packaging on your site.
Multi-trip packaging such as containers, stacking pallets and skeleton transport boxes keep everything in place on the site, minimise time wasted searching for parts, and streamline the storage and transport of system components, small items and accessories.

Alu-Framax pallet

Storage and transport device for Alu-Framax panels:
- durable
- stackable – both when filled and when folded closed
- collapsible – do not take up much space

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck



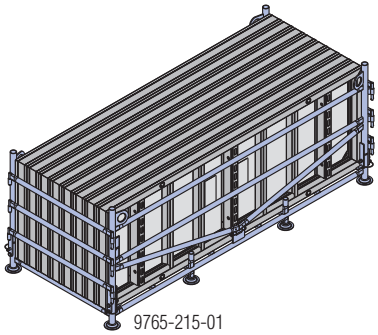
a ... 280 cm
b ... 117 cm
c ... 26 cm
d ... 107 cm

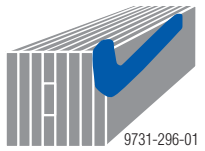
Max. load: 1200 kg
Permitted imposed load: 5200 kg

NOTICE
- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- The rating plate must be in place and clearly legible.

Loading examples

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**!

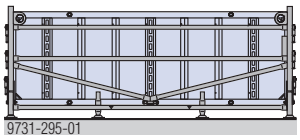
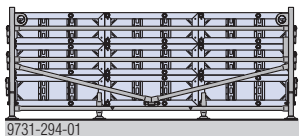




Using Alu-Framax pallets as storage units

Max. n° of units on top of one another

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

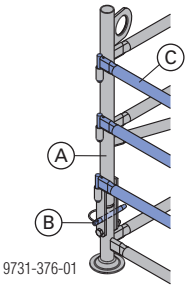
Panel height of 2.70m		Panel height of 0.90m	
 9731-295-01		 9731-294-01	
Panel	Units	Panel	Units
0.90x2.70m	8	0.90x0.90m	24
0.30x2.70m	24	0.30x0.90m	72

Using Alu-Framax pallets as transport devices

Lifting by crane

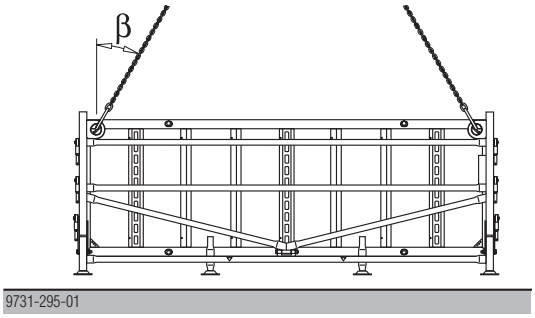
➤ Before attaching the lifting chain, check that:

- 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!



NOTICE

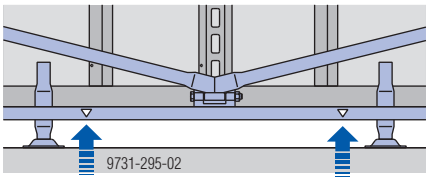
- Multi-trip packaging items may only be lifted one at a time.
- Panels are only allowed to be transported in the pallet if they are stacked in the upright.
- Secure the load in part-loaded pallets!
- Use a suitable lifting chain (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread angle β max. 30°!



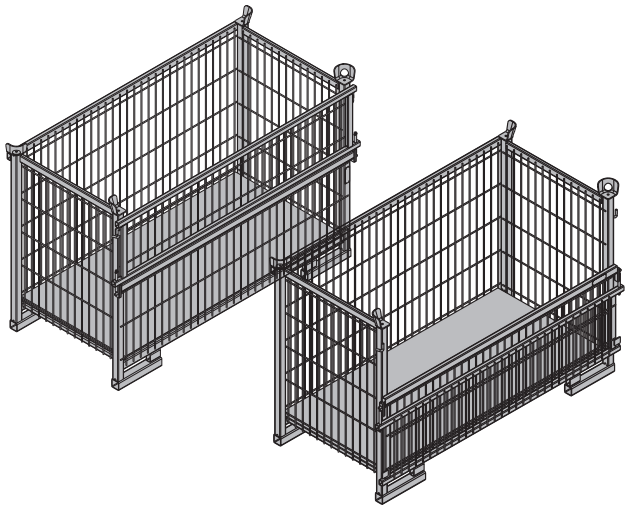
Repositioning by forklift truck or pallet stacking truck

NOTICE

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



Doka skeleton transport box 1.70x0.80m



Storage and transport devices for small items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

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

Max. load: 700 kg (1540 lbs)
Permitted imposed load: 3150 kg (6950 lbs)

NOTICE
- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

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

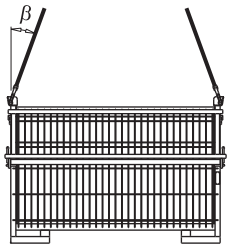
Max. n° of boxes on top of one another

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

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

Lifting by crane

NOTICE
- Multi-trip packaging items may only be lifted one at a time.
- Only lift the boxes when their sidewalls are closed!
- Use a suitable lifting chain (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread-angle β max. 30°!

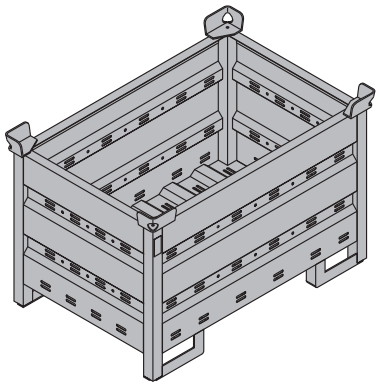


9234-203-01

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 1.20x0.80m galv.



Storage and transport devices for small items:
- durable
- stackable

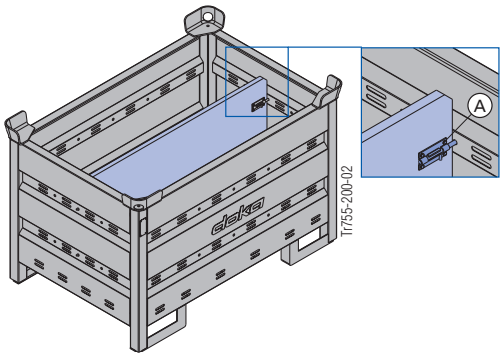
Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

Max. load: 1500 kg (3300 lbs)
Permitted imposed load: 7850 kg (17305 lbs)

NOTICE
- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

Multi-trip transport box partition

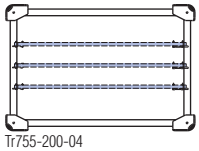
Different items in the Multi-trip transport box can be kept separate with the Multi-trip transport box partitions 1.20m or 0.80m.

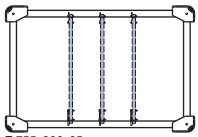


A Slide-bolt for fixing the partition

Possible ways of dividing the box

Multi-trip transport box partition	Lengthways	Crossways
1.20m	max. 3 partitions	-
0.80m	-	max. 3 partitions


Tr755-200-04


Tr755-200-05

Using Doka multi-trip transport boxes as storage units

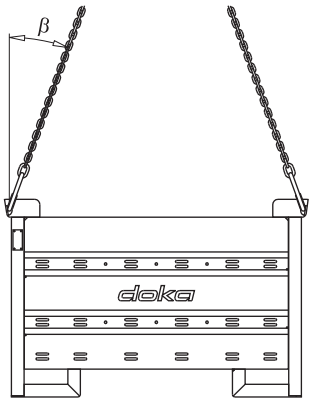
Max. n° of boxes on top of one another

Outdoors (on the site) Floor gradient up to 3%	Indoors Floor gradient up to 1%
3	6
It is not allowed to stack empty pallets on top of one another!	

Using Doka multi-trip transport boxes as transport devices

Lifting by crane

NOTICE
- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread angle β max. 30°!

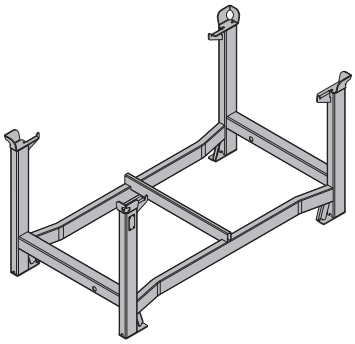


9206-202-01

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 devices for long items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

Max. load: 1100 kg (2420 lbs)
Permitted imposed load: 5900 kg (12980 lbs)

NOTICE
- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

Using Doka stacking pallets as storage units

Max. n° of units on top of one another

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

Note:

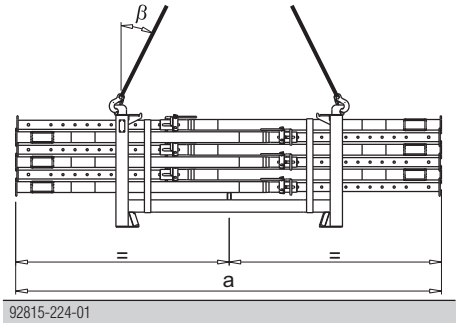
How to use with bolt-on castor set:
Always apply the fixing brake when the container is ‘parked’.

When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on caster set mounted to it.

Using Doka stacking pallets as transport devices

Lifting by crane

NOTICE
- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m).
  Do not exceed the permitted load-bearing capacity.
- Load the items centrically.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.
- Spread angle β max. 30°!

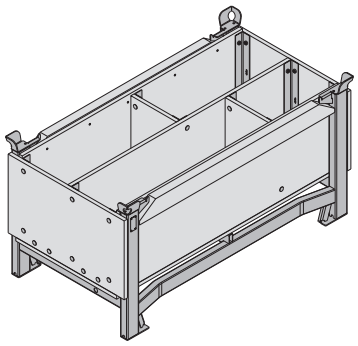


	a
Doka stacking pallet 1.55x0.85m	max. 4.5 m
Doka stacking pallet 1.20x0.80m	max. 3.0 m

Repositioning by forklift truck or pallet stacking truck

NOTICE
- Load the items centrically.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.

Doka accessory box



Storage and transport devices for small items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

The Doka accessory box is the tidy, easy-to-find way of storing and stacking all interconnection and form-tie components.

Max. load: 1000 kg (2200 lbs)
Permitted imposed load: 5530 kg (12191 lbs)

NOTICE
- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

Doka accessory boxes as storage units

Max. n° of boxes on top of one another

Outdoors (on the site) Floor gradient up to 3%	Indoors Floor gradient up to 1%
3	6
It is not allowed to stack empty pallets on top of one another!	

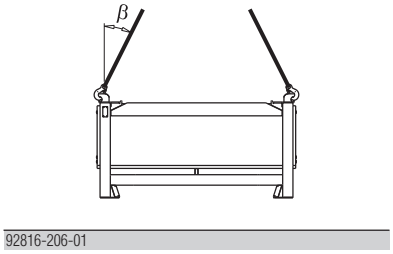
Note:

How to use with bolt-on castor set:
Always apply the fixing brake when the container is 'parked'.
When Doka accessory boxes are stacked, the bottom box must NOT be one with a bolt-on castor set mounted to it.

Doka accessory box as transport devices

Lifting by crane

NOTICE
- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread angle β max. 30°!

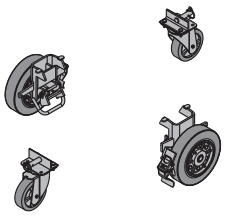


Repositioning by forklift truck or pallet stacking truck

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

Bolt-on castor set B

The Bolt-on caster set B turns the stacking pallet into a fast and manoeuvrable transport device.
Suitable for drive-through access openings > 90 cm.



The Bolt-on caster set B can be mounted to the following multi-trip packaging items:
- Doka accessory box
- Doka stacking pallets

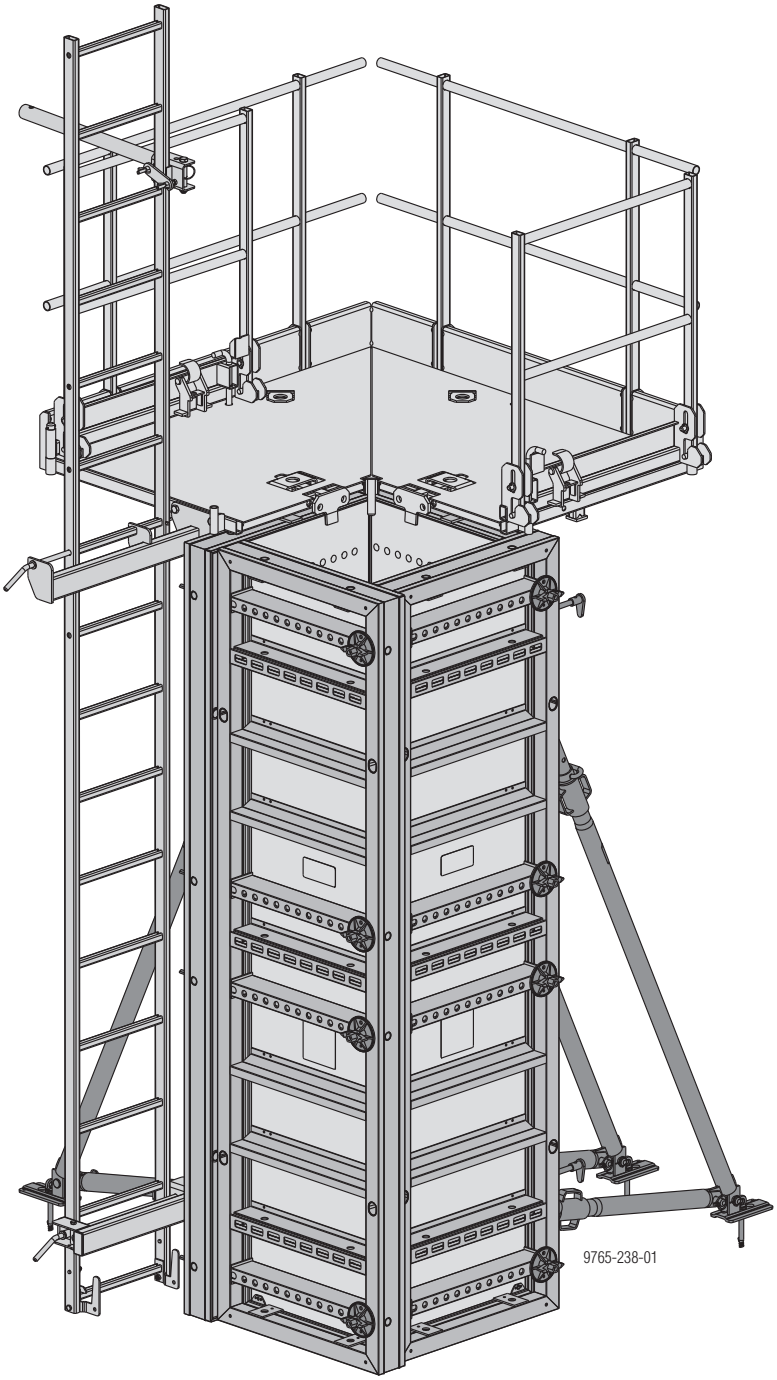
Follow the directions in the 'Bolt-on castor set B' Operating Instructions!

Column formwork

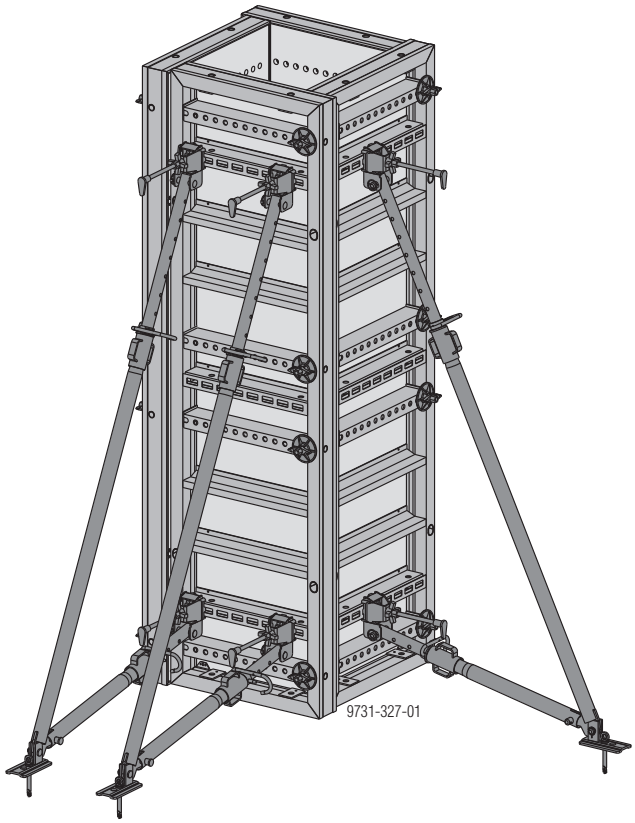
The Alu-**Framax Xlife universal panels** permit flexible accommodation to column cross-sections of up to 60 cm x 60 cm in **5 cm increments.**

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

Perm. 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.

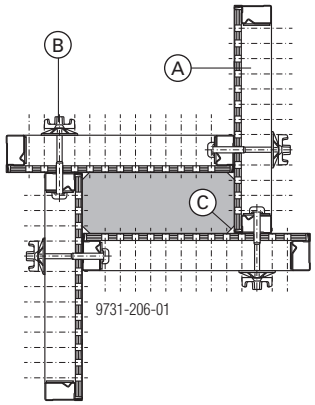
Striking:

- ➤ 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



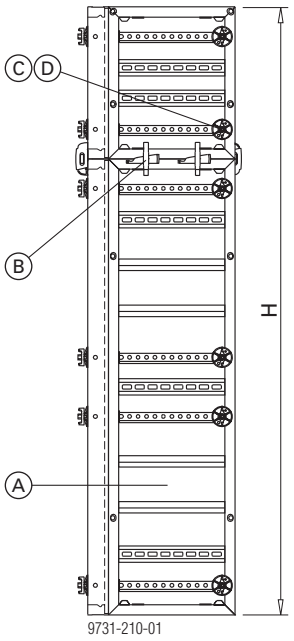
Example: Column 20 x 50 cm

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

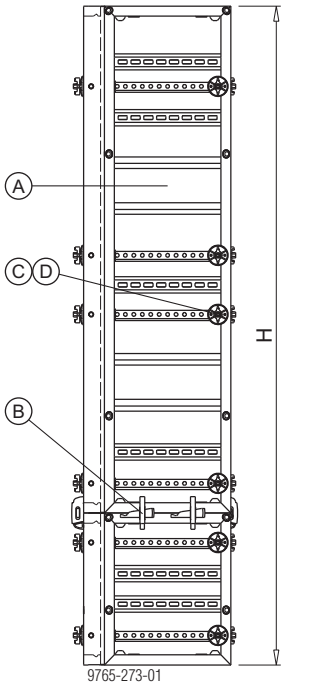
Note:
Seal off the unused hole-grid holes in the form-facing of the Xlife universal panels with **Framax plugs R24.5**.

Schedule of materials

Example H = 3.60 m (2.70m+0.90m):



Example H = 3.90 m (3.00m+0.90m):



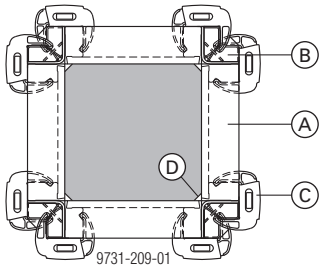
Formwork height **(H)**	Alu-Framax Xlife universal panel **(A)**				Quick acting clamp RU **(B)**	Universal fixing bolt **(C)**	Super plate 15.0 **(D)**
	3.00m	2.70m	1.35m	0.90m			
0.90 m				4		8	8
1.35 m			4			8	8
1.80 m				8	8	16	16
2.25 m			4	4	8	16	16
2.70 m		4				16	16
3.00 m	4					16	16
3.15 m			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!

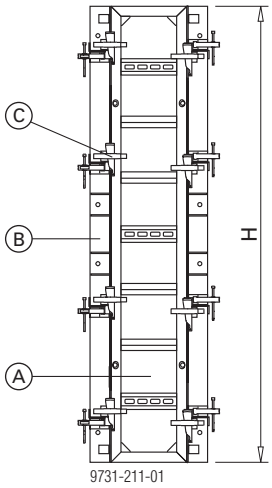
with Framax outside corners and Alu-Framax Xlife panels

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

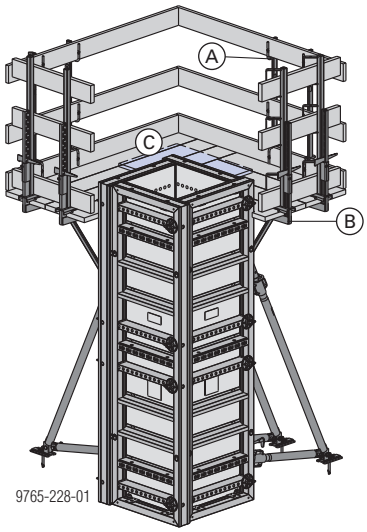


Example: Framax outside corners 2.70m with Alu-Framax Xlife panels 0.45x2.70m

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



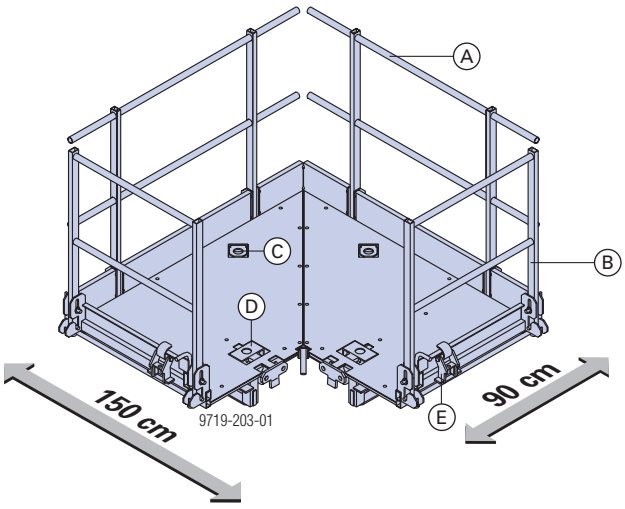
A Framax bracket 90 (deck-boards and guard-rail boards provided at site)
B Edge protection system XP (guard-rail boards provided at site)
C Board for screwing the platform decking onto

Note:
Where the two platform planking units meet, a board must be screwed onto the underside.

For more information on constructing pouring platforms, see the section headed 'Pouring platforms with single brackets'.

Doka column formwork platform 150/90cm

Product description



A	Rear railing
B	Side railing
C	Rear hoisting point
D	Safety hook (blue) = front hoisting point
E	Extra hoisting point (red) in parked position

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

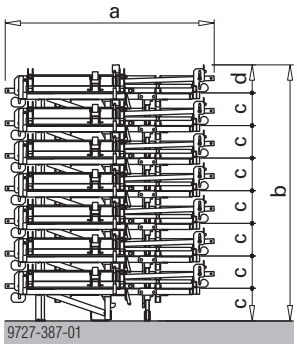
The main features:

- 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.
  - with Alu-Framax Xlife: from 25x25 to 60x60cm
  - with Framax Xlife: 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!
- Because the platform can be re-suspended so quickly, it can "migrate" from one formwork to the next during concreting. This means that one platform is sufficient to serve several column formworks.
- 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.

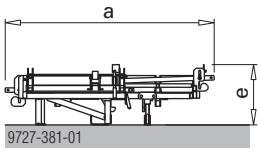
Transporting, stacking and storing

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.

Stack of
7 column formwork platforms



Single folded-down platform



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

➤ Tip up the side railings.

The railings are locked in place automatically.

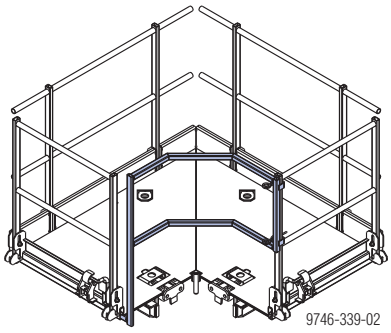
➤ Tip up the rear railings.

The railings are locked in place automatically.

The column-formwork platform is now ready for use.

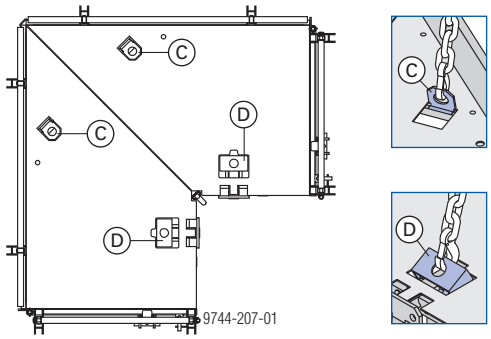
Note:
When folding the platform back down, first fold down the rear railings, and then the side ones.

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



Moving the platform

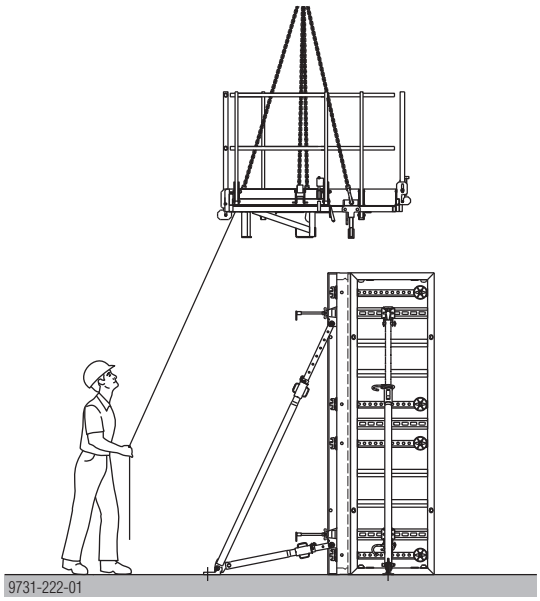
➤ Attach the crane to the locations shown.



C Rear crane suspension point
D Front crane suspension point

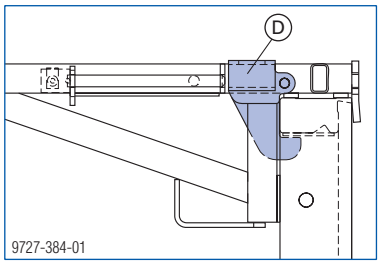
Red extra crane suspension point in "parked" position.

➤ Hang the column formwork platform into place on the formwork.



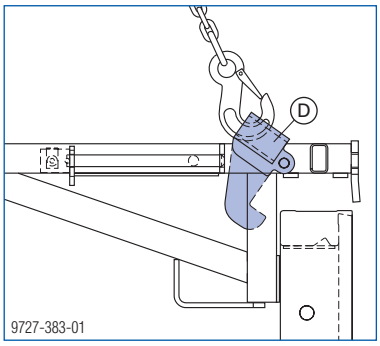
Suspending the platform exactly in position is made much easier when guide-cables are used.

➤ After the column formwork platform has been hung into place on the formwork, detach the four-part lifting 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.



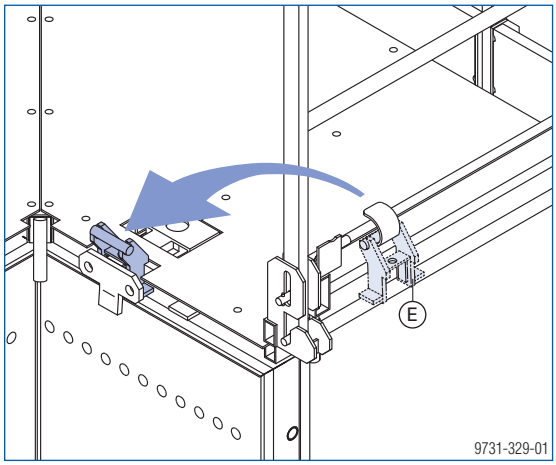
Moving the formwork and the platform in one piece

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

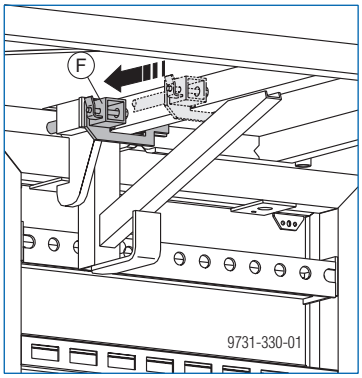
➤ Only ever lift and reposition one formwork half at a time.
➤ Max. height of formwork that can be repositioned together with the platform: 8.10 m.

➤ Hang the platform into place on the formwork (proceed as in "Moving the platform").

➤ Move the extra crane hoisting point **(E)** from the parked position to the "in-use" position. Right position = inclined forward towards formwork.



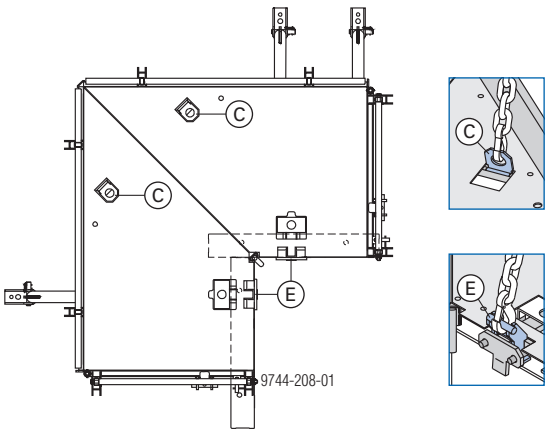
➤ Fix the extra crane hoisting point with the slide bolt **(F)** on the underside of the platform.



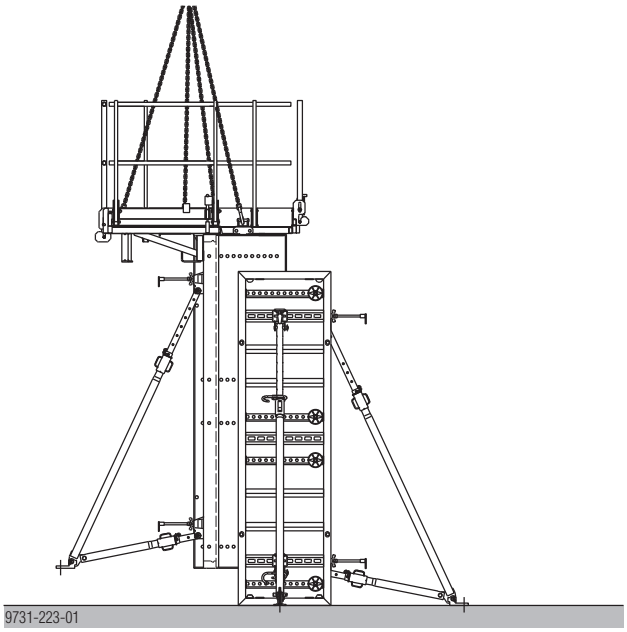
Make sure that the slide bolt latches in in the frontmost position.

➤ 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 hoisting point **(E)** must be used.



C Rear crane suspension point
E Extra crane suspension point



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

Separating the platform from the formwork

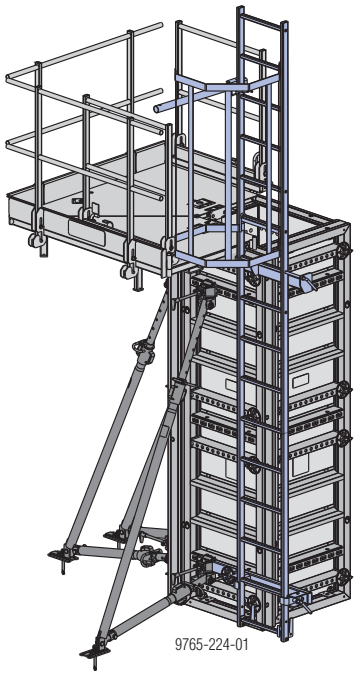
➤ Fix the slide bolt **(F)** back in the rear position and move the extra crane hoisting point into the "parked" position.

➤ Attach the crane to the locations shown in "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 XS 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 the section headed "Ladder system".

Circular formwork

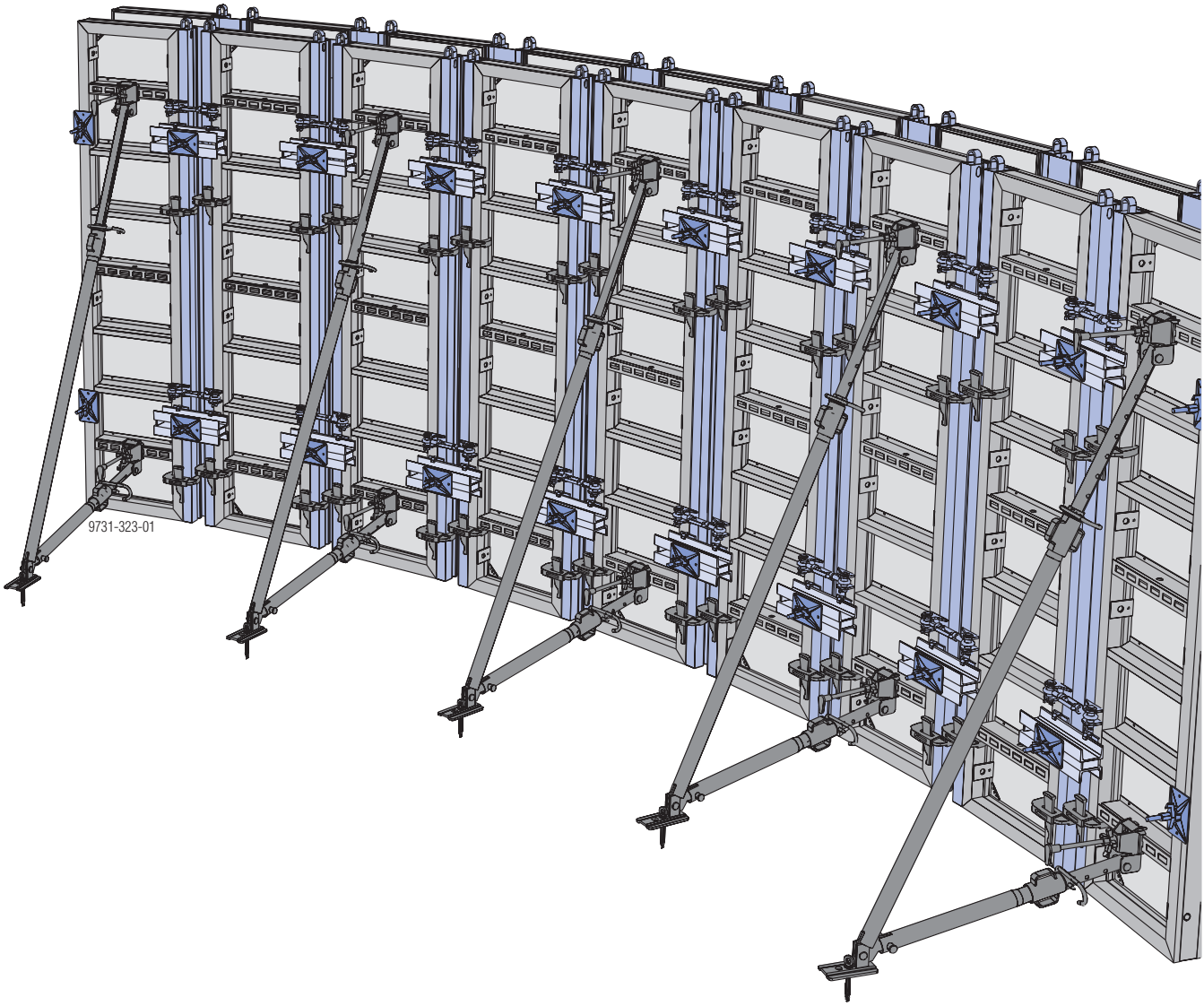
The quick way to form "in the round" - the Framax circular forming plates will get your framed formwork "around" any curve!

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



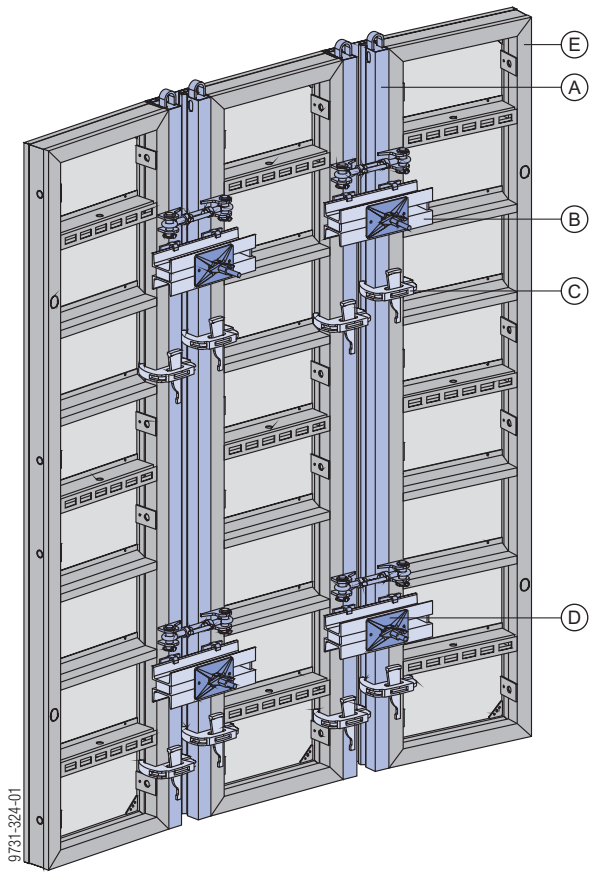
Design of the circular formwork

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

NOTICE

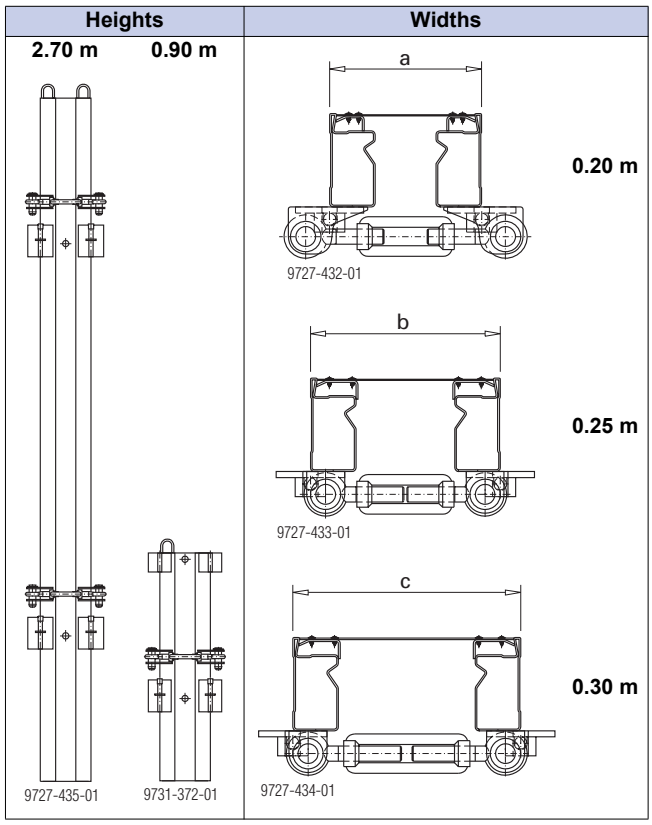
Minimum inside radius: 1.80 m

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



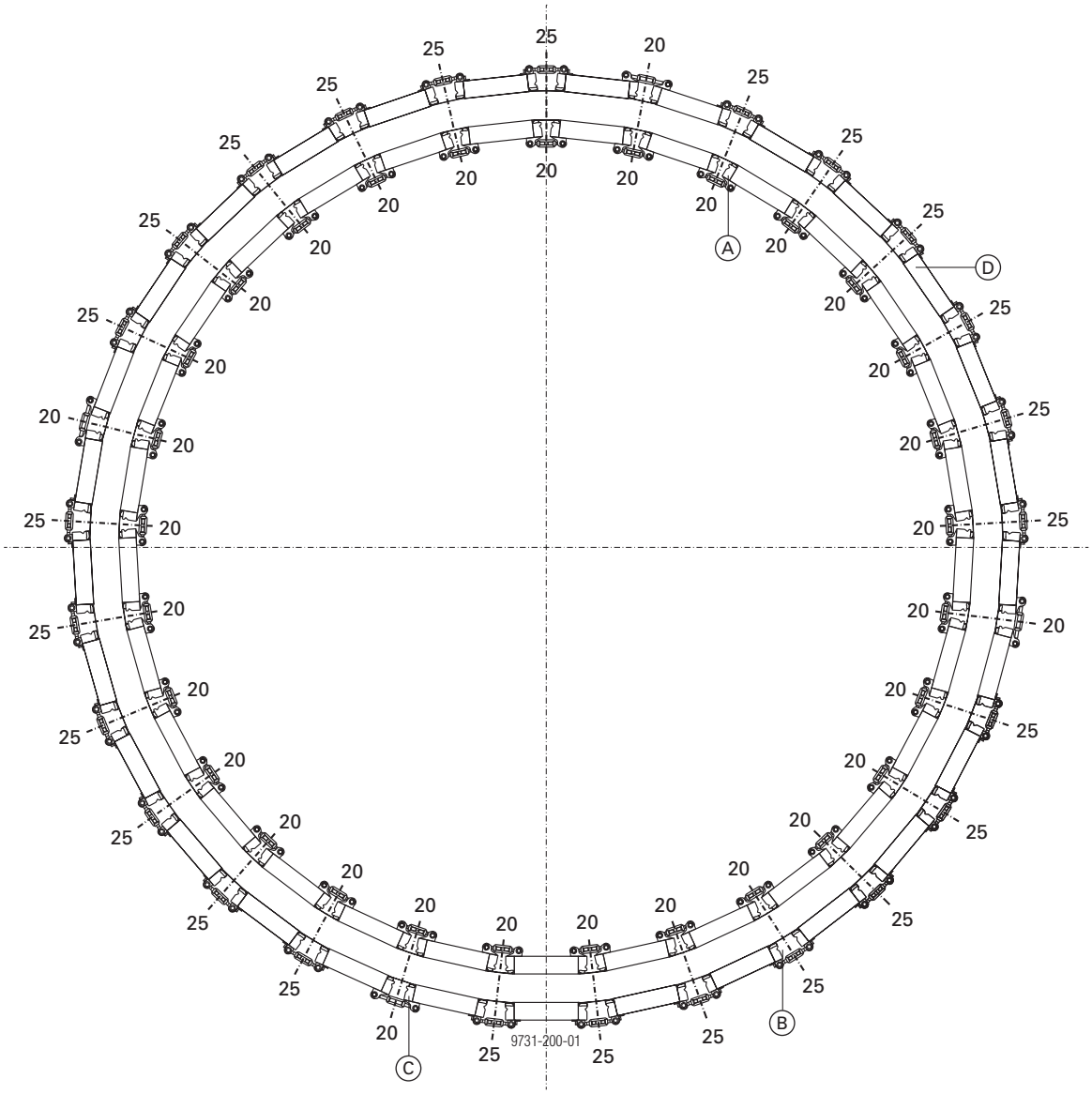
a ... 20 cm, b ... 25 cm, c ... 30 cm

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

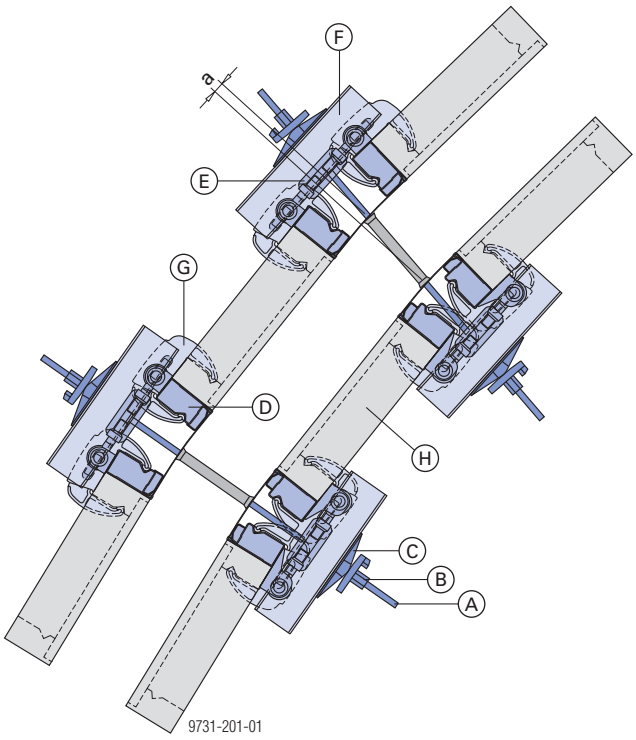
- Type of structure: Circular tank
- Inside radius of structure: 3.00 m
- Wall thickness: 0.20 m



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

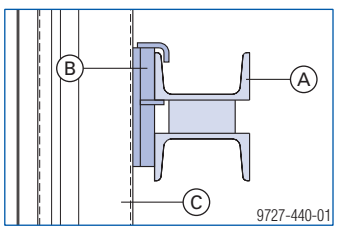
A	Tie rod 15.0mm
B	Wing nut 15,0
C	Angle anchor plate 12/18
D	Framax circular forming plate
E	Turnbuckle
F	Steel waling RD 0.40m
G	Quick acting clamp RU
H	Alu-Framax Xlife panel

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.

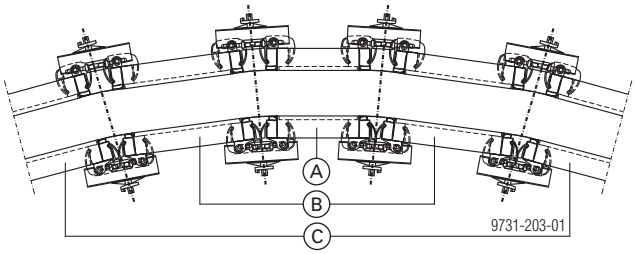
NOTICE

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.

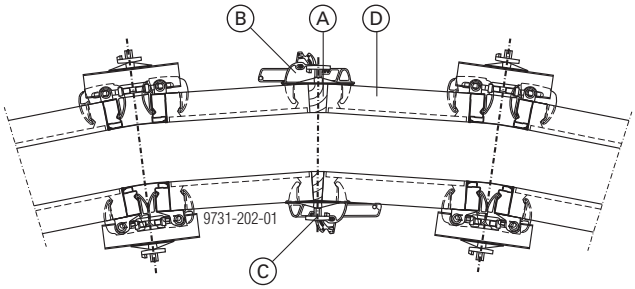
With circular formwork, it is particularly important to ensure uniform pouring.

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

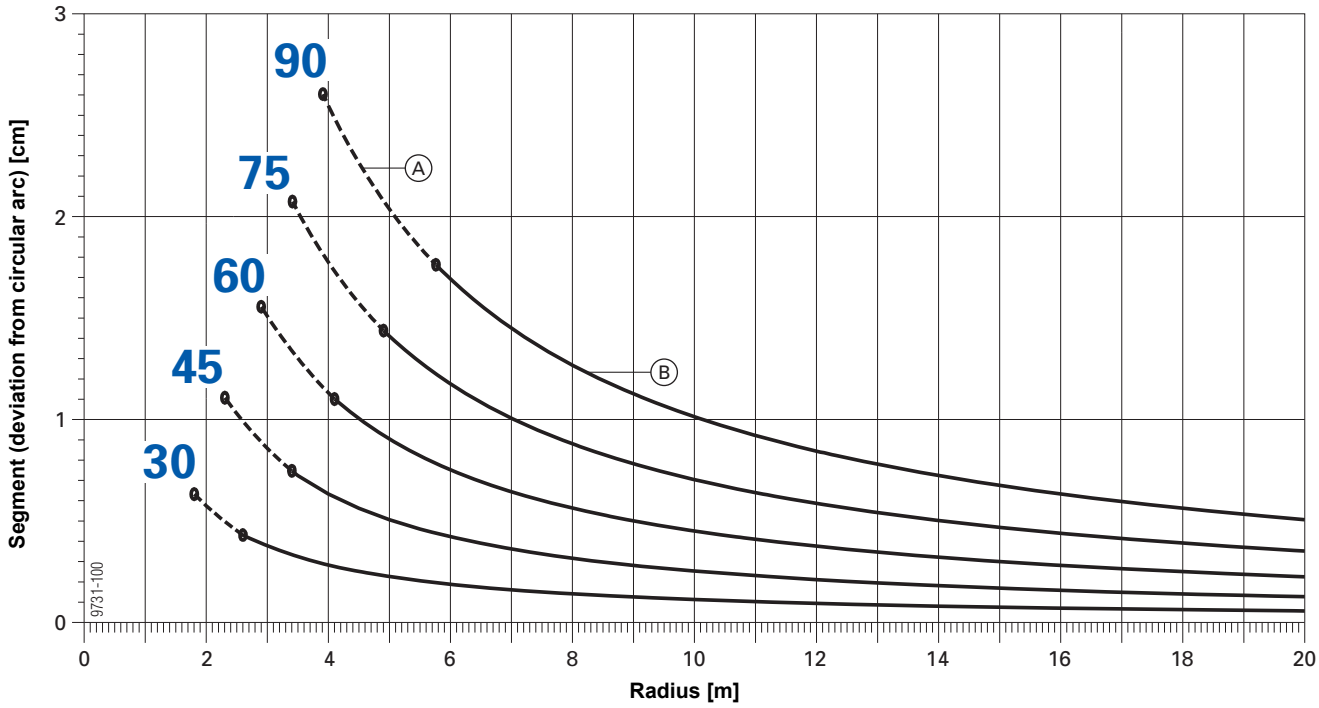


A	Wedged timber
B	Framax multi function clamp
C	Angle anchor plate 12/18 + Wing nut 15.0
D	Alu-Framax Xlife panel

Determining the max. panel width

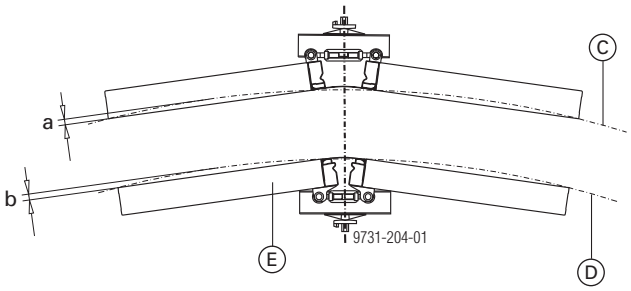
Radius segment diagram for the various widths of panel

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



A Minimum wall thickness = 20 cm

B Minimum wall thickness = 15 cm



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

Example:

- Radius: 6.0 m
- Permitted 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 concreting section [cm]:	911 (1/4 of the inside circumference)

Width of panel:

▪ Determine the max. panel width in the radius segment diagram, with reference to the radius of the structure and the permitted deviation from the circular arc.	**Panel width = 60 cm**

Width of circular forming plates for inside formwork:

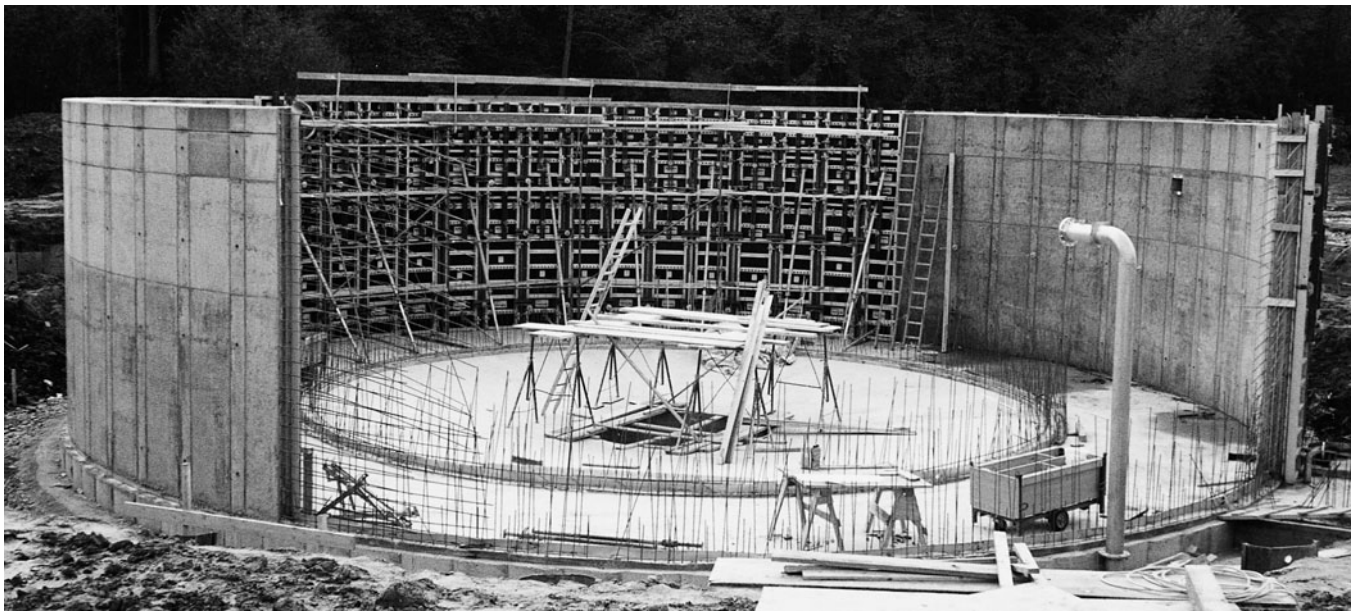
▪ As a general rule, use the Circular forming plate 0.20m with the inside formwork.	**Width of circular forming plate = 20 cm**

Number of circular forming plates and panels for inside formwork:

▪ (Length of concreting section - panel width) ÷ (Panel width + 20) = ...	(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:

▪ (Outside radius ÷ inside radius) · (Panel width + 20) - Panel width = ...	(600 ÷ 580) · (60 + 20) - 60 = 22.76 cm
▪ Select the next smaller Circular forming plate to be the "Type A" Circular forming plate.	**Width of "Type A" Circular forming plate = 20 cm**
▪ Calculate the difference.	**Difference =** (22.76 cm - 20 cm) = **2.76 cm**
▪ Number of Circular forming plates · (1 - (Difference ÷ 5)) = ...	11 · (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**

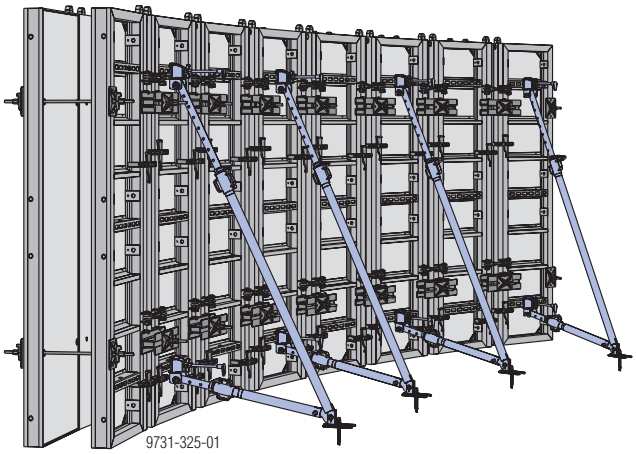


Site: Ottendorf sewage treatment plant

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

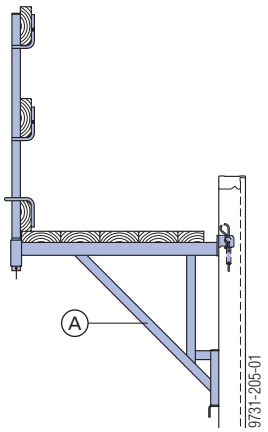
The formwork panels must be held stable in **every** phase of the construction work!

Please observe all applicable safety regulations!

For more information, please see 'Plumbing accessories'.

Pouring platform

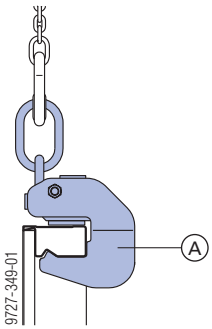
The **Framax brackets 90 (A)** can be used to make a universal pouring scaffold.



For more information, please see "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.

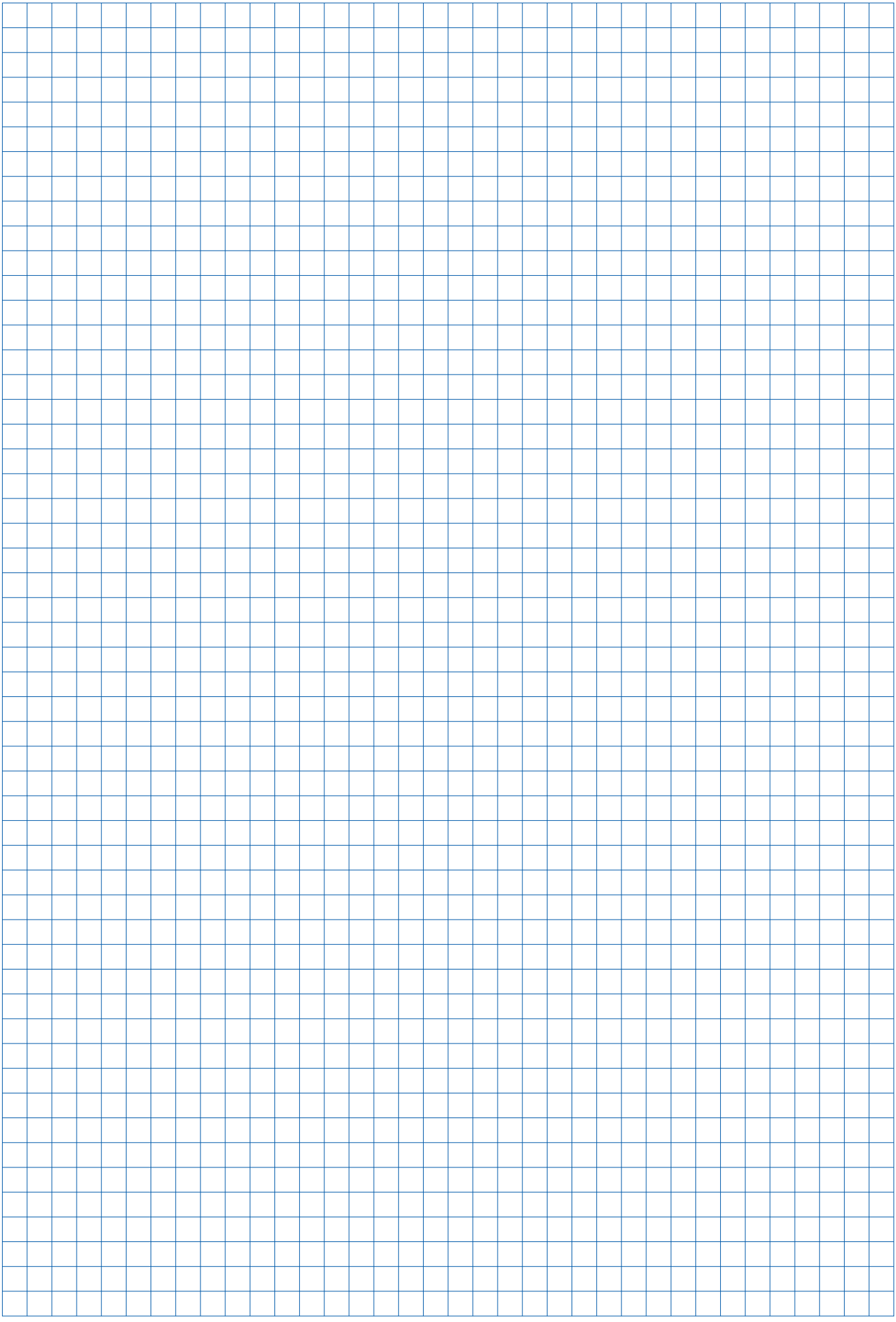


NOTICE

- 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 (spread-angle β: max. 30°).
- Check that the slip-out guards of the Framax lifting hooks have engaged!

For further information, see the section headed 'Lifting by crane'.

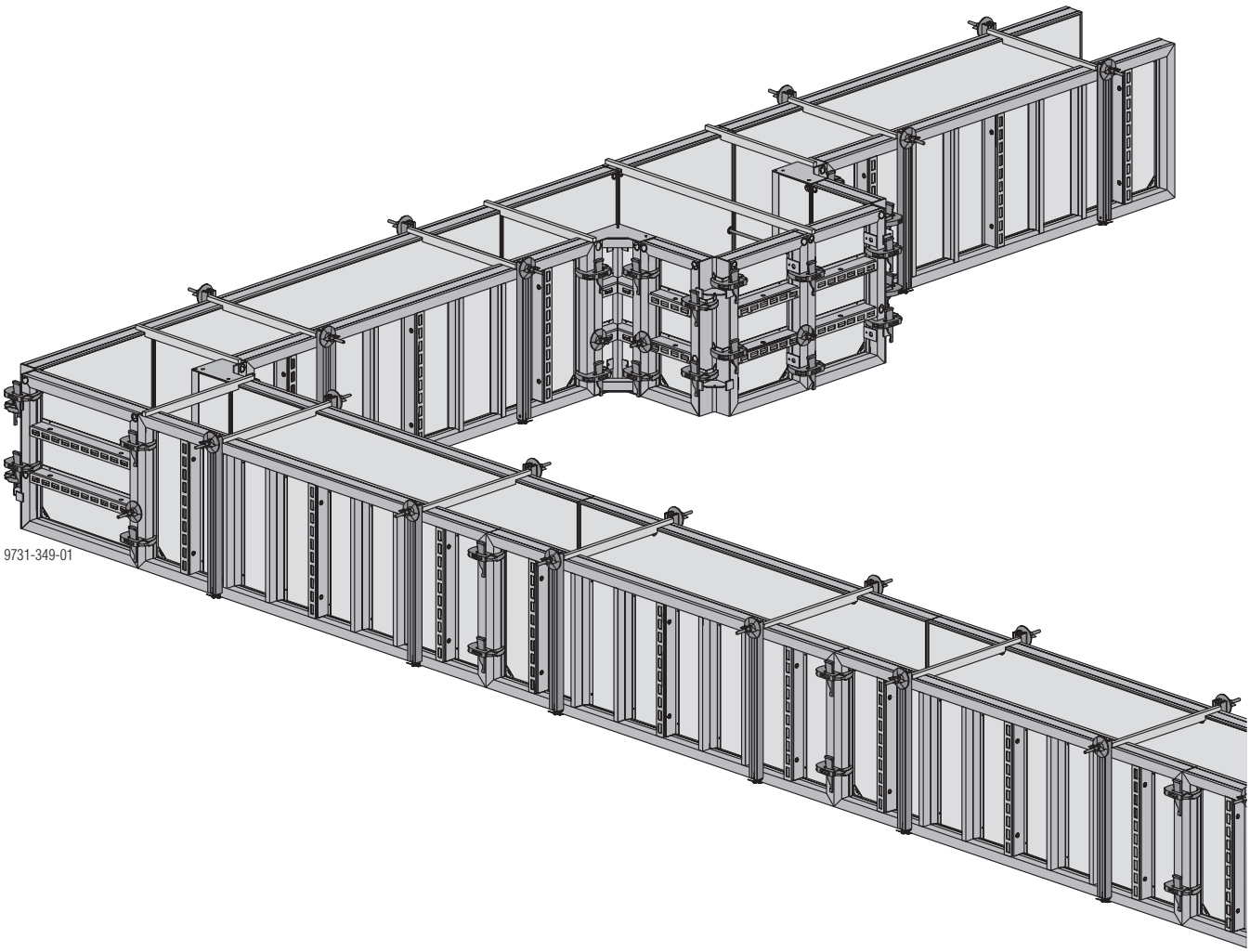
Follow the directions in the Operating Instructions!



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

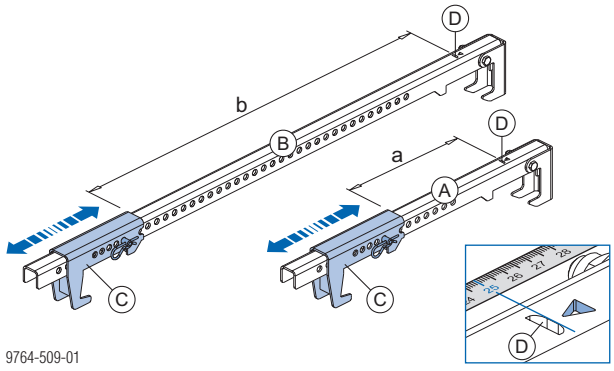
Framax head anchor

- 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

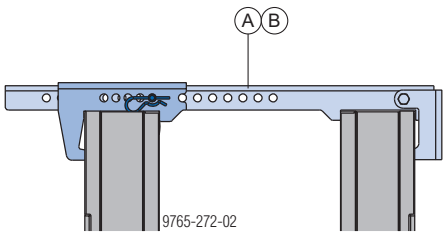
Installation of Framax head anchors:

➤ 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.



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

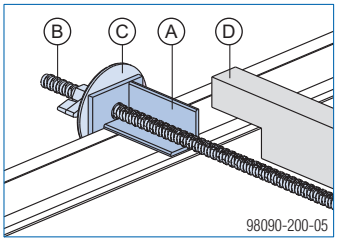


A Framax head anchor 15-40cm
B Framax head anchor 15-100cm
C Adjusting unit
D Notch = measuring point

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



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

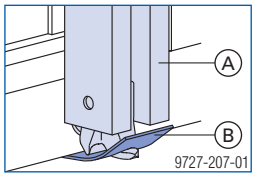
Framax tie-holder bracket:
Permitted capacity: 15 kN

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

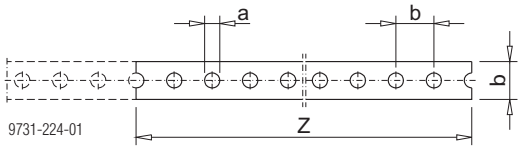
- Wall thicknesses can be formed in 5 cm grid



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

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

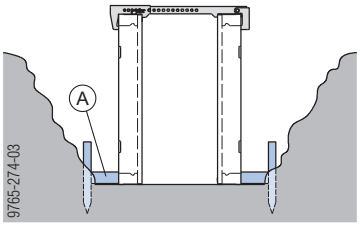


a ... 18 mm
b ... 50 mm
Z ... Length of tape cut: Wall thickness + 40 cm

Foundation clamps
2 per panel

Horizontal bracing (site-provided)

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



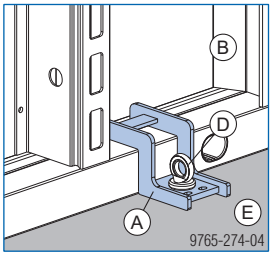
A Horizontal bracing

Floor fixing plate and express anchor

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

NOTICE

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



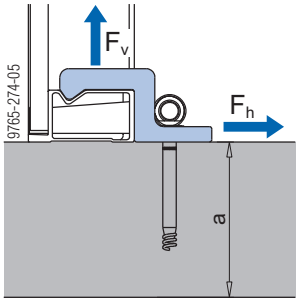
A Framax floor fixing plate
B Alu-Framax Xlife panel
D Doka express anchor 16x125mm
E Foundation slab / concrete floor-slab

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

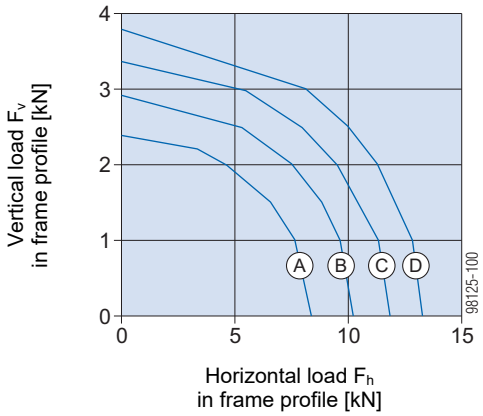
Follow the directions in the 'Doka express anchor 16x125mm' Fitting Instructions.

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. 18 cm
Distance from outside edge of panel: min. 15 cm



A Concrete strength B10 ($f_{ck\ cube}$ 10 N/mm²)
B Concrete strength B15 ($f_{ck\ cube}$ 15 N/mm²)
C Concrete strength B20 ($f_{ck\ cube}$ 20 N/mm²)
D Concrete strength B25 ($f_{ck\ cube}$ 25 N/mm²)

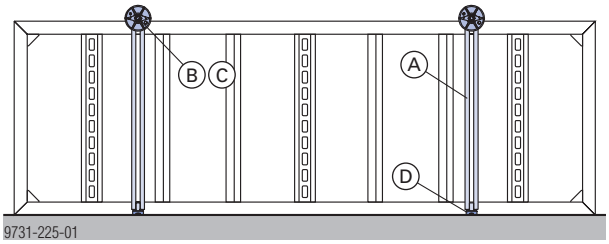
Anchorage loads, Doka express anchors or anchor-bolts:

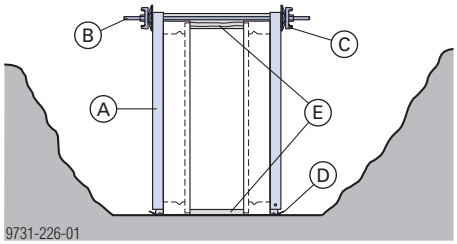
concrete strength	F_k	F_d
B10	8.4	12.6
B15	10.3	15.4
B20	11.8	17.8
B25	13.3	19.9

Design of the foundation formwork

Horizontal panels

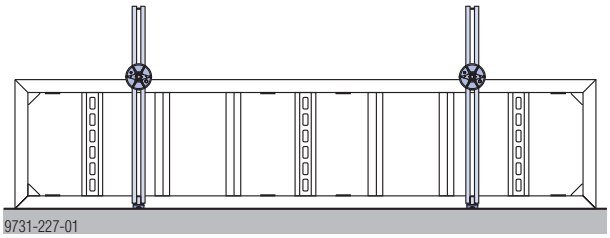
Panel 0.90x2.70m

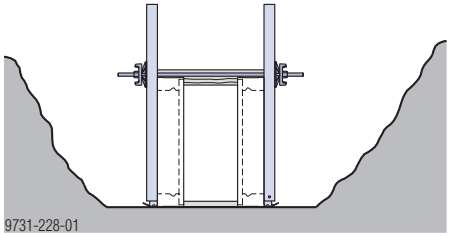




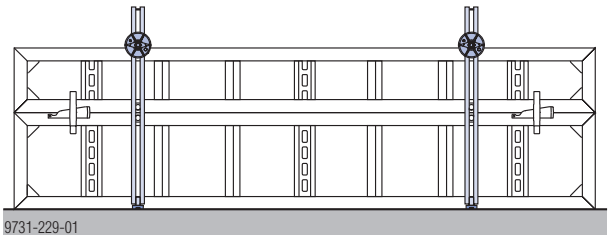
A	Framax foundation clamp
B	Tie rod 15.0mm
C	Super plate 15.0
D	Doka perforated tape
E	Wooden spacer

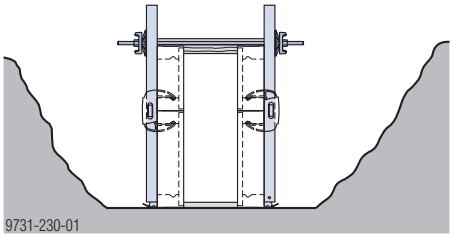
Panel 0.60x2.70m





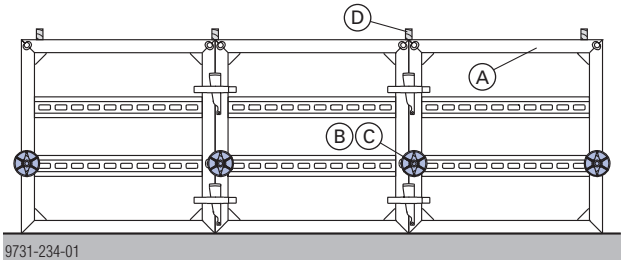
Panel 0.45x2.70m + 0.30x2.70m

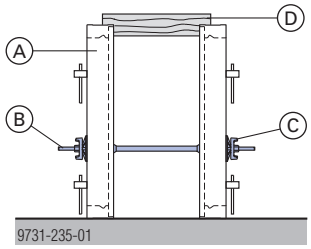




Upright 0.90 m panels

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



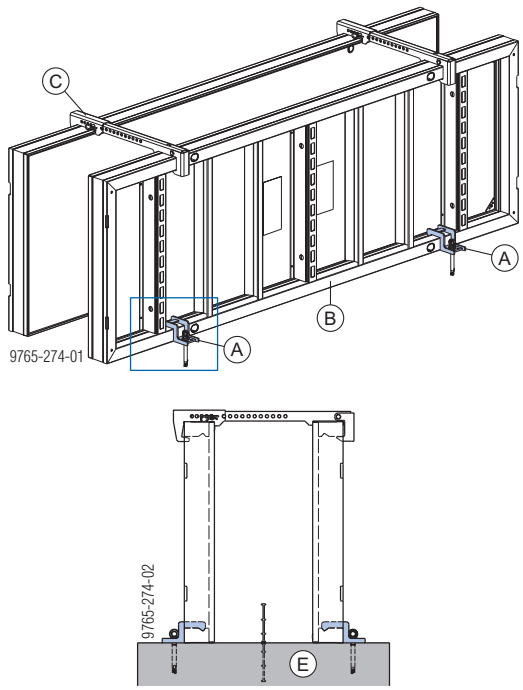


A	Panel 0.90x0.90m
B	Tie rod 15.0mm
C	Super plate 15.0
D	Wooden spacer or Framax head anchor

NOTICE

Be sure to fit the wooden spacers exactly as shown!

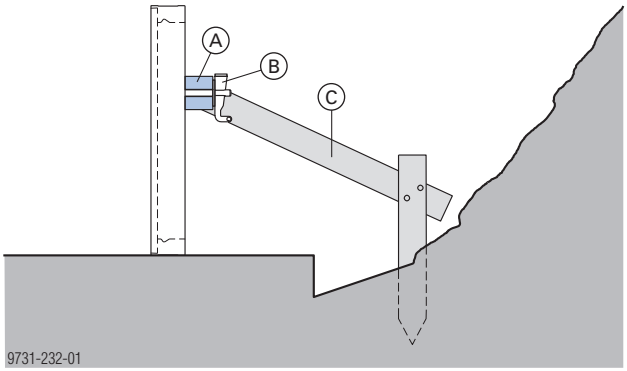
Variant with floor fixing plates and express anchors



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

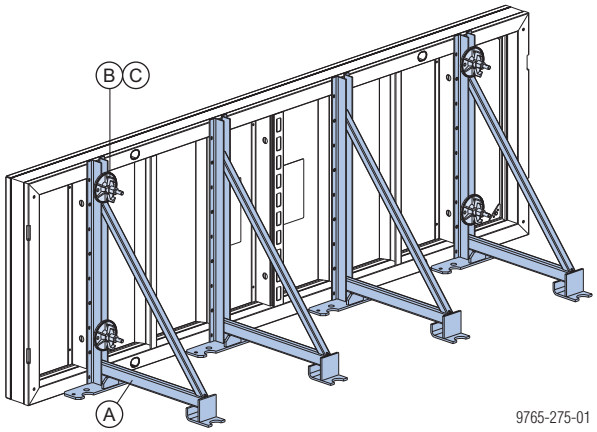
With the aid of a connecting timber and an in-place timber brace, you can brace the panels so that they stand firmly.



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).



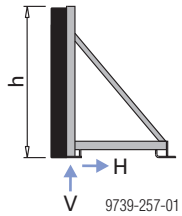
A Supporting construction
B Framax clamping bolt 4-8cm
C Super plate 15.0

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

General remarks

Using as downturned-beam formwork

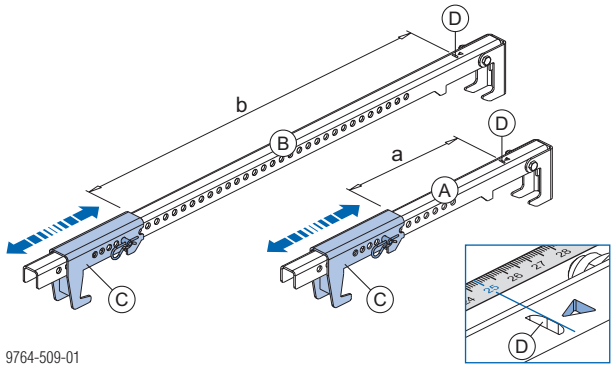
Using **head anchors** for the **top ties** and **tie-holder brackets** for the **bottom ties** has the following effects:

- The tie-points are above/below the panel – no ties in the concrete
- Form-tie spacing freely selectable

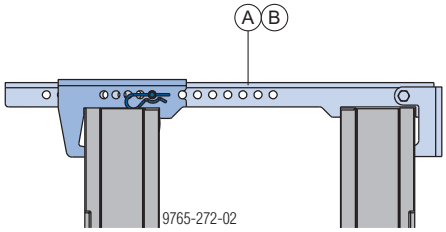
Installation of Framax head anchors:

➤ 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.



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 longside 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		

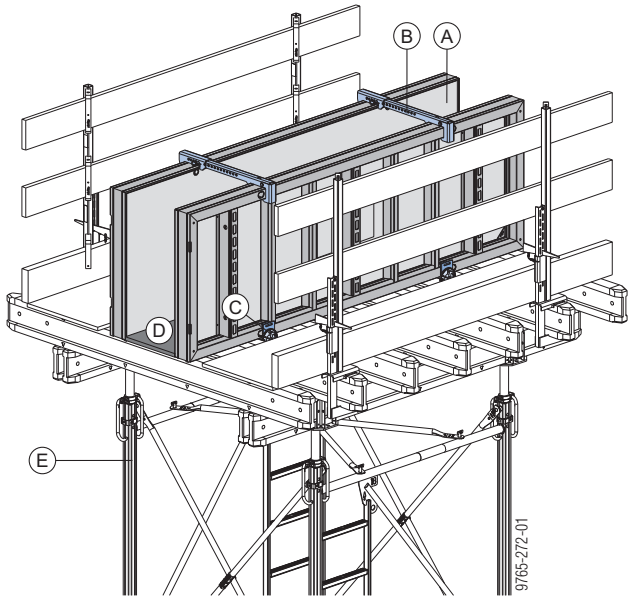
Framax head anchor:

Permitted tensile force: 10 kN
Permitted compressive force: 10 kN

Framax tie-holder bracket:

Permitted capacity: 15 kN

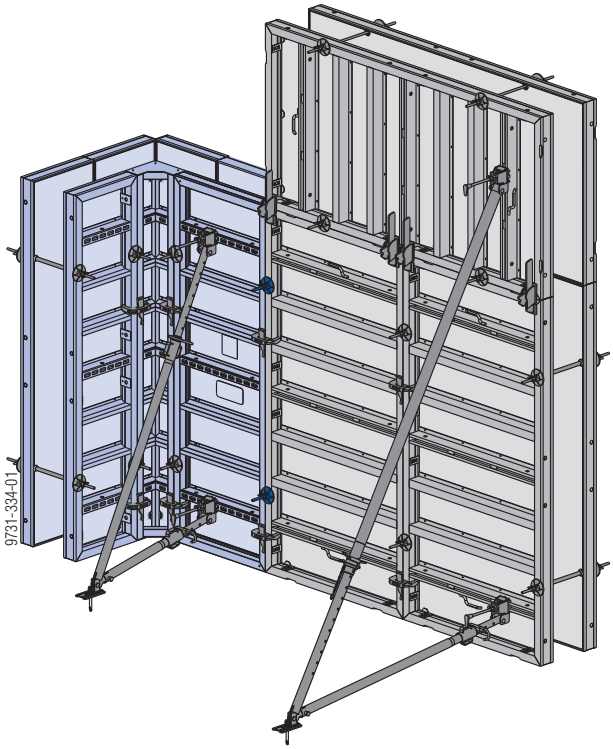
Example with 0.90x2.70m panel



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.

Where to place the form ties:

When you place an Alu-Framax Xlife panel next to a Framax Xlife panel, always place the form tie in the Framax Xlife panel!

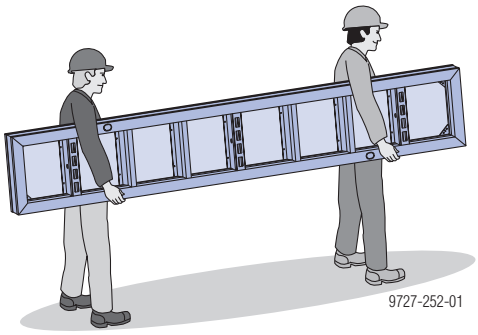
NOTICE

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 permitted design values of the Alu-Framax Xlife connector components! (see the section headed 'Inter-panel connections')

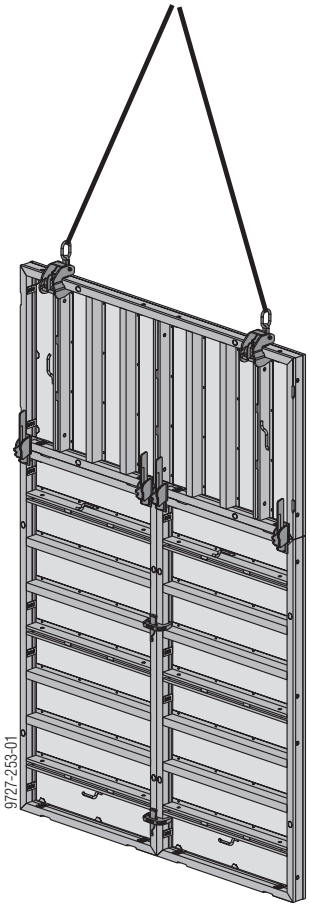
Alu-Framax Xlife (man-handled)

On **complicated layouts** or where **no crane** is available, **Alu-Framax Xlife** is the ideal way to carry on forming by hand.



Framax Xlife (crane-handled, for large areas)

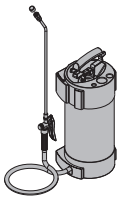
The Doka framed formwork **Framax Xlife** is the ideal framed formwork for **large-area forming using the crane**.



Cleaning and care of your equipment

Release agents

Doka-Trenn or Doka-OptiX is 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

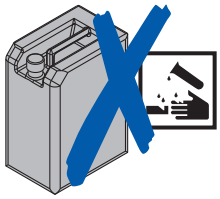
- Before every pour:
  - Apply release agent to the formwork sheet and the end faces **extremely thinly**, **evenly** and **in a continuous layer**.
- Make sure there are no drips of release-agent running down the formwork sheet.
- Applying too much release agent will spoil the concrete finish.

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 out the formwork
  - Clean the formwork with a high-pressure washer and a concrete scraper.
- Do not use any chemical cleaning agents!

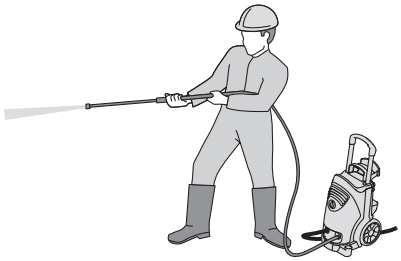


Cleaning high formwork:
Provide a service tower at a suitable cleaning location.

- Wheel-around scaffold DF
  (up to a formwork height of 3.90 m)
- Working scaffold Modul
  (up to a formwork height of 6,70 m)

Cleaning equipment

High-pressure spray cleaner

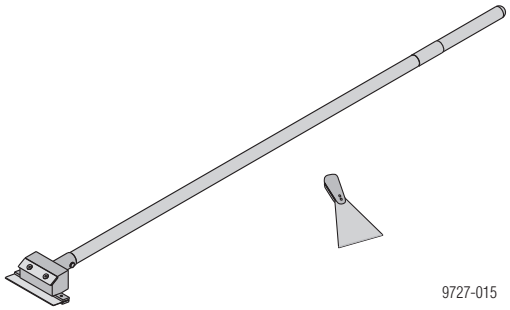


NOTICE

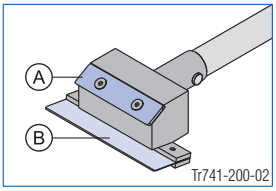
- Appliance pressure rating: 200 to max. 300 bar
- Keep the water-jet the correct distance from the formwork, and move it at the right speed:
  - The higher the pressure, the further away from the formwork you must keep the jet and the faster you must move it across the surface.
- Do not aim the jet 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.

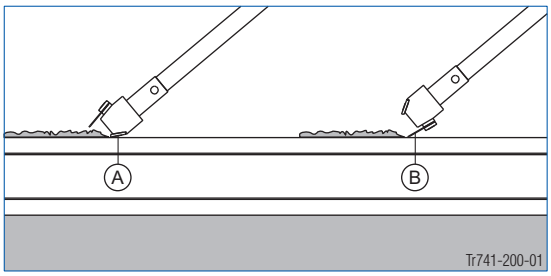
Concrete scraper

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



Functional description:

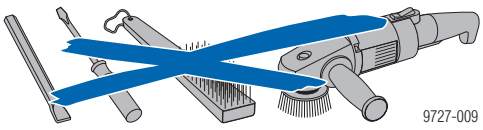




A Blade for dealing with heavy soiling
B Blade for dealing with slight soiling

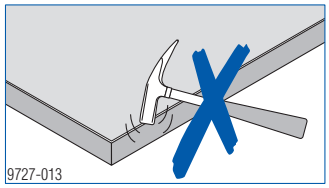
NOTICE

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

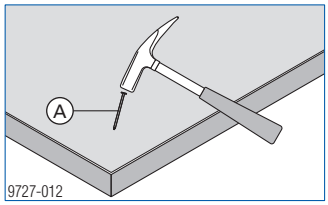


Care

- No hammer-blows to the frame profiles

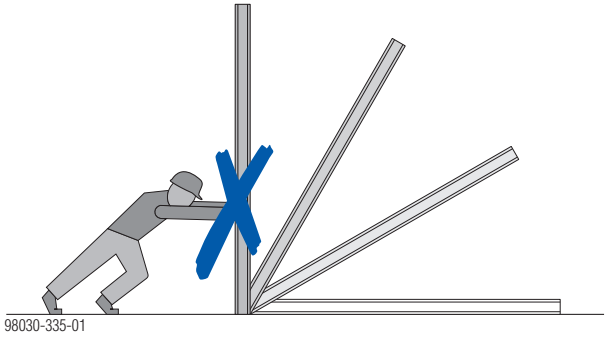


- Do not use nails on the formwork that are longer than 60 mm

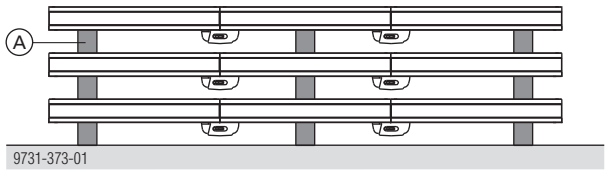


A max. l=60 mm

- Never push over panels or allow them to fall



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

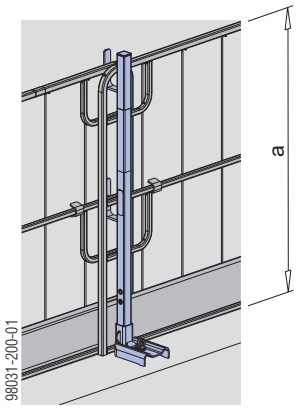


This prevents the formwork sheets from being damaged by the connector components.

Fall-arrest systems on the structure

Handrail post XP 1.20m

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

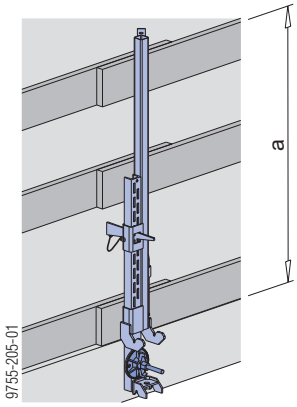


a ... > 1.00 m

Follow the directions in the 'Edge protection system XP' User Information booklet!

Handrail clamp T

- Fixed in embedded anchoring components or reinforcement hoops
- Guard-rail boards or scaffold tubes can be used as the safety barrier

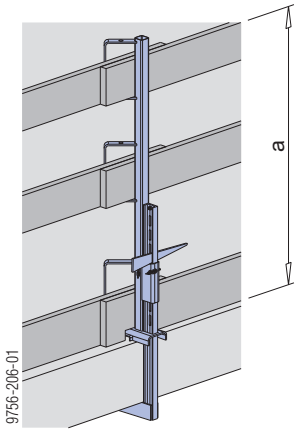


a ... > 1.00 m

Follow the directions in the 'Handrail clamp T' User Information!

Handrail clamp S

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

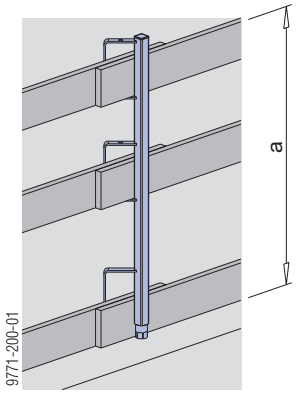


a ... > 1.00 m

Follow the directions in the “Handrail clamp S” User information!

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!

Formwork planning with Tipos-Doka

Tipos-Doka helps you to form even more efficiently

Tipos-Doka has been developed to assist you in planning the use of your Doka formwork. For wall formwork, floor formwork and platforms, it puts the same tools into your hands that we at Doka use ourselves for formwork planning.

Easy to use, fast and accurate results

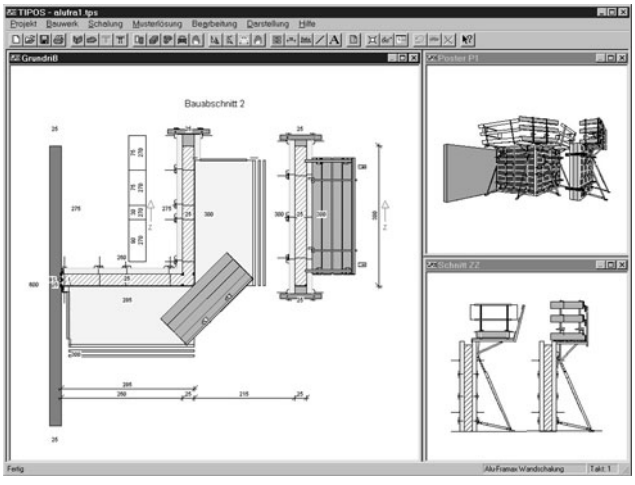
The easy-to-use interface makes for very fast working. From when you input your layout (with the "Schal-Igel"® on-screen assistant), all the way through to when you manually put the finishing touches to the formwork solution the program gives you. All this saves time - yours.

The program contains a large number of templates and wizards, so you can be sure of always getting the optimum technical and economical solution to your formwork task. This makes for greater operational reliability, and cuts costs.

You can get to work right away with the piece-lists, plans, views, sections and perspective drawings that the program gives you. Operational reliability is also enhanced by the high level of detail of the plans.

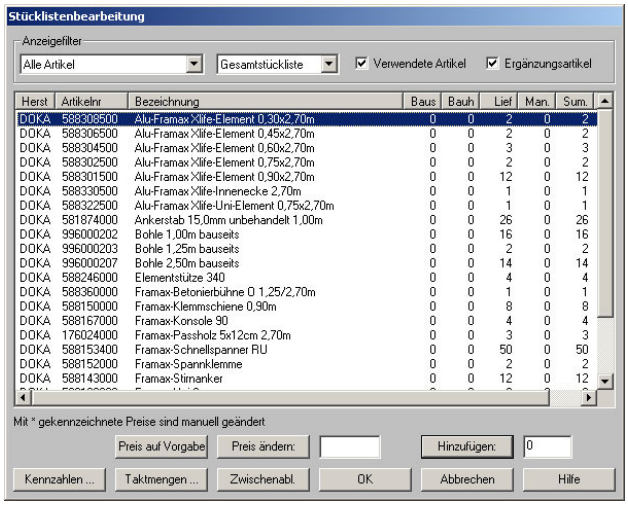
Among other things, Tipos-Doka plans the following with Alu-Framax Xlife:

- Distribution of the framed formwork panels
- Any vertically stacked configurations that areneeded
- Closures and accessories
- Pouring platforms, safety railings etc.



Drawings of formwork and platforms really can be this detailed! Both for the layout and for spatial representations, Tipos-Doka sets an impressive new standard of visual presentation.

Always the right quantities of formwork and accessories



You can import the automatically generated piece-lists into many other programs for further processing.

Formwork components and accessories that have to be organised at short notice, or replaced by improvisation, are the ones that cost the most. This is why Tipos-Doka offers complete piece-lists that leave no room for improvisation. Planning with Tipos-Doka eliminates costs before they have a chance to even arise. And your depot can make the best possible use of its stocks.

	[kg]	Article n°
Alu-Framax Xlife panel HK 0.75x3.00m	**63.5**	**588327500**
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 HK 0.50x3.00m	**46.0**	**588331500**
Alu-Framax Xlife panel HK 0.45x3.00m	**42.8**	**588333500**
Alu-Framax Xlife panel HK 0.30x3.00m	**33.3**	**588334500**
Alu-Framax Xlife panel HK 0.25x3.00m	**30.1**	**588335500**
Alu-Framax Xlife panel HK 0.20x3.00m	**27.0**	**588337500**
Alu-Framax Xlife-Element		
Powder-coated		
On enquiry!		

Alu-Framax Xlife panel 0.90x2.70m	**68.8**	**588301500**
Alu-Framax Xlife panel HK 0.90x2.70m	**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		
Powder-coated		

Alu-Framax Xlife panel 0.50x2.70m	**40.8**	**588307500**
Alu-Framax Xlife panel 0.25x2.70m	**28.0**	**588309500**
Alu-Framax Xlife panel 0.20x2.70m	**24.9**	**588311500**
Alu-Framax Xlife-Element		
Powder-coated		
On enquiry!		

Alu-Framax Xlife panel 0.90x0.90m	**25.6**	**588310500**
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		
Powder-coated		

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		
Powder-coated		
On enquiry!		

Alu-Framax Xlife univer. panel HK 0.75x3.00m	**71.5**	**588338500**
Alu-Framax Xlife-Uni-Element HK 0,75x3,00m		
Powder-coated		
Corners marked in blue		
On enquiry!		

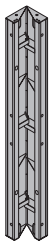
Alu-Framax Xlife universal panel 0.75x2.70m	**64.2**	**588322500**
Alu-Framax Xlife univer. panel HK 0.75x2.70m	**64.4**	**588322400**
Alu-Framax Xlife universal panel 0.75x1.35m	**33.8**	**588324500**
Alu-Framax Xlife universal panel 0.75x0.90m	**27.0**	**588326500**
Alu-Framax Xlife-Uni-Element		
Powder-coated		
Corners marked in blue		

	[kg]	Article n°
Alu-Framax Xlife inside corner 3.00m	**52.2**	**588339500**
Alu-Framax Xlife inside corner 2.70m	**50.3**	**588330500**
Alu-Framax Xlife inside corner 0.90m	**18.5**	**588332500**
Alu-Framax Xlife-Innenecke		
Powder-coated		

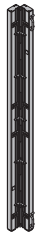
Framax outside corner 3.00m	**52.5**	**588964000**
Framax outside corner 2.70m	**47.0**	**588126000**
Framax outside corner 0.90m	**16.0**	**588336000**
Framax-Außenecke		
Galvanised		

Framax hinged inside corner I galv. 3.30m	**129.2**	**588610500**
Framax hinged inside corner I galv. 2.70m	**105.8**	**588136500**
Framax hinged inside corner I galv. 0.90m	**41.0**	**588352500**
Framax-Scharnierecke I		
Galvanised, powder-coated		

Framax hinged inside corner I 2.70m	**102.3**	**588136000**
Framax hinged inside corner I 0.90m	**38.8**	**588352000**
Framax-Scharnierecke I		
Powder-coated blue		



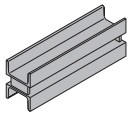
Framax hinged outside corner A galv. 2.70m	**52.8**	**588942000**
Framax hinged outside corner A galv. 0.90m	**17.5**	**588944000**
Framax-Scharnierecke A verzinkt		
Galvanised, powder-coated		



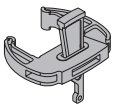
	[kg]	Article n°
Framax hinged outside corner A 2.70m	**52.8**	**588134000**
Framax hinged outside corner A 0.90m	**17.6**	**588350000**
Framax-Scharnierecke A		
Powder-coated blue		

Framax circular forming plate 0.20x2.70m	**56.5**	**588235000**
Framax circular forming plate 0.25x2.70m	**63.5**	**588236000**
Framax circular forming plate 0.30x2.70m	**67.4**	**588237000**
Framax circular forming plate 0.20x0.90m	**21.6**	**588241000**
Framax circular forming plate 0.25x0.90m	**23.5**	**588242000**
Framax circular forming plate 0.30x0.90m	**24.6**	**588243000**
Framax-Bogenblech		
Galvanised, powder-coated		

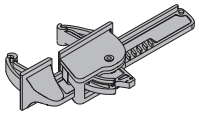
Framax steel waling RD 0.40m	**8.7**	**588189000**
Framax-Stahlwandriegel RD 0,40m		
Painted blue		



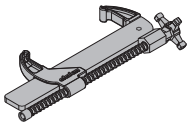
Framax quick acting clamp RU	**3.3**	**588153400**
Framax-Schnellspanner RU		
Galvanised		
Length: 20 cm		



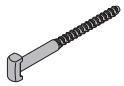
Framax multi function clamp	**5.8**	**588169000**
Framax-Uni-Spanner		
Galvanised		
Length: 40 cm		



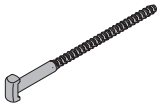
Framax adjustable clamp	**5.3**	**588168000**
Framax-Ausgleichsspanner		
Galvanised		
Length: 48 cm		



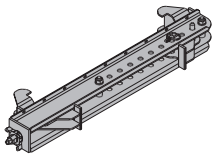
Framax universal fixing bolt 10-16cm	**0.60**	**588158000**
Framax-Universalverbinder 10-16cm		
Galvanised		
Length: 26 cm		



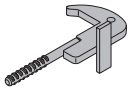
Framax universal fixing bolt 10-25cm	**0.69**	**583002000**
Framax-Universalverbinder 10-25cm		
Galvanised		
Length: 36 cm		



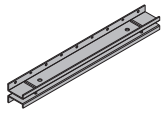
	[kg]	Article n°
Framax stop-end waler tie 15-45cm	**15.0**	**588940000**
Framax stop-end waler tie 15-75cm	**20.6**	**588941000**
Framax-Stirnabschalzwinge		
Galvanised		



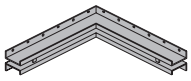
Framax stop-end tie	**1.5**	**588143000**
Framax-Stirnanker		
Galvanised		
Length: 29 cm		



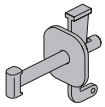
Framax universal waling 0.60m	**6.6**	**588689000**
Framax universal waling 0.90m	**10.6**	**588150000**
Framax universal waling 1.50m	**16.8**	**588148000**
Framax-Klemmschiene		
Painted blue		



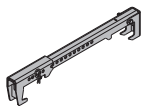
Framax universal corner waling	**12.8**	**588151000**
Framax-Eckklemmschiene		
Painted blue		
Leg length: 60 cm		



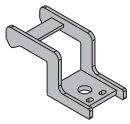
Framax wedge clamp	**1.5**	**588152000**
Framax-Spannklemme		
Galvanised		
Length: 21 cm		



Framax head anchor 15-40cm	**4.2**	**588969000**
Length: 72 - 81 cm		
Framax head anchor 15-100cm	**6.1**	**588970000**
Length: 131 - 141 cm		
Framax-Kopfanker		
Galvanised, powder-coated		

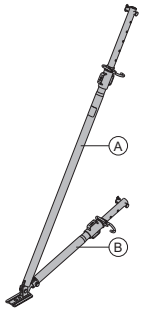


Framax floor fixing plate	**0.87**	**588628000**
Framax-Bodenhalter		
Galvanised		
Length: 17.6 cm		
Width: 7.7 cm		
Height: 8.5 cm		



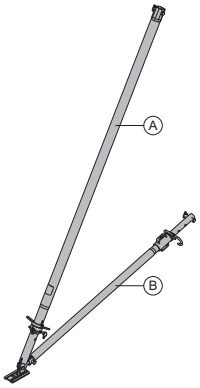
	[kg]	Article n°
Panel strut 340 IB Elementstütze 340 IB consisting of:	**24.3**	**580365000**
(A) **Plumbing strut 340 IB** Galvanised Length: 190.8 - 341.8 cm	**16.7**	**588696000**
(B) **Adjusting strut 120 IB** Galvanised Length: 81.5 - 130.6 cm	**7.6**	**588248500**

Galvanised
Delivery condition: folded closed



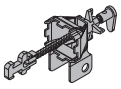
Panel strut 540 IB Elementstütze 540 IB consisting of:	**41.4**	**580366000**
(A) **Plumbing strut 540 IB** Galvanised Length: 310.5 - 549.2 cm	**30.7**	**588697000**
(B) **Adjusting strut 220 IB** Galvanised Length: 172.5 - 221.1 cm	**10.9**	**588251500**

Galvanised
Delivery condition: folded closed



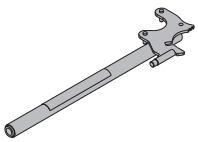
Prop head EB Stützenkopf EB	**3.1**	**588244500**

Galvanised
Length: 40.8 cm
Width: 11.8 cm
Height: 17.6 cm



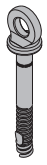
Universal dismantling tool Universal-Lösewerkzeug	**3.7**	**582768000**

Galvanised
Length: 75.5 cm



Doka express anchor 16x125mm Doka-Expressanker 16x125mm	**0.31**	**588631000**

Galvanised
Length: 18 cm
Follow the directions in the "Fitting instructions"!

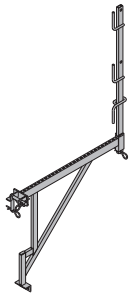


	[kg]	Article n°
Doka coil 16mm Doka-Coil 16mm	**0.009**	**588633000**

Galvanised
Diameter: 1.6 cm

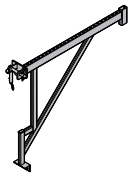
Framax bracket 90 Framax-Konsole 90	**12.5**	**588167000**

Galvanised
Length: 103 cm
Height: 185 cm
Delivery condition: railing included



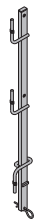
Framax bracket 90 EP Framax-Konsole 90 EP	**9.0**	**588979000**

Galvanised
Length: 103 cm
Height: 84 cm



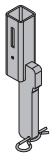
Handrail post 1.00m Geländer 1,00m	**3.8**	**584335000**

Galvanised
Length: 124 cm



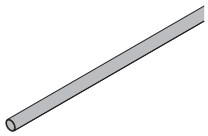
Bracket adapter XP FRR 50/30 Konsolenadapter XP FRR 50/30	**2.4**	**586486000**

Galvanised
Height: 32 cm



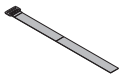
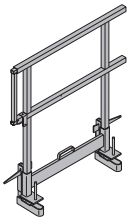
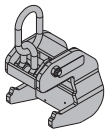
Scaffold tube 48.3mm 0.50m	**1.7**	**682026000**
Scaffold tube 48.3mm 1.00m	**3.6**	**682014000**
Scaffold tube 48.3mm 1.50m	**5.4**	**682015000**
Scaffold tube 48.3mm 2.00m	**7.2**	**682016000**
Scaffold tube 48.3mm 2.50m	**9.0**	**682017000**
Scaffold tube 48.3mm 3.00m	**10.8**	**682018000**
Scaffold tube 48.3mm 3.50m	**12.6**	**682019000**
Scaffold tube 48.3mm 4.00m	**14.4**	**682021000**
Scaffold tube 48.3mm 4.50m	**16.2**	**682022000**
Scaffold tube 48.3mm 5.00m	**18.0**	**682023000**
Scaffold tube 48.3mm 5.50m	**19.8**	**682024000**
Scaffold tube 48.3mm 6.00m	**21.6**	**682025000**
Scaffold tube 48.3mm .....m Gerüstrohr 48,3mm	**3.6**	**682001000**

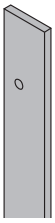
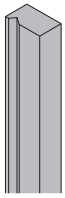
Galvanised



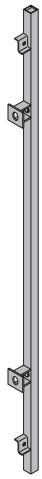
	[kg]	Article n°
Scaffold tube connection Gerüstrohranschluss Galvanised Height: 7 cm	**0.27**	**584375000**
Screw-on coupler 48mm 50 Anschraubkupplung 48mm 50 Galvanised Width-across: 22 mm Follow the directions in the "Fitting instructions"!	**0.84**	**682002000**
Xsafe plus platform 2.70m with side 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**
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**
Xsafe plus platform extension 0.60m Xsafe plus-Bühnenverlängerung 0,60m Galvanised Height: 120 cm Delivery condition: railing included	**43.4**	**586418000**
Xsafe plus lifting adapter Framax Xsafe plus-Umsetzadapter Framax Galvanised Height: 51.4 cm	**6.6**	**586436000**
Framax pouring platform O 1.25/2.70m Framax-Betonierbühne O 1,25/2,70m Timber parts varnished yellow Steel parts galvanised Delivery condition: folded closed	**117.0**	**588360000**

	[kg]	Article n°
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**
Framax adapter XP Framax-Adapter XP Galvanised Height: 56 cm	**8.0**	**586475000**
Railing clamp XP 40cm Geländerzwinge XP 40cm Galvanised Height: 73 cm	**7.7**	**586456000**
Handrail post XP 1.20m Geländersteher XP 1,20m Galvanised Height: 118 cm	**4.1**	**586460000**
Toeboard holder XP 1.20m Fußwehrhalter XP 1,20m Galvanised Height: 21 cm	**0.64**	**586461000**
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**

	[kg]	Article n°
Velcro fastener 30x380mm Klettverschluss 30x380mm Yellow 	**0.02**	**586470000**
Handrail clamp S Schutzgeländerzwinge S Galvanised Height: 123 - 171 cm 	**11.5**	**580470000**
Side handrail clamping unit T Seitenschutzgeländer T Galvanised Length: 115 - 175 cm Height: 112 cm 	**29.1**	**580488000**
Framax lifting hook Framax-Umsetzbügel Galvanised Height: 22 cm Follow the directions in the "Operating Instructions"! 	**10.6**	**588149000**
Framax stacking cone Framax-Stapelkonus Blue Diameter: 2 cm 	**0.02**	**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°
Dokamatic lifting strap 13.00m Dokamatic-Umsetzgurt 13,00m Green Follow the directions in the "Operating Instructions"! 	**10.5**	**586231000**
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 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 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 formwork stripping timb. 10x12cm 2.85m **Framax formwork stripping timb. 10x12cm 3.45m** Framax-Ausschalholz Varnished yellow 	**16.4** **19.9**	**176008000** **176014000**

	[kg]	Article n°
Framax steel closure plate 5cm 2.70m	**14.0**	**588273000**
Framax steel closure plate 5cm 0.90m	**6.0**	**588271000**
Framax-Stahlausgleich		
Powder-coated blue		

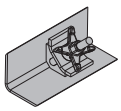


Connecting timber	**0.70**	**176030000**
Anklemmholz		
Varnished yellow Width: 10 cm		

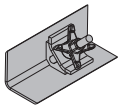
Framax triangular ledge 2.70m	**0.38**	**588170000**
Framax-Dreikantleiste 2,70m		

Framax frontal triangular ledge 2.70m	**1.7**	**588129000**
Framax frontal triangular ledge 3.30m	**2.0**	**588949000**
Framax-Stirndreikantleiste		
Grey		

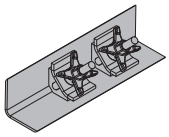
Box-out clamp 24cm	**3.4**	**580063000**
Box-out clamp 25cm	**3.4**	**580064000**
Box-out clamp 30cm	**3.9**	**580065000**
Aussparungsklemme		
Galvanised Leg length: 10 cm		



Box-out clamp type 1 .....cm	**17.4**	**580066000**
Aussparungsklemme Typ 1 .....cm		
Painted blue Leg length: 10 cm		

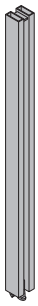


Box-out clamp type 2 .....cm	**17.4**	**580067000**
Aussparungsklemme Typ 2 .....cm		
Painted blue Leg length: 10 cm		



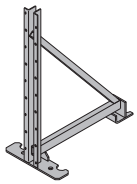
Framax tie-holder bracket	**1.4**	**588188000**
Framax-Ankerhaltewinkel		
Painted blue Width: 9 cm Height: 13 cm		

	[kg]	Article n°
Framax foundation clamp 0.90m	**4.9**	**588141000**
Framax-Fundamentspanner 0,90m		
Galvanised		



Doka perforated tape 50x2.0mm 25m	**17.0**	**588206000**
Doka-Lochband 50x2,0mm 25m		

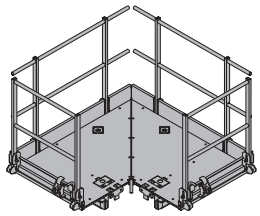
Supporting construction	**10.7**	**588477000**
Abstützwinkel		
Galvanised Length: 66 cm Width: 37 cm Height: 91 cm		



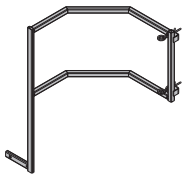
Universal plug R20/25	**0.003**	**588180000**
Kombi-Ankerstopfen R20/25		
Blue Diameter: 3 cm		

Framax plug R24.5	**0.003**	**588181000**
Framax-Abdeckstopfen R24,5		
Yellow Diameter: 2 cm		

Doka column formwork platform 150/90cm	**211.8**	**588382000**
Doka-Stützenbühne 150/90cm		
Galvanised Length: 173 cm Width: 173 cm Height: 130 cm Delivery condition: folded closed		



Counter railing col. formwork plat. 150/90cm	**8.0**	**588385000**
Gegengeländer Stützenbühne 150/90cm		
Galvanised Width: 87 cm Height: 170 cm		

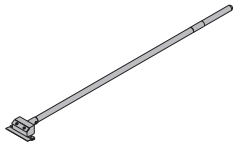


[kg] Article n°

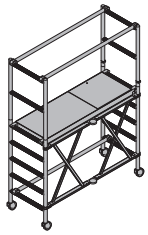
Framax assembling tool 4.2 588678000
Framax-Montagestange

Galvanised
Length: 193 cm

Double scraper Xlife 100/150mm 1.40m 2.8 588674000
Doppelschaber Xlife 100/150mm 1,40m

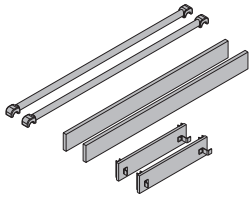


Wheel-around scaffold DF 44.0 586157000
Mobilgerüst DF



Aluminium
Length: 185 cm
Width: 80 cm
Height: 255 cm
Delivery condition: folded closed

Wheel-around scaffold DF accessory set 13.3 586164000
Zubehörset Mobilgerüst DF



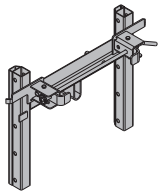
Aluminium
Timber parts varnished yellow
Length: 189 cm

Framax telescopic assembling tool 4.5 588651000
Framax-Teleskop-Montagestange

Aluminium
Length: 227 - 398 cm

Ladder system XS

Connector XS Wall formwork 20.8 588662000
Anschluss XS Wandschalung



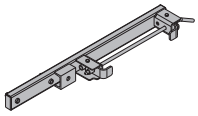
Galvanised
Width: 89 cm
Height: 63 cm

[kg] Article n°

Fixing clamp XS Framax 1.5 588677000
Befestigungsklemme XS Framax

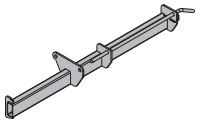
Galvanised
Length: 20 cm
Width-across: 27 mm

Connector XS Framax/Alu-Framax 11.2 588639000
Anschluss XS Framax/Alu-Framax



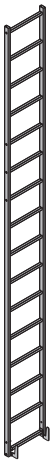
Galvanised
Length: 115 cm

Connector XS column formwork platform 10.0 588637000
Anschluss XS Stützenbühne



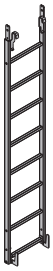
Galvanised
Length: 123 cm

System ladder XS 4.40m 33.2 588640000
System-Leiter XS 4,40m



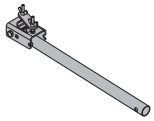
Galvanised

Ladder extension XS 2.30m 19.1 588641000
Leiternverlängerung XS 2,30m



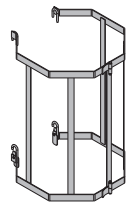
Galvanised

Securing barrier XS 4.9 588669000
Sicherungsschranke XS



Galvanised
Length: 80 cm

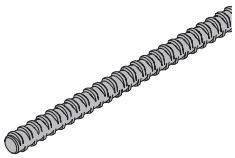
	[kg]	Article n°
Ladder cage XS 1.00m	**16.5**	**588643000**
Ladder cage XS 0.25m	**10.5**	**588670000**
Rückenschutz XS		
Galvanised		



Ladder cage exit XS	**17.0**	**588666000**
Rückenschutz-Ausstieg XS		
Galvanised Height: 132 cm		

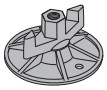
Tie rod system 15.0

Tie rod 15.0mm galvanised 0.50m	**0.72**	**581821000**
Tie rod 15.0mm galvanised 0.75m	**1.1**	**581822000**
Tie rod 15.0mm galvanised 1.00m	**1.4**	**581823000**
Tie rod 15.0mm galvanised 1.25m	**1.8**	**581826000**
Tie rod 15.0mm galvanised 1.50m	**2.2**	**581827000**
Tie rod 15.0mm galvanised 1.75m	**2.5**	**581828000**
Tie rod 15.0mm galvanised 2.00m	**2.9**	**581829000**
Tie rod 15.0mm galvanised 2.50m	**3.6**	**581852000**
Tie rod 15.0mm galvanised .....m	**1.4**	**581824000**
Tie rod 15.0mm non-treated 0.50m	**0.73**	**581870000**
Tie rod 15.0mm non-treated 0.75m	**1.1**	**581871000**
Tie rod 15.0mm non-treated 1.00m	**1.4**	**581874000**
Tie rod 15.0mm non-treated 1.25m	**1.8**	**581886000**
Tie rod 15.0mm non-treated 1.50m	**2.1**	**581876000**
Tie rod 15.0mm non-treated 1.75m	**2.5**	**581887000**
Tie rod 15.0mm non-treated 2.00m	**2.9**	**581875000**
Tie rod 15.0mm non-treated 2.50m	**3.6**	**581877000**
Tie rod 15.0mm non-treated 3.00m	**4.3**	**581878000**
Tie rod 15.0mm non-treated 3.50m	**5.0**	**581888000**
Tie rod 15.0mm non-treated 4.00m	**5.7**	**581879000**
Tie rod 15.0mm non-treated 5.00m	**7.2**	**581880000**
Tie rod 15.0mm non-treated 6.00m	**8.6**	**581881000**
Tie rod 15.0mm non-treated 7.50m	**10.7**	**581882000**
Tie rod 15.0mm non-treated .....m	**1.4**	**581873000**
Ankerstab 15,0mm		



DIN 18216

Super plate 15.0	**1.1**	**581966000**
Superplatte 15,0		
Galvanised Height: 6 cm Diameter: 12 cm Width-across: 27 mm		



DIN 18216

Wing nut 15.0	**0.31**	**581961000**
Flügelmutter 15,0		
Galvanised Length: 10 cm Height: 5 cm Width-across: 27 mm		

DIN 18216

Hexagon nut 15.0	**0.23**	**581964000**
Sechskantmutter 15,0		
Galvanised Length: 5 cm Width-across: 30 mm		

DIN 18216

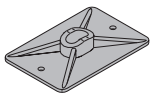
Framax pressure plate 6/15	**0.80**	**588183000**
Framax-Druckplatte 6/15		
Galvanised		

Star grip nut 15.0 G	**0.47**	**587544000**
Sternmutter 15,0 G		
Galvanised Width: 10 cm Height: 5 cm Width-across: 26 mm		

Rod connector 15.0	**0.49**	**581981000**
Verbindungsmuffe 15,0		
Non-treated Length: 10.5 cm Diameter: 3.2 cm		

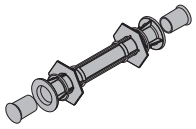
DIN 18216

Angle anchor plate 12/18	**1.5**	**581934000**
Winkelplatte 12/18		
Galvanised		

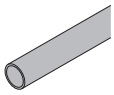


DIN 18216

Distance piece 20cm	**0.04**	**581907000**
Distance piece 25cm	**0.05**	**581908000**
Distance piece 30cm	**0.06**	**581909000**
Distanzhalter		
PE Grey Blue		



Plastic tube 22mm 2.50m	**0.45**	**581951000**
Kunststoffrohr 22mm 2,50m		
PVC Grey Diameter: 2.6 cm		

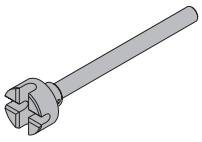


Universal cone 22mm	**0.005**	**581995000**
Universal-Konus 22mm		
Grey Diameter: 4 cm		

Plug 22mm	**0.003**	**581953000**
Verschlussstopfen 22mm		
PE Grey		

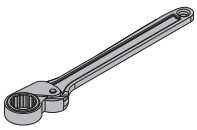
Protective cap 15.0/20.0	**0.03**	**581858000**
Schutzkappe 15,0/20,0		
Yellow Length: 6 cm Diameter: 6.7 cm		

Tie-rod wrench 15.0/20.0	**1.9**	**580594000**
Ankerstabschlüssel 15,0/20,0		
Galvanised Length: 37 cm Diameter: 8 cm		



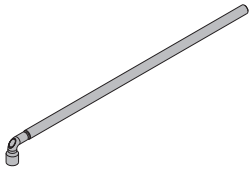
	[kg]	Article n°

Friction type ratchet SW27 0.49 581855000
Freilaufknarre SW27



Manganese-phosphated
Length: 30 cm

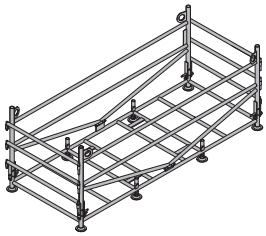
Box spanner 27 0.65m 1.9 581854000
Steckschlüssel 27 0,65m



Galvanised

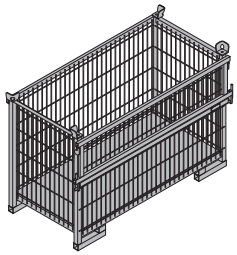
Multi-trip packaging

Alu-Framax pallet 126.7 588396000
Alu-Framax-Palette



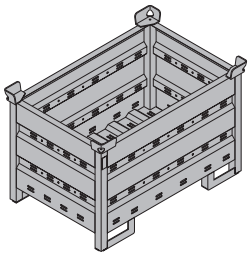
Galvanised
Length: 280 cm
Width: 110 cm
Height: 107 cm
Delivery condition: folded closed

Doka skeleton transport box 1.70x0.80m 87.0 583012000
Doka-Gitterbox 1,70x0,80m



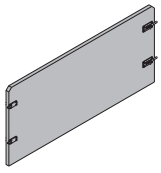
Galvanised
Height: 113 cm

Doka multi-trip transport box 1.20x0.80m 70.0 583011000
Doka-Mehrwegcontainer 1,20x0,80m



Galvanised
Height: 78 cm

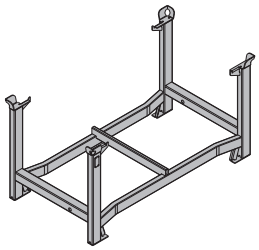
Multi-trip transport box partition 0.80m 3.7 583018000
Multi-trip transport box partition 1.20m 5.5 583017000
Mehrwegcontainer Unterteilung



Steel parts galvanised
Timber parts varnished yellow

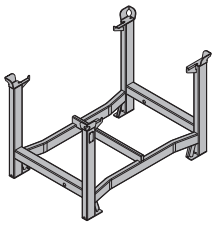
	[kg]	Article n°

Doka stacking pallet 1.55x0.85m 41.0 586151000
Doka-Stapelpalette 1,55x0,85m



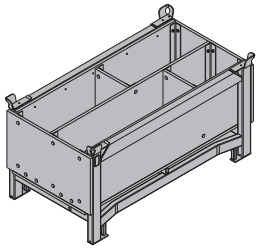
Galvanised
Height: 77 cm

Doka stacking pallet 1.20x0.80m 38.0 583016000
Doka-Stapelpalette 1,20x0,80m



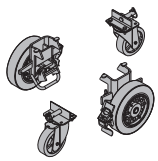
Galvanised
Height: 77 cm

Doka accessory box 106.4 583010000
Doka-Kleinteilebox



Timber parts varnished yellow
Steel parts galvanised
Length: 154 cm
Width: 83 cm
Height: 77 cm

Bolt-on castor set B 33.6 586168000
Anklemm-Radsatz B



Painted blue

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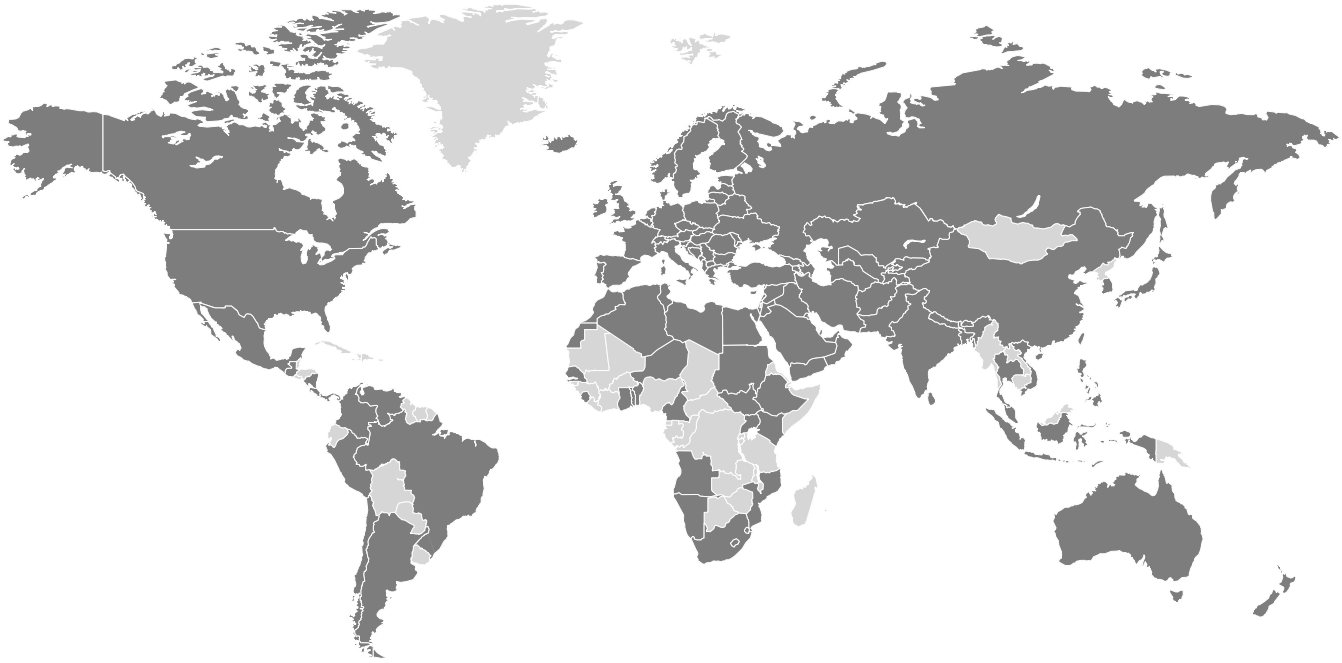

www.doka.com/alu-framax-xlife