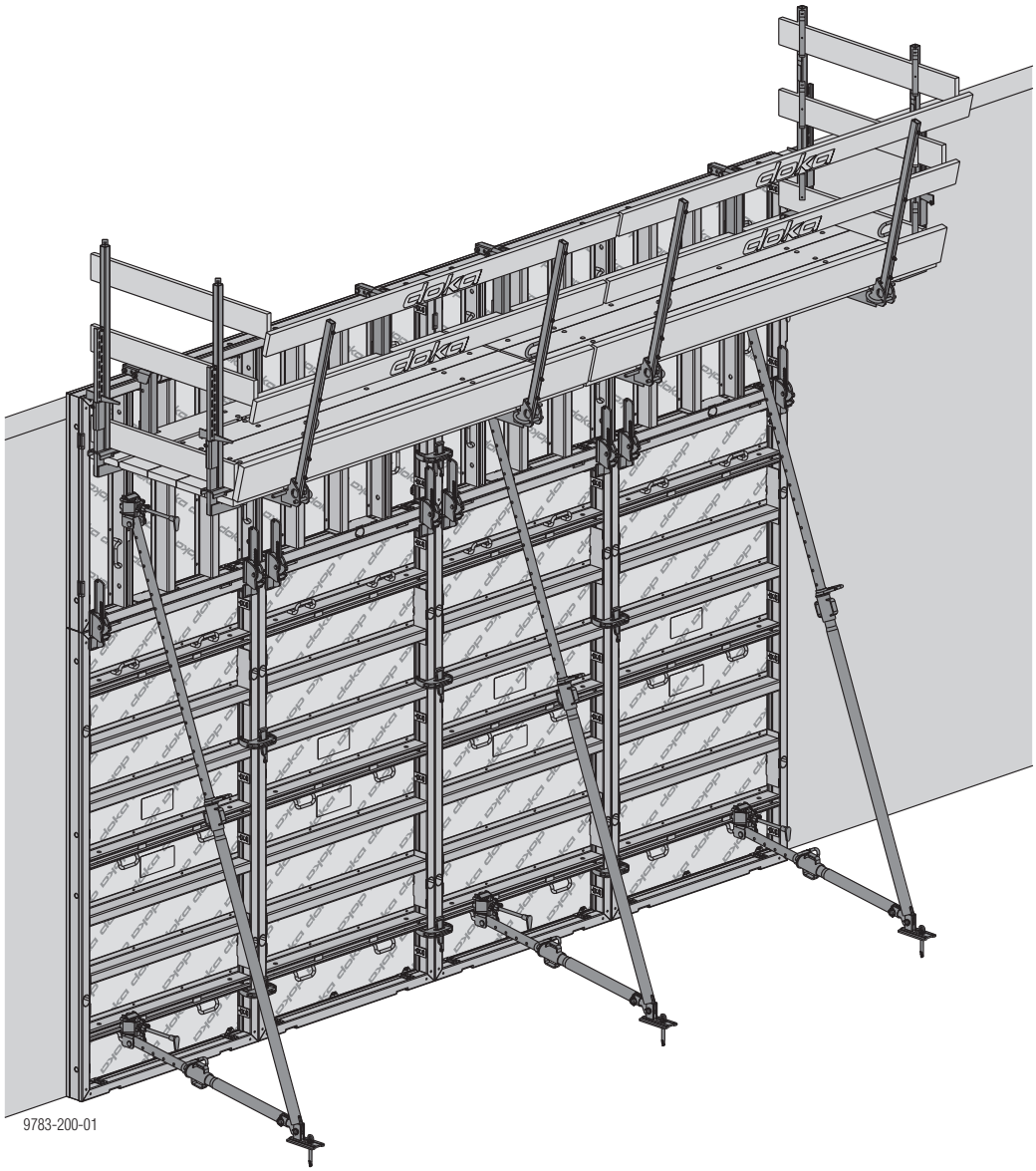
999783014 - 12/2021
en-US

The Formwork Experts.

Framed formwork Framax S Xlife

User Information

Instructions for assembly and use



Contents

Introduction

Basic 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 utilization 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 insure that the information materials provided by Doka (e.g. User Information booklets, Method Statements, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that users have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and formwork utilization 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 must ensure compliance with the national applicable laws, standards and rules 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 utilize the system. It does not substitute for these, however.

Remarks on this booklet

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

Planning

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

Regulations; occupational health & safety

- All laws, Standards, industrial safety regulations and other safety rules applying to the application and utilization 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 shall ensure that this product is erected and dismantled, repositioned 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 shall 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).
- The functional / technical instructions, safety warnings and loading data shall all be strictly observed and complied with. Non-compliance can cause accidents and severe injury (risk of fatality) and serious 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 prohibited to weld or heat Doka products, particularly parts for anchoring, suspension or connecting, and also cast parts, etc.
  Welding radically changes the micro-structure of the materials of which these components are made. This leads to a drastic reduction in failure load, constituting a serious safety risk.
  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.
  Welding work can be done only on the articles expressly mentioned in the Doka documents as being suitable for work of this nature.

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).
- The use of our safety systems and formwork systems in combination with those of other manufacturers could be dangerous, risking injury to health and damage to property, and therefore requires separate verification by the user.
- 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.

Erecting the formwork

- Doka products and systems must be set up in such a way that all loads acting upon them are safely transferred!

Pouring

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

Stripping the formwork

- Do not strip the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped!
- When stripping 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 S bias-cut corners.
- When stripping 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 booklet, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.
- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- When lifting formwork or formwork accessories with a crane, no persons must be carried along, e.g. on working platforms or in multi-trip packaging.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

Maintenance

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

Miscellaneous

The weights are averages on the basis of new material. Actual weights can vary due to material tolerances. Weights can also differ on account of dirtying, moisture absorption, etc.

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

Symbols

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.

NOTE
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.

Visual inspection
Indicates that actions performed must be checked by means of a visual inspection.

Tip
Draws attention to a useful tip for best-practice usage.

Reference
Cross-references other documents.

Services

Support in every phase of the project

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

Project assistance from start to finish

Every project is unique and calls for individualized 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 customized 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.

Optimize construction workflows with Doka

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

Custom formwork and on-site assembly

Doka complements its system formwork with customized formwork units. Specially trained personnel assemble load-bearing towers and formwork on site.

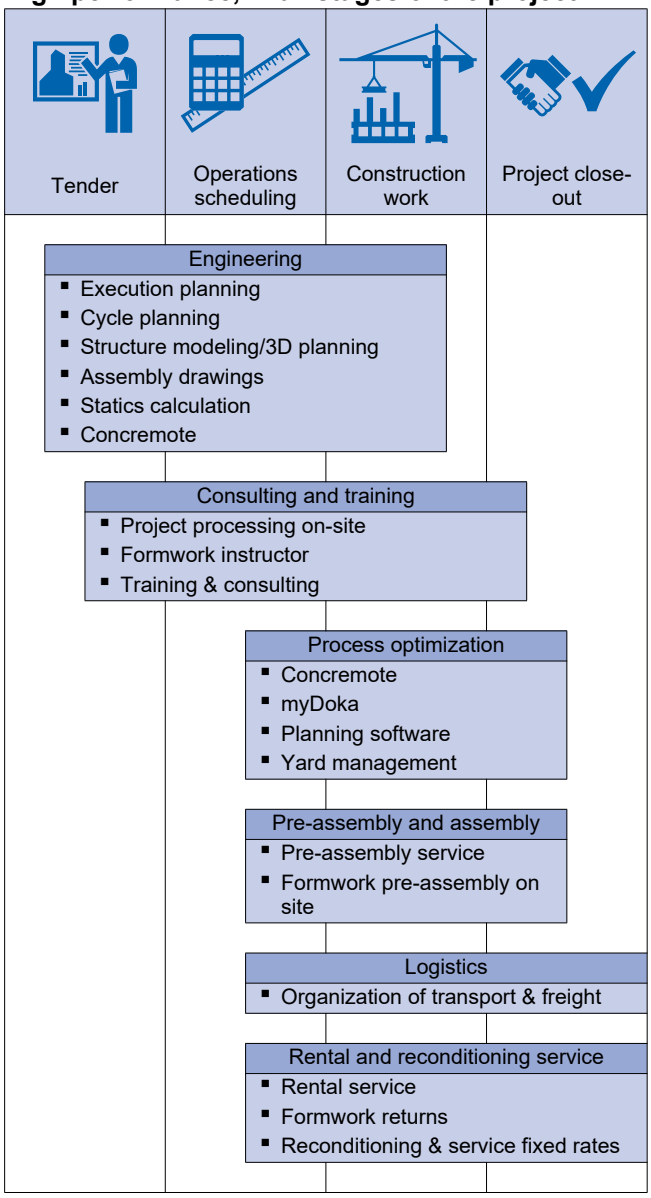
Just-in-time availability

Formwork availability is vital for on-time, on-budget realization of your project. 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 client-owned equipment and Doka rental equipment.

High performance, in all stages of the project



upbeat construction
digital services for higher productivity

From planning through to completion - with upbeat construction we'll be moving construction forward and upping the beat for more productive building with all our digital services. Our digital portfolio covers the entire construction process and is being extended all the time. To find out more about our specially developed solutions go to doka.com/upbeatconstruction.

Doka framed formwork Framax Xlife

The Framax Xlife S version - a European framed formwork system adapted to the special requirements in the North American market

Doka framed formwork Framax Xlife is a complete system that includes high-performance safety and workplace accessories. The system lets you tackle forming tasks (especially large-area ones) very **swiftly and efficiently**.

The **ingenious panel size-grid** makes for **optimum adaptability** to all construction-site situations.

The connecting devices and accessories are also designed to fit in with this grid.

The **innovative plastic coating of the Xlife sheet** enables it to be re-used intensively, with superb concrete results every time.

Framax Xlife is perfectly tailored for use on:

- Large-area walls
- Columns
- Circular formwork
- Footings

A range of practical accessories makes work on the site a lot easier and does away with the need for costly job-site improvisations.

With **Framax Xlife**, you can gang-form large areas, moving the formwork by **crane**.

Doka framed formwork Framax Xlife is the ideal framed formwork for large-area crane-assisted gang-forming.

The **exceptionally high safe working load** and **long lifespan** of Doka Framax Xlife make it highly **economical** for all wall-forming tasks.

Framax Xlife is exceptionally versatile and flexible, so you can quickly form any layout with it.

The **panels can be fixed together** at any point around the frame, **quickly and safely**, using Framax quick-acting clamps RU or multi-function clamps.

Because the Framax Xlife panels are so robust, you only need **2 form ties per 2.70 m of panel height.**

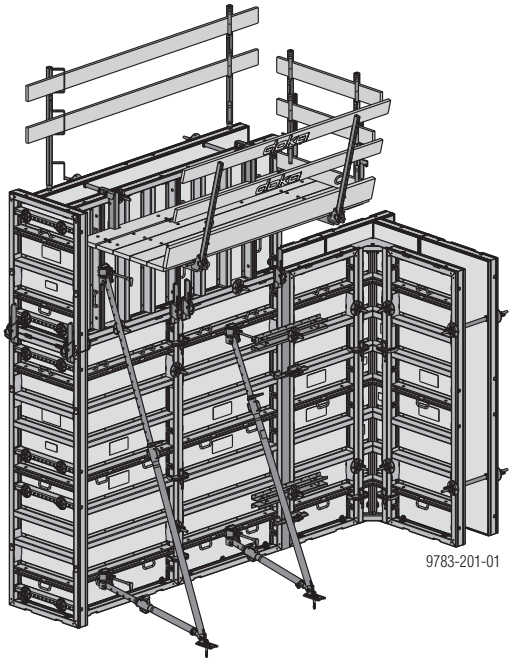
Any filler-gaps left between the Framax Xlife panels are very easy to close. The system gives you a choice here between several different options, so that you can always get the best possible **length adjustment** in each case.

Framax Xlife also takes **corners**, **bulkheads** and **wall junctions** efficiently in its stride. Here too, it gives you perfect, cost-saving solutions.

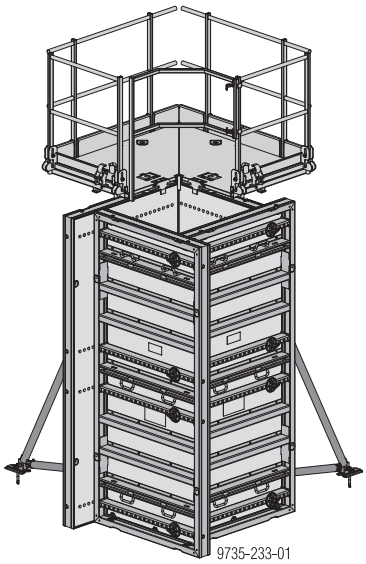
Matching safety and workplace accessories make working with Framax Xlife even quicker and easier.

Areas of use

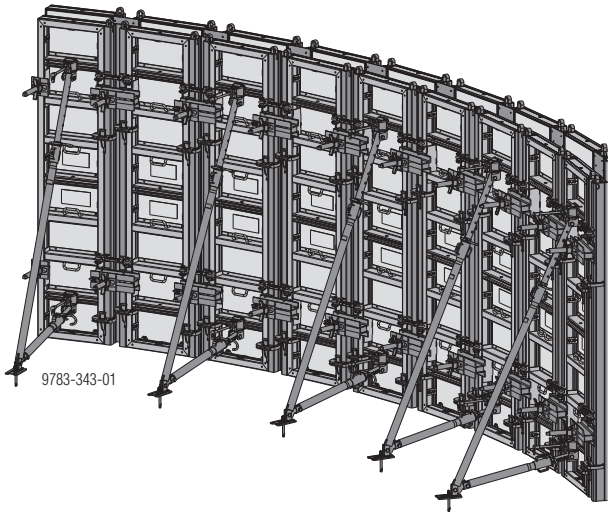
Wall formwork



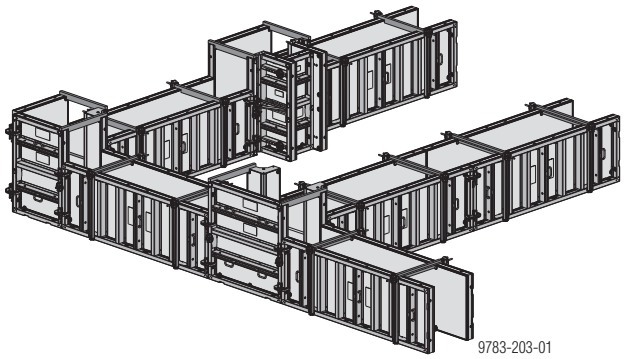
Column formwork

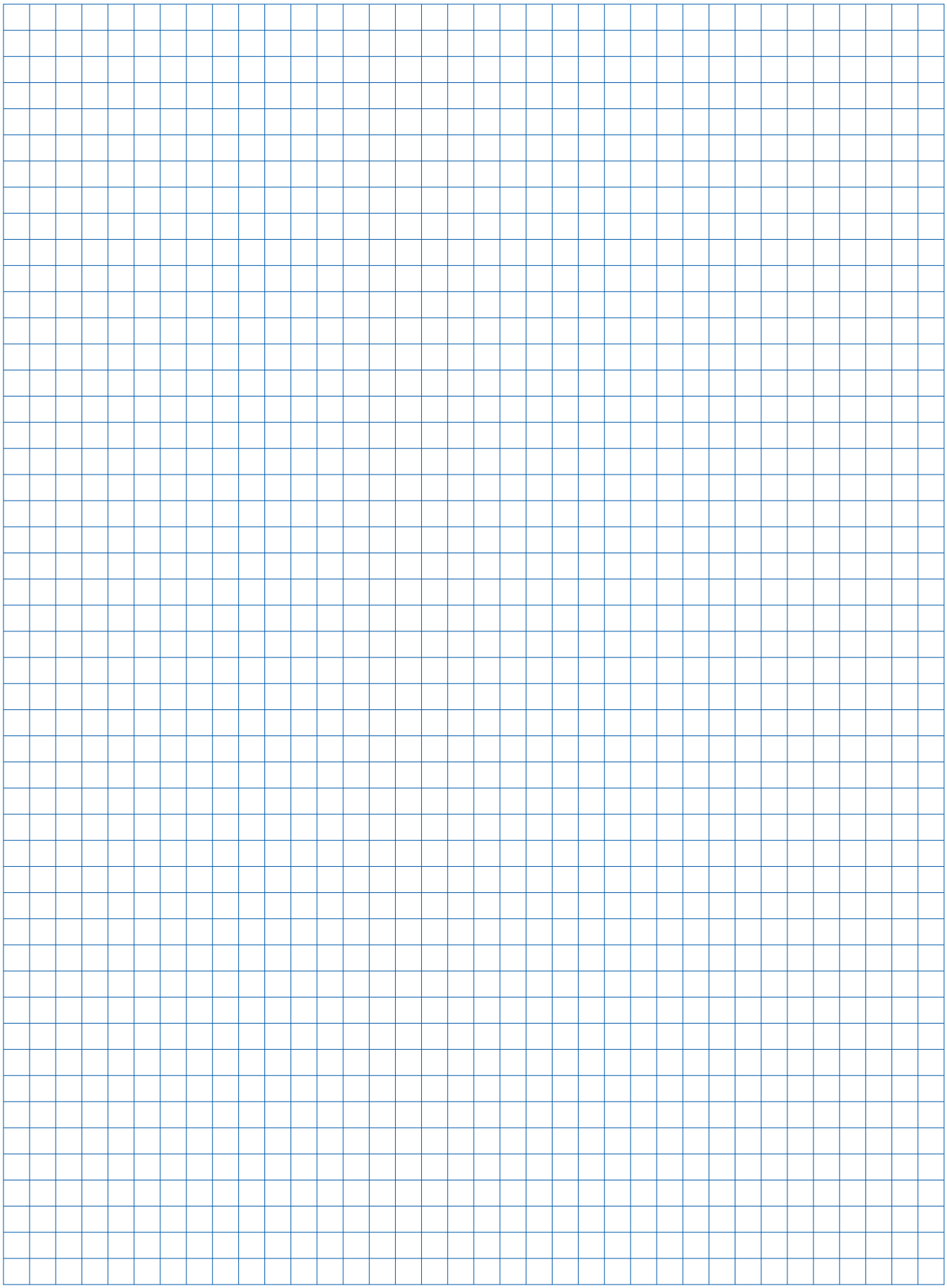


Circular formwork

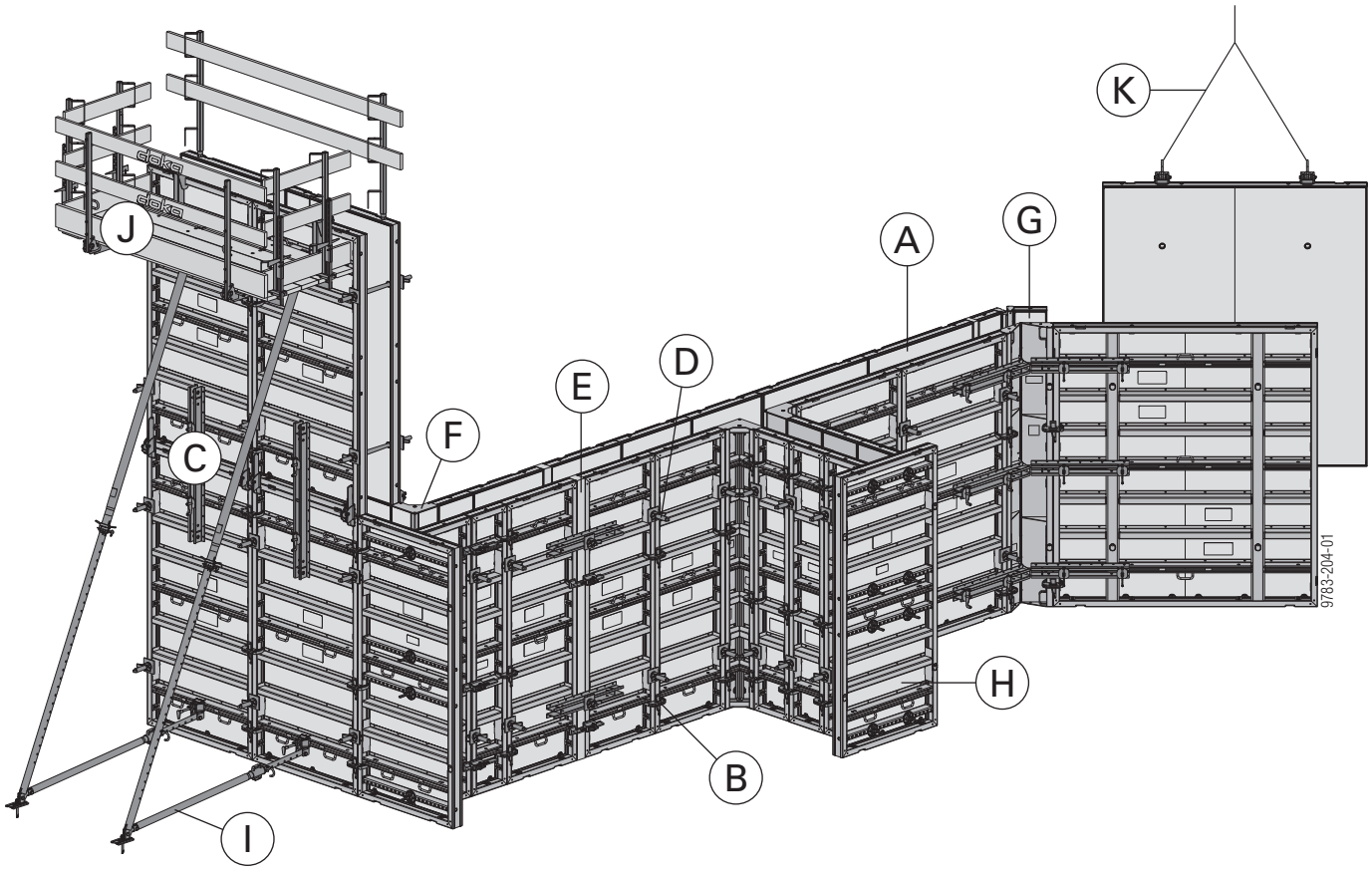


Footing and grade beam formwork





Wall formwork



A	Framax S Xlife panel (Page 16)
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Permitted pressure of fresh concrete:
1,650 psf (80 kN/m²)
(see 'Framax panel in detail' and 'Form-tie system')

Instructions for assembly and use

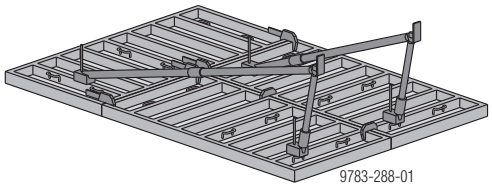
The sequence shown here is based on a straight wall. As a rule, formwork set-up should start in a corner, working outward.

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 the section headed 'Transporting, stacking and storing').
- ➤ To lift off one panel at a time, use Framax transport bolts and the Doka 4-part chain 3.20m (see the section headed 'Transporting, stacking and storing').

Pre-assembly

- ➤ Pre-assemble gang-forms face-down on an assembly bench (see 'Joining gangs').
- ➤ With the gang-form still flat, mount panel struts to it (see 'Plumbing accessories').



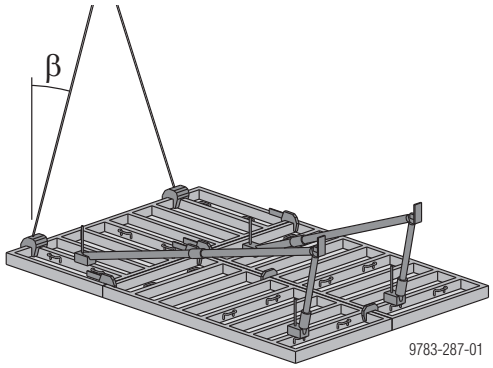
Erecting the formwork

- ➤ Attach the lifting chain to the Framax lifting hook (see the section headed 'Lifting by crane' and the Operating Instructions for the 'Framax lifting hook').

Max. load:

- Spread angle β up to 7.5°:
  3300 lbs (1500 kg) / Framax lifting hook
  Practical area of formwork that can be lifted using 2 lifting hooks: approx. 480 sq.ft. (45 m²)
- Spread angle β up to 30°:
  2200 lbs (1000 kg) / Framax lifting hook
  Practical area of formwork that can be lifted using 2 lifting hooks: approx. 320 sq.ft. (30 m²)

Framax lifting hooks with the rated load-bearing capacity of max. 2200 lbs (1000 kg) also comply with the requirements for a load bearing capacity of 3300 lbs (1500 kg) at a spread angle β ≤ 7.5°.



- ➤ Pick up the gang-form by crane.
- ➤ Spray the plywood face with release-agent (see ‘Cleaning and care of your equipment’).

NOTICE

- ➤ Guiding the gang should be done with taglines that are long enough to keep the person who is doing the guiding out of the way of the gang.

- ➤ Fly the gang-form to its new location.

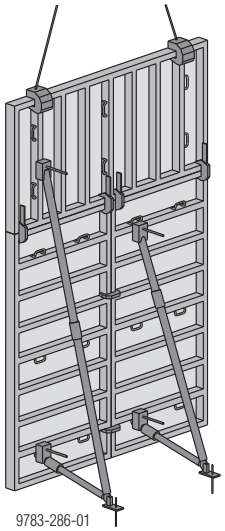
CAUTION

Never use a sledge-hammer to plumb and align 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.

- ➤ Fix the panel struts firmly to the ground (see the section headed 'Plumbing accessories').



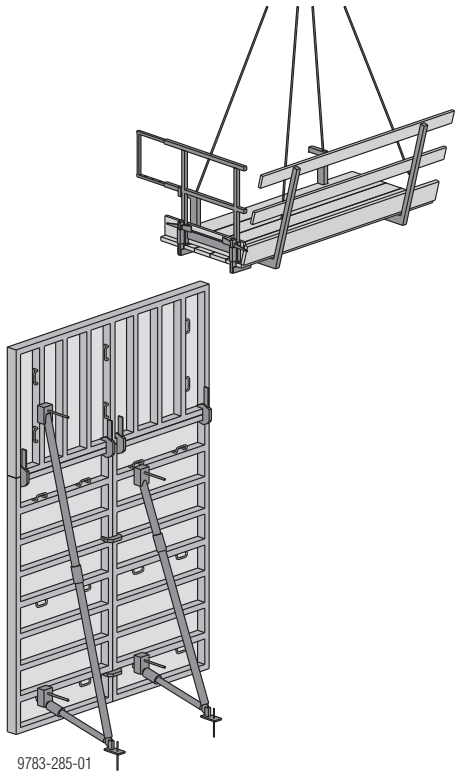
The gang-form is now stable and can be plumbed and aligned exactly, with no need for the crane.

- ➤ Detach the gang-form from the crane.

WARNING

➤ Do not allow people to ride on the formwork or platform.

➤ Hook the pouring platform into place (see the section headed 'Pouring platforms').



WARNING

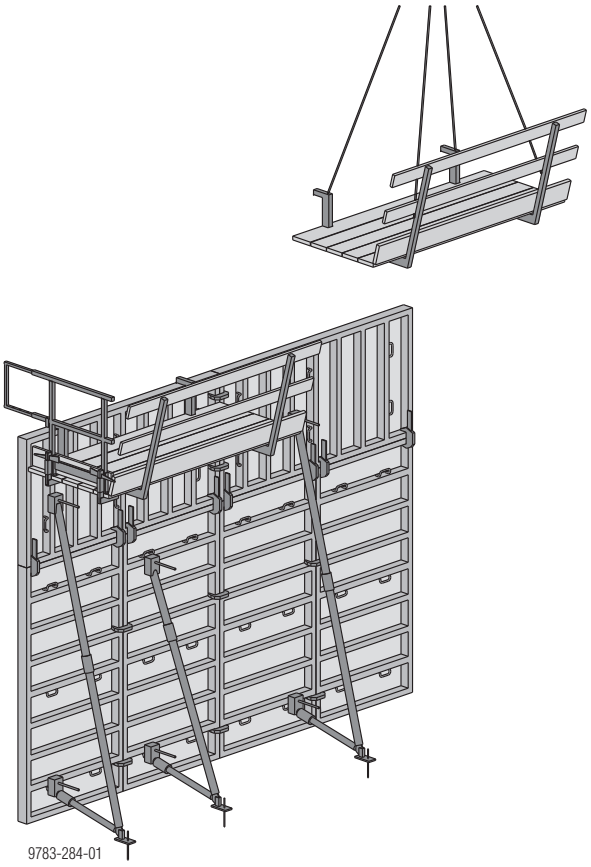
There is not yet an opposing guardrail on the formwork!

Danger to life from fatal falls!

➤ Use personal fall-arrest systems to protect against falls (e.g. safety harness)
or
mount an opposing guardrail to the gang-form while this is still being pre-assembled on the ground.

➤ Detach the pouring platform from the crane.

➤ Continue lining up gangs in this way, and link them together (see the section headed ‘Joining gangs’).

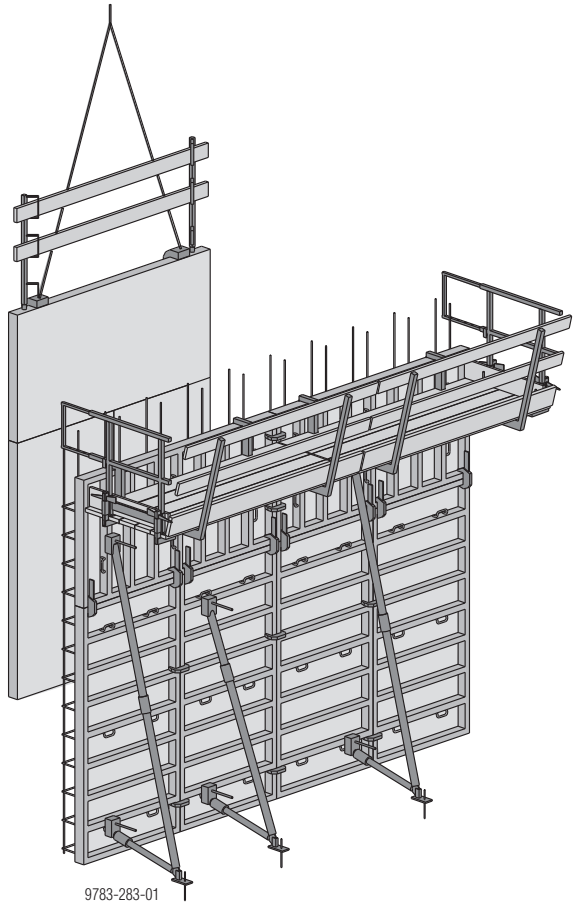


➤ Fit end-of-platform sideguards (see the section headed 'Pouring platforms').

Erecting the opposing formwork

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

- ➤ Mount the opposing guard-rail to the (face-down) gang-form of the opposing formwork (see 'Pouring platforms').
- ➤ Spray the plywood face with release agent (see 'Cleaning and care of your equipment').
- ➤ Fly the opposing formwork by crane to its next location.



- ➤ Insert the form-ties (see 'Form-tie system').

Before disconnecting from the crane:

- ➤ If there are no panel struts on the opposing formwork, do not disconnect the gang from the crane until a large enough number of form-ties have been installed to keep it safely in an upright position.

- ➤ Detach the gang-form from the crane (wherever possible, operate the lifting hook from the opposite pouring platform).
- ➤ Continue lining up adjacent gang-forms in this way, and clamp them together (see 'Joining gangs').

Pouring

Permitted pressure of fresh concrete:
1,650 psf (80 kN/m²)
(see 'Framax panel in detail' and 'Form-tie system')

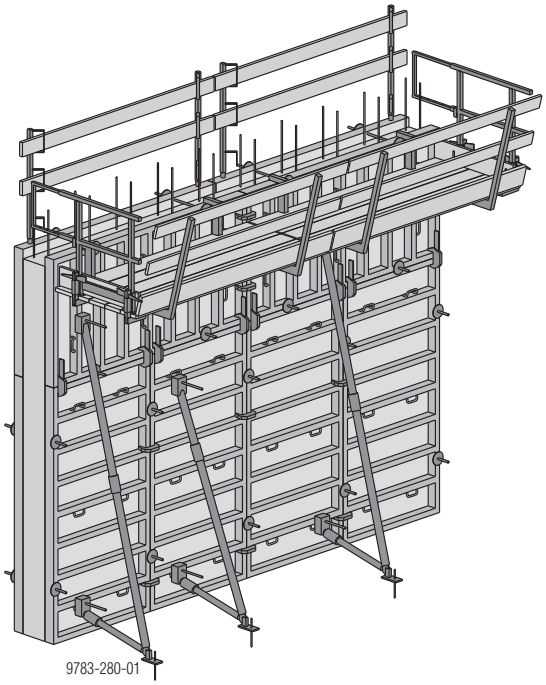
Observe the following **guidelines**:

- The section headed 'Pressure of fresh concrete on vertical formwork – DIN 18218' in the Calculation Guide 'Doka formwork engineering'
- ACI 301 - 'Specifications for Structural Concrete'
- ACI 309 - 'Guide for Consolidation of Concrete'
- ACI 347 - 'Guide to Formwork for Concrete'
- SP4 - 'Formwork for Concrete'
- CAN/CSA S269.3 - 'Concrete Formwork'

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 the formwork

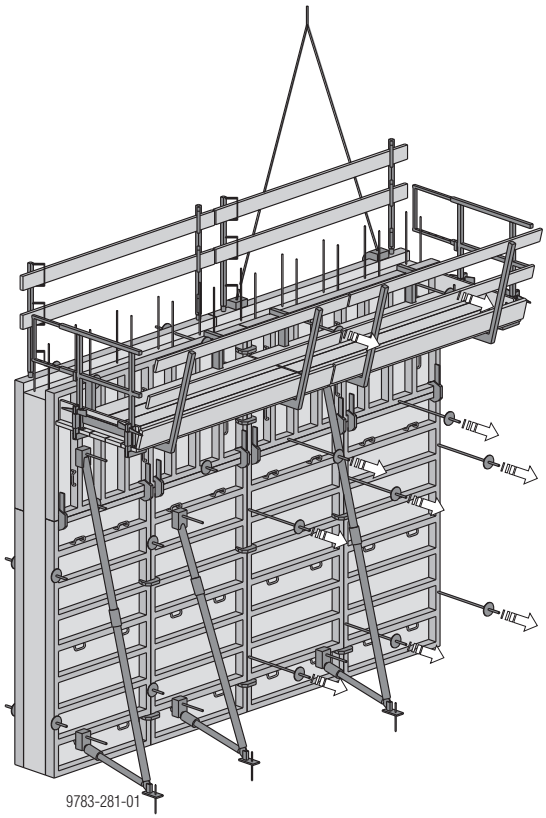
NOTICE

➤ Observe the stipulated stripping times.

➤ Remove any loose items from the formwork and platforms, or secure them firmly.

➤ Attach the gang-form of the unbraced formwork side to the crane (wherever possible, operate the lifting hook from the opposite pouring platform).

➤ Take out the form-ties and undo the connectors to the adjacent panels.



In order to speed up operations when repositioning by crane, most of the form-ties can be taken out in advance.

Warning!
However, there must be at least as many form-ties left in place as are needed to keep the gang safely in an upright position.

WARNING

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

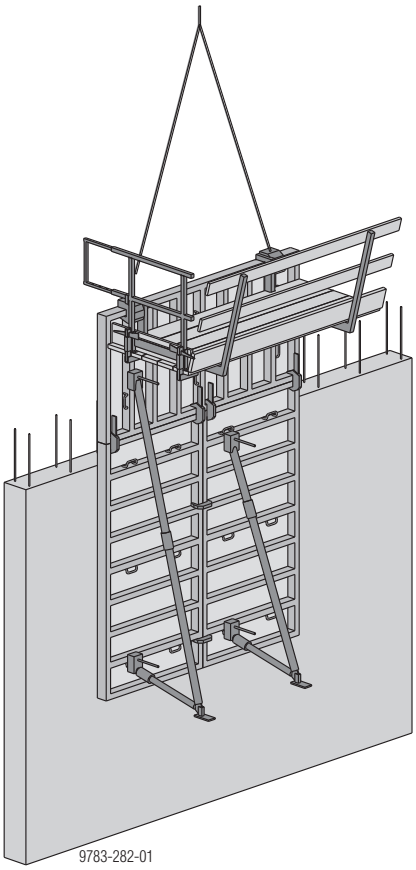
Risk of crane overload.

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

➤ Pick up the gang-form and fly it to its next location. If the gang-form is 'parked' in the upright prior to its next use, it must have sufficient stability (see 'Plumbing accessories').
Gang-forms with only one panel strut must not be 'parked' upright, but placed face-down.

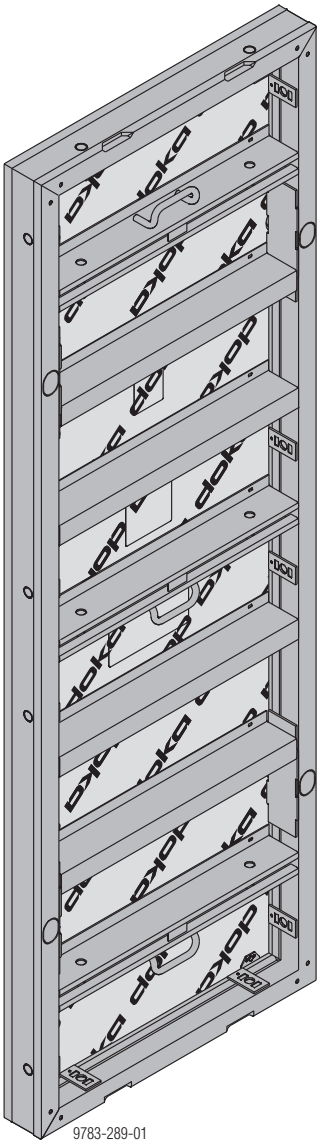
➤ Clean residual concrete off the formwork sheet (see 'Cleaning and care of your equipment').

➤ On gangs that have panel struts and pouring platforms attached to them, first attach this gang to the crane as shown in the illustration, and only then disconnect the floor anchorages of the panel struts.



Framax panel in detail

High load-bearing capacity



GSV
geprüft
durch neutrales Prüfinstitut
Güteschutzverband
Betonschalungen

1,650 psf (80 kN/m²) fresh-concrete pressure acting on whole area as defined by DIN 18218, and subject to compliance with the surface planeness tolerances specified in DIN 18202 Table 3 Line 6.

Where the concrete density is 150 pcf (25 kN/m³), this corresponds to a hydrostatic pour-height of 10'-6" (3.20 m).

Also complies with the following rules:

- ACI 117 - 'Specifications for Tolerances for Concrete Construction and Materials'
- ACI 347 - 'Guide to Formwork for Concrete'
  - Table 3.1: Class of surface 'B'

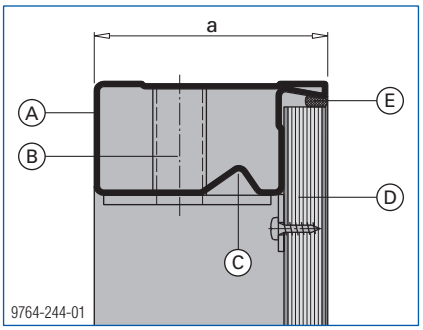
Clean concrete surfaces with the innovative Xlife sheet

The Xlife sheet consists of a **combination of a traditional plywood core and a novel, 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 washer
- Attached from the rear, so no screw marks on the concrete

Dimensionally stable, galvanized, powder-coated steel frames

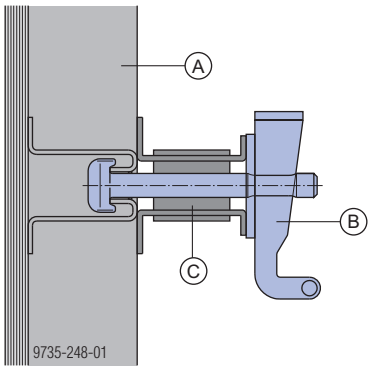


a ... 4 $^{13}/_{16}$" (123 mm)

A	Frame profile
B	Cross borehole
C	Continuous hardware slot for gang connectors
D	Xlife sheet
E	Silicone sealing strip

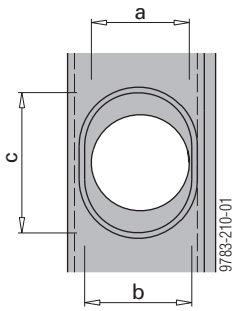
- Dimensionally stable frame profiles
- Strong cross-profiles
- Powder coated, so easy to clean
- Edge faces are easy to clean - so panels always abut tightly
- All-round hardware slot for fastening clamps at any point required
- Hot-dip galvanized for long life
- Edges of formwork sheet are protected by frame profile
- Cross boreholes for corner configurations and bulkheads

Accessories are easy to fasten, in the integrated waling system



A Framax S Xlife panel
B Framax wedge clamp
C Framax S universal waling

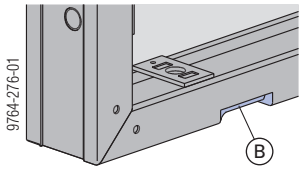
Form-tie sleeves



a ... diameter 1 $^{5}/_{8}$" (42 mm)
b ... 1 $^{7}/_{8}$" (47 mm)
c ... 2 $^{3}/_{8}$" (61 mm)

- Tie rods are very easy to insert, through the large conical form-tie sleeves
- Only 2 form-ties needed per 2.70 m of panel height

Lifting edge



B Lifting edge

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

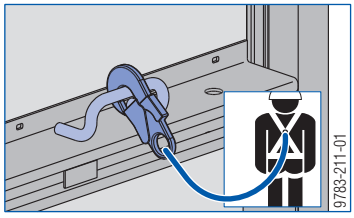
Attachment points for personal fall arrest equipment

Note:
Do not access, get on the formwork or use the safety handles or lifting rings until the panels have been properly braced.

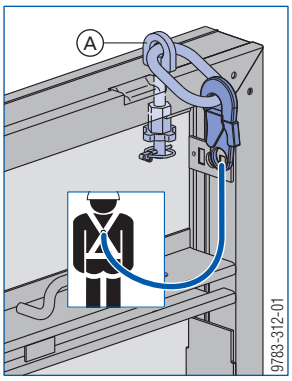
WARNING
Do not use the safety handles or lifting rings as slinging points for crane-handling!
Danger of formwork dropping from crane!
➤ Use only suitable load-carrying equipment and slinging points. See 'Lifting by crane' and 'Transporting, stacking and storing'.

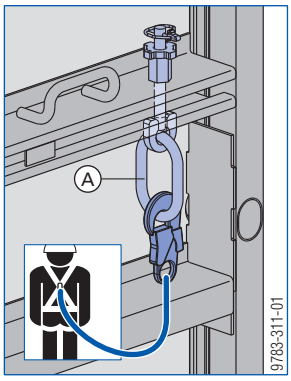
Note:
The attachment points shown here for personal fall arrest equipment conform to OSHA requirements.

Integrated safety handles



Additionally mounted attachment points





A Lifting ring

Mounting the lifting ring:
➤ Mount the lifting ring in the cross borehole and fix it in place with the nut and a linch pin.

Permissible fresh-concrete pressure as a function of the maximum panel width

	Max. width of panel	Permitted fresh-concrete pressure $\sigma_{hk, max}$	
		1650 psf (80 kN/m²)	**2050 psf (100 kN/m²)**
Framax S Xlife panel (all panel heights)	240 cm (7'-10 1/2")	✓	
	135 cm (4'-5 1/8")	✓	
	105 cm (3'-5 3/8")	✓	✓
	90 cm (2'-11 3/8")	✓	
	75 cm (2'-5 1/2")	✓	✓
	60 cm (1'-11 5/8")	✓	✓
	45 cm (1'-5 3/4")	✓	✓
	30 cm (11 3/4")	✓	✓
Framax S Xlife universal panel (all panel heights)	122 cm (4'-0'')	✓	
	90 cm (2'-11 3/8")	✓	

This means that for higher pour-pressures of up to **2050 psf (100 kN/m²)**, it is only allowed to use panels of 105, 75, 60, 45 and 30 cm in width.

Note:

All other Framax accessories can be subjected to increased pour-pressures of up to 2050 psf (100 kN/m²) (but only if the approved Framax S panels are used as per the above table).

System grid

Framax Xlife panels

Logical panel size-grid in 6" (15 cm) steps. The heights and widths of the Framax Xlife panels together result in a logical, advantageous size-grid which makes this formwork highly flexible and economical.

- Easy planning and forming
- Height and width adjustments are made in 6" (15 cm) steps
- Very few fillers needed
- Clear joint pattern

Only 2 form-ties needed in the vertical. For pour heights of up to 8'-10" (2.70m) where the 8'-10" (2.70m) high panels are used, only 2 form-ties are needed.

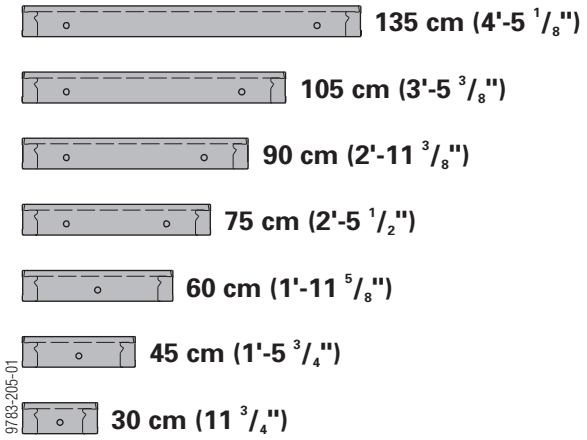
Wide spacing between form-ties in the horizontal: up to 4'-5" (1.35 m)

Only

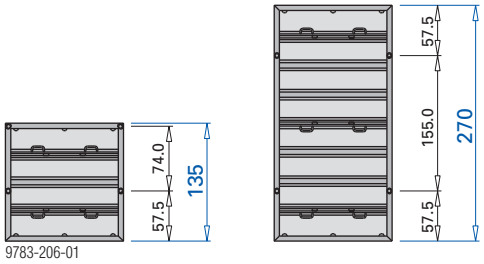
- 7 widths of panel,
- 2 heights of panel and
- 1 extra-large panel

are all you need to cover any plan.

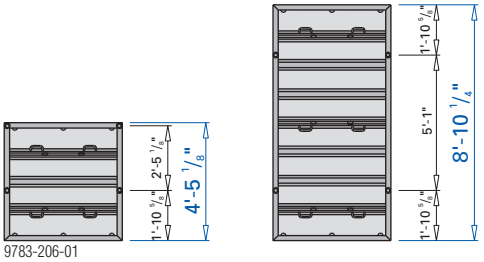
Widths of panels



Heights of panels

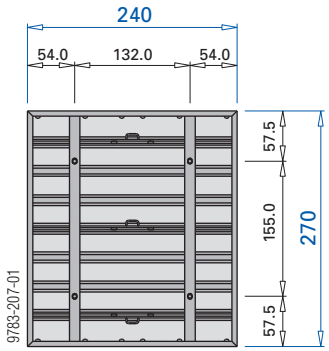


Dimensions in cm

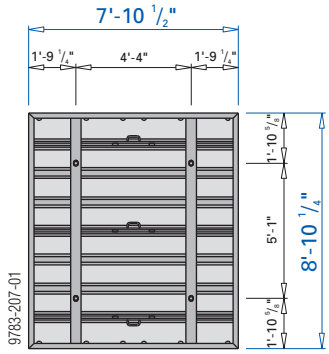


Dimensions in inch

Extra-large panel



Dimensions in cm

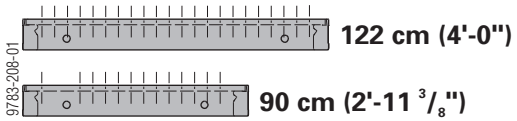


Dimensions in inch

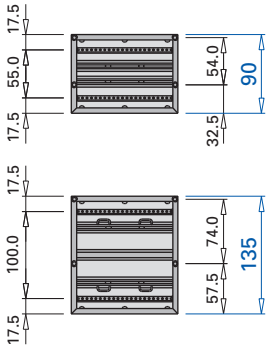
For examples of typical utilizations, see 'Vertical stacking of panels'.

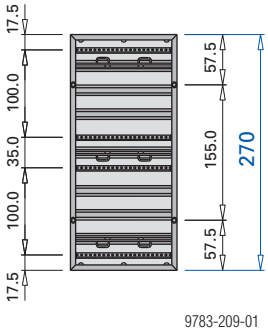
Framax Xlife universal panels

Widths of panels

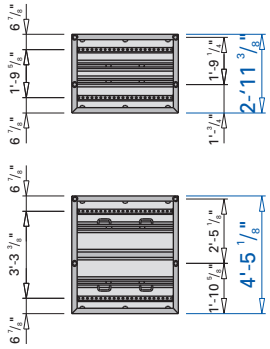


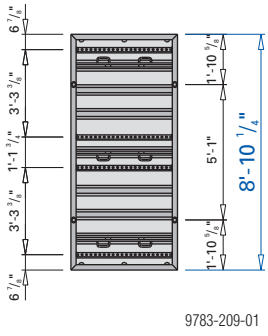
Heights of panels





Dimensions in cm





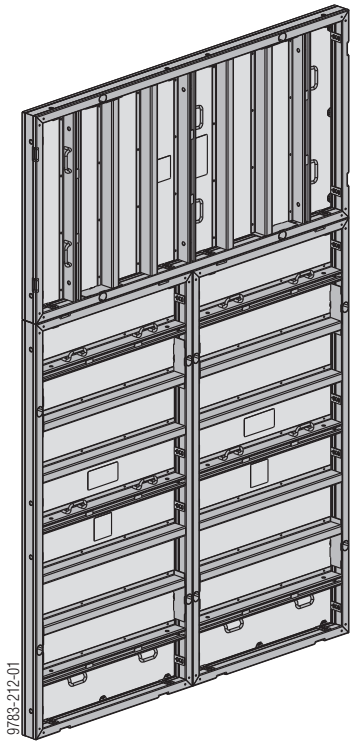
Dimensions in inch

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

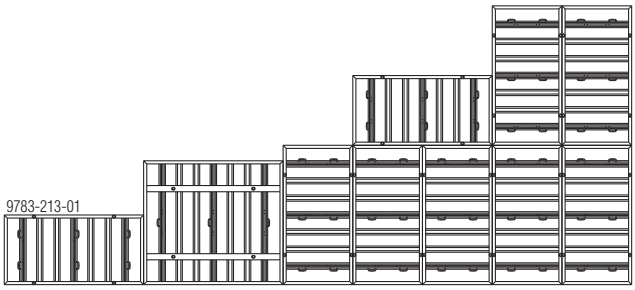
- corners
- wall junctions
- bulkheads
- columns
- pilasters

Adaptability

Possible combinations



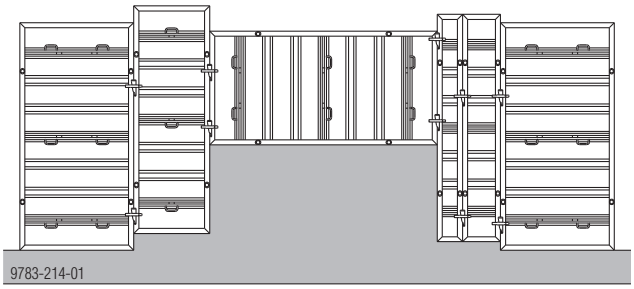
Framax Xlife's perfect panel size-grid gives you a huge number of possible combinations, in both width and height. You can use the panels either **upright** or **horizontal**, and the **15 cm grid** always gives you optimum adaptability to the dimensions of the structure.



Schematic representation

Infinite height offset

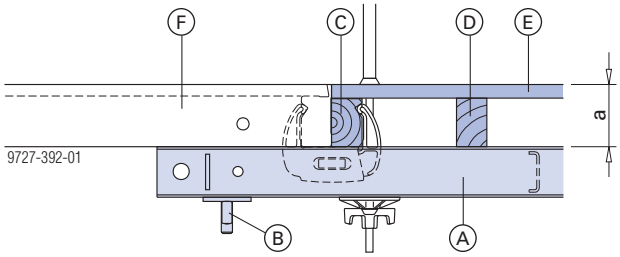
The continuous hardware slot around the inside of the Framax Xlife panels enables the connector components to be fastened anywhere on the frame. This allows any adjacent panels to be **staggered** to **any height required**, i.e. without being confined to any fixed grid. This means that the formwork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



Schematic representation

Continue forming with job-built fillers

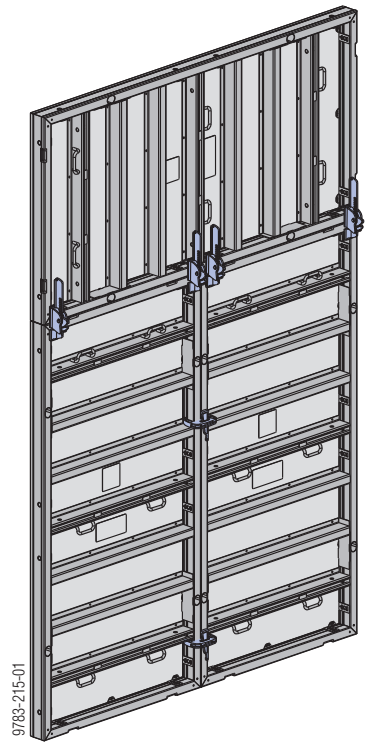
Framax Xlife framed formwork also gives you easy connections when you need to "fill in" with job-built timber formwork. The universal waling and wedge clamp make it easy for you to join the panels to dimensional lumber and formwork sheets.



a ... 4 $^{1}/_{8}$" (104 mm) squared timber + $^{3}/_{4}$" (19 mm) formwork sheet

A	Framax S universal waling (with nail-holes for easy fastening of squared timber)
B	Framax wedge clamp
C	Framax molded timber
D	Squared timber
E	Formwork sheet
F	Framax S Xlife panel

Joining gangs



Attributes of the gang connectors:

- provide self-aligning, crane-handling-safe connections between the gangs
- no losable small parts
- dirt-resistant and hard-wearing for site use
- easy to fix, with a formwork hammer

NOTICE

- Use a formwork hammer weighing max. 32 oz. (800 g).
- Do not oil or grease wedge-clamped joints.

Upright panels:

Panel height	N° of clamps
1.35 m	2
2.70 m	2

Horizontal panels:

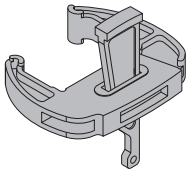
Panel width	N° of clamps
0.30 - 0.45 m	1
0.60 - 1.35 m	2

Note:

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

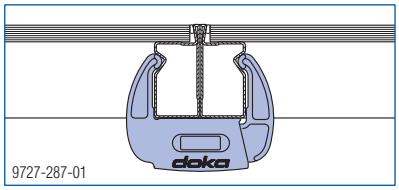
Simple inter-panel connections

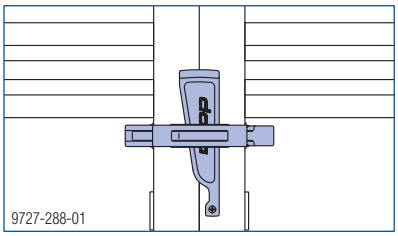
with Framax quick-acting clamp RU



Framax quick-acting clamp RU:
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 1.35 kip (6.0 kN)
Permitted moment: 0.37 kip-ft (0.5 kNm)

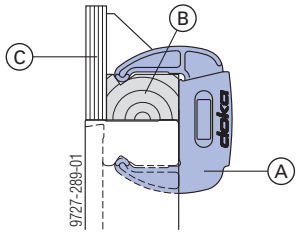
The continuous hardware slot running around the inside of the frame profile means that panels can be fastened together anywhere on the frame. This allows adjacent panels to be staggered in height, infinitely.





More functions

Vertical stacking with molded timber



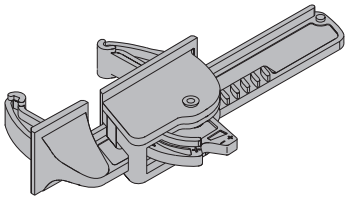
A Framax quick-acting clamp RU

B Framax molded timber 27mm (for 27mm formwork sheet) or Framax molded timber 21mm (for 21mm formwork sheet) or Framax molded timber 18mm (for 3/4" formwork sheet)

C Formwork sheet

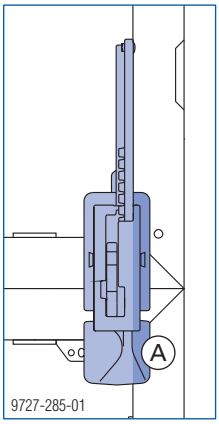
Self-aligning inter-panel connections and fillers

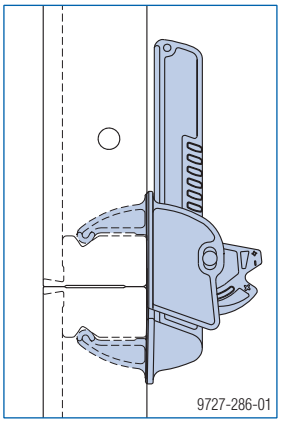
with Framax multi-function clamp



Framax multi-function clamp:
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 2.02 kip (9.0 kN)
Permitted moment: 0.66 kip-ft (0.9 kNm)
Values apply only when mounted on profile.

Particularly with stacking joints, 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.

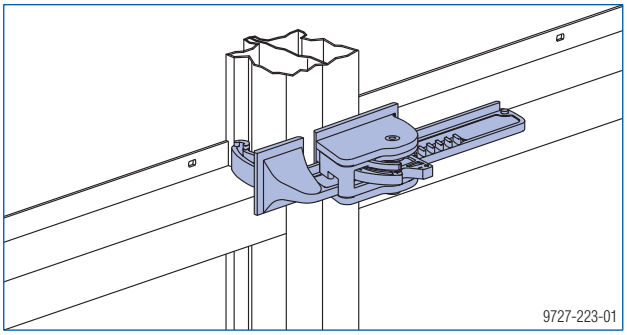




A Bearing surface on the profile

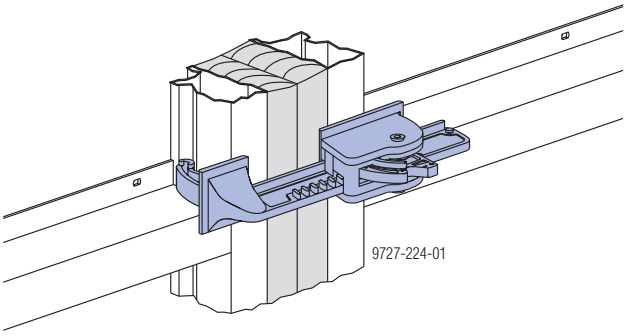
More functions

Inter-panel connections



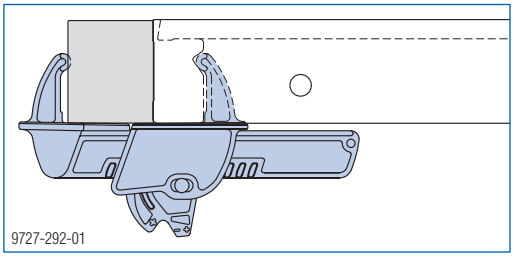
Joining the panels using the Framax multi-function clamp provides additional bracing of the gang-form (as the clamp bears directly onto the profile).

Filler joints up to 6" (15 cm)

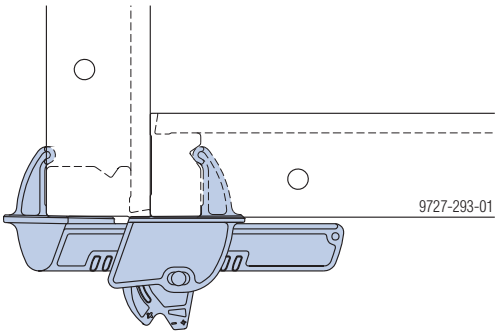


With its 6" (15 cm) clamping range, the Framax multi-function clamp matches the panel size-grid exactly.
For more information, see 'Length adjustment using fillers'.

Timber joints up to 8" (20 cm)



Corner joints on footings

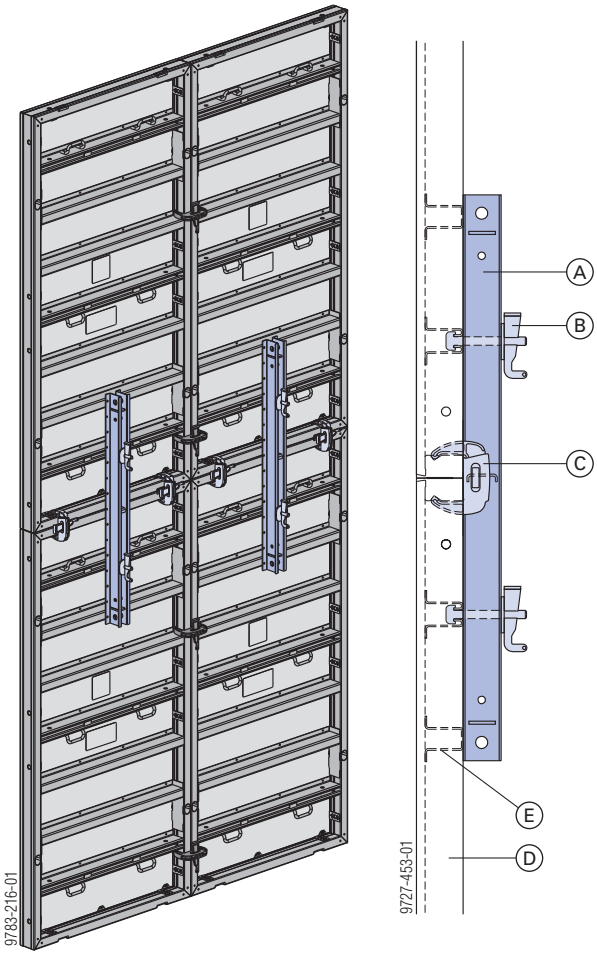


N° of Framax multi-function clamps used as corner connectors on footings:

Panel height	N° of Framax multi-function clamps
max. 1.35 m	2

Bracing the gangs

Framax universal waling



A	Framax S universal waling 1.50m
B	Framax wedge clamp
C	Framax quick-acting clamp RU
D	Framax S Xlife panel
E	Cross profile as bearing surface for universal waling

On **job-built fillers**, 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 **stacking configurations**. This makes it possible to pick up and set down large gang-forms by crane with no problems. The additional universal walings are also useful for transferring the loads from platforms.

Note:

Instead of the universal waling, it is also possible to use a Multi-purpose waling WS10 Top50.

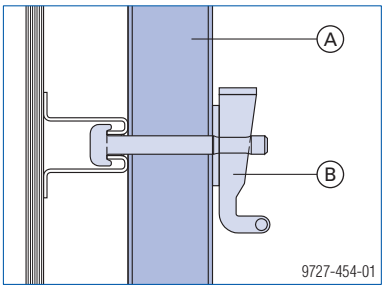
Framax S universal waling:

Permitted moment (for vertical stacking): 3.7 kip-ft (5.0 kNm)

Due to the permitted tensile load of 3.15 kip (14 kN) in the waling profile, even stiffer components such as Multi-purpose walings WS10 Top50 are also subject to:
permitted moment 3.7 kip-ft (5.0 kNm)

Fixing methods

with Framax wedge clamp

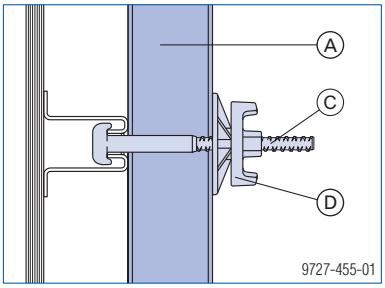


A	Framax S universal waling
B	Framax wedge clamp

NOTICE

Do not oil or grease wedge-clamped joints.

with Framax universal fixing bolt and Super plate



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

Vertical stacking of panels

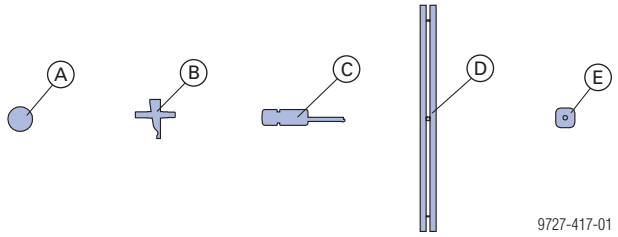
Positions of the interconnecting and form-tie components and accessories needed for:

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

Framax quick-acting clamp RU:
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 1.35 kip (6.0 kN)
Permitted moment: 0.37 kip-ft (0.5 kNm)

Framax multi-function clamp:
Permitted tensile force: 3.37 kip (15.0 kN)
Permitted shear force: 2.02 kip (9.0 kN)
Permitted moment: 0.66 kip-ft (0.9 kNm)
Values apply only when mounted on profile.

Framax S universal waling:
Permitted moment (for vertical stacking): 3.7 kip-ft (5.0 kNm)
Due to the permitted tensile load of 3.15 kip (14 kN) in the waling profile, even stiffer components such as Multi-purpose walings WS10 Top50 are also subject to:
permitted moment 3.7 kip-ft (5.0 kNm)



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

NOTICE

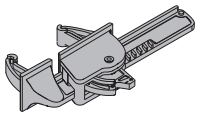
The values and information stated here apply to **standard gang-forms**:

- Standard gang-forms are gang-forms consisting entirely of **panels with widths of 0.30 m to 1.35 m**.
- Examples of gang-forms containing extra-large panels (e.g. with widths of 2.40 m and 2.70 m) are illustrated on the following pages.

For detailed planning, we recommend using Tipos-Doka.

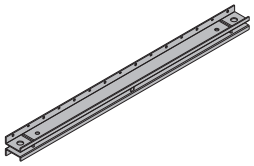
with Framax multi-function clamp

Number of clamps at each vertically stacked panel joint



Panel width	Number of clamps
0.30 m	1
0.45 m	1
0.60 m	2
0.75 m	2
0.90 m	2
1.05 m	2
1.35 m	2

N° of universal walings at each vertically stacked panel joint



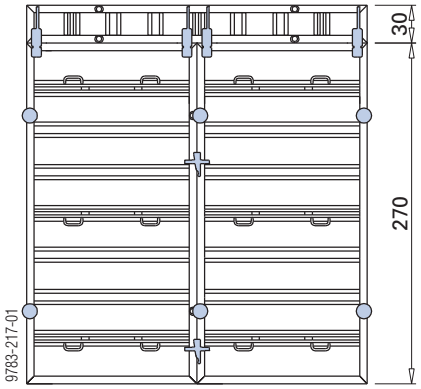
Formwork heights of over 13’-4" (4.05 m) and up to 17’-9" (5.40 m):

- Per 1.35 m of gang-form width: 1 universal waling
- Exception:
  - Horizontal panel placed at top of gang: no universal waling
  - All other horizontal panels: only 1 universal waling per 2.70 m of gang-form width

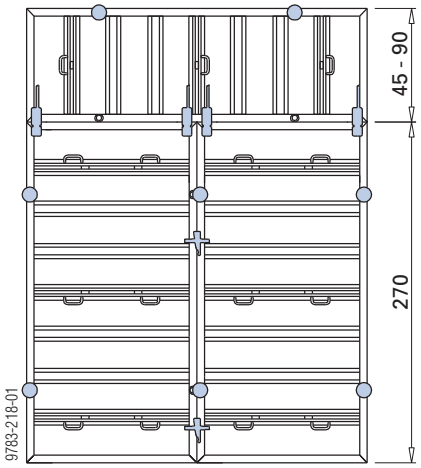
Formwork heights of up to 26’-7" (8.10 m):

- Per 1.35 m of gang-form width: 1 universal waling
- Exception:
  - Horizontal panel placed at top of gang: only 1 universal waling per 2.70 m of gang-form width.

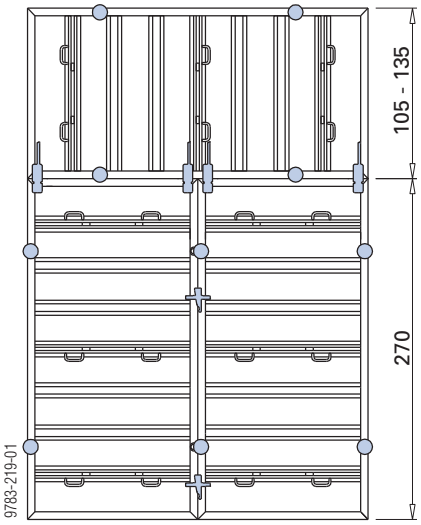
Formwork height: 9’-10" (300 cm)



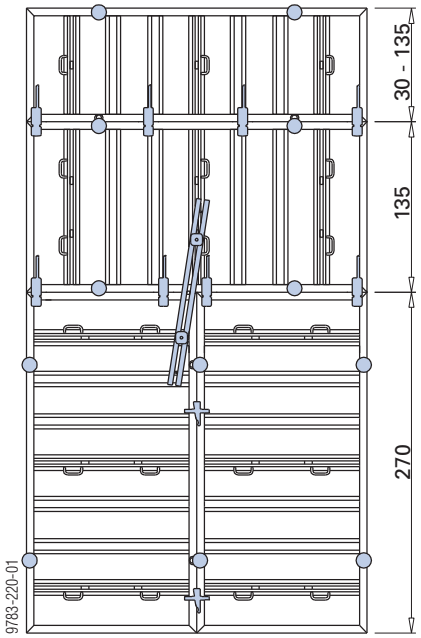
Formwork height: 10’-4" to 11’-10" (315 to 360 cm)



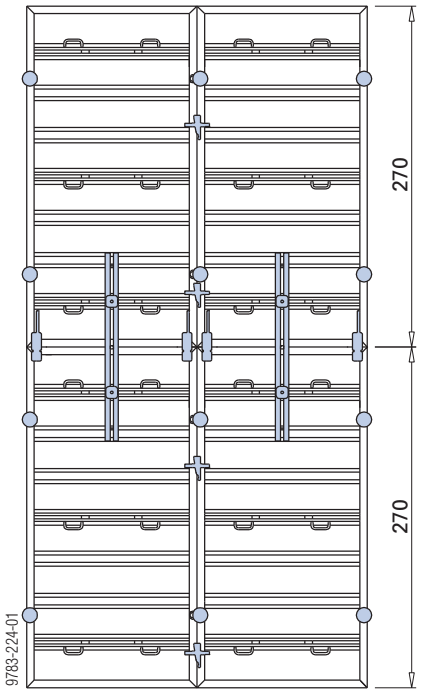
Formwork height: 12’-4" to 13’-4" (375 to 405 cm)



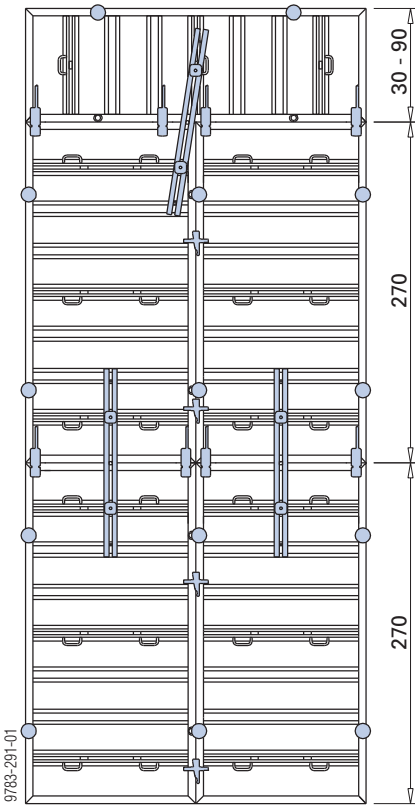
Formwork height: 14’-3" to 17’-9" (435 to 540 cm)



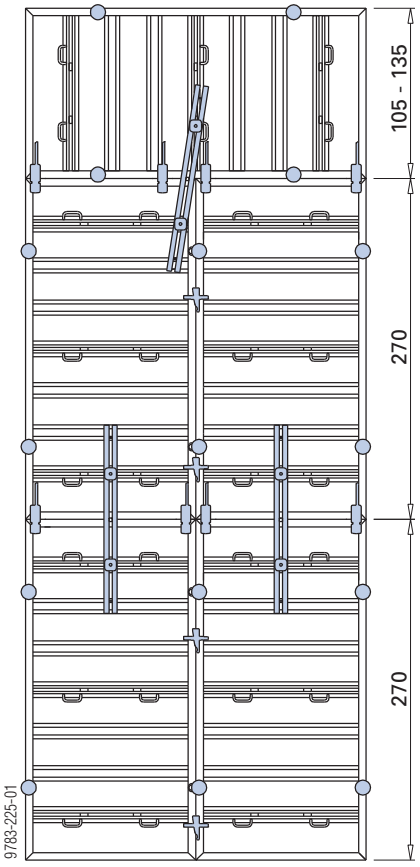
Formwork height: 17’-9" (540 cm)



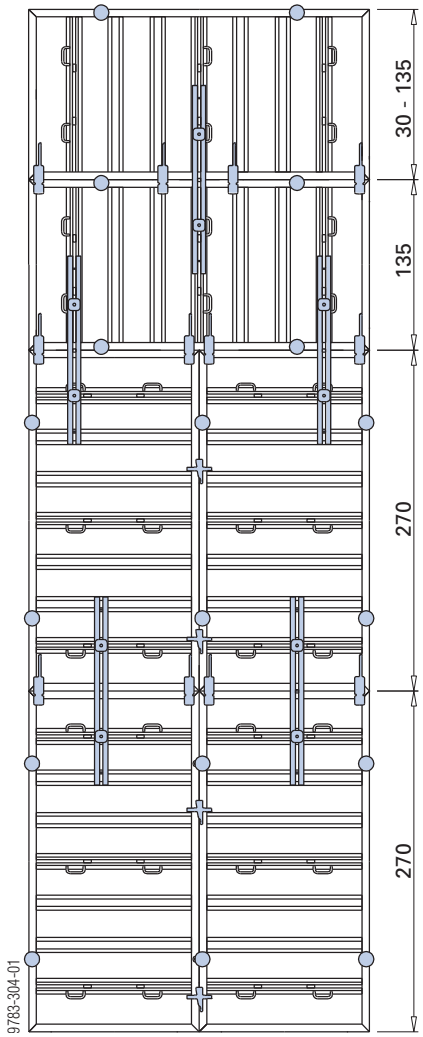
Formwork height: 18’-8" to 20’-8" (570 to 630 cm)



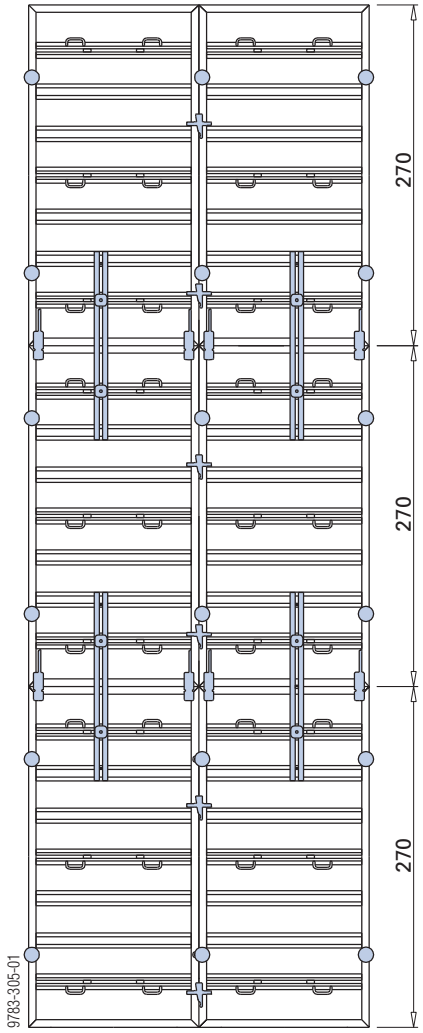
Formwork height: 21’-2" to 22’-2" (645 to 675 cm)



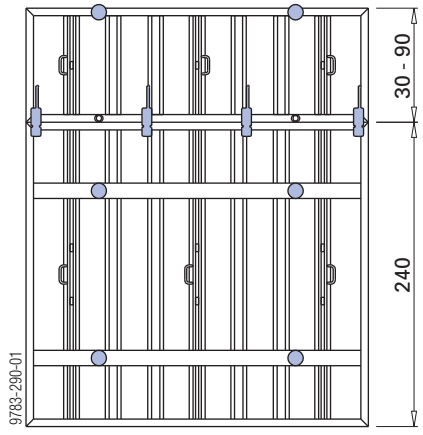
Formwork height: 23’-1" to 26’-7" (705 to 810 cm)



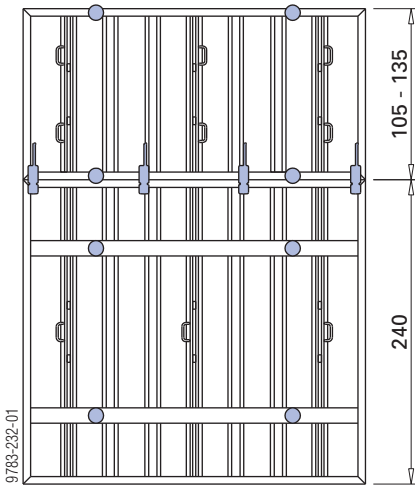
Formwork height: 26’-7" (810 cm)



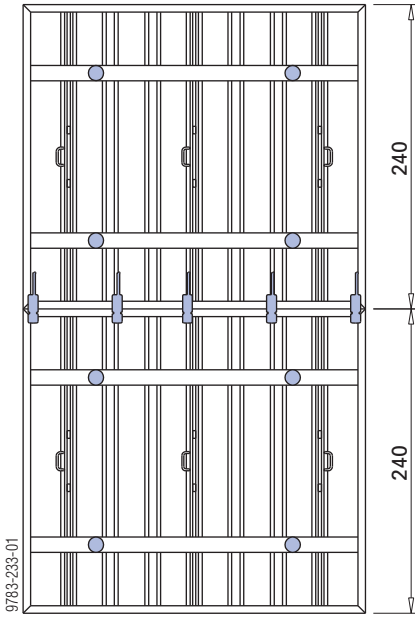
Formwork height: 8’-10" to 10’-10" (270 to 330 cm)



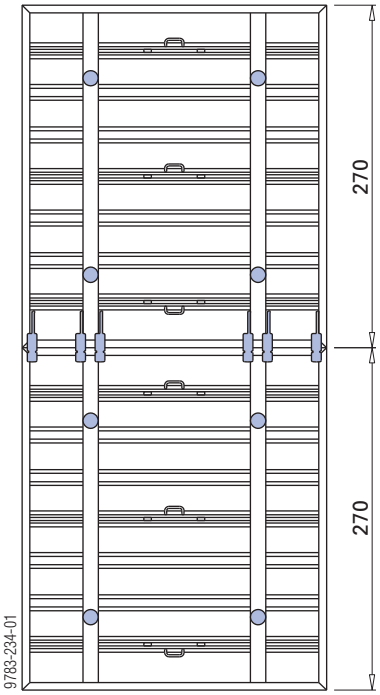
Formwork height: 11’-4" to 12’-4" (345 to 375 cm)



Formwork height: 15’-9" (480 cm)

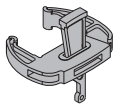


Formwork height: 17’-9" (540 cm)



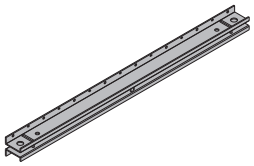
with Framax quick-acting clamp RU

Number of clamps at each vertically stacked panel joint



Panel width	Number of clamps
0.30 m	1
0.45 m	1
0.60 m	2
0.75 m	2
0.90 m	2
1.05 m	2
1.35 m	2

N° of universal walings at each vertically stacked panel joint



Gang-form with pouring platform

Formwork heights of up to 26’-7" (8.10 m):

- Per 1.35 m of gang-form width: 1 universal waling
  Exception:
  - Horizontal panel placed at top of gang:
    only 1 universal waling per 2.70 m of gang-form width.

Gang-form without pouring platform

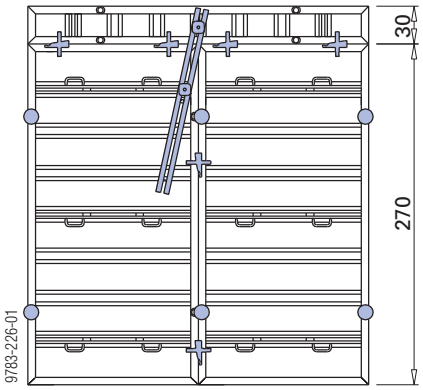
Formwork heights of over 12’-4" (3.75 m) and up to 17’-9" (5.40 m):

- Per 1.35 m of gang-form width: 1 universal waling
  Exception:
  - Up to 0.60 m wide horizontal panel placed at top of gang:
    no universal waling.
  - Over 0.60 m wide horizontal panel placed at top of gang:
    only 1 universal waling per 2.70 m of gang-form width

Formwork heights of up to 26’-7" (8.10 m):

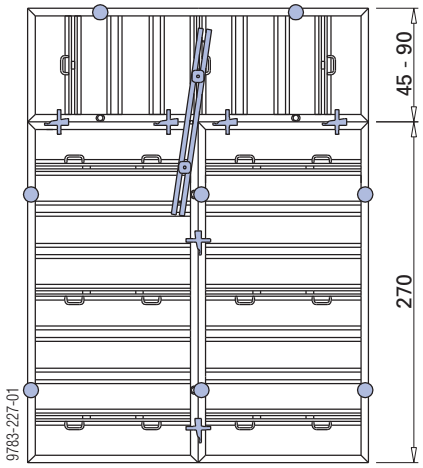
- Per 1.35 m of gang-form width: 1 universal waling
  Exception:
  - Up to 0.90 m wide horizontal panel placed at top of gang:
    only 1 universal waling per 2.70 m of gang-form width

Formwork height: 9’-10" (300 cm)



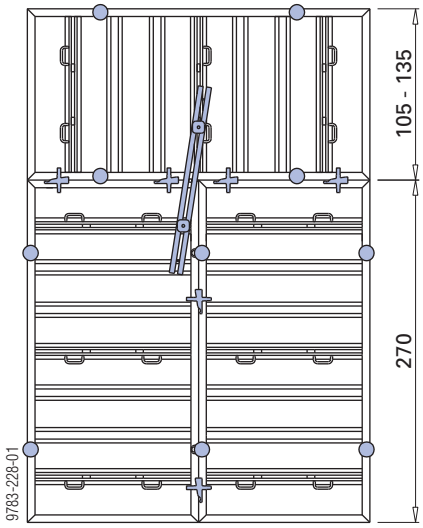
Universal waling only needed if pouring platforms are to be used.

Formwork height: 10’-4" to 11’-10" (315 to 360 cm)

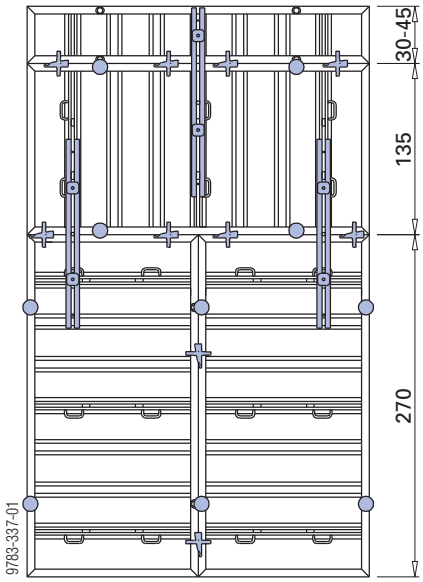


Universal waling only needed if pouring platforms are to be used.

Formwork height: 12’-4" to 13’-4" (375 to 405 cm)

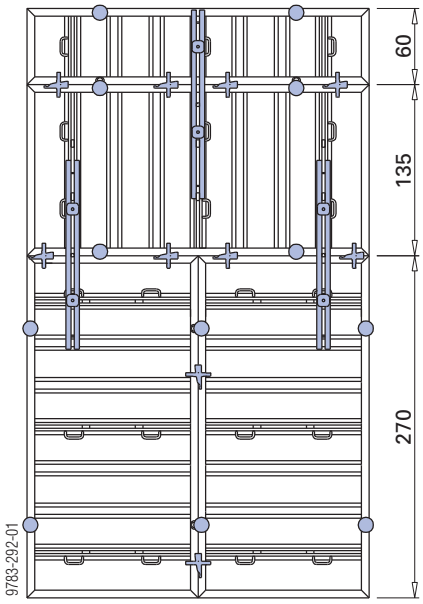


Formwork height: 14’-3" to 14’-9" (435 to 450 cm)



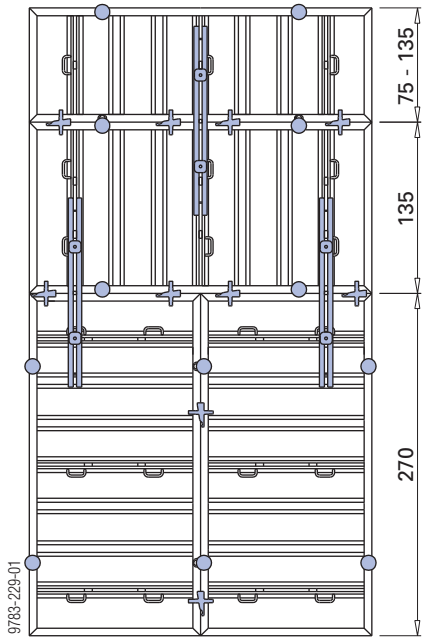
Universal waling on topmost horizontal panel is needed only if pouring platforms are to be used.

Formwork height: 15’-3" (465 cm)

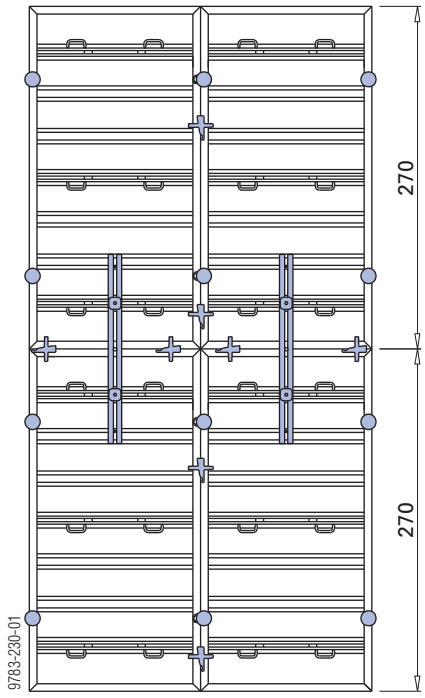


Universal waling on topmost horizontal panel is needed only if pouring platforms are to be used.

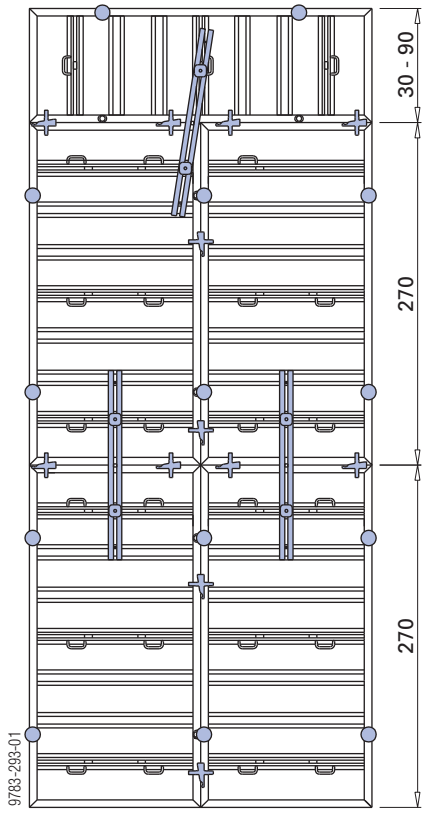
Formwork height: 15’-9" to 17’-9" (480 to 540 cm)



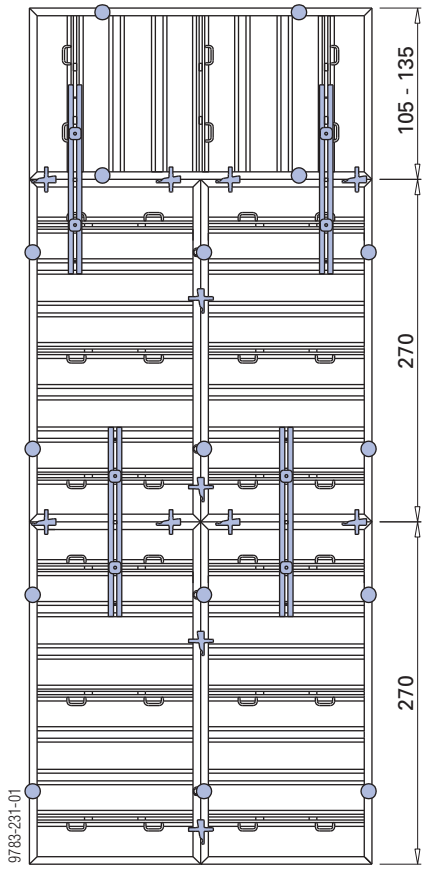
Formwork height: 17’-9" (540 cm)



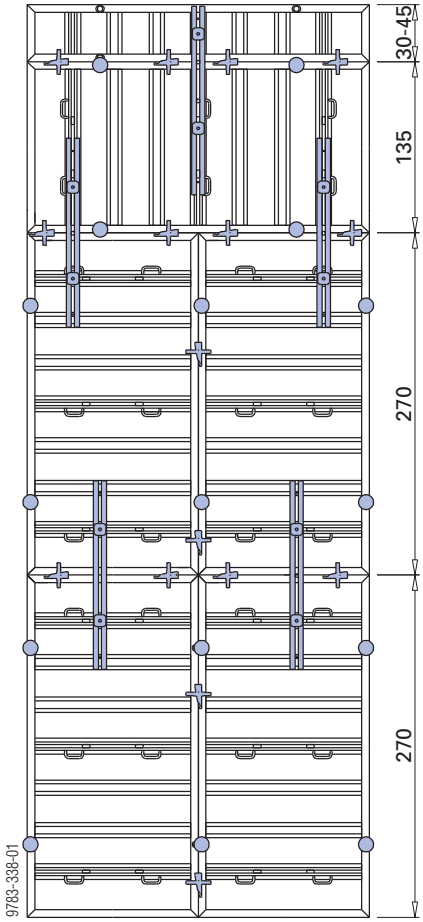
Formwork height: 18’-8" to 20’-8" (570 to 630 cm)



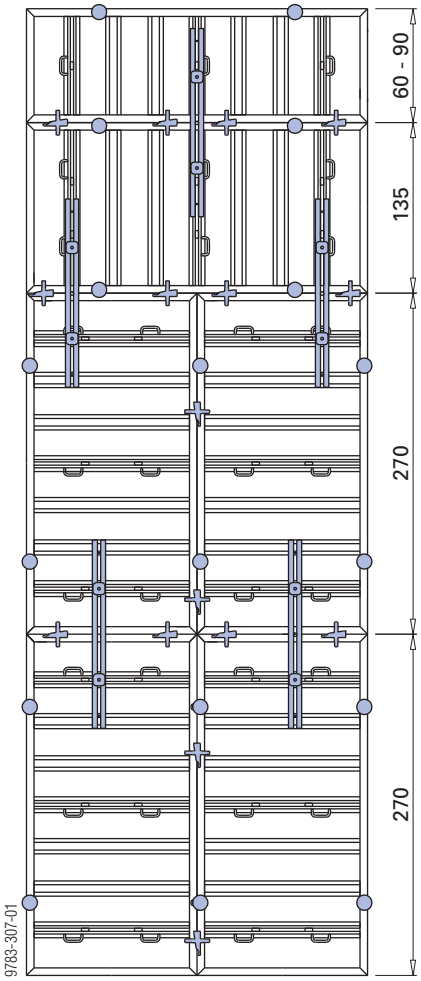
Formwork height: 21’-2" to 22’-2" (645 to 675 cm)



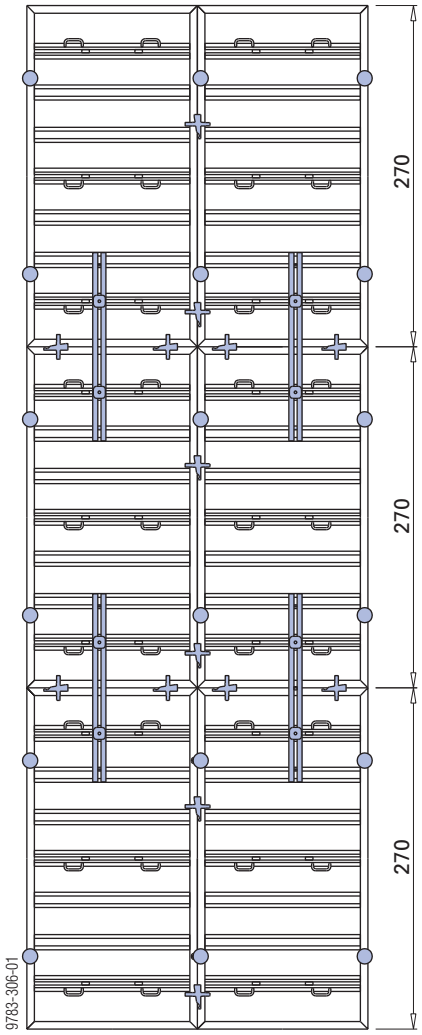
Formwork height: 23’-1" to 23’-7" (705 to 720 cm)



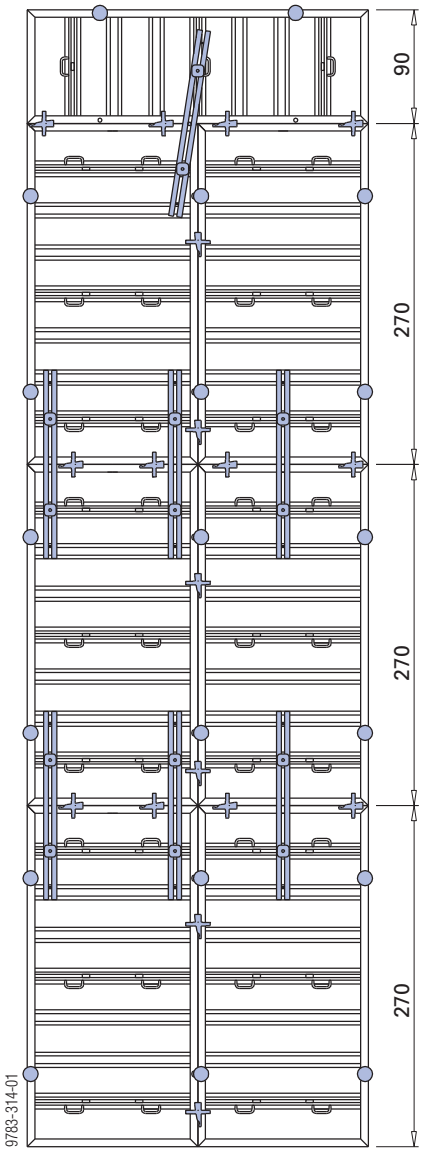
Formwork height: 24’-1" to 25’-1" (735 to 765 cm)



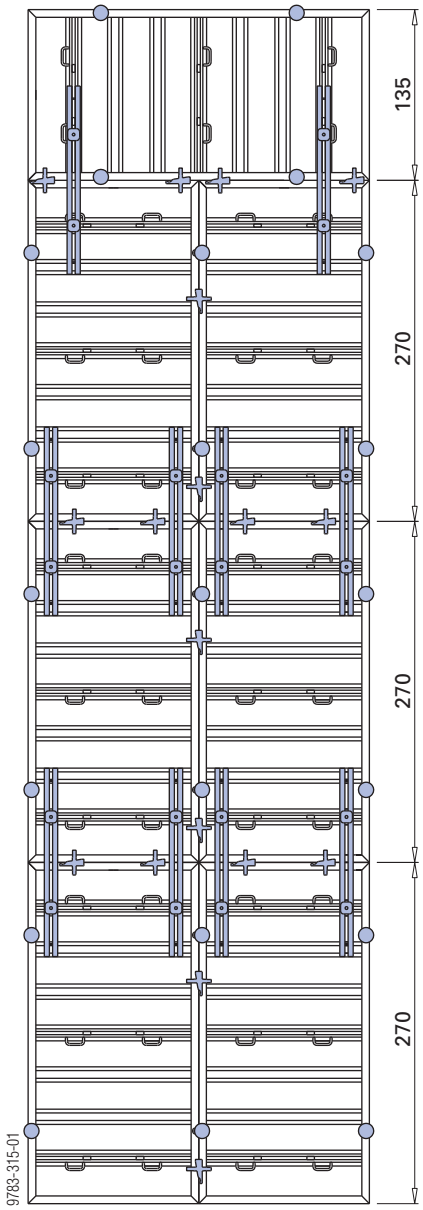
Formwork height: 26’-7" (810 cm)



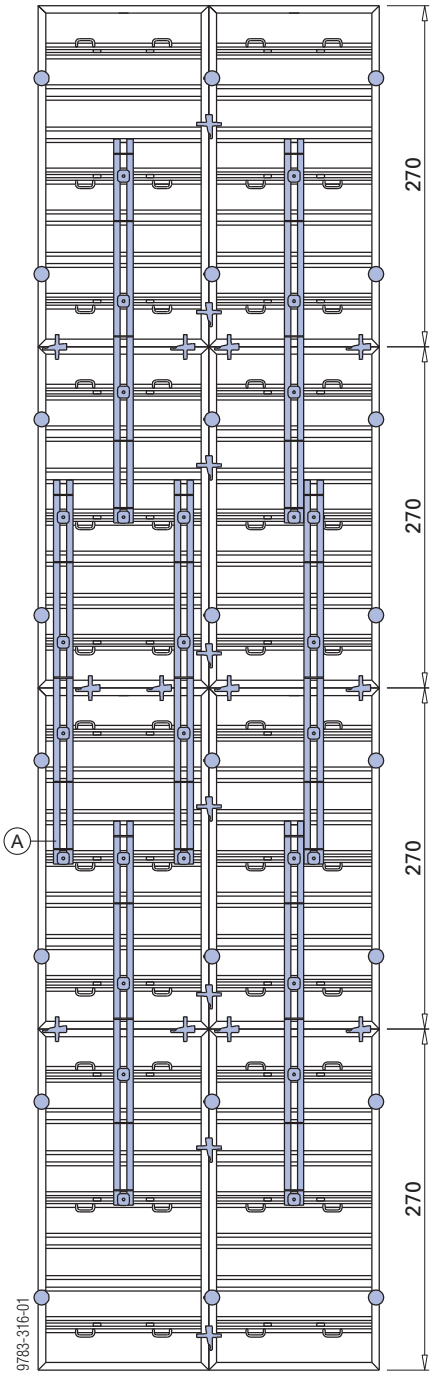
Formwork height: 29’-6" (900 cm)



Formwork height: 31’-0" (945 cm)

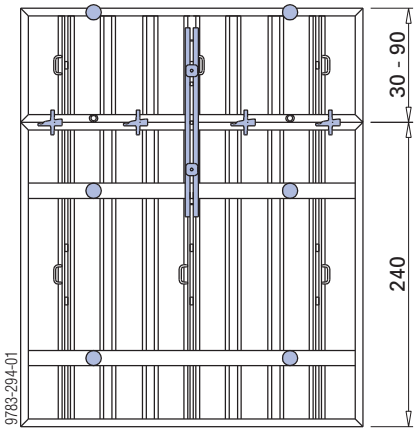


Formwork height: 35’-5" (1080 cm)



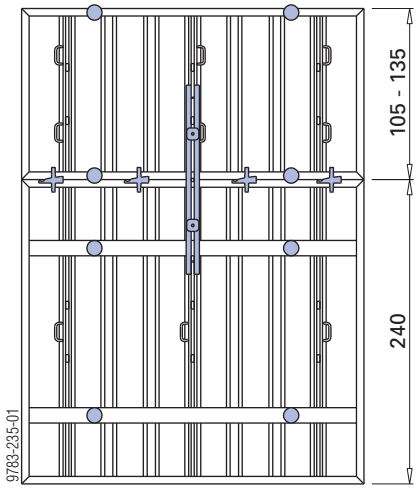
A Multi-purpose waling WS10 Top50 10’-0" (300 cm)

Formwork height: 8’-10" to 10’-10" (270 to 330 cm)

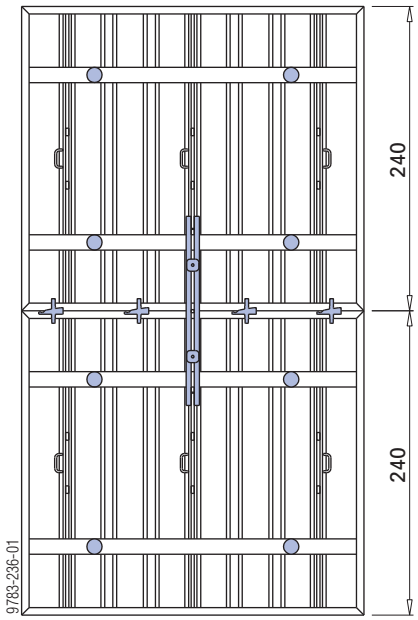


Universal waling only needed if pouring platforms are to be used.

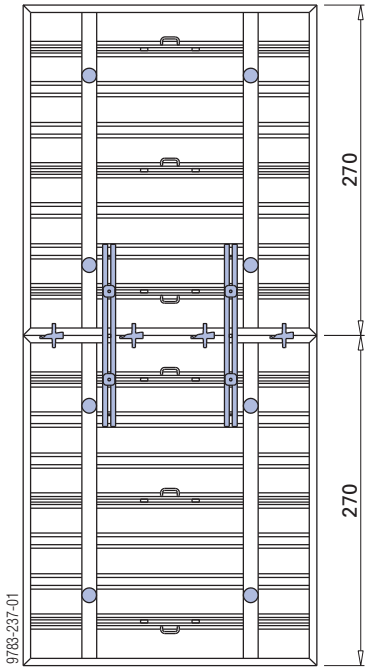
Formwork height: 11’-4" to 12’-4" (345 to 375 cm)



Formwork height: 15’-9" (480 cm)

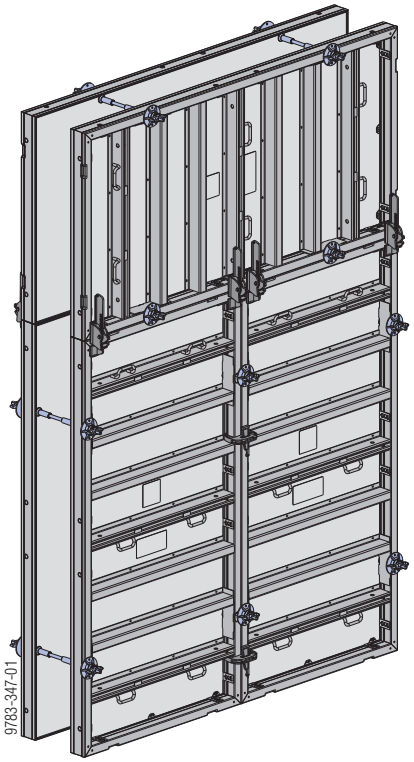


Formwork height: 17’-9" (540 cm)



Tie-rod system using Super-plates 20.0 B

Tying the panels in the frame profile



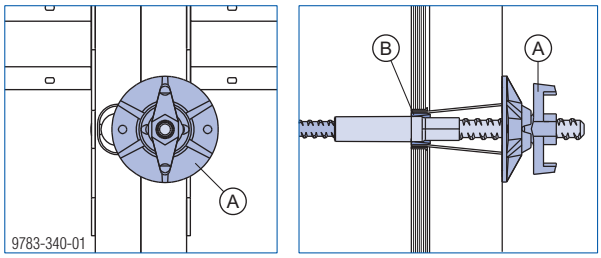
The basic rule is:

Place a form tie in every form-tie hole that is not covered by a Super plate (e.g. at a panel joint, only tie one of the two adjoining panels).

If the tie rod system is used with Super plates 20.0 B, a reducer sleeve must be fitted in every form-tie hole.

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

For exceptions, see the sections headed 'Length adjustment using fillers' and 'Vertical stacking'.



A Super plate 20.0 B
B Reducer sleeve

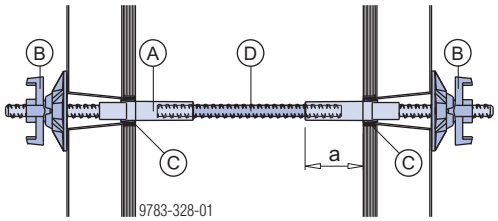
WARNING
Sensitive rod steel!
- Never weld or heat tie rods.
- Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.

Note:
Close off any unneeded form-tie sleeves with **Framax S frame hole plugs 44**.

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'.

She-bolt system 7/8" [20.0mm]



a ... 4" (10.2 cm)

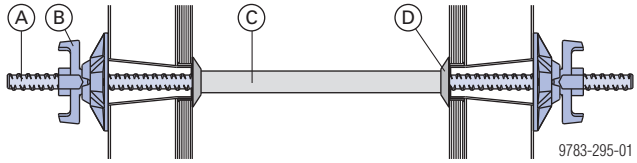
A She-bolt 20.0mm x 13"
B Super plate 20.0 B
C Reducer sleeve
D Coil rod 1" or Tie rod 20.0

Required length of she-bolt:

	She-bolt 20.0mm x
Tie fixed directly on frame profile	**13"**
Tie passes through universal waling	**20"**
Special applications	**24"**

She-bolt system 7/8" [20.0mm]:
Permitted capacity allowing a 2 : 1 factor of safety against failure:
37500 lbs (166 kN)

The Doka form-tie system 20.0



A	Tie-rod 20.0mm
B	Super-plate 20.0 B
C	Plastic tube 26mm
D	Framax S universal cone 1"

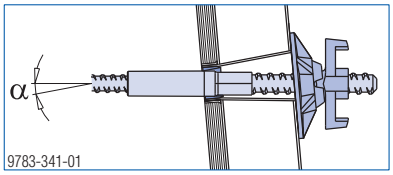
Note:
The "Plastic tubes 26mm" left behind in the concrete are closed off with **"Plugs 26mm"**.

Tie-rod 20.0mm:
Permitted capacity, allowing a 2 : 1 factor of safety: 38,000 lbs (169 kN)

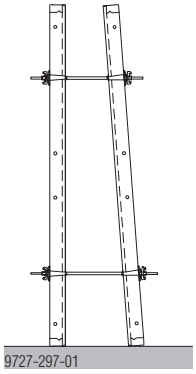
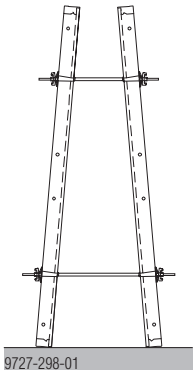
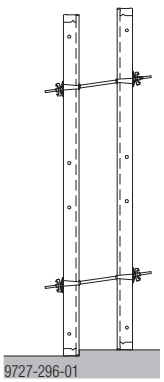
Spanner for tie-rod 15.0/20.0
For turning and holding the tie-rods.

Sloping ties on height-mismatched panels

Thanks to their large, conical form-tie sleeves, the panels can be inclined on one or both sides, and/or height-mismatched.



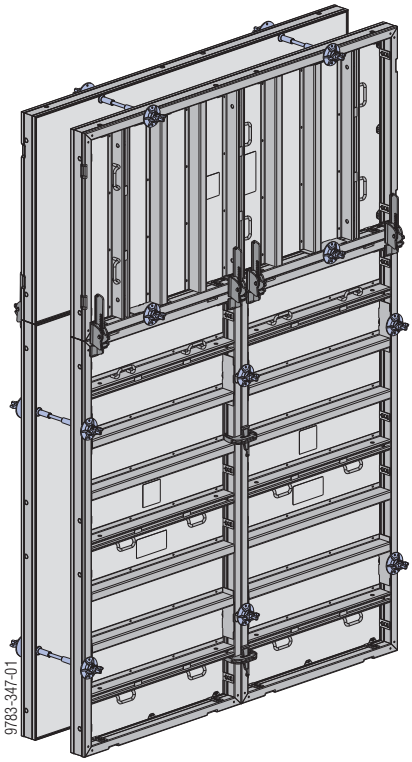
α ... max. 5° (on diam. 1 ¼" tie-rods)
... max. 8° (on diam. 1" tie-rods)

Conical on one side	Conical on both sides	Height mismatch
She-bolt: max. 5° Form-tie system 20.0: max. 8°	She-bolt: max. 2 x 5° Form-tie system 20.0: max. 2 x 8°	max. 1" per 10" of wall thickness
		
9727-297-01	9727-298-01	9727-296-01

Note:
Secure inclined panels against uplift.
Inclined and height-mismatched positioning are not possible with panels that have been placed on their sides (horizontally).

Tie-rod system using anchor-plates

Tying the panels in the frame profile

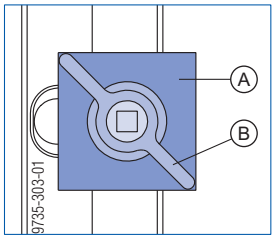


The basic rule is:

Place a form tie in every form-tie hole that is not covered by a flat washer (e.g. at a panel joint, only tie one of the two adjoining panels).

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

For exceptions, see the sections headed 'Length adjustment using fillers' and 'Vertical stacking'.



A Flat washer, min. 5" x 5" (12 x 12 cm)
B Wing nut

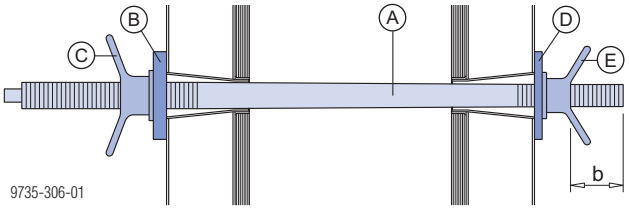
WARNING
Sensitive rod steel!
- ➤ Never weld or heat tie rods.
- ➤ Tie rods that are damaged or have been weakened by corrosion or wear must be withdrawn from use.

Note:
Close off any unneeded form-tie sleeves with **Framax S frame hole plugs 44**.

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'.

Taper-tie system 1 1/2" to 1 1/4"

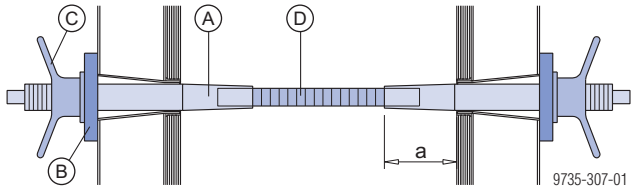


A Taper tie 1 1/2" to 1 1/4"
B Flat washer 1 1/2"
C Wing nut 1 1/2"
D Flat washer 1 1/4"
E Wing nut 1 1/4"

Wall thickness	Size of tie rod	Dimension 'b'
8 1/2" to 11 1/2" (21.6 to 29.2 cm)	36"	4 1/4" (10.8 cm)
11 1/2" to 14 1/2" (29.2 to 36.8 cm)		1 1/4" (3.2 cm)
14 1/2" to 17 1/2" (36.8 to 44.5 cm)	42"	4 1/4" (10.8 cm)
17 1/2" to 20 1/2" (44.5 cm to 52.1 cm)		1 1/4" (3.2 cm)
20 1/2" to 23 1/2" (52.1 to 59.7 cm)	48"	4 1/4" (10.8 cm)
23 1/2" to 26 1/2" (59.7 to 67.3 cm		1 1/4" (3.2 cm)
26 1/2" to 29 1/2" (67.3 to 75.0 cm)	54"	4 1/4" (10.8 cm)
29 1/2" to 32 1/2" (75.0 to 82.6 cm		1 1/4" (3.2 cm)
32 1/2" to 35 1/2" (82.6 to 90.2 cm)	60"	4 1/4" (10.8 cm)
35 1/2" to 38 1/2" (90.2 to 97.8 cm)		1 1/4" (3.2 cm)
38 1/2" to 41 1/2" (97.8 to 105.4 cm)	66"	4 1/4" (10.8 cm)
41 1/2" to 44 1/2" (105.4 to 113.0 cm)		1 1/4" (3.2 cm)
44 1/2" to 47 1/2" (113.0 to 120.7 cm)	72"	4 1/4" (10.8 cm)
47 1/2" to 50 1/2" (120.7 to 128.3 cm)		1 1/4" (3.2 cm)
50 1/2" to 53 1/2" (128.3 to 135.9 cm)	78"	4 1/4" (10.8 cm)
53 1/2" to 56 1/2" (135.9 to 143.5 cm)		1 1/4" (3.2 cm)

Taper tie 1 1/2" to 1 1/4"
Permitted capacity allowing a 2 : 1 factor of safety against failure:
50000 lbs (222 kN)

She-bolt system 1 1/2"



a ... 4" (10.2 cm)

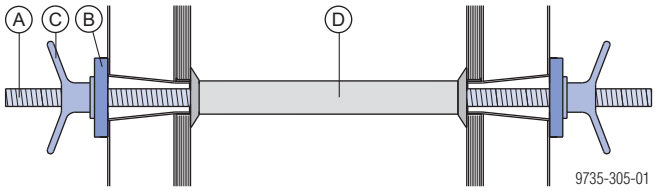
A She-bolt 1 1/2"
B Anchor plate 1 1/2"
C Wing nut 1 1/2"
D Coil rod 1"

Required length of she-bolt:

	She-bolt
Tie fixed directly on frame profile	1 1/2"x**14"**
Tie passes through universal waling	1 1/2"x**20"**

She-bolt system 1 1/2":
Permitted capacity allowing a 2 : 1 factor of safety against failure: 37,500 lbs (166 kN)

Coil rod system 1"

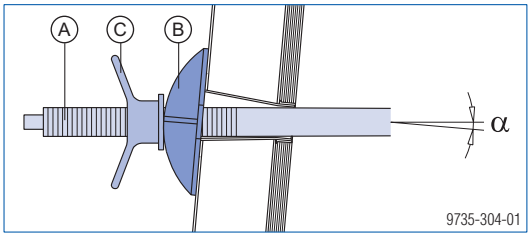


A Coil rod 1"
B Anchor plate 1"
C Wing nut 1"
D Plastic tube

Coil rod 1"
Permitted capacity allowing a 2 : 1 factor of safety against failure: 37,500 lbs(166 kN)

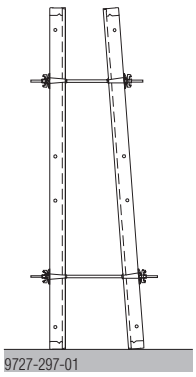
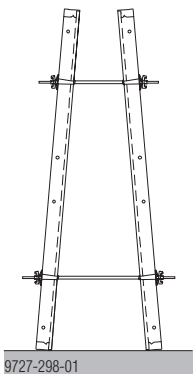
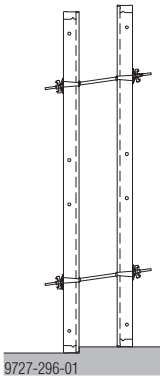
Sloping ties on height-mismatched panels

Thanks to their large, conical form-tie sleeves, the panels can be inclined on one or both sides, and/or height-mismatched.



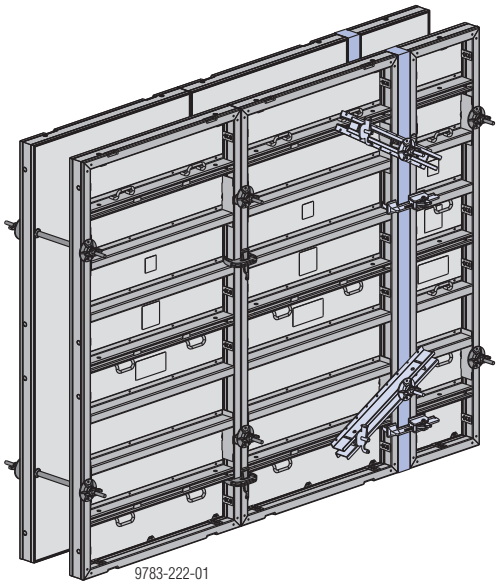
α ... max. 5° (on form-ties of diam 1 $^1/_2$")
... max. 8° (on form-ties of diam 1 $^1/_4$")

A She-bolt or taper tie
B Angle anchor plate
C Wing nut

Conical on one side	Conical on both sides	Height mismatch
She-bolt: max. 5° Taper tie (small end): max. 8° Form-tie system 20.0: max. 8°	max. 2 x 5° Taper tie (small end): max. 8° Taper tie (large end): max. 5° Form-tie system 20.0: max. 2 x 8°	max. 1" per 10" of wall thickness
 9727-297-01	 9727-298-01	 9727-296-01

Note:
Secure inclined panels against uplift.
Inclined and height-mismatched positioning are not possible with panels that have been placed on their sides (horizontally).

Length adjustment using fillers

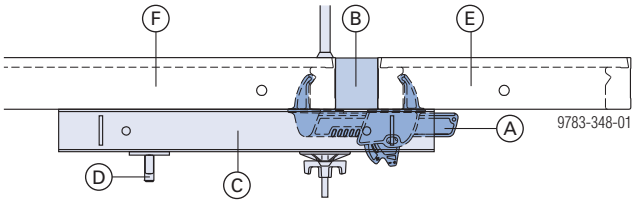


Framax S universal waling:
Permitted moment: 3.85 kip-ft (5.2 kNm)

Filler widths: 0 - 6" (0 - 15 cm)

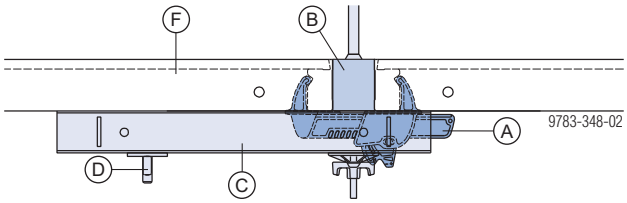
with Framax multi-function clamp

Tying through frame profile



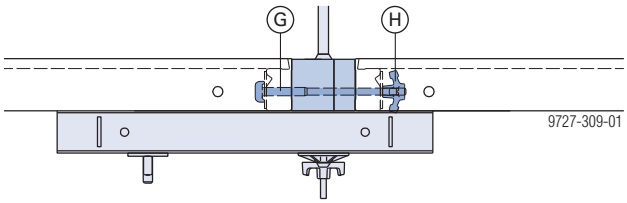
A Framax multi-function clamp
B Fitting-timber
C Framax S universal waling
D Framax wedge clamp
E Framax S Xlife panel (max. width 60cm)
F Framax S Xlife panel

Tying through fitting-timber



A Framax multi-function clamp
B Fitting-timber
C Framax S universal waling
D Framax wedge clamp
F Framax S Xlife panel

with Framax universal fixing bolt



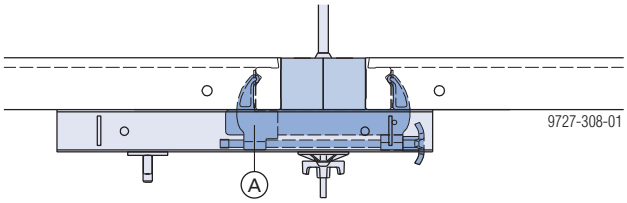
G Framax universal fixing bolt
H Star grip nut 15.0 G

NOTICE
3 universal fixing bolts are needed for every 2.70 m of panel height.

	Filler zone
Framax universal fixing bolt 10-16cm	0 to 2 3/8" (0 to 6 cm)
Framax universal fixing bolt 10-25cm	0 to 6" (0 to 15 cm)

Filler widths: 0 - 8" (0 - 20 cm)

with Framax adjustable clamp



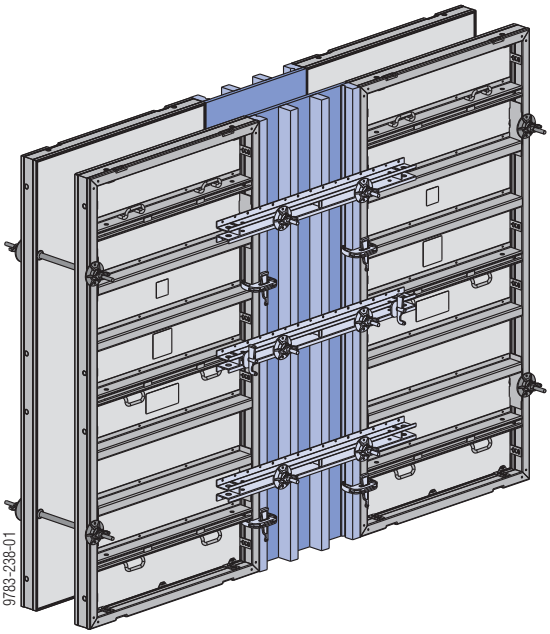
A Framax adjustable clamp

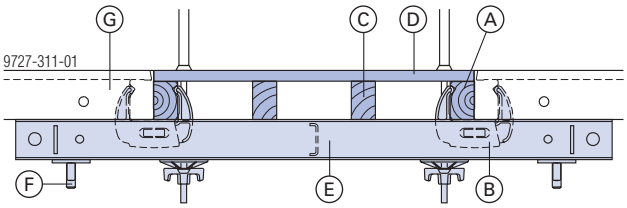
Note:
Fit the Framax adjustable clamp in the same position as the Framax multi-function clamp.

Framax adjustable clamp:
Permitted tensile force: 2.25 kip (10.0 kN)

Filler widths: 7" - 30" (17 - 80 cm)

with molded timbers and formwork sheeting





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

	Filler zone
Framax S universal waling 0.90m	0 to 12" (0 to 30 cm)
Framax S universal waling 1.50m	0 to 30" (0 to 80 cm)

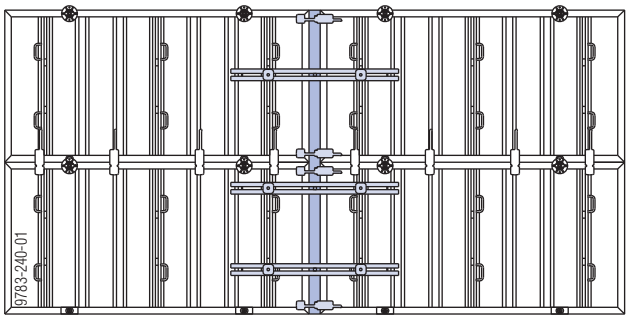
Tying the panels:

Filler widths <12” (30 cm): Place 1 tie through the filler in the top universal waling, and 1 in the bottom universal waling.

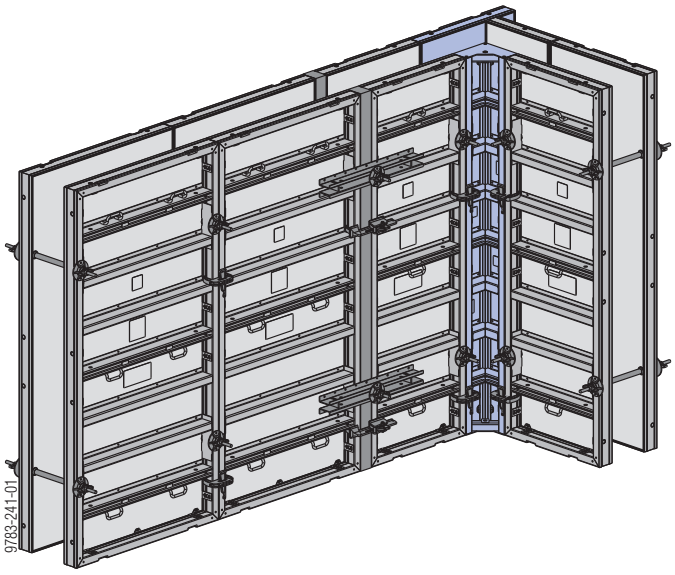
Filler widths >12" (30 cm): Place two ties in each of the 3 universal walings (per 2.70 m formwork height.

A tension anchor can be made using a tie rod and Star grip nut 15.0 G.

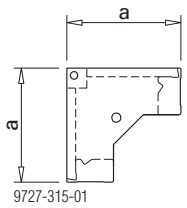
Fillers on horizontal panels



90 degree corners



The corner solutions are based on the strong, torsion-proof **Framax Xlife inside corner**.



a ... 12" (30.5 cm)
The hole drilled in the inside corner enables a vertical stacking connection to be made using universal fixing bolts + super-plates.

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

- with Framax Xlife universal panels
- with Framax outside corners

Note:

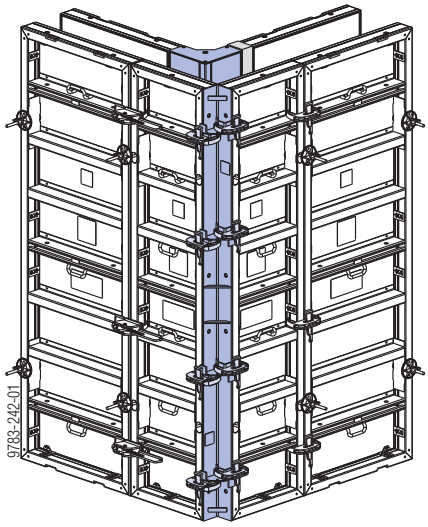
For details regarding extra clamps on outside corners (for increased tensile loads) see 'Inter-panel connections for increased tensile loads'.

NOTICE

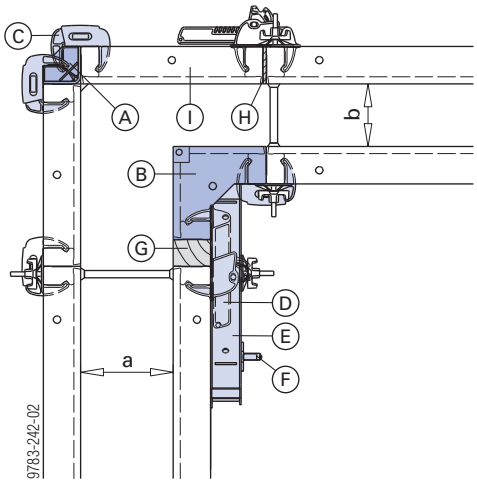
Do not oil or grease wedge-clamped joints.

with Framax outside corners

The Framax outside corner is used in e.g. narrow trench situations.



Wall thicknesses up to 12" (30.5 cm)

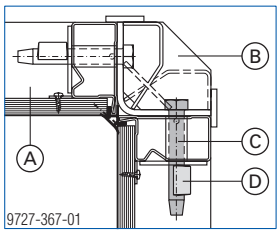


a ... 12" (30.5 cm)
b ... 8" (20.3 cm)

A	Framax outside corner
B	Framax S Xlife inside corner
C	Framax quick-acting clamp RU
D	Framax multi-function clamp
E	Framax S universal waling
F	Framax wedge clamp
G	Fitting-timber 3 $^1/_2$" (9 cm)
H	Fitting-timber $^1/_2$" (1.3 cm)
I	Framax S Xlife panel 0.60m

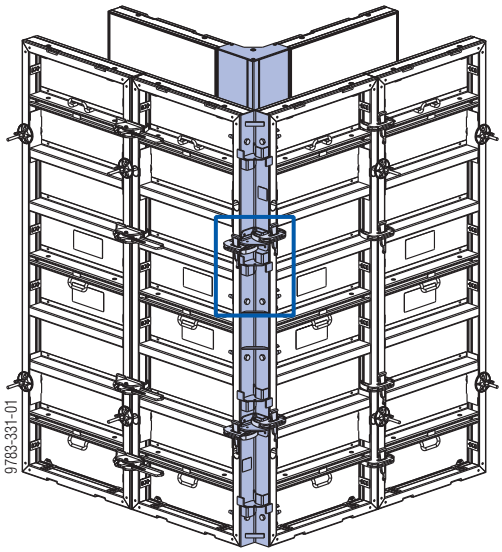
Where there is a **filler on both sides** of the inside corner, the **universal corner waling** is an economical way of providing stiffening reinforcement.

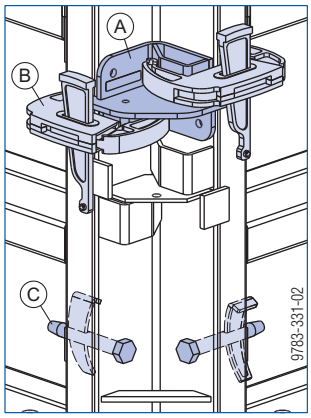
Wall thicknesses > 12" (30.5 cm) and up to 24" (60 cm)



A Framax S Xlife panel
B Framax outside corner
C Framax wedge bolt RA 7.5
D Framax tensioning wedge R

Wall thicknesses > 24" (60 cm) and up to 41" (104.5 cm)





A Framax S corner clamp
B Framax quick-acting clamp RU
C Framax wedge bolt RA 7.5 + Framax tensioning wedge R

Required number of connectors for different wall thicknesses

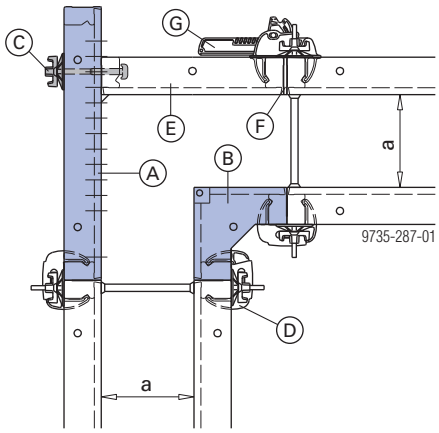
Wall thickness	Height of outside corner	Quick-acting clamp RU	Tensioning wedge	Wedge bolt	Corner clamp
up to 12" (30.5 cm)	1.35m	4			
	2.70m	8			
>12" to 24" (>30.5 to 60 cm)	1.35m		4	4	
	2.70m		8	8	
>24" to 41" (>60 to 104.5 cm)	1.35m	2	4	4	1
	2.70m	4	8	8	2

with Framax Xlife universal panels

The continuous 2" (5.1 cm) hole-grid makes it possible to form corner configurations on walls of up to 30" (76.2 cm) thick.

Attainable wall thicknesses in a 2" (5.1 cm) grid:

Framax S Xlife universal panel 0.90m	2" to 16" (5.1 to 40.6 cm)
Framax S Xlife universal panel 1.22m	2" to 30" (5.1 to 76.2 cm)



a ... 12" (30.5 cm)

A Framax S Xlife universal panel
B Framax S Xlife inside corner
C Framax universal fixing bolt + Super-plate 15.0
D Framax quick-acting clamp RU
E Framax S Xlife panel 0.60m
F Fitting-timber $^3/_8$" (1 cm)
G Framax multi-function clamp

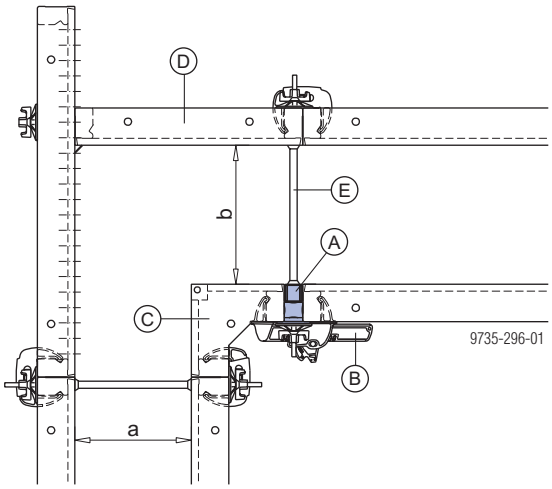
Required numbers of Universal fixing bolts + Super-plates 15.0:

Universal panel 0.90m	2 of each
Universal panel 1.35m	2 of each
Universal panel 2.70m	4 of each

Framax steel filler 6cm

Used mainly in corner zones, the Framax steel filler 6cm stands out for its high strength and long lifespan.

Steel filler - **inside**	e.g. wall thickness 15" (38.5 cm) and 21" (53.5 cm)
Steel filler - **outside**	e.g. wall thickness 20" (50.5 cm) and 26" (65.5 cm)



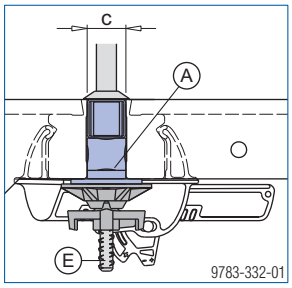
a ... 15" (38.5 cm)
b ... 18" (46 cm)

NOTICE

Always locate ties in the steel filler.

Note:

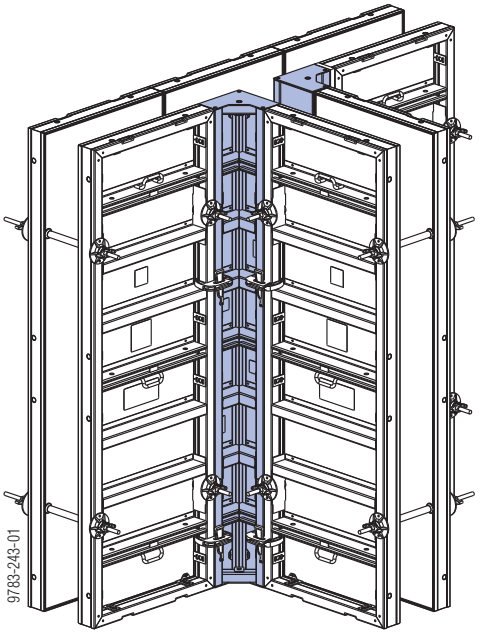
When steel fillers are used, no universal walings are needed.

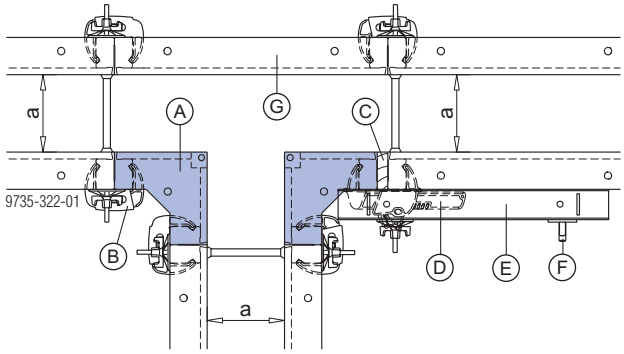


c ... 2 $^1/_2$" (6.0 cm)

A	Framax S steel filler 6cm
B	Framax multi-function clamp
C	Framax S Xlife inside corner
D	Framax S Xlife panel 0.75m
E	Form-tie

Example: T-junction



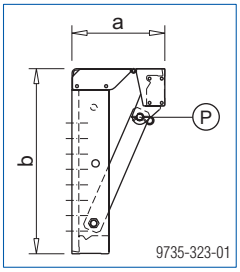


a ... 10" (25.4 cm)

A	Framax S Xlife inside corner
B	Framax quick-acting clamp RU
C	Fitting-timber 1 $^1/_2$" (3.7 cm)
D	Framax multi-function clamp
E	Framax S universal waling
F	Framax wedge clamp
G	Framax S Xlife panel 0.90m

Pilasters

Pilasters can be formed quickly using pilaster panels.



a ... 12" (30.5 cm)
b ... 24" (61 cm)

P Fastening bolt for fixing at right-angles (during pouring)

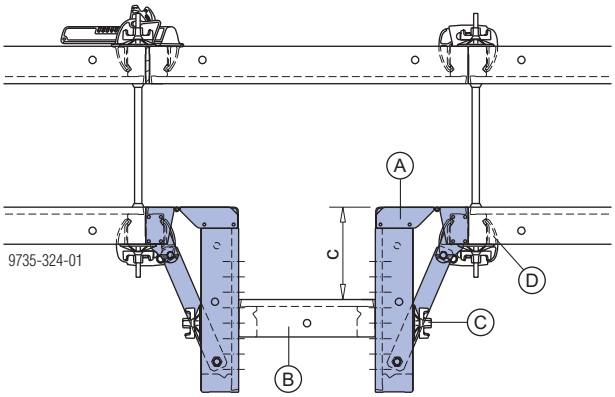
The pilaster panel permits pilaster depths of 4" (10 cm) to 18" (46 cm), in 2" (5.1 cm) increments, and of 24" (61 cm) when outside corners are used.

Required number of connectors per pilaster:

Panel height	Framax universal fixing bolt + Super-plates 15.0
1.35m	4
2.70m	8

2 positions / functions:

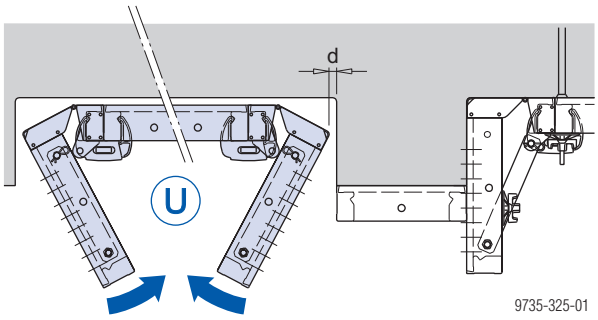
- bolted in place at right-angles –> for pouring



c ... 4" to 18" (10 to 46 cm)

A Framax S Xlife pilaster panel
B Framax S Xlife panel
C Framax universal fixing bolt + Super-plate 15.0
D Framax quick-acting clamp RU

- folded closed –> for stripping and resetting the formwork



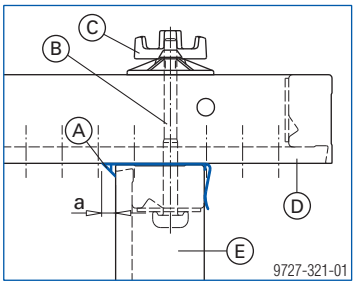
d ... stripping play 1" (2.5 cm)

U Lift-in-one unit

Chamfer edges

with Framax frontal triangular ledge

The Framax frontal triangular ledge can be pushed over the end face of the panel (no nails needed). For forming outside corners, it is used with the universal panel (integrated slot grid for universal fixing bolts). It is also possible to form edges using the Framax triangular ledge, of course.

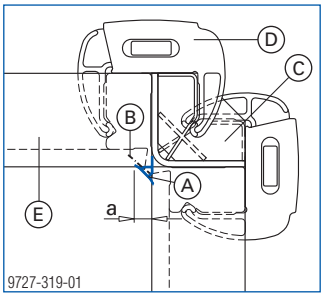


a ... 3/4" (20 mm)

A	Framax frontal triangular ledge 2.70m or Framax triangular ledge 2.70m
B	Framax universal fixing bolt
C	Super-plate 15.0
D	Framax S Xlife universal panel
E	Framax S Xlife 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 here.



a ... 3/4" (20 mm)

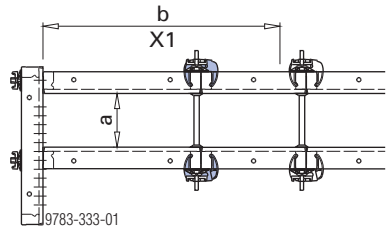
A	Framax triangular ledge 2.70m
B	Wire nail 22x40
C	Framax outside corner
D	Framax quick-acting clamp RU
E	Framax S Xlife panel

Inter-panel connections for increased tensile loads

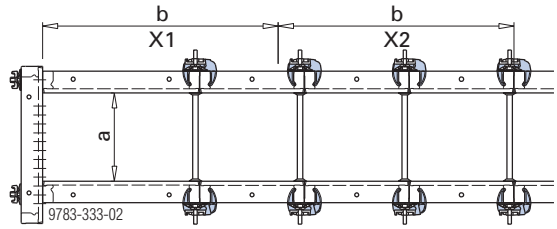
As a basic rule, only **2 clamps** are needed **per 2.70 m formwork height** as a tension link between the panels.

However, where **increased tensile loads** need to be sustained, especially near outside corners and bulkheads, **extra clamps are needed**.

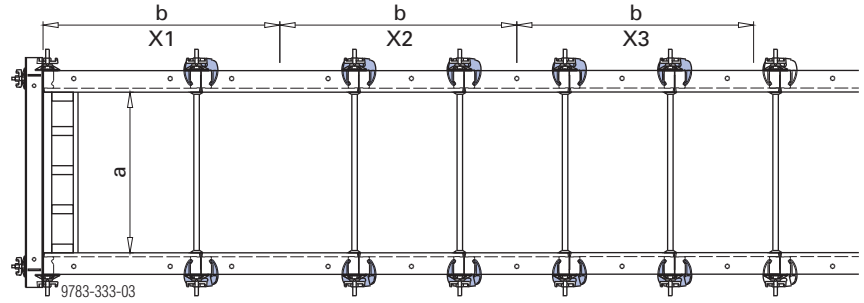
Near bulkheads



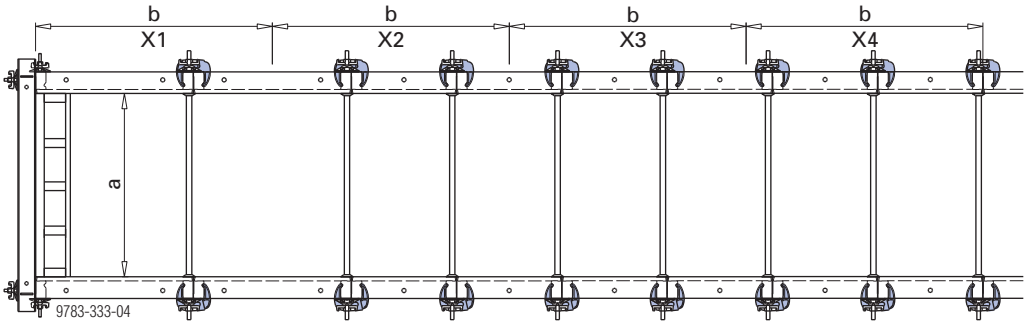
a ... up to 16" (40 cm)
b ... 4'-6" (135 cm)
X1 ... **1 extra clamp**



a ... up to 24" (60 cm)
b ... 4'-6" (135 cm)
X1 ... **2 extra clamps**
X2 ... **1 extra clamp**

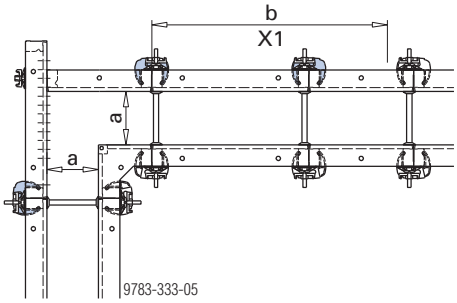


a ... up to 36" (91.5 cm)
b ... 4'-6" (135 cm)
X1 ... **3 extra clamps**
X2 ... **2 extra clamps**
X3 ... **1 extra clamp**

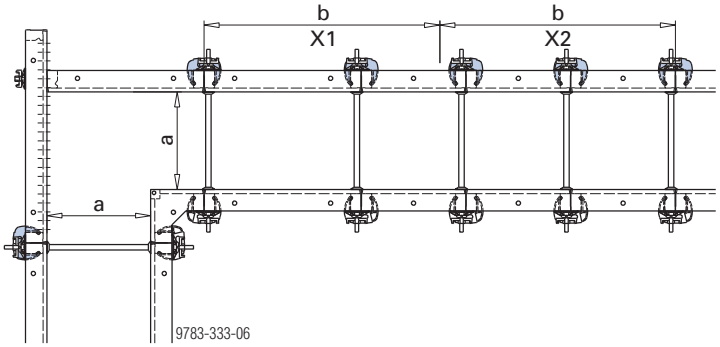


a ... up to 41" (104.5 cm)
b ... 4'-6" (135 cm)
X1 ... **4 extra clamps**
X2 ... **3 extra clamps**
X3 ... **2 extra clamps**
X4 ... **1 extra clamp**

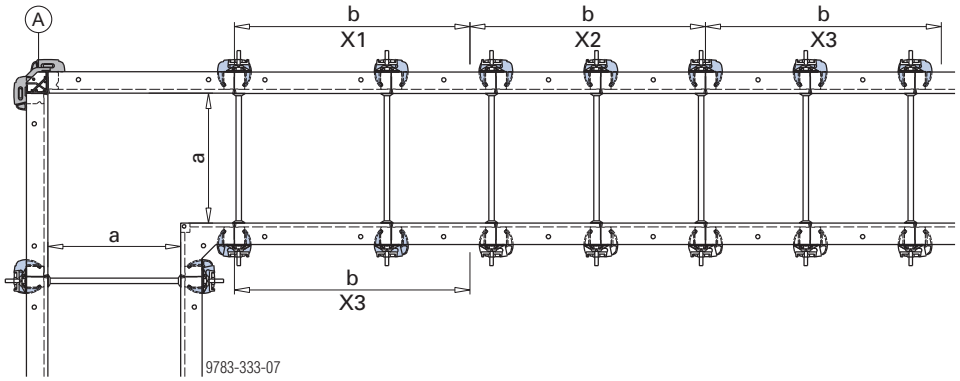
Near outside corners



a ... up to 16" (40 cm)
b ... 4'-6" (135 cm)
X1 ... **1 extra clamp**

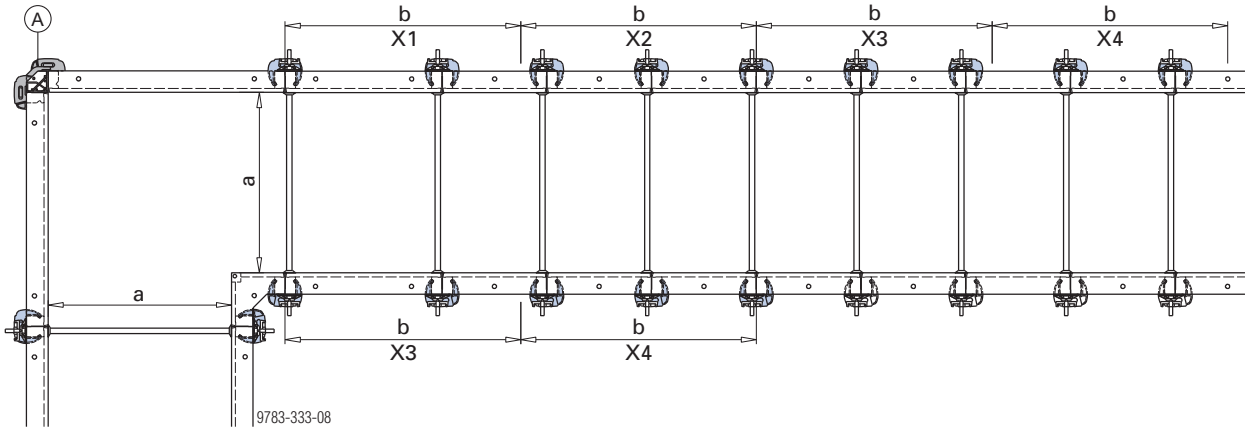


a ... up to 24" (60 cm)
b ... 4'-6" (135 cm)
X1 ... **2 extra clamps**
X2 ... **1 extra clamp**



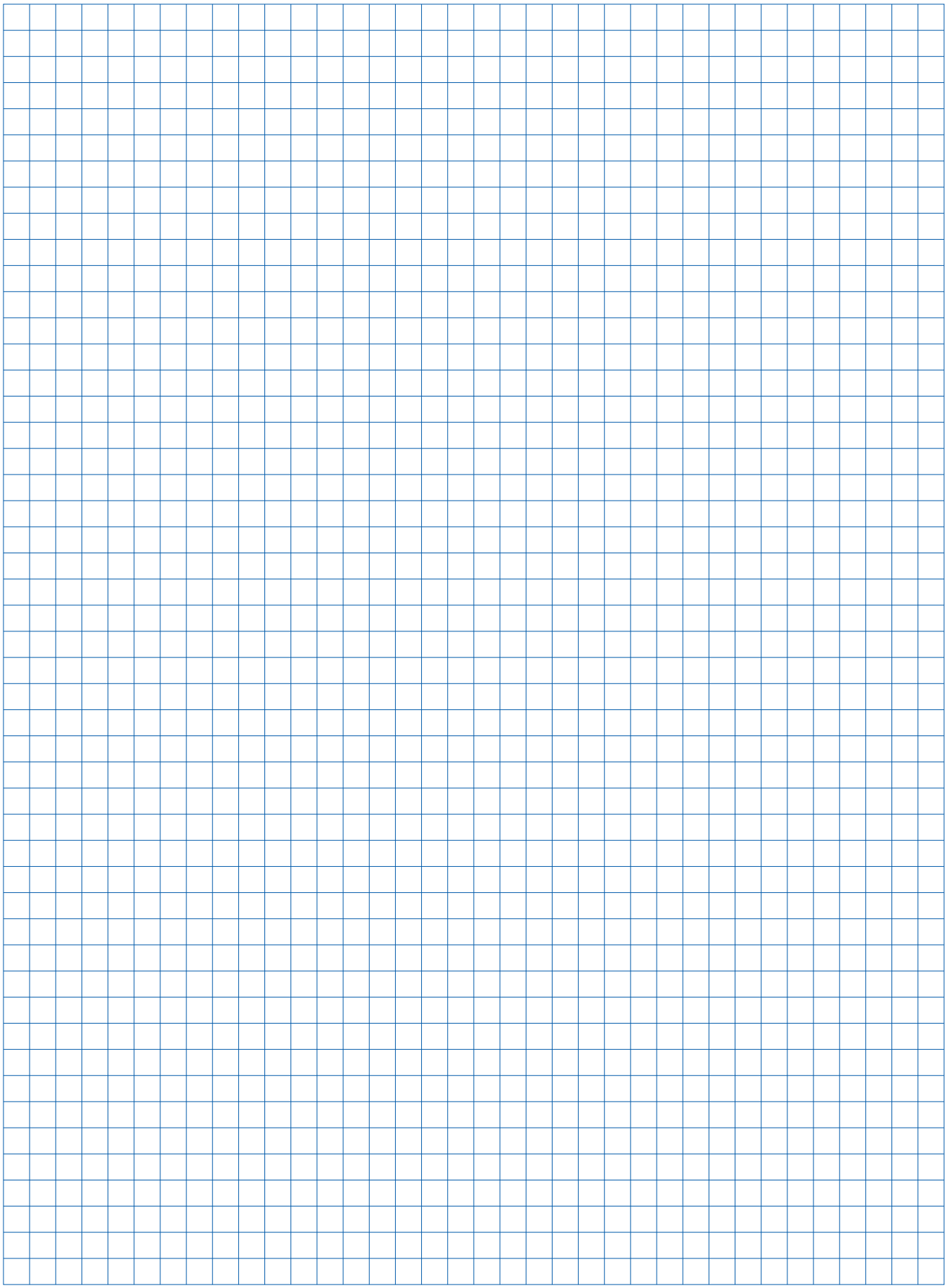
a ... up to 36" (91.5 cm)
b ... 4'-6" (135 cm)
X1 ... **3 extra clamps**
X2 ... **2 extra clamps**
X3 ... **1 extra clamp**

A Framax S corner clamp +
Framax quick acting clamp RU +
Framax wedge bolt RA 7.5 +
Framax tensioning wedge R

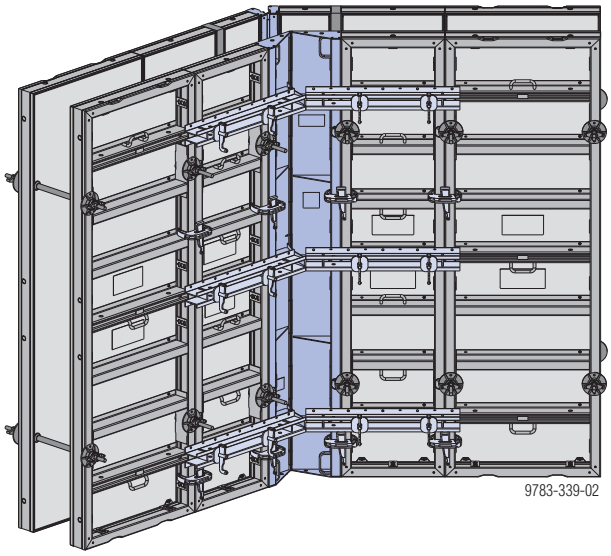


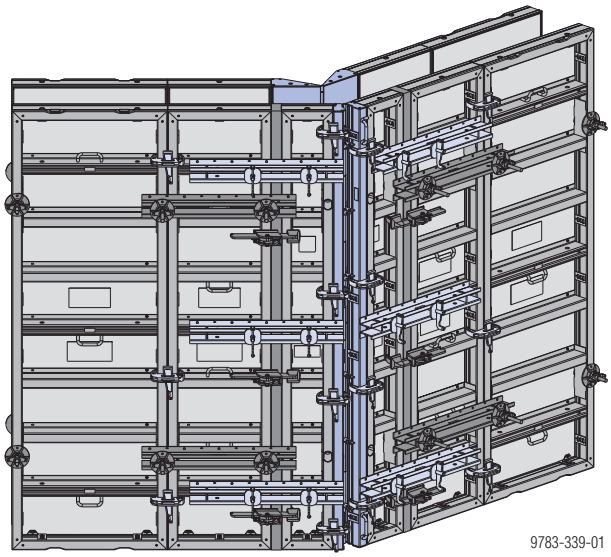
a ... up to 41" (104.5 cm)
b ... 4'-6" (135 cm)
X1 ... **4 extra clamps**
X2 ... **3 extra clamps**
X3 ... **2 extra clamps**
X4 ... **1 extra clamp**

A Framax S corner clamp +
Framax quick acting clamp RU +
Framax wedge bolt RA 7.5 +
Framax tensioning wedge R

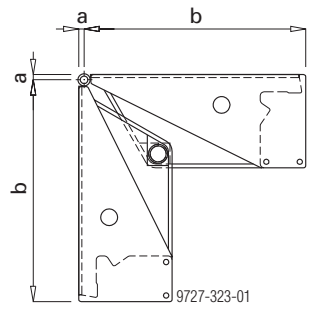
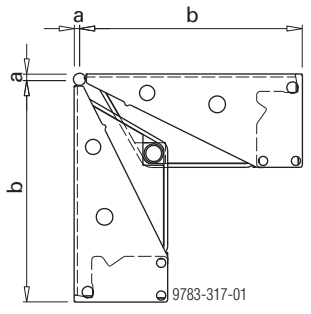


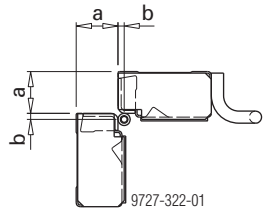
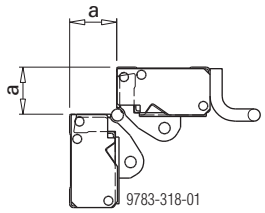
Acute and obtuse-angled corners





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

Hinged inside corner I (powder-coated)	Hinged inside corner I (galvanized)
 a ... 1/4" (0.7 cm) b ... 11 1/2" (29.2 cm)	 a ... 1/4" (0.7 cm) b ... 11 1/2" (29.3 cm)

Hinged outside corner A (powder-coated)	Hinged outside corner A (galvanized)
 a ... 2 1/8" (5.5 cm) b ... 3/8" (0.8 cm)	 a ... 2 1/2" (6.3 cm)

Note:

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

N° of universal walings in the outside and inside corners:

Panel height	N° of universal walings
1.35 m	4
2.70 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

If there are fillers, fit extra Universal walings as shown in "Length adjustment using fillers".

Number of clamps needed in the hinged outside corner:

Panel height	N° of clamps
1.35 m	4
2.70 m	8

NOTICE

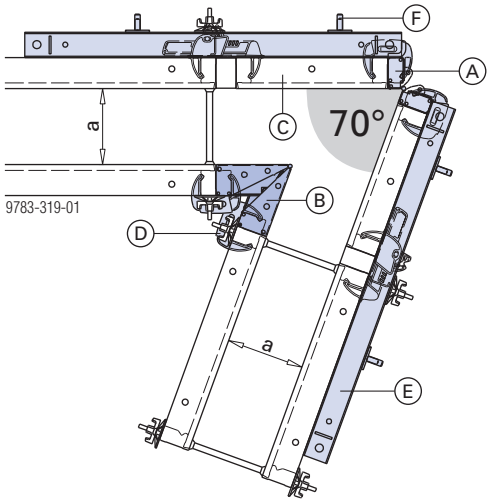
For details regarding extra clamps on outside corners (for increased tensile loads) see 'Inter-panel connections for increased tensile loads'.

70° – 135° angles, with Hinged corners I + A

NOTICE

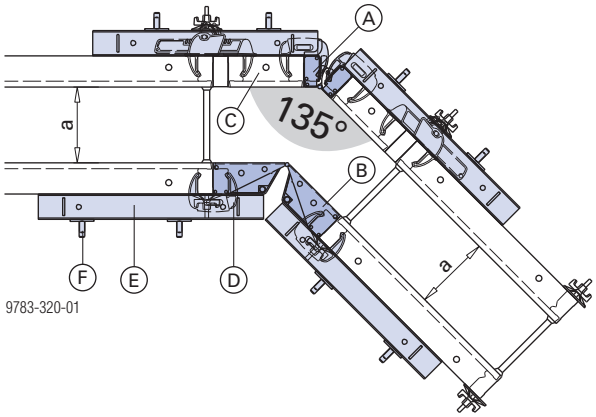
- **Max. width of panel** next to hinged outside corner A: **0.60m**
- In addition, **fillers of up to max. 6” (15 cm)** are allowed.

The use of panels wider than 0.60 m next to hinged corners must be reviewed by our Engineering Office to determine proper and safe usage.



a ... 12" (30.5 cm)

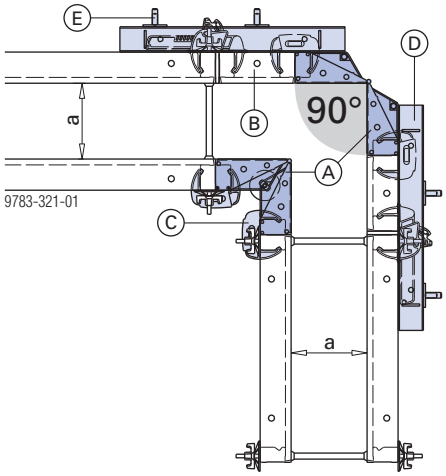
A	Framax hinged outside corner A
B	Framax S hinged inside corner I
C	Framax S Xlife panel 0.60m
D	Framax quick-acting clamp RU
E	Framax S universal waling 1.50m
F	Framax wedge clamp



a ... 12" (30.5 cm)

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

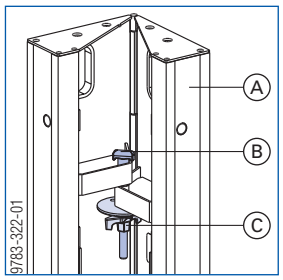
90° - 180° angles, with hinged inside corner I only



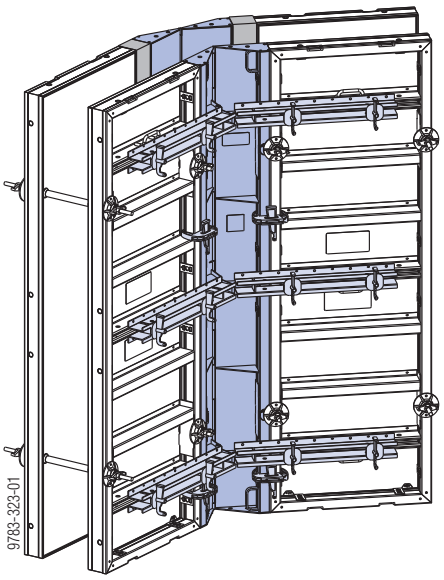
a ... 12" (30.5 cm)

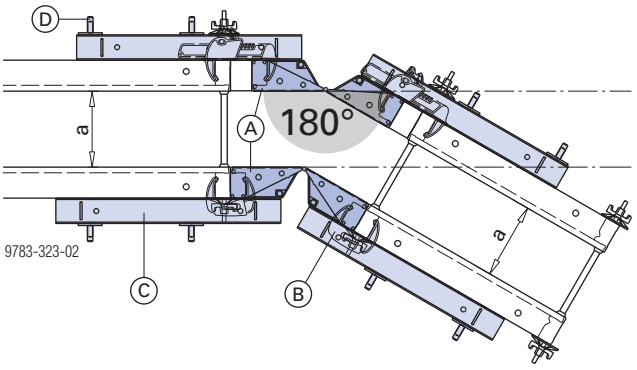
A	Framax S hinged inside corner I
B	Framax S Xlife panel 0.30m
C	Framax quick-acting clamp RU
D	Framax S universal waling
E	Framax wedge clamp

The Hinged inside corner I can be fixed at a 90° angle using a Universal fixing bolt and a Super plate 15.0.



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





a ... 12" (30.5 cm)

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

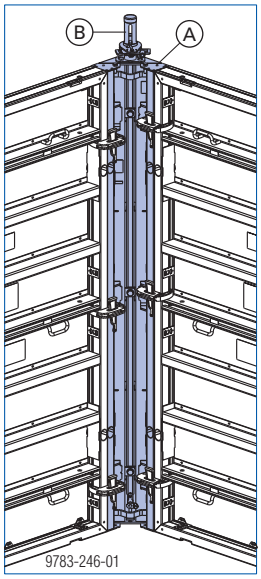
Shaft formwork / stripping aid

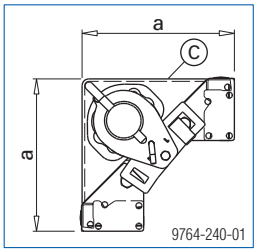
Shaft formwork with Bias-cut corner I

With the **Bias-cut corner I**, the entire shaft formwork unit is detached from the wall, in one piece, before being lifted and reset by crane.

Product features:

- No negative impression in the concrete.
- Formwork set-up and stripping function integrated in the inside corner (no need for crane – uses stripping spindles).
- Entire shaft formwork unit is lifted and reset in one piece (with lifting hooks and four-part lifting chain).





a ... 12" (30 cm)

A	Framax S bias cut corner I
B	Framax stripping spindle I with ratchet
C	Steel form-facing

Number of Framax quick-acting clamps RU needed:

Height of the Stripping corner I	N° of clamps
1.35 m	4
2.70 m	6

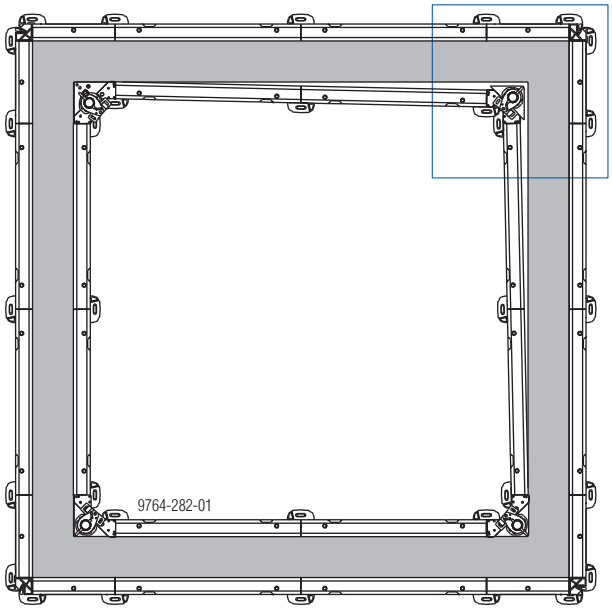
NOTICE

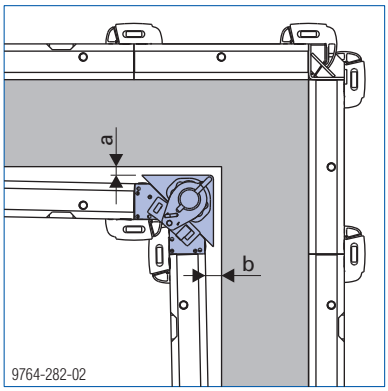
To obtain the full stripping play, install neighboring Framax quick-acting clamps RU at staggered heights.

Position of fillers (fitting-timbers) in the inside shaft formwork:

- whenever possible, not directly next to the bias-cut corners

Stripping play:

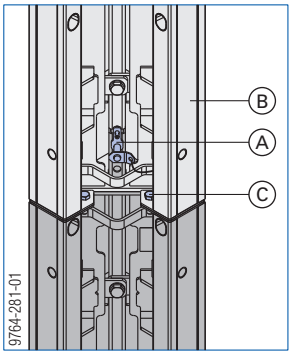




a ... 1 $^1/_8$" (30 mm)
b ... 2 $^1/_4$" (60 mm)

Vertical stacking of Framax bias-cut corners I

1) Pull out the coupling bolt.
2) Maneuver the Bias-cut corner I into place so that it is flush with the one below it.
3) Push the coupling bolt back in.
4) Bolt the Bias cut corners I together with two hexagonal bolts.

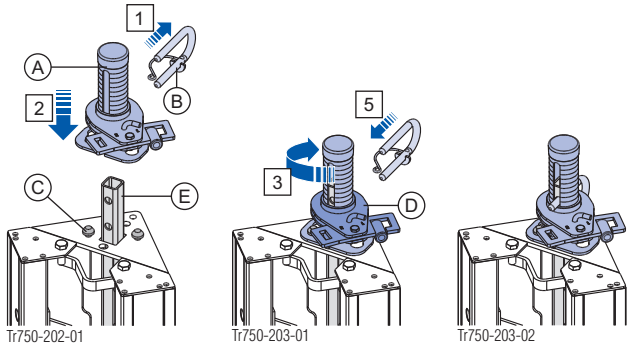


A	Coupling bolt
B	Bias-cut corner I
C	Hexagonal bolt M16x45 (or $^5/_8$ x 1 $^3/_4$")

Animation: https://player.vimeo.com/video/256373947

Mounting the Framax stripping spindle I

1) Pull out the U-bolt from the stripping spindle.
2) Place the stripping spindle on the centering stud of the bias-cut corner.
3) Twist the stripping spindle clockwise until fully engaged.
4) Position the ratchet between the holes in the push-rod.
5) Fix the stripping spindle with the U-bolt.



A	Framax stripping spindle I with ratchet
B	U-bolt
C	Centering stud of bias-cut corner
D	Ratchet
E	Push-rod

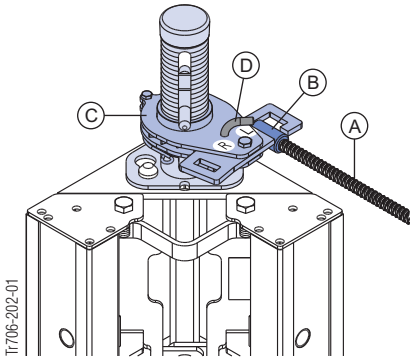
Animation: https://player.vimeo.com/video/256374622

Operating the Framax stripping spindle I with ratchet

➤ Screw a Tie-rod 15.0mm into the Weldable coupler 15.0 of the ratchet.

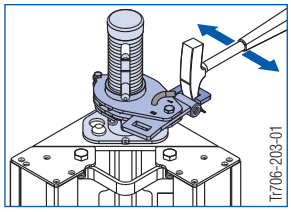
➤ **Setting up**:
- shift the change-over lever into the '**L**' position
- turn the ratchet **clockwise**.

➤ **Stripping**:
- shift the change-over lever into the '**R**' position
- turn the ratchet **anti-clockwise**.



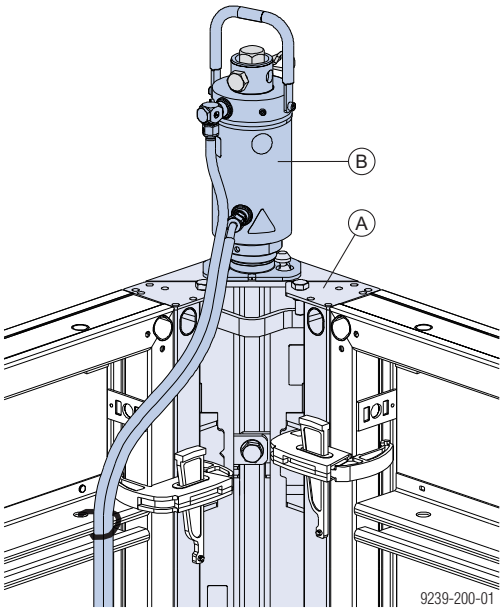
A	Tie-rod 15.0mm
B	Weldable coupler 15.0
C	Ratchet
D	Change-over lever

You can also use a **formwork hammer** to operate the ratchet, instead of a Tie-rod 15.0mm.



Operation of the Framax bias cut corner I hydraulic

With the Framax stripping cylinder I, formwork up to 5.40 m high can be erected and stripped hydraulically.

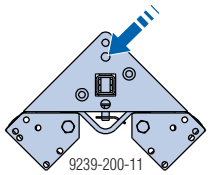


A Framax bias cut corner I
B Framax stripping cylinder I

NOTICE

It is not permissible to install the stripping cylinder on a bias cut corner that does not have a hole for the locking pin!

This hole is a standard feature of all bias cut corners manufactured from 2005 onward.



Depending on requirements, the Framax stripping cylinder I can be used with various hydraulic units and accessories.

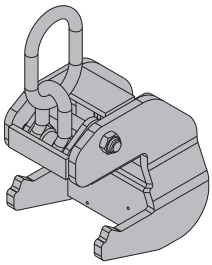
Compatible hydraulic units

- Hydraulic unit Framax V4 with
  - Battery drill 18 V (1800 rpm)
- Hydraulic unit V45 50/60Hz with
  - System pressure limiter Xclimb 60 V45
- Hydraulic unit SCP V1200 50/60Hz with
  - Coupling adapter Framax stripping cyl. I

Follow the directions in the ‘Framax bias cut corner I hydraulic’ Operating Instructions!

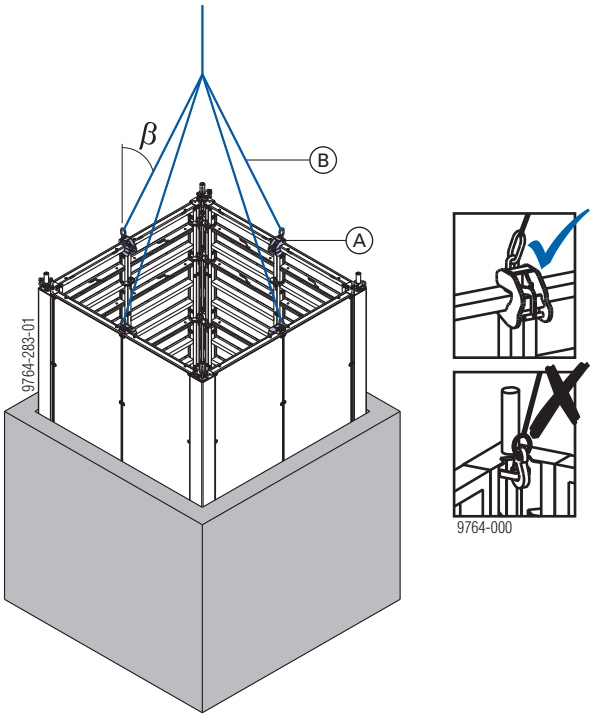
Lifting by crane

Framax lifting hook



Follow the directions in the Operating Instructions!

Resetting the formwork



β ... max. 15°

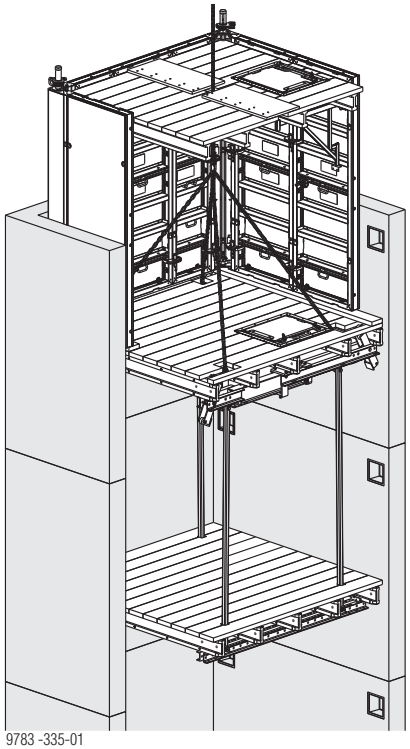
A Framax lifting hook
B Four-part lifting tackle

The crane hook on the Bias-cut corner I must not be used for lifting the shaft formwork.
➤ The shaft formwork may only be reset **using lifting hooks**.

Permitted weight of the shaft formwork:
4000 kg (8800 lbs) with 4 Framax lifting hooks

Use a lifting beam for repositioning large gangforms.

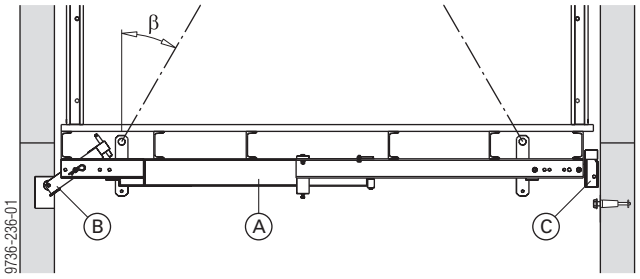
Resetting the formwork plus shaft platform



NOTICE
- **Before lifting:** Remove any loose items from the formwork and platforms, or secure them firmly.
- 'Passenger transportation' is forbidden!
- Spread-angle β: max. 30°

Max. load per chain-attachment point:
4400 lbs (2000 kg)

➤ Strip out the formwork.
➤ Attach a 4-part chain to the telescopic shaft beams.



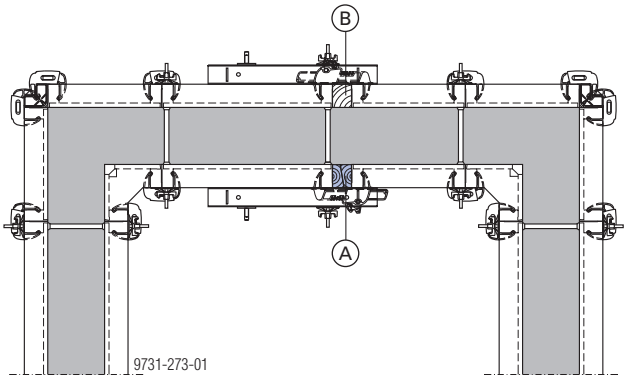
A Telescopic shaft beam
B Pawl-type mounting
C With main beam head (cone-type mounting)

➤ Reposition the entire unit by crane.

Follow the directions in the 'Shaft platform' User Information booklet.

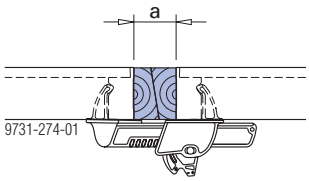
Facilitating stripping with the formwork stripping timber (without Framax bias cut corner)

The diagonally cut formwork stripping timber makes quick work of removing inside-formwork in narrow cross-sections such as lift-shafts or stair-wells.

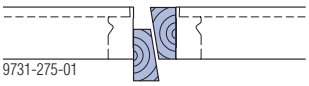


A **Inside** - formwork stripping timber

B **Outside** - fitting-timber



a ... 4" (10 cm)



The Framax formwork stripping timbers are 2.85 m long. This means that they are 15 cm longer than the panels are high, which makes them easier to remove.

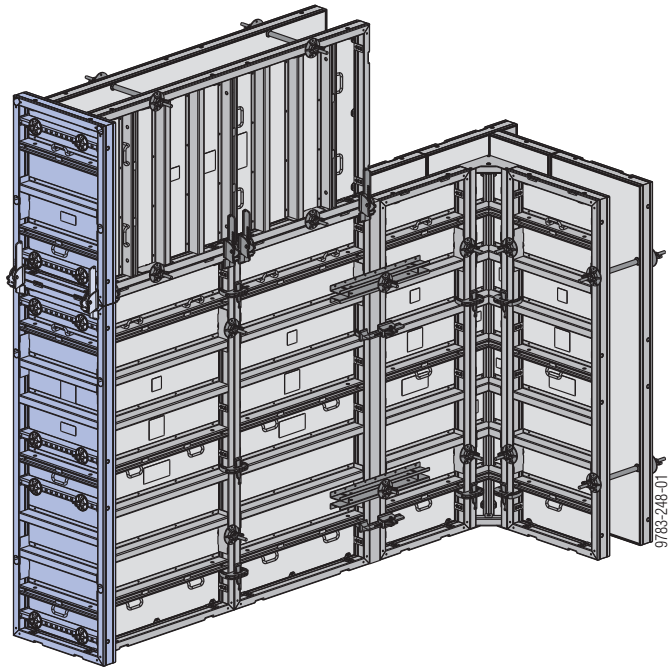
Bulkhead formwork

There are **3 possible ways** of forming **bulkheads**:

- with universal panels
- with stop-end waler ties
- with universal walings

Note:
For details regarding extra clamps on bulkheads (for increased tensile loads) see the section headed 'Inter-panel connections for increased tensile loads'.

with Universal panels



The universal panels are mounted using universal fixing bolts and Super plates 15.0.

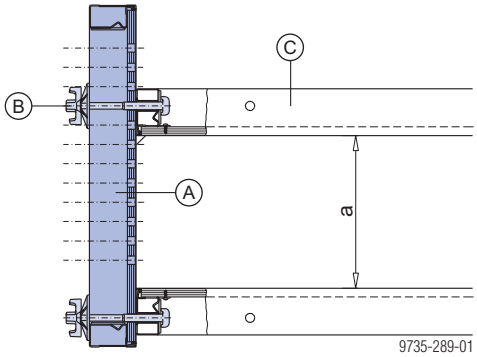
Required number of connectors:

Panel height	Framax universal fixing bolts + Super plates 15.0
0.90m	4
1.35m	4
2.70m	8

Framax universal fixing bolt:
Permitted tensile force: 8.0 kip (35.5 kN)
Permitted shear force: 8.0 kip (35.5 kN)

Framax Xlife universal panel 0.90m

The continuous **2" (5.1 cm) hole-grid** makes it possible to form bulkheads on walls of **up to 22" (56 cm) thick**.



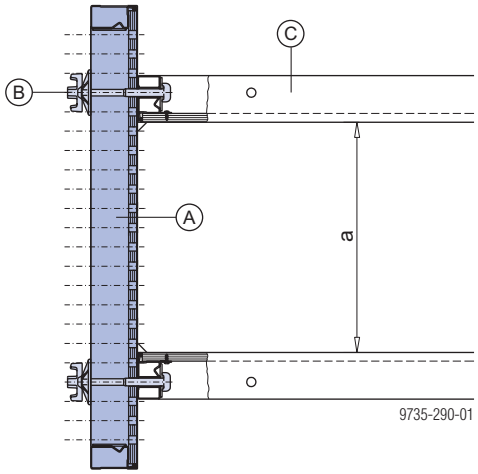
a ... up to 22" (56 cm), in 2" (5.1 cm) increments

A	Framax S Xlife universal panel 0.90m
B	Framax universal fixing bolt + Super-plate 15.0
C	Framax S Xlife panel (panel width > 0.30m)

Framax Xlife universal panel 1.22m

The continuous **2" (5.1 cm) hole-grid** makes it possible to form bulkheads on walls of **up to 30" (76.2 cm) thick**.

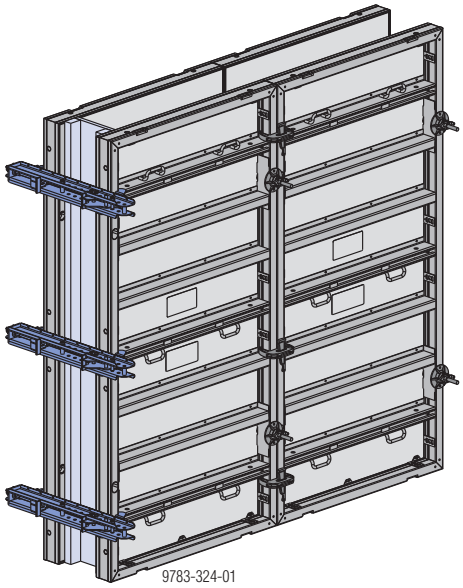
Note:
If the concrete pressure is reduced, wall thicknesses of up to 36" (91.5 cm) are also possible.



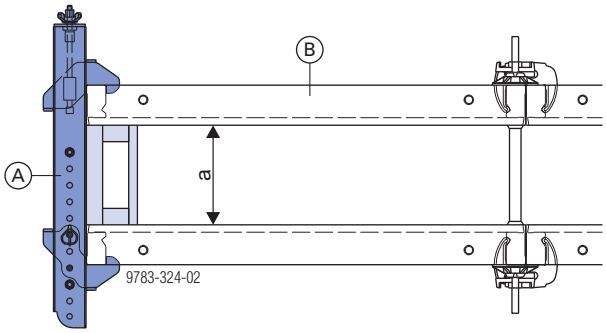
a ... up to 30" (76.2 cm), in 2" (5.1 cm) increments

A	Framax S Xlife universal panel 1.22m
B	Framax universal fixing bolt + Super-plate 15.0
C	Framax S Xlife panel (panel width > 0.30m)

with stop-end waler ties



The Stop-end waler tie lets you form bulkheads steplessly, from wall thicknesses of 6" (15 cm) to 30" (75 cm).



a ... 6" (15 cm) to 30" (75 cm)

A Framax stop-end waler tie

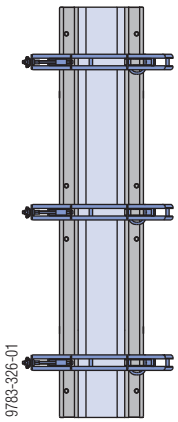
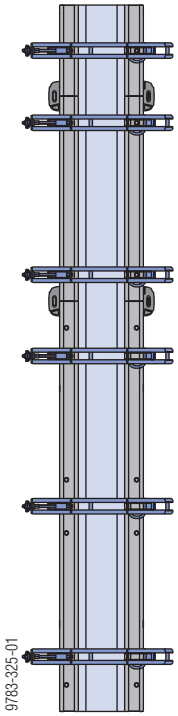
B Framax S Xlife panel

Required numbers of Framax stop-end waler ties:

Wall thickness	Panel height (upright panels)	Stop-end waler ties
6" - 18" (15 - 45 cm)	1.35 m	2
	2.70 m	2
>18" - 30" (>45 - 75 cm)	1.35 m	2
	2.70 m	3

Wall thickness	Panel width (horizontal panels)	Stop-end waler ties
6" - 30" (15 - 75 cm)	0.30 m	1
	0.45 m	1
	0.60 m	1
	0.75 m	2
	0.90 m	2
	1.05 m	2
	1.35 m	2

Positioning the stop-end waler ties:

Example for formwork height 8'-10 1/4" (2.70 m)	Example for formwork height 15'-3" (4.65 m)
	

with Universal walings

Universal walings make it possible to **form bulkheads continuously across any thickness of wall**.

Framax S universal waling:
Permitted moment: 3.85 kip-ft (5.2 kNm)

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

- with universal fixing bolts
- with stop-end ties

Universal fixing bolts

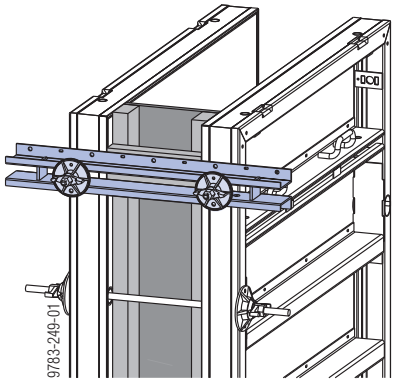
Required number of universal walings:

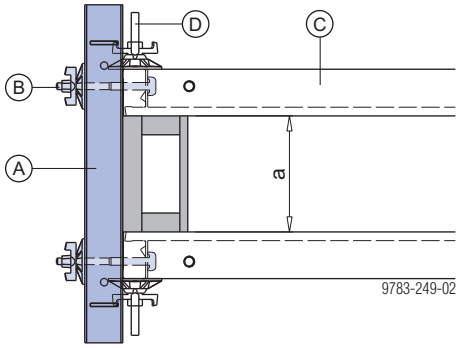
Panel height	N° of universal walings
1.35 m	2
2.70 m	4

Framax universal fixing bolt:
Permitted tensile force in the cross borehole of the Framax S Xlife panel: 5.6 kip (25.0 kN)

Panel widths 0.45m to 1.35m

The universal walings are mounted using universal fixing bolts and Super plates 15.0 fixed through the cross boreholes in the panels.



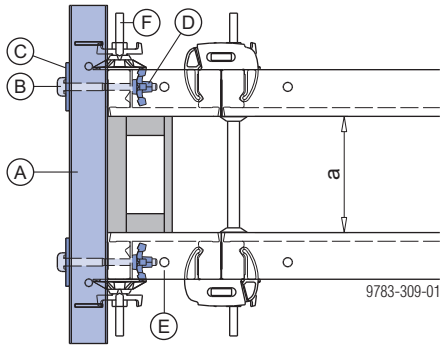


a ... up to 30" (76.2 cm)

A Framax S universal waling
B Framax universal fixing bolt + Super plate 15.0
C Framax S Xlife panel (panel width > 0.30m)
D Form ties

Panel width 0.30m

The universal walings are mounted using universal fixing bolts, flat washers 3/4" and star grip nuts 15.0 G fixed through the cross boreholes in the 0.30m wide panels.



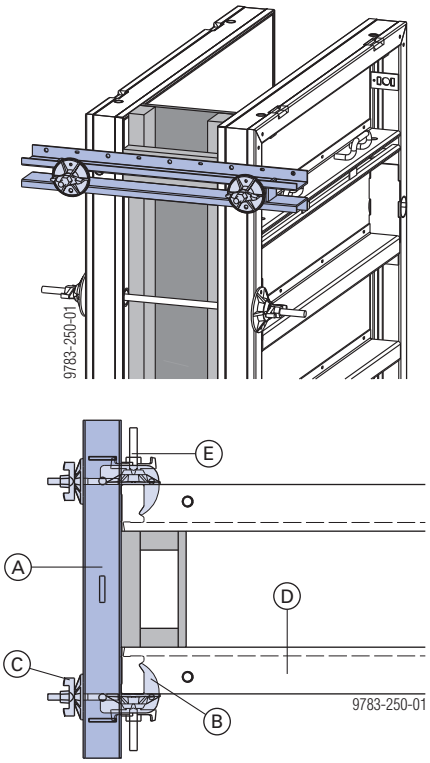
a ... up to 30" (76.2 cm)

A Framax S universal waling
B Framax universal fixing bolt
C Flat washer 3/4"
D Star grip nut 15.0 G
E Framax S Xlife panel 0.30m
F Form ties

Note:
This method of mounting the universal walings must only be used on 0.30m wide panels.

Bulkhead ties

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



A	Framax S universal waling or Multi-purpose waling WS10 Top50
B	Framax stop-end tie (clamping range: 3 1/2" - 5" (9 - 13 cm))
C	Super plate 15.0
D	Framax S Xlife panel
E	Form tie

Position of the stop-end ties:

In order to ensure uniform load transfer, the stop-end ties should be fitted in the middle (between two cross profiles) wherever possible.

Framax stop-end tie:
Permitted capacity: 3.37 kip (15.0 kN)

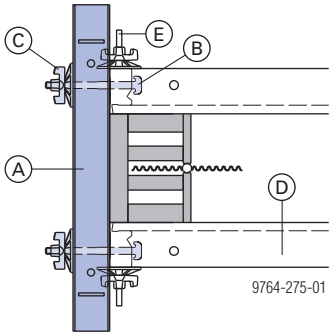
Multi-purpose waling WS10 Top50:
Permitted moment: 9.0 kip-ft (12.3 kNm)

Panel height: **2.70m** Fresh-concrete pressure: **1650 psf (80 kN/m²)**	
Wall thickness	Universal walings / multi-purpose walings
up to 12" (30 cm)	2
up to 14" (35 cm)	3
up to 18" (45 cm)	4
up to 24" (60 cm)	5
up to 30" (75 cm)	6

Panels longside horizontal		
Panel width	Wall thickness	Universal walings / multi-purpose walings
up to 0.45m	up to 30" (75 cm)	1
up to 1.05m		2
over 1.05m	up to 24" (60 cm) [1)]	2

1) A wall thickness up to 30" (75 cm) is permitted where the following condition is met:
The over 1.05m wide longside-horizontal panel must be placed at the top of the gang.

Bulkheads with waterstops



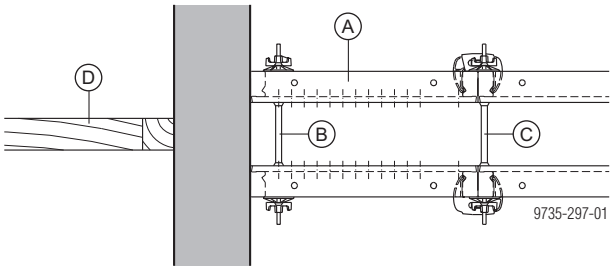
A	Framax S universal waling or Multi-purpose waling WS10 Top50
B	Framax universal fixing bolt or Framax stop-end tie
C	Super plate 15.0
D	Framax S Xlife panel
E	Form tie

Wall junctions, offsets and steps

Connecting to existing walls

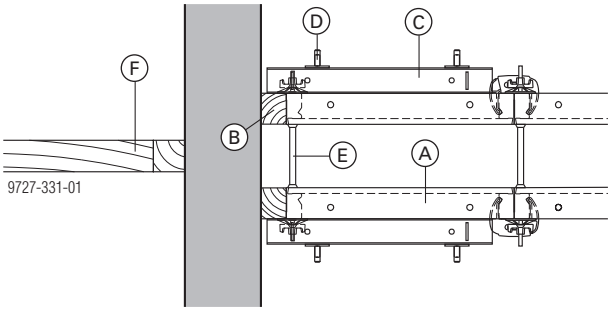
Right-angled connections

with a Framax Xlife universal panel



A Framax S Xlife universal panel
B Tie rod system 15.0
(on the Universal panel 2.70m, 3 form ties are required, one in the first hole of each perforated profile)
C Form tie
D Bracing (site-provided)

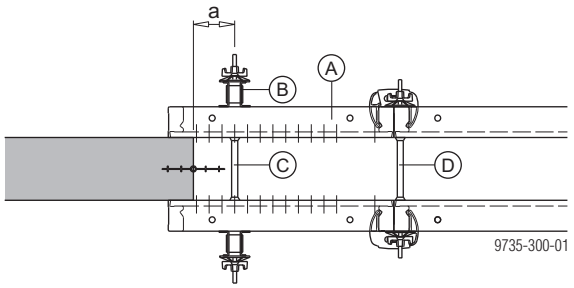
with Framax Xlife panel and squared timber



A Framax S Xlife panel
B Squared timber (min. 2 $^1/_2$" up to max. 8" (min. 6.5 cm up to max. 20 cm))
C Framax S universal waling
D Framax wedge clamp
E Form tie
F Bracing (site-provided)

In-line connections

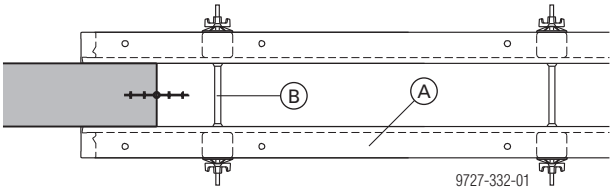
with a Framax Xlife universal panel



a ... max. 8" (20 cm)

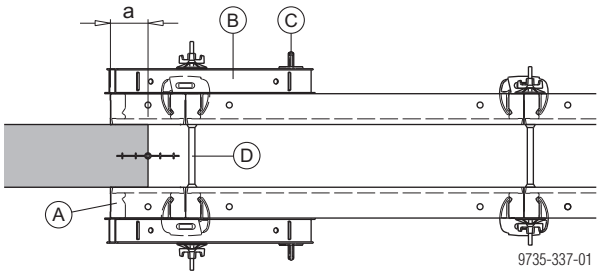
A Framax S Xlife universal panel
B Framax S universal waling 1.50m
C Tie rod system 15.0
(in the Universal panel 2.70m, 3 form ties are needed)
D Form tie

with Framax Xlife panel 2.40x2.70m



A Framax S Xlife panel 2.40x2.70m
B Form tie

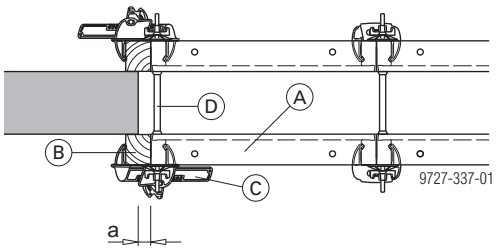
with Framax Xlife panel 0.30m



a ... min. $^1/_2$" (1 cm)

A Framax S Xlife panel 0.30m
B Framax S universal waling
C Framax wedge clamp
D Form tie

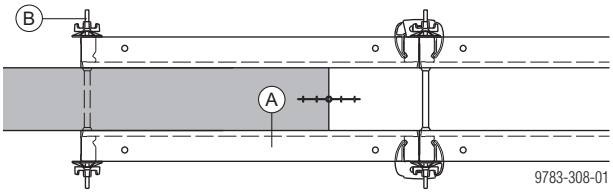
with Framax Xlife panel and squared timber



a ... max. 2" (5 cm)

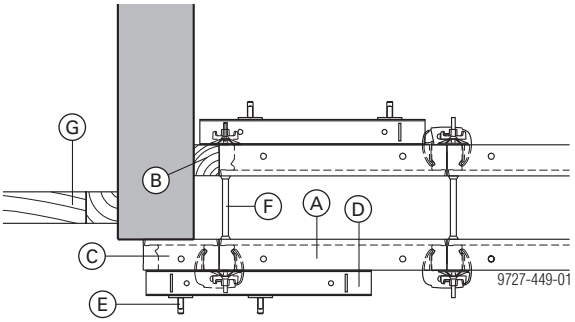
A Framax S Xlife panel
B Squared timber
C Framax multi-function clamp
D Form tie

with a Framax Xlife panel from the previous casting section:



A Framax S Xlife panel
B Form tie

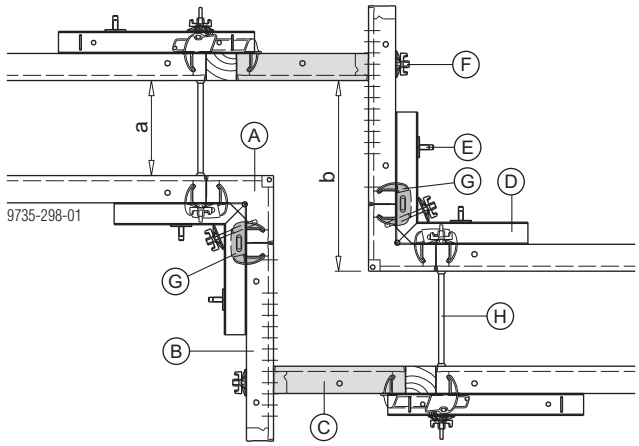
Corner connections



A Framax S Xlife panel
B Squared timber (min. 2 $^1/_2$" up to max. 8" (min. 6.5 cm up to max. 20 cm))
C Framax S Xlife panel 0.30m
D Framax S universal waling
E Framax wedge clamp
F Form tie
G Bracing (site-provided)

Wall steps

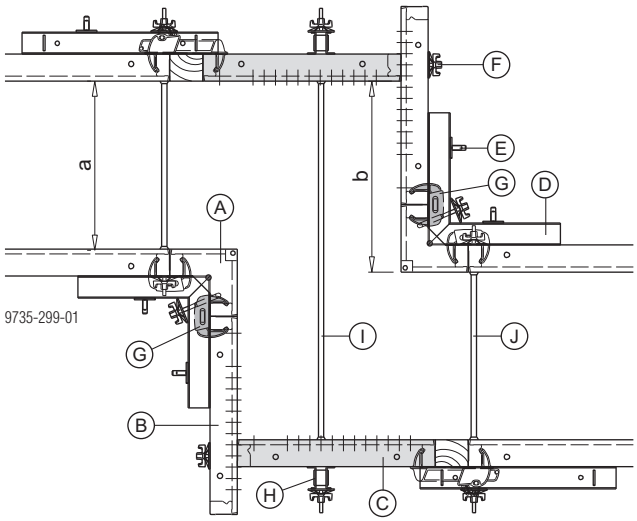
wall thicknesses up to 17" (43 cm)



a ... up to 17" (43 cm)
b ... max. 36" (91 cm)

A	Framax S Xlife inside corner
B	Framax S Xlife universal panel
C	Framax S Xlife panel (max. width 0.60m)
D	Framax S universal corner waling (3 for every 2.70 m of formwork height)
E	Framax wedge clamp
F	Super plate 15.0 + Framax universal fixing bolt
G	Framax quick acting clamp RU (4 for every 2.70 m of formwork height)
H	Form tie

wall thicknesses up to 30" (76 cm)

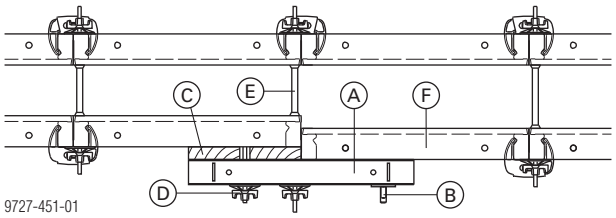


a ... up to 30" (76 cm)
b ... max. 36" (91 cm)

A	Framax S Xlife inside corner
B	Framax S Xlife universal panel
C	Framax S Xlife universal panel 0.90m
D	Framax S universal corner waling (3 for every 2.70 m of formwork height)
E	Framax wedge clamp
F	Super plate 15.0 + Framax universal fixing bolt
G	Framax quick acting clamp RU (4 for every 2.70 m of formwork height)
H	Framax S universal waling 1.50m
I	Tie rod system 15.0 (in the Universal panel 2.70m, 3 form ties are needed)
J	Form tie

Wall offsets

one-sided wall offset up to max. 4 3/4" (12 cm)

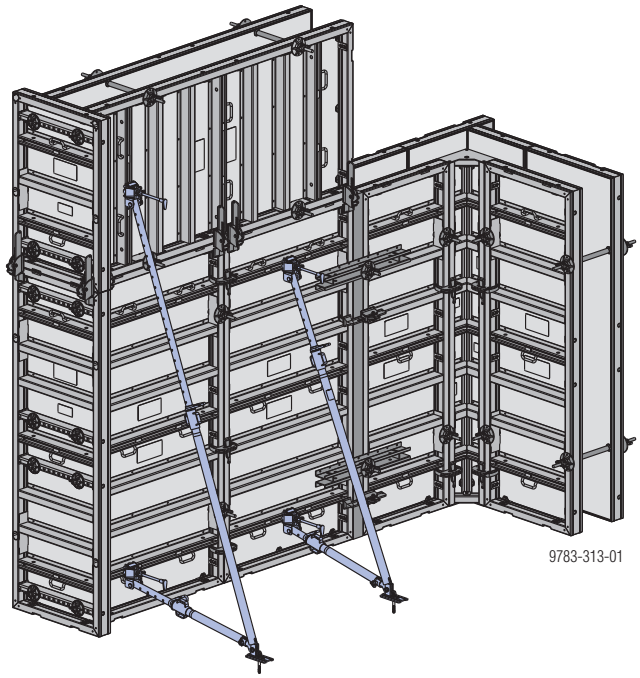


A	Framax S universal waling
B	Framax wedge clamp
C	Squared timber
D	Super plate 15.0 + Framax universal fixing bolt 10-25cm
E	Form tie
F	Framax S Xlife panel

Note:

On short walls (high longitudinal tensile forces), bracing is necessary.

Plumbing accessories



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

NOTICE

The formwork gangs must be securely braced in **every** phase of the construction work!

Observe all applicable safety rules!

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

Note:

See 'Vertical stacking of panels' for the positions of the Framax quick-acting clamps RU, Framax multi-function clamps and Framax universal walings that are needed when stacking.

Max. influence widths of the plumbing accessories:

Formwork height	**Panel strut / pipe brace**	Max. influence width assuming wind pressure of	
		10 psf (0.48 kN/m²)	**15 psf** (0.72 kN/m²)
10'-10" (3.30 m)	**340**	9'-6" (2.90 m)	6'-6" (2.00 m)
13'-3" (4.05 m)	**340**	9'-6" (2.90 m)	6'-6" (2.00 m)
17'-9" (5.40 m)	**540** [1]	10'-6" (3.20 m)	7'-0" (2.10 m)
19'-8" (6.00 m)	**540** [1]	8'-6" (2.60 m)	5'-11" (1.80 m)
23'-7" (7.20 m)	**540** [1] +	11'-6" (3.50 m)	7'-6" (2.30 m)
	22'-0"-40'-0" [2]	13'-3" (4.05 m)	10'-6" (3.20 m)
26'-7" (8.10 m)	**540** [1] +	10'-0" (3.05 m)	6'-6" (2.00 m)
	22'-0"-40'-0" [2]	13'-3" (4.05 m)	10'-6" (3.20 m)
29'-6" (9.00 m)	**540** [1] +	10'-6" (3.20 m)	7'-0" (2.10 m)
	22'-0"-40'-0" [2]	11'-6" (3.50 m)	7'-6" (2.30 m)
31'-0" (9.45 m)	**540** [1] +	11'-6" (3.50 m)	7'-6" (2.30 m)
	22'-0"-40'-0" [2]	9'-6" (2.90 m)	6'-6" (2.00 m)
35'-5" (10.80 m)	**540** [1] +	8'-6" (2.60 m)	5'-6" (1.65 m)
	22'-0"-40'-0" [2]	7'-0" (2.10 m)	5'-0" (1.50 m)
Max. anchoring load: **3 kip (13.5 kN)**			

[1] or Pipe brace 12'-0"-21'-0"
[2] or Eurex 60 550

These values apply up to wind-pressures of 10 psf (0.48 kN/m²) or 15 psf (0.72 kN/m²) respectively. The greater wind loads encountered at exposed formwork-ends must be constructionally sustained by additional plumbing accessories (e.g. struts or pipe-braces).

The number of plumbing accessories needed must be determined separately in the following cases:

- wind pressure above 15 psf (0.72 kN/m²)
- formwork higher than 35'-5" (10.80 m)

For more information (wind loads etc.) see the section headed 'Vertical and horizontal loads' in the Calculation Guide 'Doka formwork engineering'.

Note:

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

Sample calculation:

- Formwork height: 26'-7" (8.10 m)
- Width of gang-form: 17'-9" (5.40 m)
- Wind pressure: 10 psf (0.48 kN/m²)

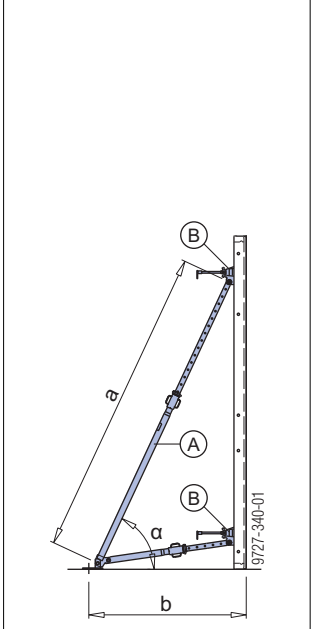
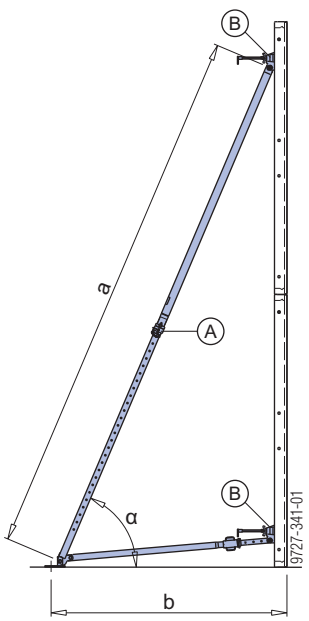
Result:

- 2 Panel struts 540
  (or 2 Pipe braces 12'-0"-21'-0")
  and
- 2 Pipe braces 22'-0"-40'-0"
  (or 2 Eurex 60 550)

Panel struts 340 and 540

Product features:

- Can be telescoped in a 3" (8 cm) grid
- Fine adjustment by screw-thread
- All parts are captively integrated – including the telescopic tube (has anti-dropout safeguard)

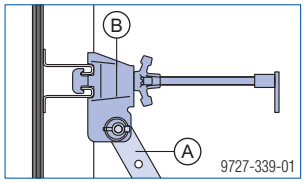
Panel strut 340	Panel strut 540
	
a ... 6'-4" - 11'-2" (191 - 341 cm) b ... 3'-6" - 5'-0" (105 - 154 cm)	a ... 10'-3" - 18'-0" (311 - 549 cm) b ... 6'-6" - 8'-0" (197 - 245 cm)

α ... approx. 60°

A Panel strut 340 IB or 540 IB

B Prop head EB

Connection in the waling profile



A Panel struts 340 IB and 540 IB

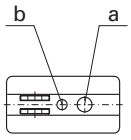
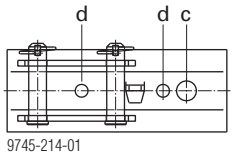
B Prop head EB

Animation: https://player.vimeo.com/video/268536814

Fixing to the floor

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

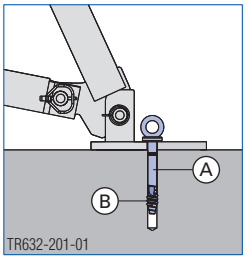
Boreholes in the footplates

Panel struts	Eurex 60 550
	

a ... ⌀ 1" (26 mm)
b ... ⌀ $^{11}/_{16}$" (18 mm) (suitable for Doka express anchor)
c ... ⌀ 1 $^{1}/_{8}$" (28 mm)
d ... ⌀ $^{11}/_{16}$" (18 mm) (suitable for Doka express anchor)

Anchoring the footplate

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



A Doka express anchor 16x125mm

B Doka coil 16mm

Cylinder compressive strength of concrete:
min. 3000 psi (20 N/mm²)

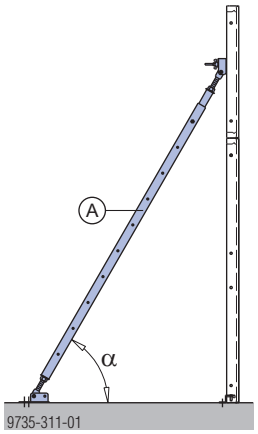
Follow the Fitting Instructions!

Required safe working load of alternative anchor for foot-plates: min. 3,0 kip (13.5 kN)

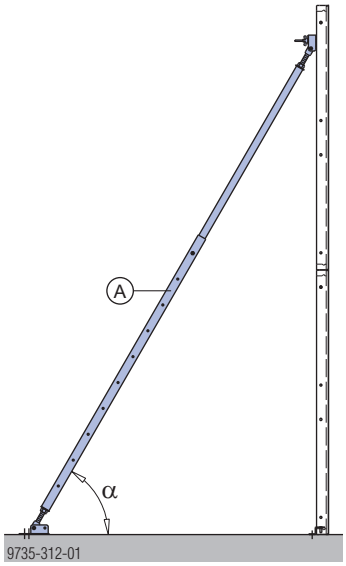
Follow the manufacturers' applicable fitting instructions.

Pipe brace 12'-0"-21'-0" and Pipe brace 22'-0"-40'-0"

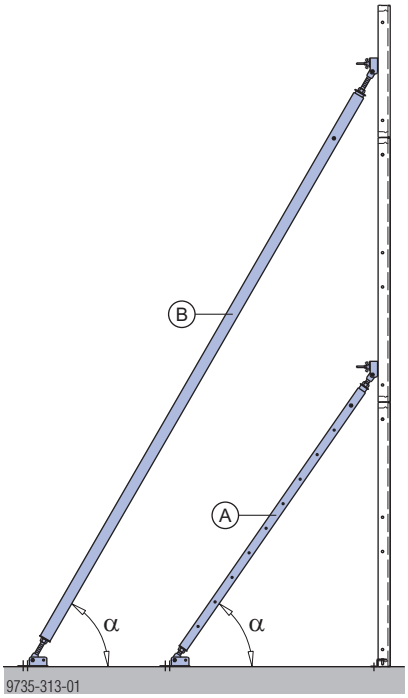
Formwork heights up to 13’-4" (4.05 m)



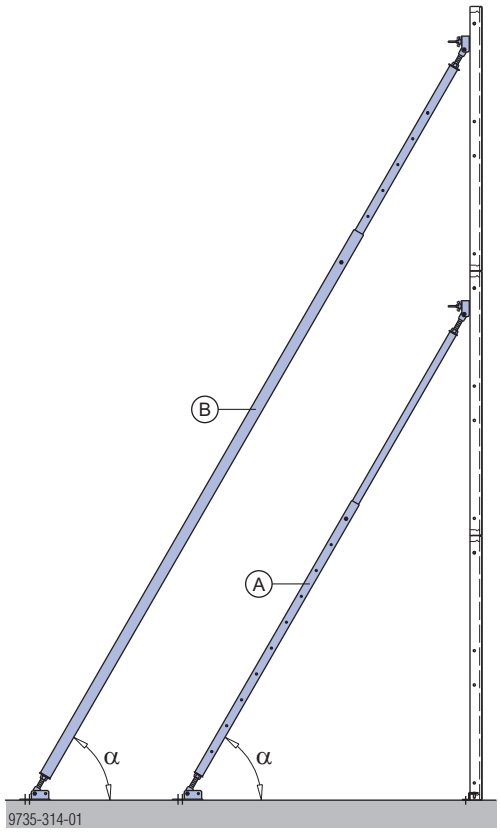
Formwork heights up to 17’-8" (5.40 m)



Formwork heights up to 22’-2" (6.75 m)



Formwork heights up to 26’-7" (8.10 m)



α ... approx. 60°

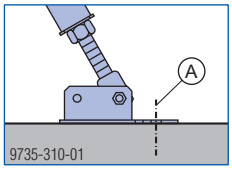
A Pipe brace 12'-0"-21'-0"

B Pipe brace 22'-0"-40'-0"

Fixing to the floor

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

Anchoring the footplate



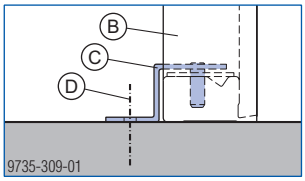
A Drill-in anchor ⌀ 3/4" (20 mm)

Required safe working load of alternative anchor for foot-plates: min. 3.0 kip (13.5 kN)

Follow the manufacturer's applicable fitting instructions.

Fixing the panels

The Bracing clip Framax S is fitted into the cross boreholes of the bottom frame profile and anchored to the ground.



B Framax S Xlife panel

C Bracing clip Framax S

D Dowel-type anchor ⌀ 1/2" (12 mm)

Number and positioning of Bracing clips Framax S:

- One Bracing clip Framax S is needed for each pipe brace.
- Fit the Bracing clip Framax S to the cross borehole nearest the pipe brace.

Required load-bearing capacity of the dowel-type anchor:
Tensile force: 1,000 lbs (4.5 kN) where the simultaneously acting shear force is 1,000 lbs (4.5 kN)

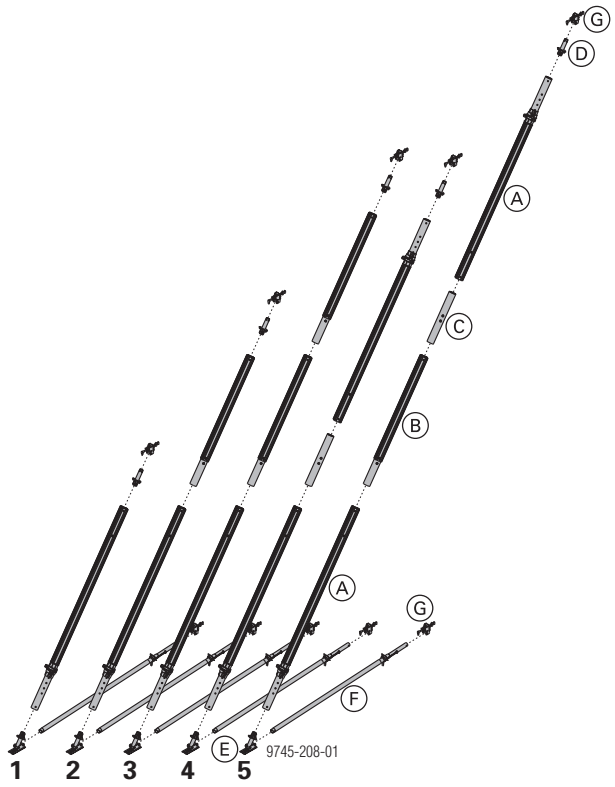
Follow the manufacturer's applicable fitting instructions.

Eurex 60 550 used as a strut or pipe-brace

As the Doka plumbing strut Eurex 60 550 – fitted with the appropriate accessories – this prop can also be used **for shoring high wall formwork**.

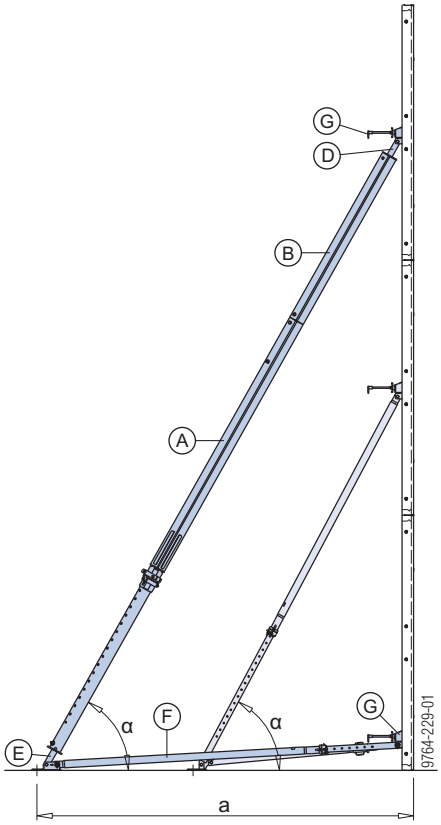
- Can be connected directly – without modification – to Doka framed formwork and Doka timber-beam formwork.
- The Adjusting strut 540 Eurex 60 makes handling much easier, especially when the formwork is being transferred.
- Can be telescoped in 4" (10 cm) increments, with continuous fine adjustment.

Follow the directions in the 'Eurex 60 550' User Information booklet!



Type	Extension length	Plumbing strut Eurex 60 550 **(A)**	Extension Eurex 60 2.00m **(B)**	Coupler Eurex 60 **(C)**	Connector Eurex 60 IB **(D)**	Plumbing strut shoe Eurex 60 EB **(E)**	Adjusting strut 540 Eurex 60 IB **(F)**	Prop head EB **(G)**	Weight
1	12'-5" - 19'-4" (3.79 - 5.89 m)	1	---	---	1	1	1	2	200 lbs (91.1 kg)
2	19'-0" - 25'-10" (5.79 - 7.89 m)	1	1	---	1	1	1	2	248 lbs (112.4 kg)
3	25'-7" - 32'-5" (7.79 - 9.89 m)	1	2	---	1	1	1	2	295 lbs (133.7 kg)
4	23'-8" - 37'-5" (7.22 - 11.42 m)	2	---	1	1	1	1	2	314 lbs (142.5 kg)
5	30'-3" - 44'-0" (9.22 - 13.42 m)	2	1	1	1	1	1	2	360 lbs (163.8 kg)

Example of a possible combination of Type 4



a ... 11'-3" - 19'-0" (341 - 580 cm)
α ... approx. 60°

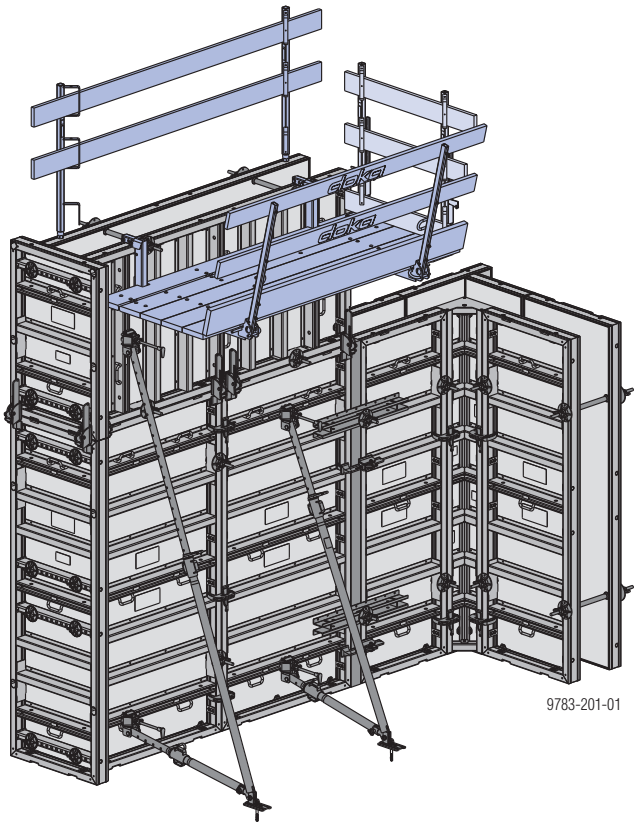
A	Plumbing strut Eurex 60 550
B	Extension Eurex 60 2.00m
C	Coupler Eurex 60
D	Connector Eurex 60 IB
E	Plumbing strut shoe Eurex 60 EB
F	Adjusting strut 540 Eurex 60 IB
G	Prop head EB

The rule-of-thumb here is:

The length of the strut or pipe-brace (i.e. the complete Eurex 60 550 plumbing-strut assembly) = the height of the gang to be braced.

Pouring platforms

can be quickly readied for use, and make concreting both easy and safe.



Preconditions for use:

Observe all applicable safety rules.

Only fix the pouring platform onto formwork constructions that are sufficiently stable to transfer the expected loads.

Ensure that the formwork gang has sufficient stiffness.

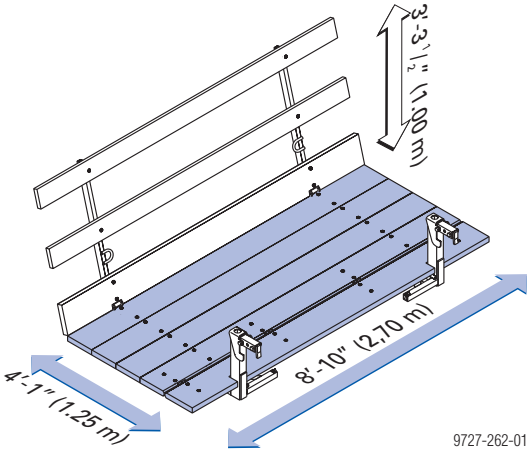
Also brace the formwork in a windproof manner when erecting it and when it is temporarily "parked" in the standing position.

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.
- It is NOT allowed to place the formwork on its side while the pouring platform is still mounted!
- Horizontal panels in vertically stacked configurations must also be tied at the top edge when used with pouring platforms!
- For length adjustments, it may be necessary to place floor planking as a bridge (max. 19" (50 cm)) between two platforms. Minimum plank overlap: 10" (25 cm).

Framax pouring platform U 1.25/2.70m

A pre-assembled, foldable, ready-to-use platform, 4'-1" (1.25 m) wide, for convenient and safe working.



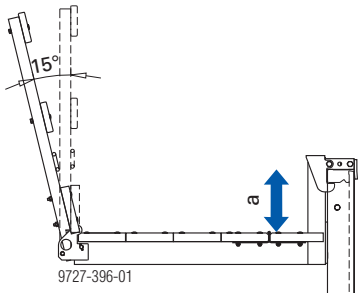
Permitted service load:

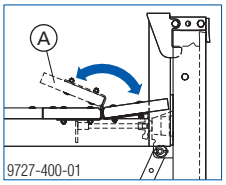
- in accordance with **OSHA 1926**, Subpart L: **30 psf (150 kg/m²)**
- in accordance with **CAN/CSA S269.2** - "Access Scaffolding for Construction Purposes" (light-duty scaffolds): **25 psf (120 kg/m²)**

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

- 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 12" (30 cm) below the top edge of the formwork. This means that there is a 'boundary' on the side facing the formwork.
- The guard rail can be locked in either of two positions:
  - in the vertical
  - tilted by 15°
- Tilt-back board:
  - The front plank can be tilted back so that panel struts can be attached to the panel.
  - This lets you get at form ties at the top of the formwork, and makes room for any projecting universal walings.



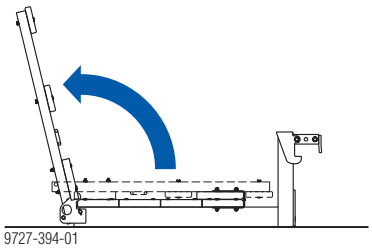


a ... 12" (30 cm)

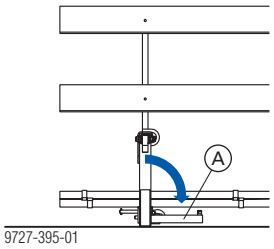
A Tilt-back board

Preparing the pouring platform:

➤ Tilt up the railings and lock them in position.



➤ Put both side stops into position.

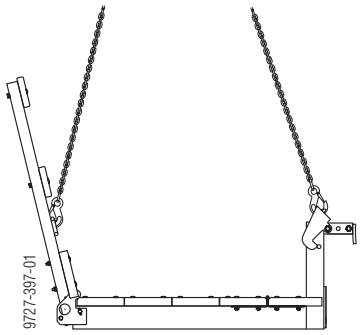


A Side stop

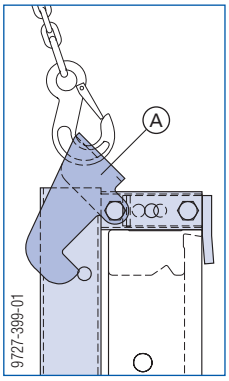
➤ Close the planking with the tilt-back board.

Lifting the platform onto the formwork:

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



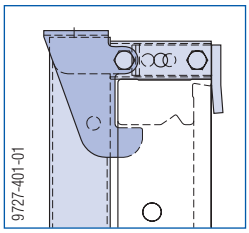
➤ Fix the pouring platform to the top of the formwork.



A Safety hook

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

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



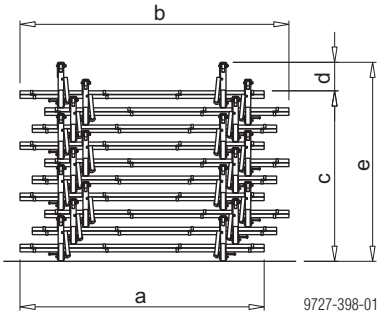
The pouring platform is now secured against accidental lift-out.

Lifting the platform off the formwork:

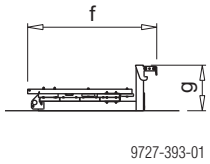
➤ Attach a four-part lifting tackle to the pouring platform and raise it.
When the pouring platform is raised by the four-part lifting tackle on the safety hook, the platform is automatically unlocked.

Transporting, stacking and storing

Stack of 10
Framax pouring platforms U



Single folded-down platform



a ... 8'-10" (268 cm)
b ... 9'-8" (295 cm)
c ... 10 x 7 3/8" (10 x 18.7 cm)
d ... 12 1/4" (31 cm)
e ... approx. 7'-2" (218 cm)
f ... 4'-8" (142 cm)
g ... 19 1/2" (50 cm)

Pouring-platforms with single brackets

Preconditions for use:

Observe all applicable safety rules.

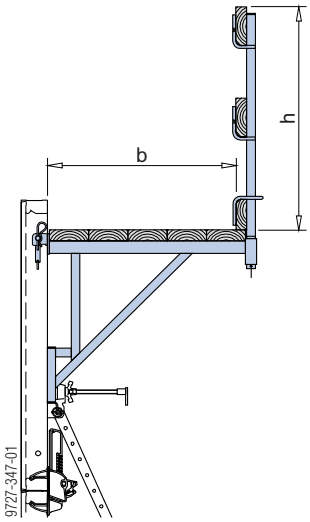
Only fix the pouring platform onto formwork constructions that are sufficiently stable to transfer the expected loads.

Ensure that the formwork gang has sufficient stiffness.

Also brace the formwork in a windproof manner when erecting it and when it is temporarily "parked" in the standing position.

Framax bracket 90

With the Framax bracket 90, pouring platforms with a platform width of 34” (90 cm) can be assembled. These pouring platforms can easily be assembled by hand.



b ... 34" (90 cm)
h ... 40" (103 cm)

Permitted service load:

- in accordance with **OSHA 1926**, Subpart L: **30 psf (150 kg/m²)**
- in accordance with **CAN/CSA S269.2** - ‘Access Scaffolding for Construction Purposes’ (light-duty scaffolds): **25 psf (120 kg/m²)**

Max. influence width: 6’-6" (2.00 m)

NOTICE

The brackets must be secured against accidental lift-out.

Note:

Scaffold planks and guardrail planks must be compliant with local regulations.

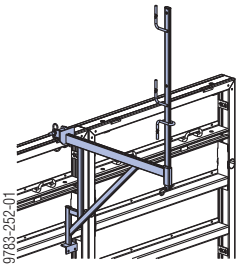
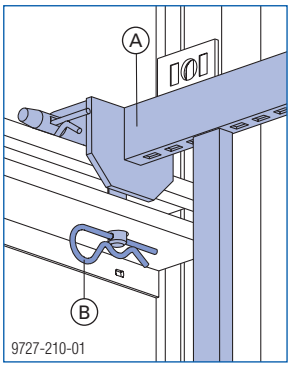
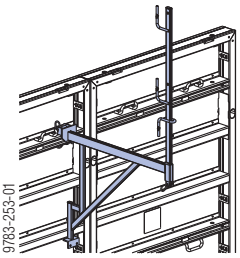
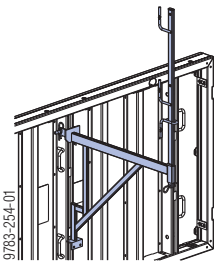
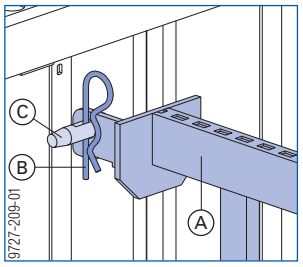
Scaffold planks and guardrail planks: Per 3’-3" (1.0 m) length of platform, 9.7 sqft (0.9 m²) of scaffold planks and 3.8 sqft (0.35 m²) of guardrail planks are needed (site-provided).

Plank thicknesses for support centers up to 6’-6” (2.00 m):

- 3 scaffold planks min. 1 1/2 x 9 1/2" (4 x 24 cm)
- 1 scaffold plank min. 1 1/2 x 5 1/2" (4 x 14 cm)
- 2 guardrail planks min. 1 1/2 x 3 1/2" (4 x 9 cm)
- 1 guardrail plank min. 1 1/2 x 5 1/2" (4 x 14 cm) (toeboard)

Fastening the scaffold planks: with 4 carriage bolts 3/8-16 x 4 3/4 (square bolts M10x120) per bracket (not included in scope of supply).

Fastening the guardrail boards: with nails

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

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

Note:

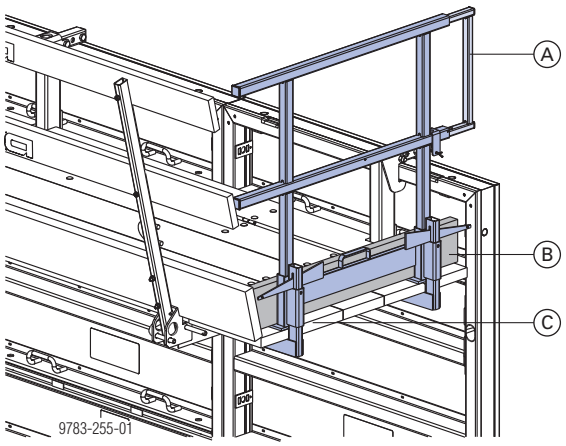
Where brackets need to be fixed to the middle cross profile of upright Framax Xlife universal panels 2.70m (2008 models onward), this can also be done in the left-hand borehole.

Sideguards on exposed platform-ends / opposing guard-rail

Sideguards on exposed platform-ends

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

Side handrail clamping unit T



A	Integrated telescopic handrail
B	Guardrail plank min. 2x6 (1 1/2" x 5 1/2" (4 x 14 cm)), site-provided
C	Pouring platform

The sideguard consists of:

- 1 Side handrail clamping unit T
- 1 guardrail plank min. 1 1/2" x 5 1/2" (4 x 14 cm), site-provided

Assembly:

➤ Fasten the clamping part to the decking of the pouring scaffold using the wedge (clamping range 1/2" to 2 1/3" (4 to 6 cm)).

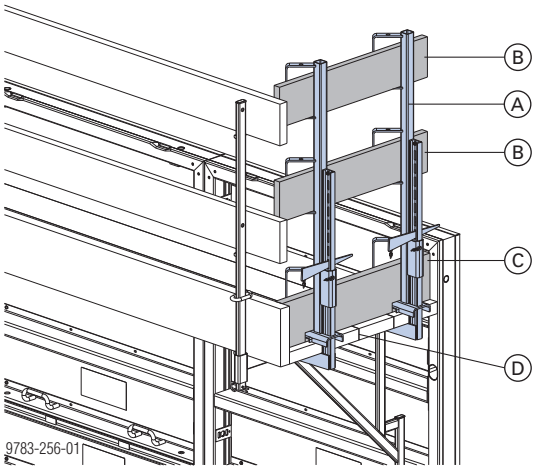
➤ Slot in the guardrail planks.

➤ Extend the telescopic railing to the desired length and secure it.

➤ Insert toeboard (guard-rail plank).

Animation: https://player.vimeo.com/video/274887351

Handrail clamp S



A	Handrail clamp S
B	Guardrail plank min. 2x4 (1 1/2" x 3 1/2" (4 x 9 cm)), site-provided
C	Guardrail plank min. 2x6 (1 1/2" x 5 1/2" (4 x 14 cm)), site-provided
D	Pouring platform

The sideguard consists of:

- 2 Handrail clamps S
- 2 guardrail planks min. 1 1/2" x 3 1/2" (4 x 9 cm), site-provided
- 1 guardrail plank min. 1 1/2" x 5 1/2" (4 x 14 cm), site-provided

Assembly:

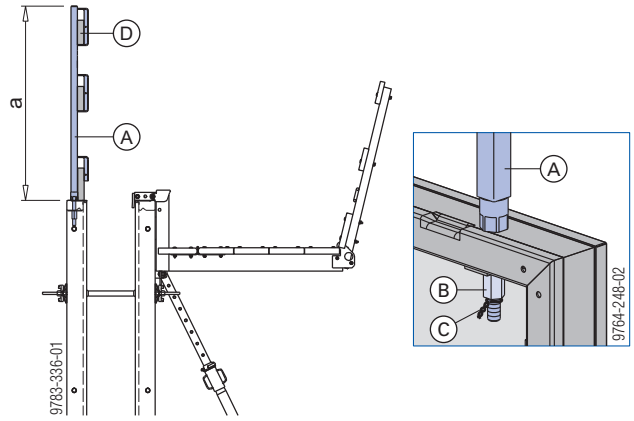
➤ Fasten the handrail clamps to the planking of the pouring scaffold, using the wedge (clamping range 1" - 1'-5" (2 to 43 cm)).

➤ Secure the guardrail planks to the loops on the handrail clamps with one d10 nail (28x65) per loop.

Follow the directions in the User Information booklet 'Handrail clamp S'!

Opposing guard-rail with Handrail post 1.10m

If there are working platforms mounted on one side of the formwork only, then the **Handrail post 1.10m** can be used to erect **guard rails on the opposing formwork**.



a ... 47" (120 cm)

A	Handrail post 1.10m
B	Hexagon nut 20.0
C	Hexagon nut secured by e.g. binding wire
D	Guard-rail plank

How to mount:

- Fix the Handrail post 1.10m into the cross borehole of the framed panel with a hexagon nut 20.0.
- Secure the Hexagon nut 20.0.

NOTICE

Before the gang-form is repositioned by crane, the guard-rail planks must be removed!

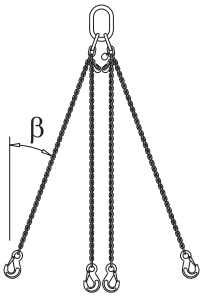
Follow the directions in the "Handrail post 1.10m" User Information!

Lifting by crane

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

Lifting chain

Doka 4-part chain 3.20m for gang-forms weighing up to max. 5200 lbs (2400 kg)



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):
at a spread angle β up to 30°: 5200 lbs (2400 kg).

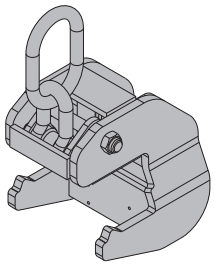
Follow the directions in the Operating Instructions!

Lifting chain for gang-forms weighing over 5200 lbs (2400 kg)

For large gang-forms, a suitably long and strongly-rated lifting chain must be used.

Follow the manufacturer's Operating Instructions!

Framax lifting hook



CE

Max. load-bearing capacity:

- Spread angle β up to 7.5°:
  3300 lbs (1500 kg) / Framax lifting hook
  Practical area of formwork that can be lifted using 2 lifting hooks: approx. 480 sq.ft. (45 m²)
- Spread angle β up to 30°:
  2200 lbs (1000 kg) / Framax lifting hook
  Practical area of formwork that can be lifted using 2 lifting hooks: approx. 320 sq.ft. (30 m²)

Framax lifting hooks with the rated load-bearing capacity of max. 2200 lbs (1000 kg) also comply with the requirements for a load bearing capacity of 3300 lbs (1500 kg) at a spread angle β ≤ 7.5°.

Follow the directions in the Operating Instructions!

NOTICE

With larger gangs, **Framax lifting hooks 20kN** must be used together with **a two-part lifting chain of sufficient load-bearing capacity**.

Follow the directions in the 'Framax lifting hook 20kN' Operating Instructions!

Securing the lifting hooks against slipping sideways

NOTICE

Position the lifting hooks so that they cannot slip sideways.

- over **inter-panel joints**
- Over **cross profiles** (single panels incorporated in the horizontal)
- Over **transversal boreholes**

For other suitable positions see the section headed “Position of the lifting hooks”.

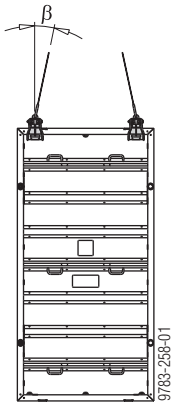
Position of the lifting hooks

Note:
The positions of the lifting hooks as shown here also apply for gangs incorporating vertically stacked panels.

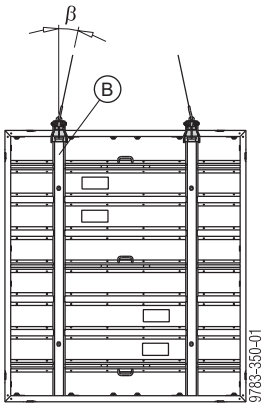
Single panel:

Panels up to 0.60 m wide

Panels over 0.60 m wide

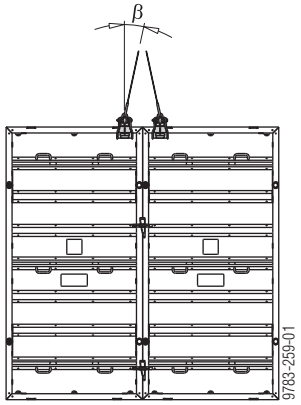


A Welded-on metal plate



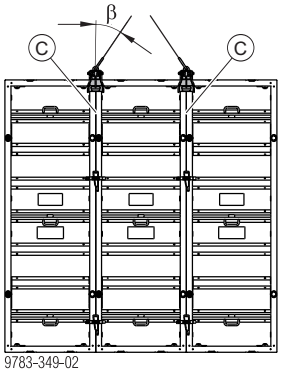
B Center profile

Gang-form - two panels upright:



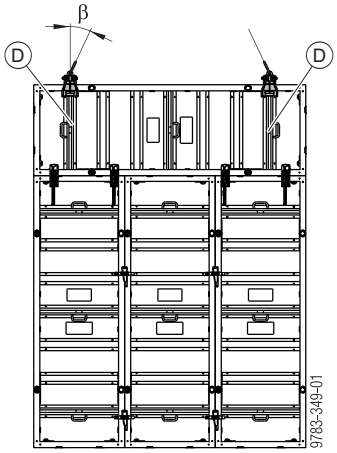
A Welded-on metal plate

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



C Panel joint

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



D Cross profile

Transporting, stacking and storing

Bundling the panels

1) Place sleepers (W x H approx. 3" x 4" (8 x 10 cm)) under the cross profile.
2) Strap the sleepers (hardwood blocking) and the bottom panel together with metal banding.

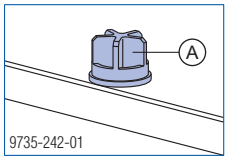
WARNING

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".

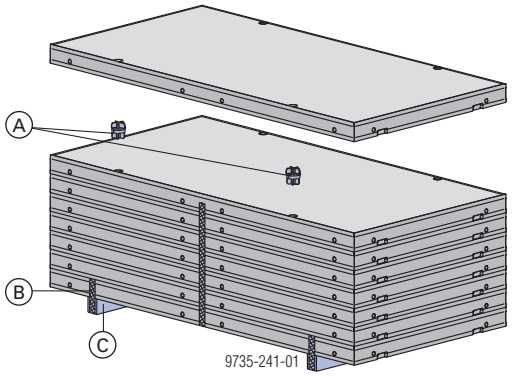
3) Insert Framax stacking cones.



A Framax S stacking cone

The stacking cones secure the panels against slippage.

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



A Framax S stacking cone
B Strapping tape
C Sleeper

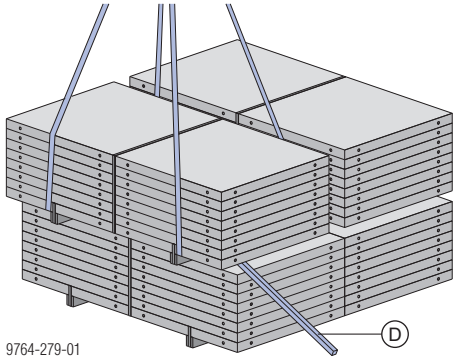
Max. number of panels in a stack:

Panel (Width)	Max. number of panels stacked on top of one another	Stacking height incl. sleepers
Up to 1.35m	8	approx. 3'-7" (110 cm)
2.40x2.70m	5	approx. 2'-6" (75 cm)

Transporting the panels

Dokamatic lifting strap 13.00m

The Lifting strap 13.00m is a practical tool for **offloading and loading 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

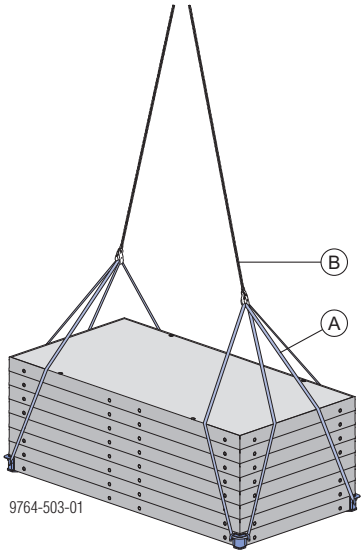
➤ The Lifting straps 13.00 m may only be used as shown here if there is no risk of the straps sliding towards one another, or of the load being displaced.

Max. load-bearing capacity:
4400 lbs (2000 kg) / Dokamatic lifting strap 13.00m

Follow the directions in the Operating Instructions!

Framax transport gear

For safe crane-handling of stacked panels at construction sites, builders' yards 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 slide out.

Advantages:

- Spring-loaded slinging hooks reach from underneath into the continuous hardware slot 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 attached and detached by just one person working on their own.
- There is no need for anti-slippage protection using Framax stacking cones here.

Max. load-bearing capacity:
4400 lbs (2000 kg) / 4 round slings

NOTICE

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

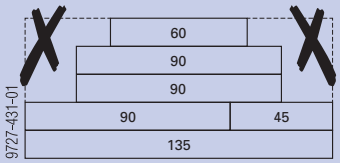
Preconditions for use:

The bottom layer of the stack must always consist of one panel only.

The panels in each stack must all be of the same width.

The top layers may also consist of "half-width" panels. The important thing here is that every panel must be firmly held by at least two round slings and that no "gaps" are left open between panels.

It is forbidden to transport stacks where the edges of the panels are not all in alignment!



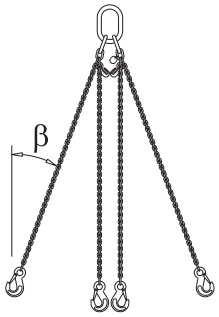
Follow the directions in the Operating Instructions!

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

  For further information, see the section headed 'Lifting by crane'.
- used in combination with **Framax transport bolts** for moving stacked panels and individual panels.



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

Max. load-bearing capacity:

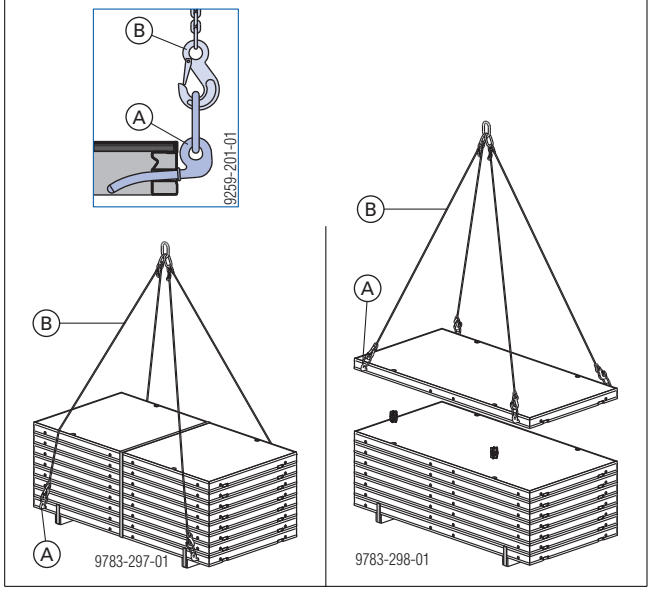
	Spread-angle β			
	0°	0°-30°	30°-45°	45°-60°
Using 1 chain	3000 lbs (1400 kg)	-	-	-
Using 2 chains	-	5200 lbs (2400 kg)	4400 lbs (2000 kg)	3000 lbs (1400 kg)
Using all 4 chains	-	7900 lbs (3600 kg)	6600 lbs (3000 kg)	4600 lbs (2120 kg)

Follow the directions in the Operating Instructions!

Framax transport bolt with Doka 4-part chain 3.20m

The Doka 4-part chain 3.20m **(B)** is used in combination with Framax transport bolts **(A)** for moving stacked panels and individual panels.

Hoisting bundled stacks of panels	Lifting panels off the stack



WARNING

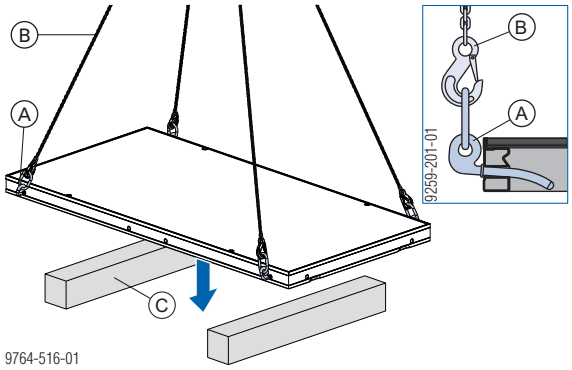
➤ It is strictly forbidden to lift stacks of panels without inserting Framax stacking cones (2 cones per layer) first!

Max. load-bearing capacity:
1100 lbs (500 kg) / Framax-transport bolt

Follow the directions in the Operating Instructions!

Lifting panels upright / turning panels over

➤ Use **Framax transport bolts** to lay the framed panel flat on squared timbers 8" x 8" (20 x 20 cm).



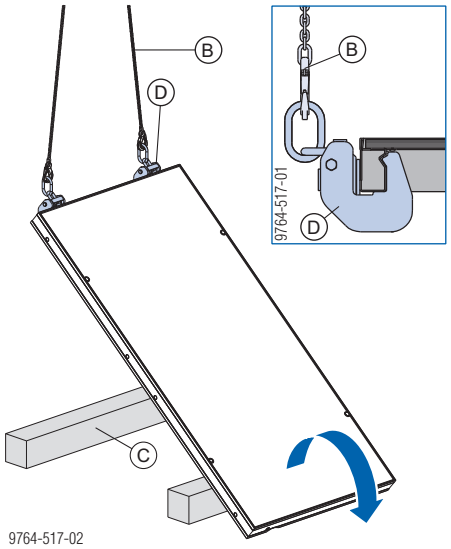
A Framax transport bolt
B Doka 4-part chain 3.20m
C Squared timber 8" x 8" (20 x 20 cm)

WARNING

Using Frami transport bolts to lift framed panels upright or turn them over is prohibited!

➤ Use Framax lifting hooks!

➤ Position the Framax lifting hooks. Lift the framed panel upright with **Framax lifting hooks** and, if applicable, lay it flat with the sheeting side down.



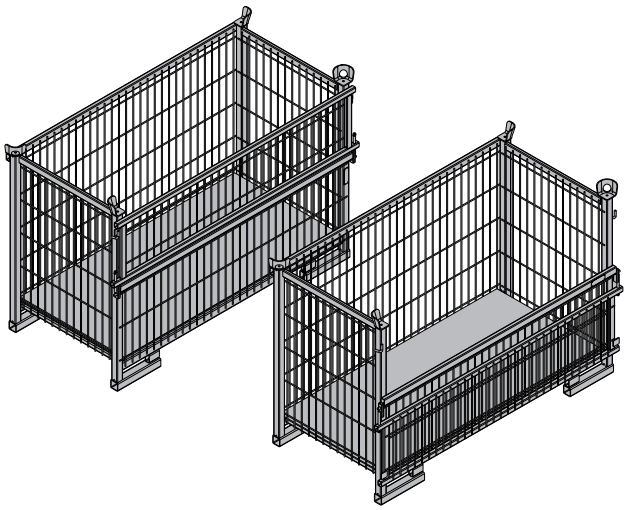
B Doka 4-part chain 3.20m
C Squared timber 8" x 8" (20 x 20 cm)
D Framax lifting hook

Follow the directions in the Operating Instructions!

Utilize the benefits of Doka multi-trip packaging on your worksite.
Our Multi-trip packaging such as transport boxes, stacking pallets, accessory boxes and skeleton transport boxes keep everything in place on the site.

Doka skeleton transport box 1.70x0.80m

Storage and transport device for small items



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

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

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

Max. n° of units on top of one another

Outdoors (on the site) Floor 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!	

NOTICE

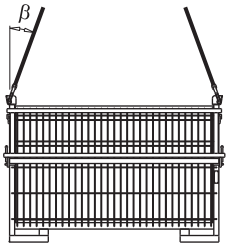
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

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

Lifting by crane

NOTICE

- Multi-trip packaging items 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 permitted load capacity.
- Spread-angle β max. 30°!



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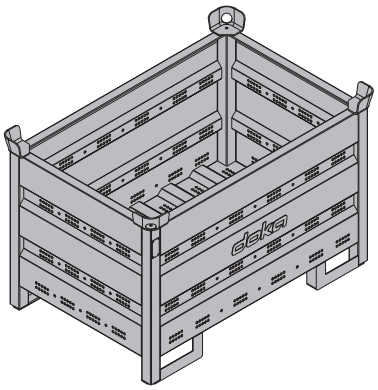
Shifting boxes with the forklift or pallet stacking truck

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

Doka multi-trip transport box

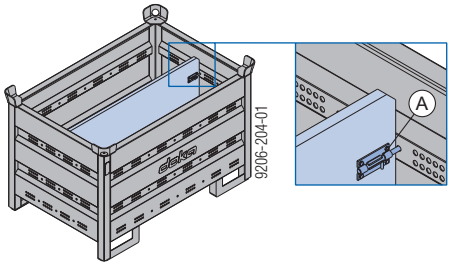
Storage and transport device for small items.

Doka multi-trip transport box 1.20x0.80m



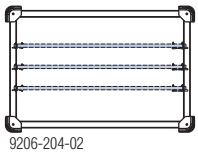
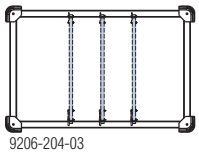
Max. load-bearing capacity: 1500 kg (3300 lbs)
Permitted imposed load: 7850 kg (17300 lbs)

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

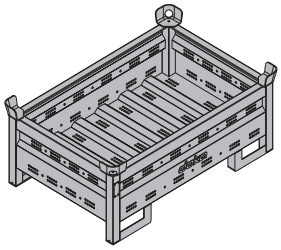


A Slide-bolt for fixing the partition

Possible ways of dividing the box

Multi-trip transport box partition	in the longitudinal direction	in the transverse direction
1.20 m	max. 3 partitions	-
0.80 m	-	max. 3 partitions
	 9206-204-02	 9206-204-03

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



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

Using Doka multi-trip transport boxes as storage units

Max. n° of units on top of one another

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

NOTICE

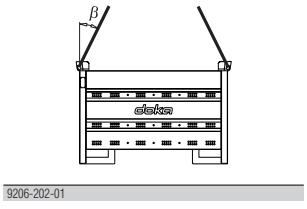
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

Using Doka multi-trip transport boxes as transport devices

Lifting by crane

NOTICE

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

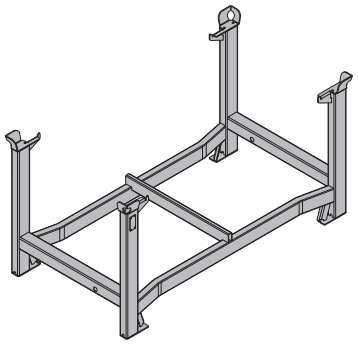


Shifting boxes with the forklift or pallet stacking truck

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.



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

Using Doka stacking pallets as storage units

Max. n° of units on top of one another

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

NOTICE

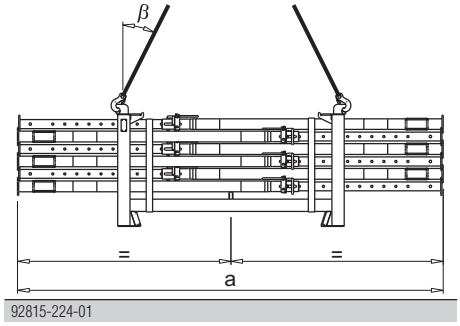
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on caster set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with 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 lifting chain (e.g. Doka 4-part chain 3.20m). Do not exceed permitted load 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

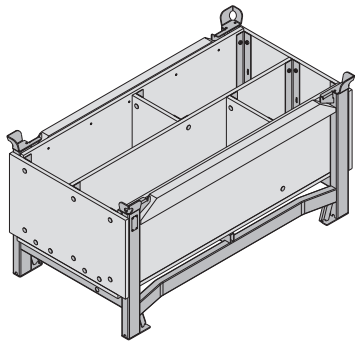
Shifting boxes with the forklift or pallet stacking truck

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.



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

Using Doka accessory boxes as storage units

Max. n° of units on top of one another

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

NOTICE

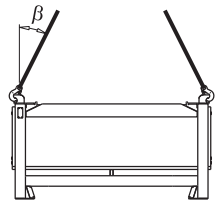
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on caster set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on caster set mounted to it.

Using Doka accessory boxes as transport devices

Lifting by crane

NOTICE

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



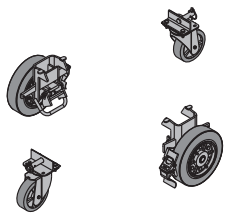
92816-206-01

Shifting boxes with the forklift or pallet stacking truck

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

Bolt-on caster set B

The Bolt-on caster set B turns the stacking pallet into a fast and maneuverable transport trolley.
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!

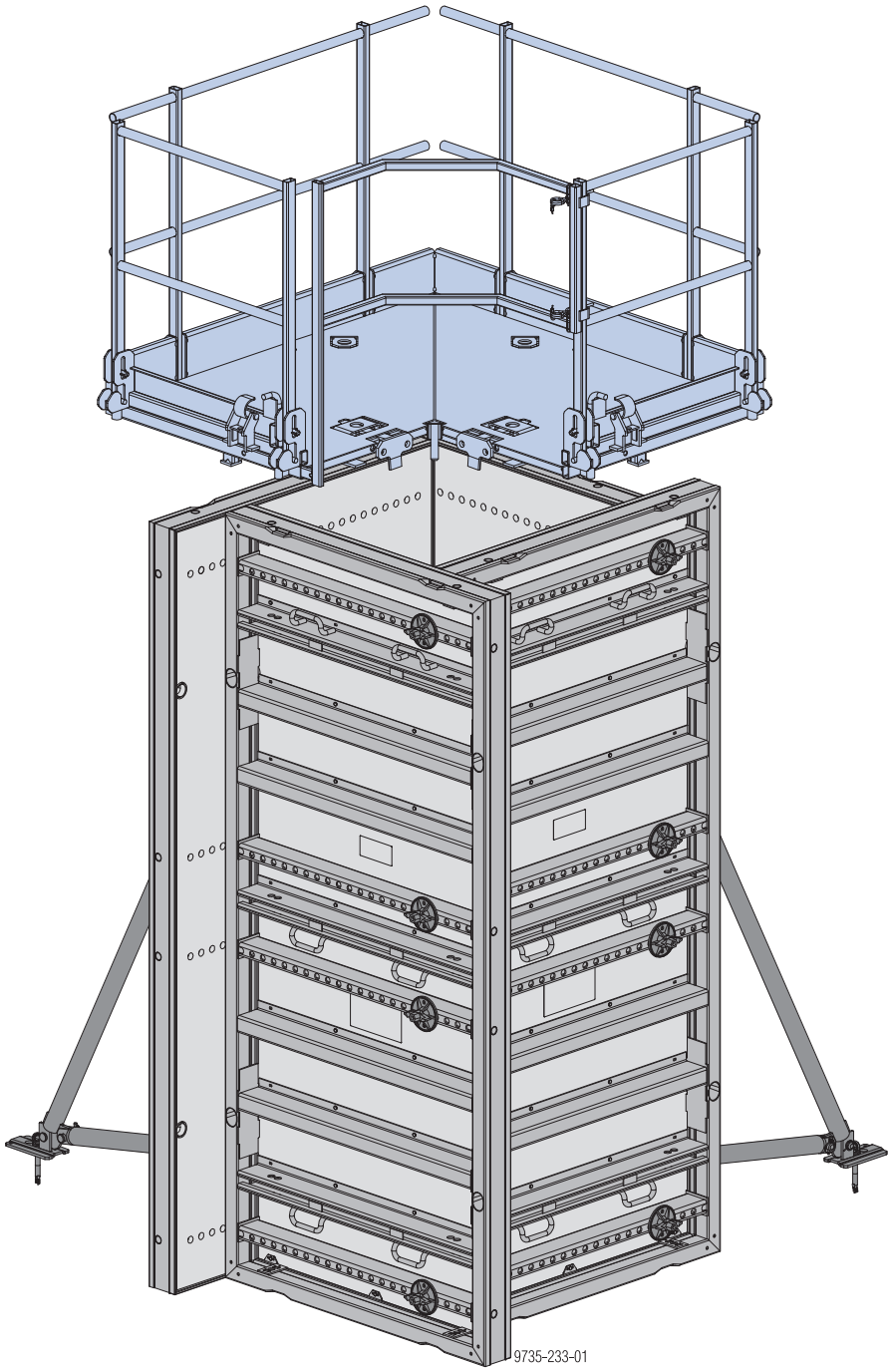
Column formwork

The **Framax Xlife universal panels** permit flexible accommodation to column cross-sections of up to 42" x 42" (106.7 x 106.7 cm) in **2" (5.1 cm) increments**.

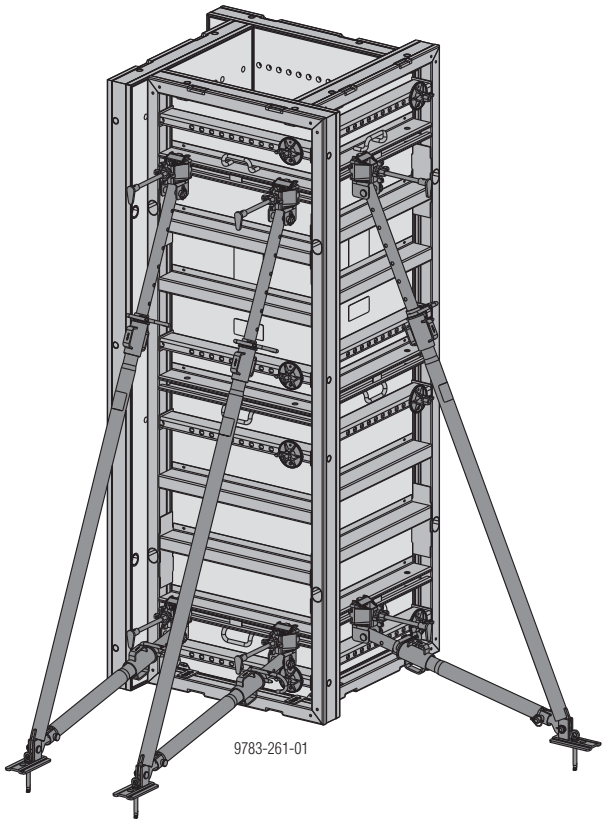
Permitted pressure of the fresh concrete: 1880 psf (90 kN/m²)

At a concrete density of 150 pcf (25 kN/m³), this corresponds to a hydrostatic pour-height of 11'-10" (3.60 m).

However, dimensions of 30 cm, 45 cm, 60 cm, 75 cm and 90 cm can also be formed using ordinary **Framax Xlife panels and Framax outside corners** (permitted fresh-concrete pressure: 1650 psf (80 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.

Setting up and stripping the formwork

Setting up:

- ➤ Pre-assemble the formwork-halves flat on the ground.
- ➤ Secure the first formwork-half with panel struts before detaching it from the crane.
- ➤ Join the second formwork-half to the first half of the formwork, then detach it from the crane.

Stripping:

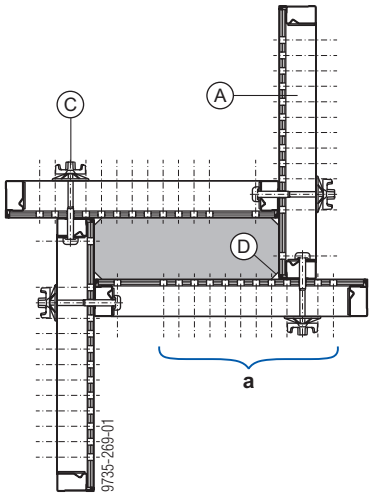
- ➤ First attach the formwork-half that is without panel struts to the crane. Then undo the connection between the formwork-halves, hoist the second formwork-half out of the way and set it down flat for intermediate storage.
- ➤ Attach the formwork-half that is with panel struts to the crane. Take out the ground anchors of the panel struts and reposition this half of the formwork.

with Framax Xlife universal panels

The practical 2" (5.1 cm) hole-grid is ideal for forming columns. **Cross-sections of up to 42" x 42" (106.7 x 106.7 cm).** By combining panels with heights of 2.70 m, 1.35 m and 0.90 m, a **height grid of 45 cm** is possible.

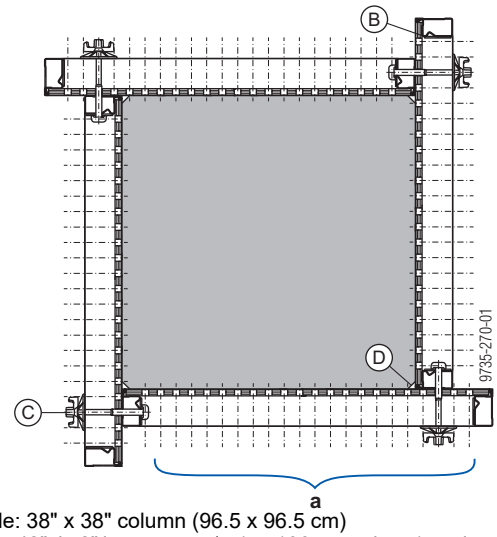
Note:
Seal off the unused holes in the form-facing of the Universal panels with **Framax plugs R24**.

Framax Xlife universal panel 0.90m



Example: 8" x 24" column (20 x 61 cm)
a ... 6" to 28", in 2" increments (15 to 71 cm, in 5.1 cm increments)

Framax Xlife universal panel 1.22m

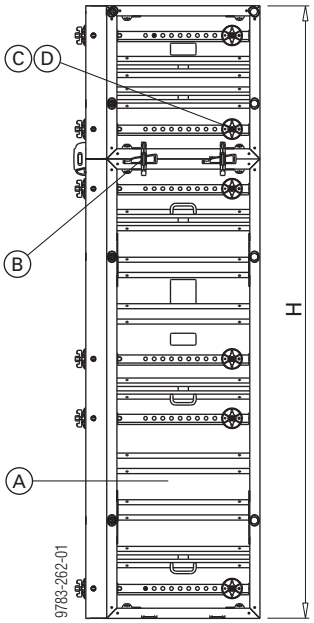


Example: 38" x 38" column (96.5 x 96.5 cm)
a ... 2" to 42", in 2" increments (5.1 to 106.7 cm, in 5.1 cm increments)

A	Framax S Xlife universal panel 0.90m
B	Framax S Xlife universal panel 1.22m
C	Framax universal fixing bolt + Super-plate 15.0
D	Framax frontal triangular ledge

Combining the two widths of panel:
Large rectangular cross-sections can be economically formed by combining the two widths of panel.

Materials schedule:



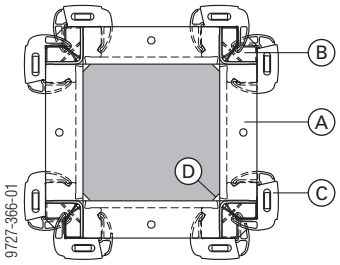
Formwork height **(H)**	Universal panel **(A)**			Quick-acting clamp RU **(B)**	Universal fixing bolt **(C)**	Super-plate 15.0 **(D)**
	2.70m	1.35m	0.90m			
3'-0" (0.90 m)			4		8	8
4'-5" (1.35 m)		4			8	8
5'-10" (1.80 m)			8	8	16	16
7'-4" (2.25 m)		4	4	8	16	16
8'-10" (2.70 m)	4				16	16
10'-4" (3.15 m)		4	8	16	24	24
11'-10" (3.60 m)	4		4	8	24	24
13'-3" (4.05 m)	4	4		8	24	24
14'-9" (4.50 m)	4		8	16	32	32
16'-3" (4.95 m)	4	4	4	16	32	32
17'-9" (5.40 m)	8			8	32	32

Table gives number of items needed

with Framax outside corners and Framax Xlife panels

Dimensions of **30 cm, 45 cm, 60 cm, 75 cm** and **90 cm** can also be formed using **Framax outside corners** and ordinary **Framax Xlife panels**.

Permitted fresh-concrete pressure:
1,650 psf (80 kN/m²)

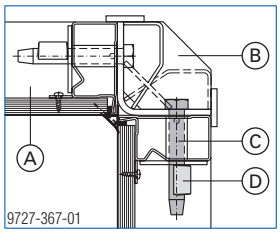


A Framax S Xlife panel (max. 60cm)
B Framax outside corner
C Framax quick-acting clamp RU
D Triangular ledge

NOTICE

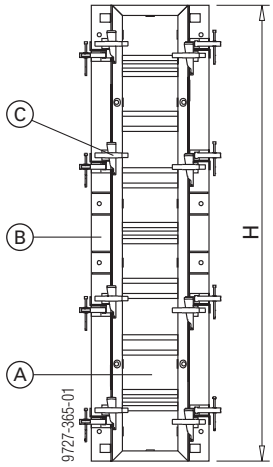
- For columns where one or both sides of the cross-section measures either **75 cm or 90 cm**, **wedge bolts** and **tensioning wedges** must be used instead of the quick-acting clamps.
- Do not oil or grease wedge-clamped joints.

Framax wedge bolt RA 7.5
Permitted tensile force in the cross borehole of the Framax S Xlife panel: 5.6 kip (25.0 kN)



A Framax S Xlife panel 0.75m or 0.90m
B Framax outside corner
C Framax wedge bolt RA 7.5
D Framax tensioning wedge R

Materials schedule:



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

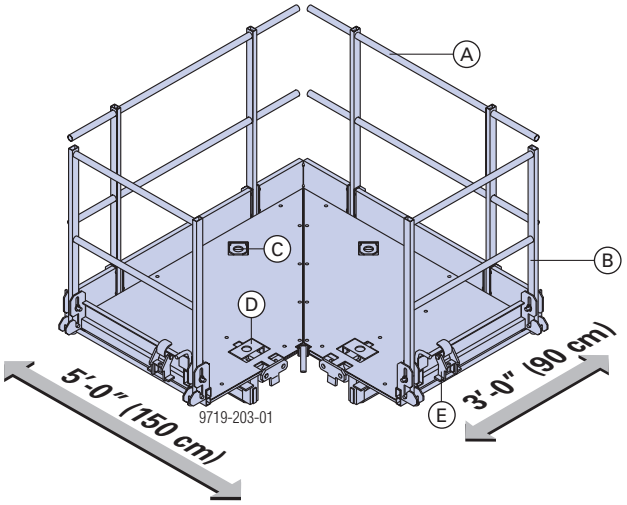
Panel height **(H)**	Framax Xlife panel **(A)**		Framax outside corner **(B)**		Quick-acting clamp RU or Wedge bolt with tensioning wedge **(C)**
	2.70m	1.35m	2.70m	1.35m	
1.35m		4		4	16
2.70m	4		4		32

Table gives number of items needed

Doka column formwork platform 150/90cm

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

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 stand-by position

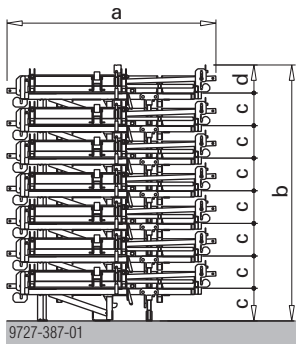
Permitted service load:
- to **OSHA 1926**, Subpart L:
  30 psf (150 kg/m²)
- to **CAN/CSA S269.2** - "Access scaffolding for Construction Purpose" (Light duty scaffold):
  25 psf (120 kg/m²)

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 Framax Xlife: 10" x 10" to 42" x 42" (25.4 x 25.4 cm to 106.7 x 106.7 cm)
- The slinging points recessed into the planking 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 relocated 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.

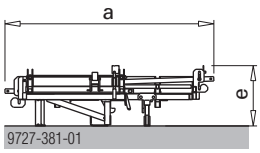
Transporting, stacking and storing

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

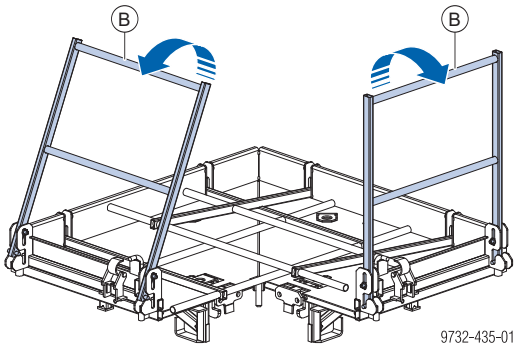


a ... 6' (183 cm)
b ... 7'-5" (225 cm)
c ... 11 1/4" (28.6 cm)
d ... 9 3/4" (24.8 cm)
e ... 21" (53 cm)

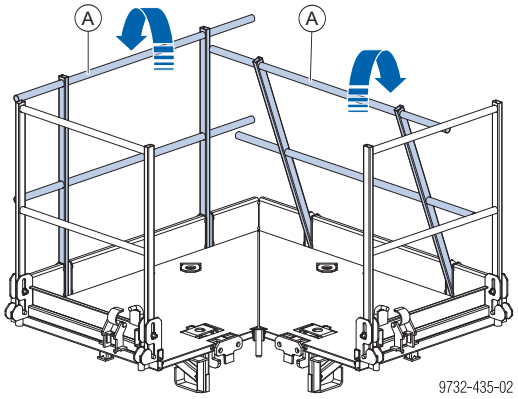
WARNING
There is a risk of the stack tipping over **in high winds**.
➤ If wind speeds are high, secure the stack additionally or reduce the stack to 3 platforms.

How to erect

➤ Tip up the side railings. The railings lock into place automatically.



➤ Tip up the rear railings. The railings lock into place automatically.

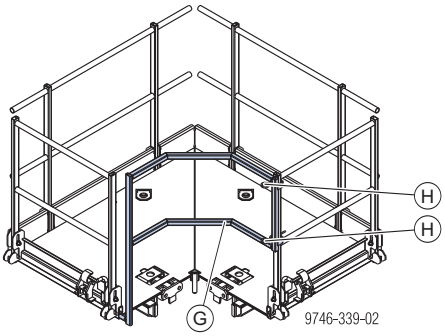


A Rear railing
B Side railing

The column formwork platform is now ready for use.

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

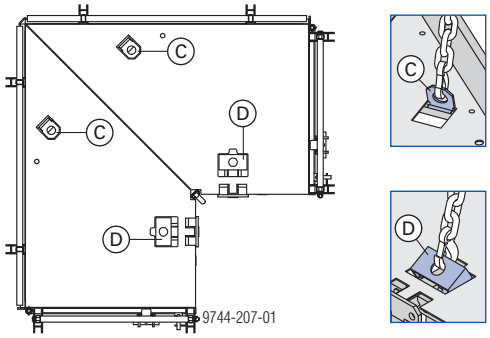
➤ Mount Counter railing col. formwork plat. 150/90cm and secure with Spring cotter 5mm.



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

Relocating the platform

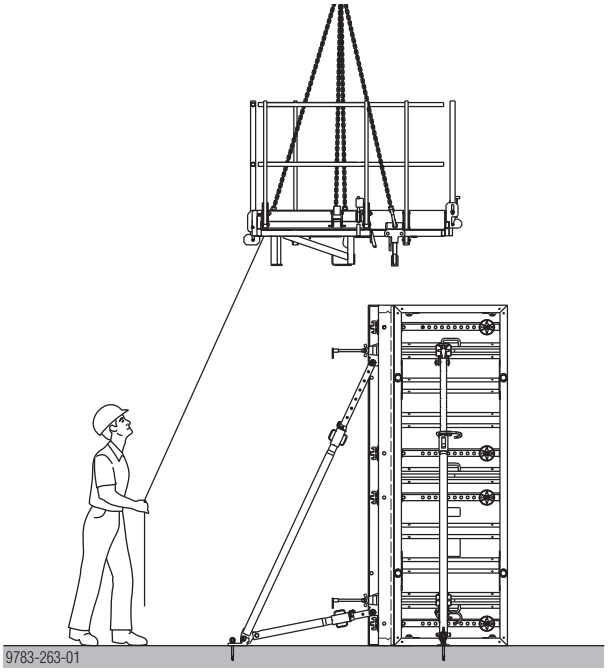
➤ Attach the crate to the points shown.



C Rear hoisting point
D Front hoisting point

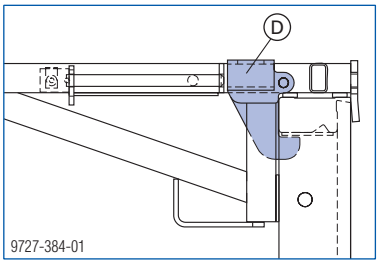
Red extra hoisting point in stand-by position.

➤ Hook the column formwork platform onto the formwork.



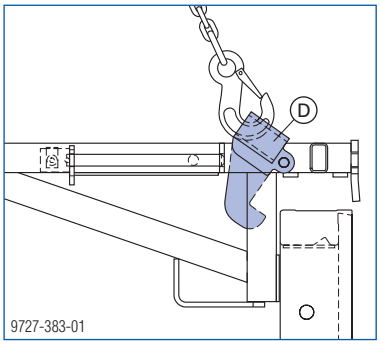
Using tag-lines makes it much easier to hang the platform exactly into place.

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



The safety hook **(D)** drops down into its starting position and automatically secures the platform against accidental lift-out.

➤ When the platform is lifted, the four-part lifting chain acts on the safety hook **(D)** and the platform automatically unlocks.



Lifting the formwork and platform in one piece

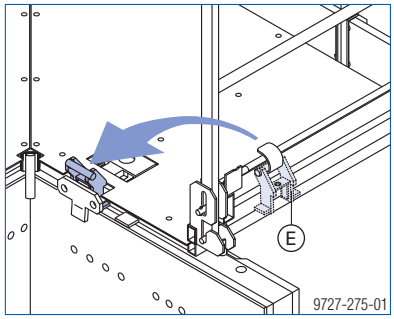
To save crane time, the Doka column formwork platform can also be repositioned jointly with the formwork:

➤ Only ever lift and reposition one formwork-half at a time.

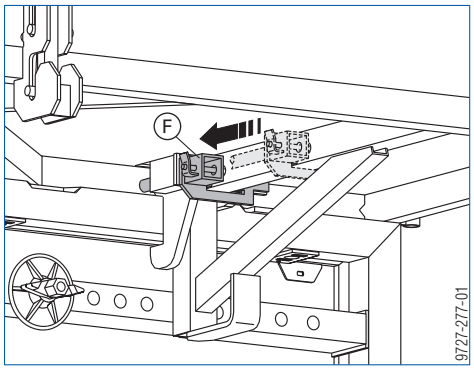
➤ Max. heights of formwork that can be repositioned together with the platform:
- 26'-7" (8.10 m) for universal panels 0.90m
- 17'-9" (5.40 m) for universal panels 1.22m

➤ Hang the platform into place on the formwork (proceed as in 'Relocating the platform').

➤ Move the extra hoisting point **(E)** from the stand-by position to the service position. Right position = inclined forward towards formwork.



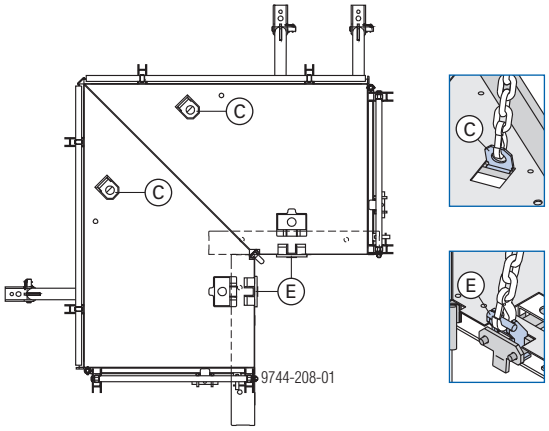
➤ Fix the extra hoisting point with the slide bolt **(F)** on the underside of the platform.



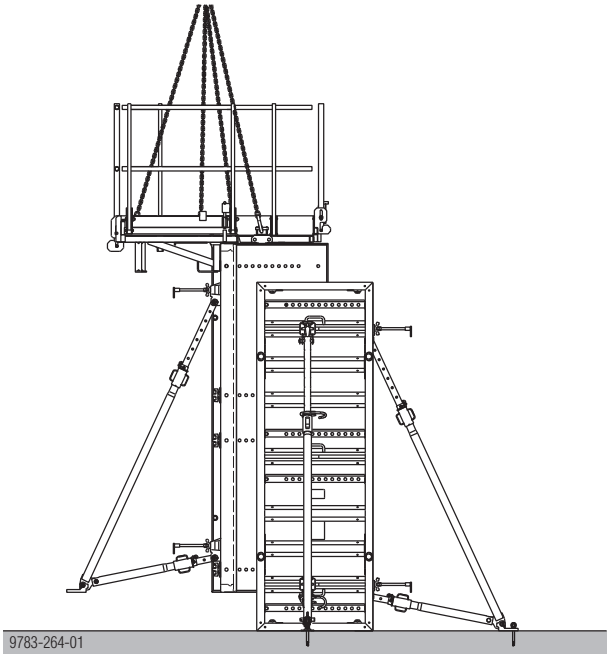
Make sure that the slide bolt engages in the front position.

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

➤ Attach the crane to the points shown.



C Rear hoisting point
E Extra hoisting point

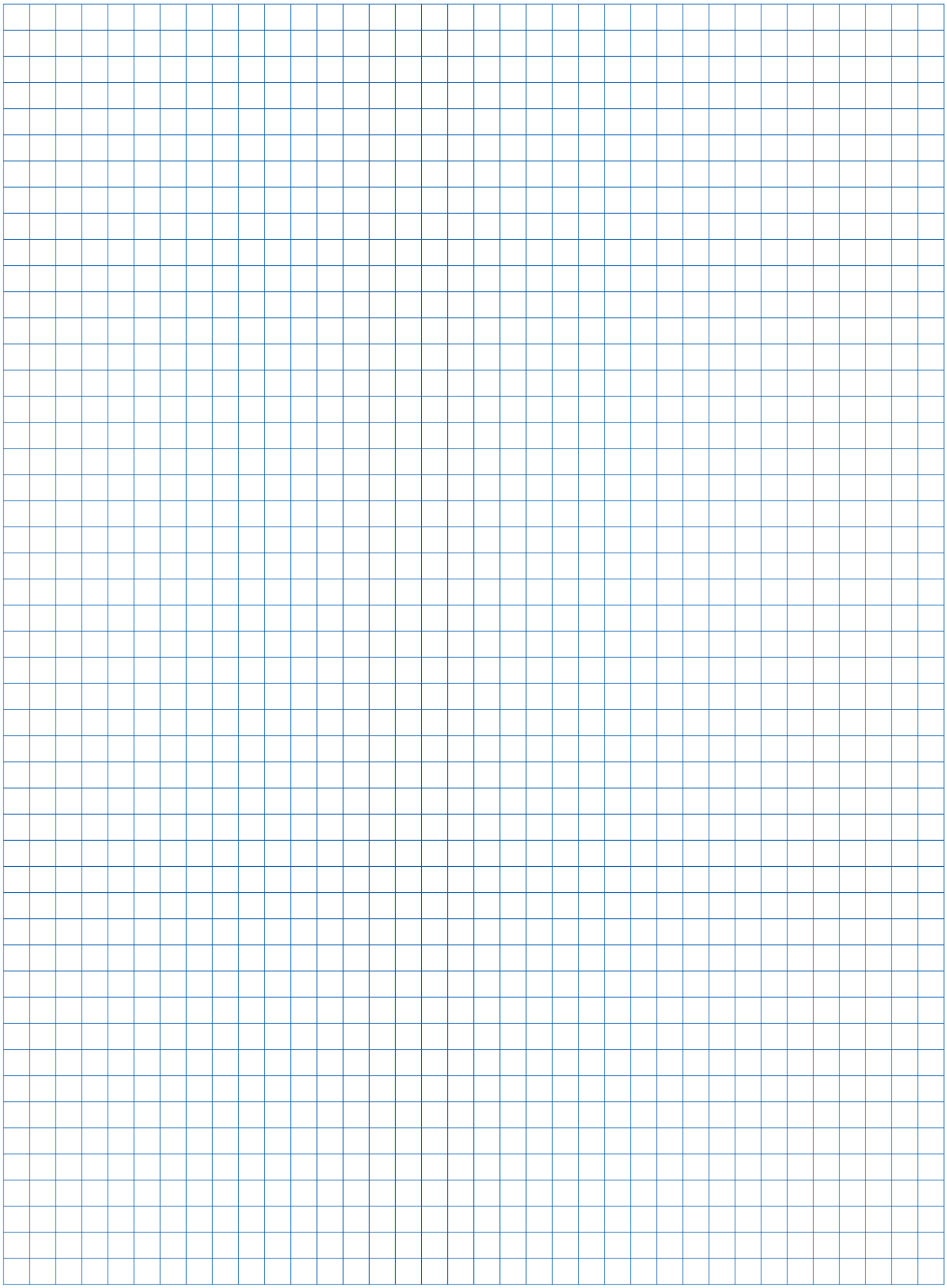


The platform can stay attached to the formwork throughout this entire operation.

Separating the platform from the formwork

➤ Fix the slide bolt **(F)** back in the rear position and move the extra hoisting point into the stand-by position.

➤ Attach the crane to the points shown in "Relocating the platform".



Circular formwork

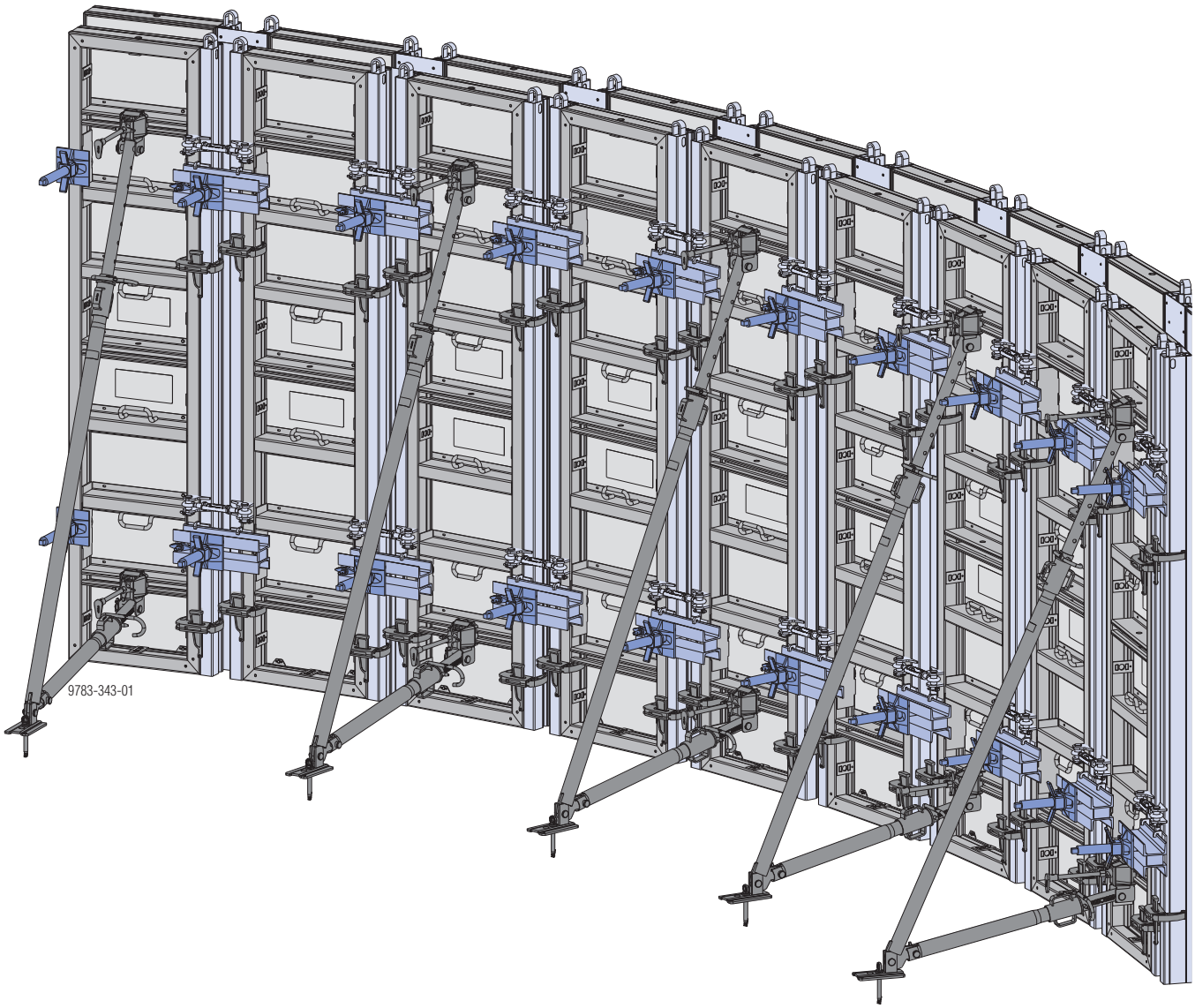
The quick way to form "in the round" – the Framax circular forming plates will get your framed formwork "around" any curve!

With the Framax circular forming plates and the panels of the Framax Xlife framed formwork system, "circular" (i.e. polygonal) structures can be formed.

A particularly cost-cutting factor in practice is the fact that you can use your existing Framax Xlife panels and all accessories such as panel struts and pouring platforms from the Framax Xlife range.

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

Permitted fresh-concrete pressure:
1,000 psf (50 kN/m²)



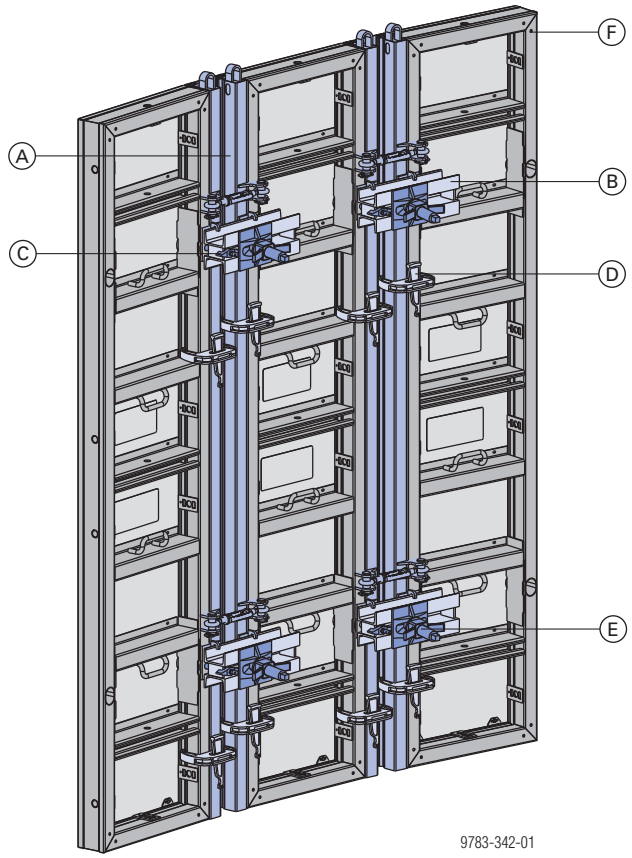
Design of the circular formwork

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

NOTICE

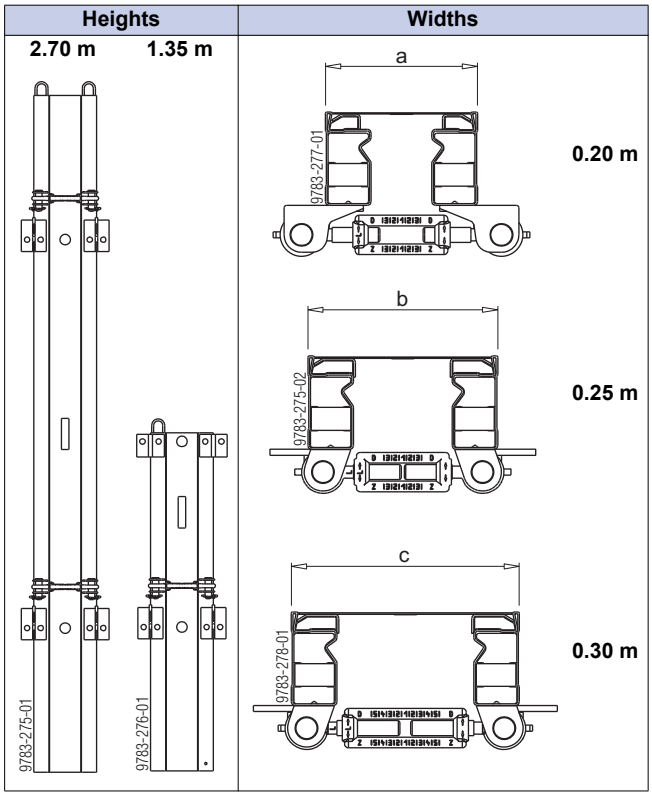
Minimum inside radius: 5'-11" (1.80 m)

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



A	Framax S circular forming plate
B	Framax S steel waling RD 0.40m
C	Framax clamping bolt 4-8cm + Wing-nut 15.0
D	Framax quick-acting clamp RU
E	Taper tie + Battered washer + Wing nut
F	Framax S Xlife panel

Framax circular forming plates



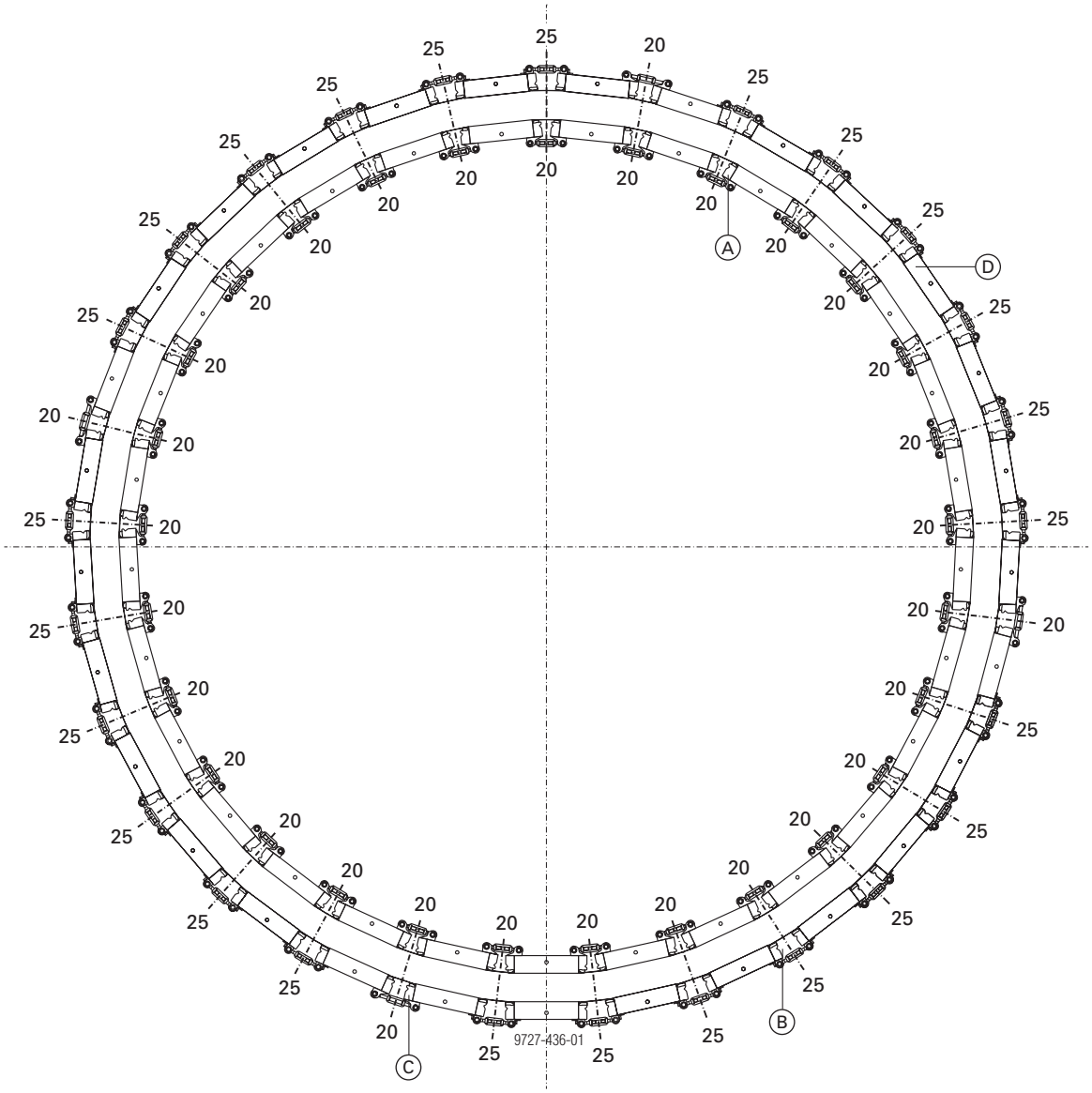
a ... 7 $^{7}/_{8}$" (20 cm)
b ... 9 $^{7}/_{8}$" (25 cm)
c ... 11 $^{3}/_{4}$" (30 cm)

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

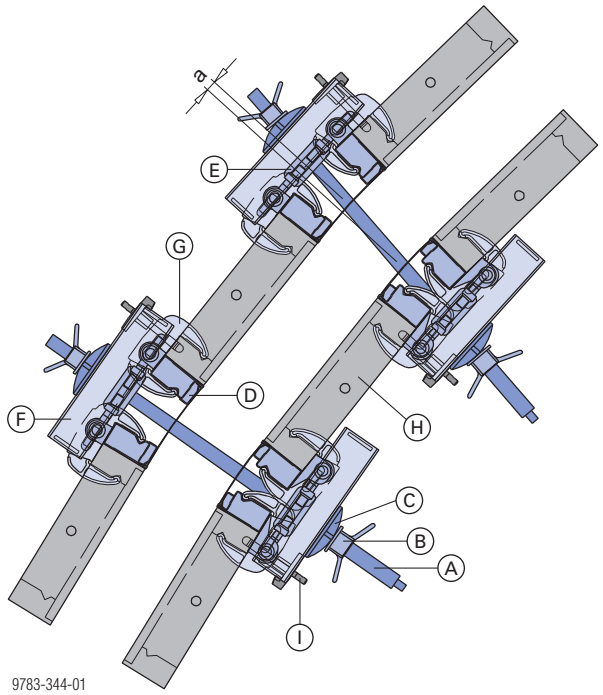
- Type of structure: Circular tank
- Inside radius of structure: 9’-10" (3.00 m)
- Wall thickness: 8" (0.20 m)



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

A	Framax S circular forming plate 0.20m (for the inside formwork)
B	Framax S circular forming plate 0.25m (for the outside formwork)
C	Framax S circular forming plate 0.20m (for length adjustment, distribute evenly around circumference)
D	Framax S 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 = ± 1" (2.5 cm)

A	Taper tie
B	Wing nut
C	Battered washer
D	Framax S circular forming plate
E	Turnbuckle
F	Framax S steel waling RD 0.40m
G	Framax quick-acting clamp RU
H	Framax S Xlife panel
I	Framax clamping bolt 4-8cm + Wing-nut 15.0

NOTICE

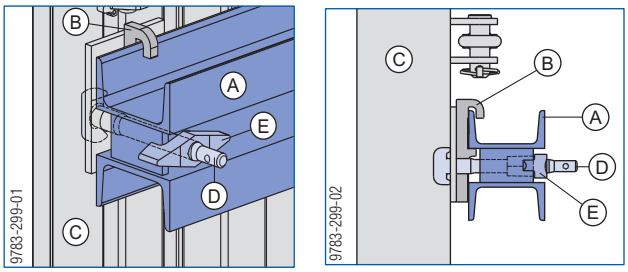
If the tie-rod displacement is any bigger than this, move up to the next size of circular forming plate.

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

Fixing the Steel waling RD 0.40m

Note:

The Steel waling RD 0.40m must be mounted to the circular forming plates before the Framax panels are attached to them.



A	Framax S steel waling RD 0.40m
B	Support and retainer for Steel waling RD 0.40m
C	Framax S circular forming plate
D	Framax clamping bolt 4-8cm
E	Wing nut

Closing the full-circle formwork

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

NOTICE

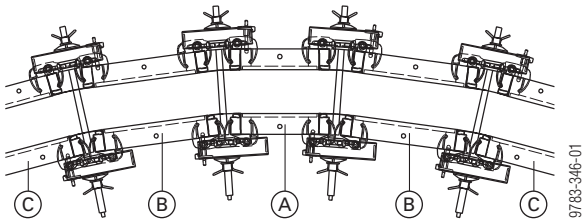
Around the perimeter, use panels of equal width wherever possible.

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

NOTICE

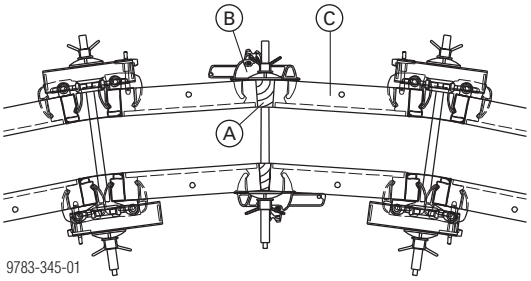
With circular formwork, it is particularly important to ensure uniform pouring.

Filler with Framax Xlife panel



A	Framax S Xlife panel e.g. 0.45m
B	Framax S Xlife panel e.g. 0.60m
C	Framax S Xlife panel e.g. 0.90m

Fillers with wedged timbers

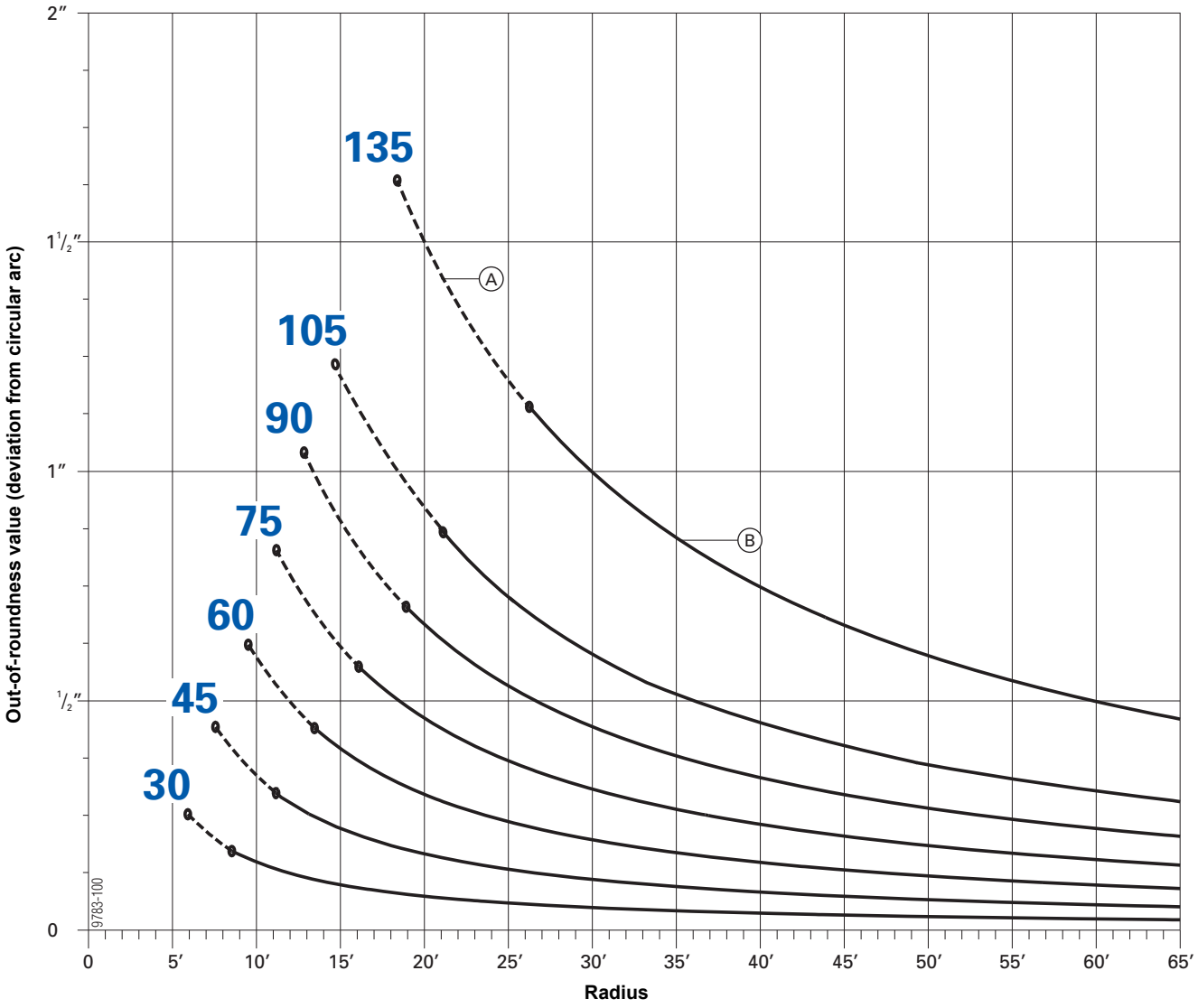


A	Wedged timber
B	Framax multi-function clamp
C	Framax S Xlife panel

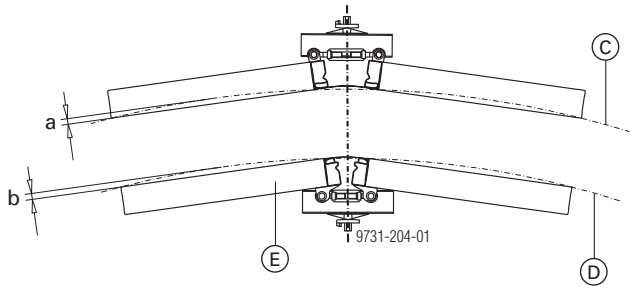
Determining the max. panel width - (inch)

Radius / out-of-roundness diagram for the various widths of panel

The radius / out-of-roundness 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 = 8"
B Minimum wall thickness = 6"



a ... Outside out-of-roundness value

b ... Inside out-of-roundness value

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

Example:

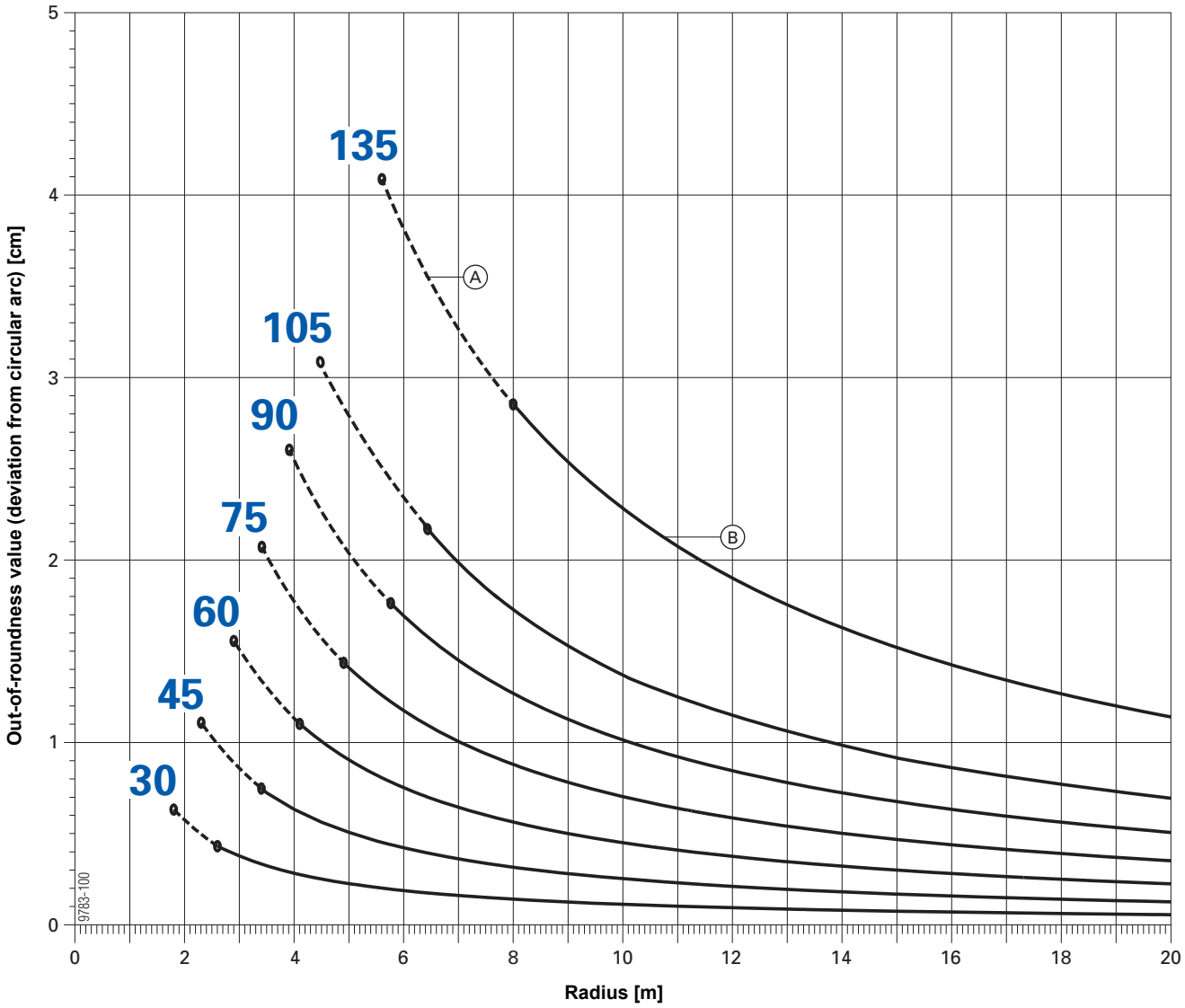
- Radius: 20’-0"
- Permitted deviation from circular arc: 3/8"

=> max. width of panel: **60 cm**

Determining the max. panel width - (metric)

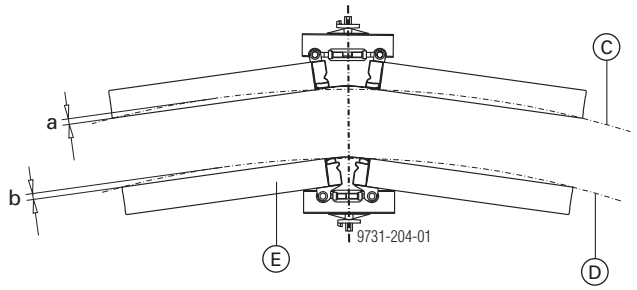
Radius / out-of-roundness diagram for the various widths of panel

The radius / out-of-roundness 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 out-of-roundness value

b ... Inside out-of-roundness value

C Ideal circular arc (outside radius)

D Ideal circular arc (inside radius)

E Framax Xlife panel

Example:

- Radius: 6.0 m
- Permitted deviation from circular arc: 1.0 cm

=> max. width of panel: **60 cm**

Determining the best distribution of the panels - (inch)

	Example

Key data of structure:

Inside radius:	19' (228")
Outside radius:	19'-8" (236")
Permitted deviation from circular arc:	$^{3}/_{8}$"
Length of concreting section:	29'-10" (358"), = 1/4 of the inside circumference

Panel width:

▪ Determine the max. panel width from the radius / out-of-roundness 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 x 2.54) - panel width) ÷ (panel width + 20) = ...	((358 x 2.54) - 60) ÷ (60 + 20) = 10.61
▪ 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) x (panel width + 20) - panel width = ...	(236 ÷ 228) x (60 + 20) - 60 = 22.80
▪ Select the next smaller circular forming plate referred to as a "Type A" circular forming plate.	**Width of "Type A" circular forming plate = 20 cm**
▪ Calculate the difference.	**Difference =** (22.80 - 20) = **2.80**
▪ Number of Circular forming plates x (1 - (difference ÷ 5)) = ...	11 x (1 - (2.80 ÷ 5)) = 4.84
▪ 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**

Determining the best distribution of the panels - (metric)

	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)

Panel width:

▪ Determine the max. panel width from the radius / out-of-roundness 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**

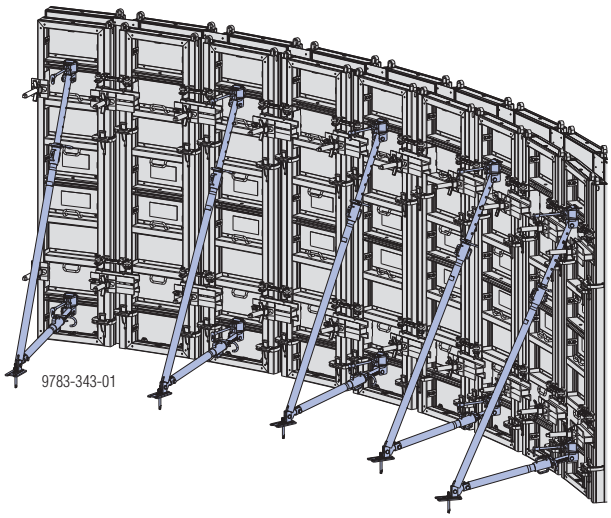
Widths of circular forming plates, and numbers needed for outside formwork:

▪ (outside radius ÷ inside radius) x (panel width + 20) - panel width = ...	(600 ÷ 580) x (60 + 20) - 60 = 22.76 cm
▪ Select the next smaller circular forming plate referred to as a "Type A" circular forming plate.	**Width of "Type A" circular forming plate = 20 cm**
▪ Calculate the difference.	**Difference =** (22.76 cm - 20 cm) = **2.76 cm**
▪ Number of Circular forming plates x (1 - (difference ÷ 5)) = ...	11 x (1 - (2.76 ÷ 5)) = 4.93
▪ Number of "Type A" circular forming plates = Rounded-up result	**Number of "Type A" circular forming plates = 5**
▪ Number of "Type B" circular forming plates = Number of circular forming plates – number of "Type A" circular forming plates" = ...	**Number of "Type B" circular forming plates =** 11 - 5 = **6**
▪ Select the next larger circular forming plate to be the "Type B" circular forming plate.	**Width of "Type B" circular forming plate = 25 cm**

Erecting and plumbing / Pouring platform / Resetting

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

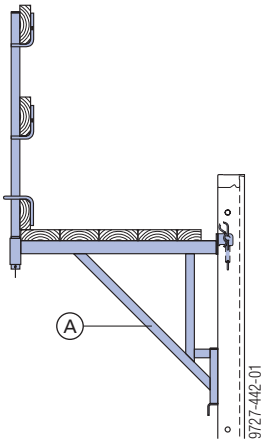
The formwork gangs must be securely braced in **every** phase of the construction work!

Observe all applicable safety rules!

For more information, please see 'Plumbing accessories'.

Pouring platform

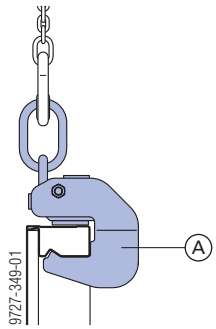
The **Framax brackets 90 (A)** can be used to make a universal pouring platform.



For more information, see the section headed '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 to be lifted will depend - among other things - on the radius that has been set.
- When moving large gang-forms, ensure that these are sufficiently stiffened.
- Prevent oblique pull, by using long transfer cables (spread-angle β: max. 30°).
- Check that the slip-out guard of the Framax lifting hook has engaged!

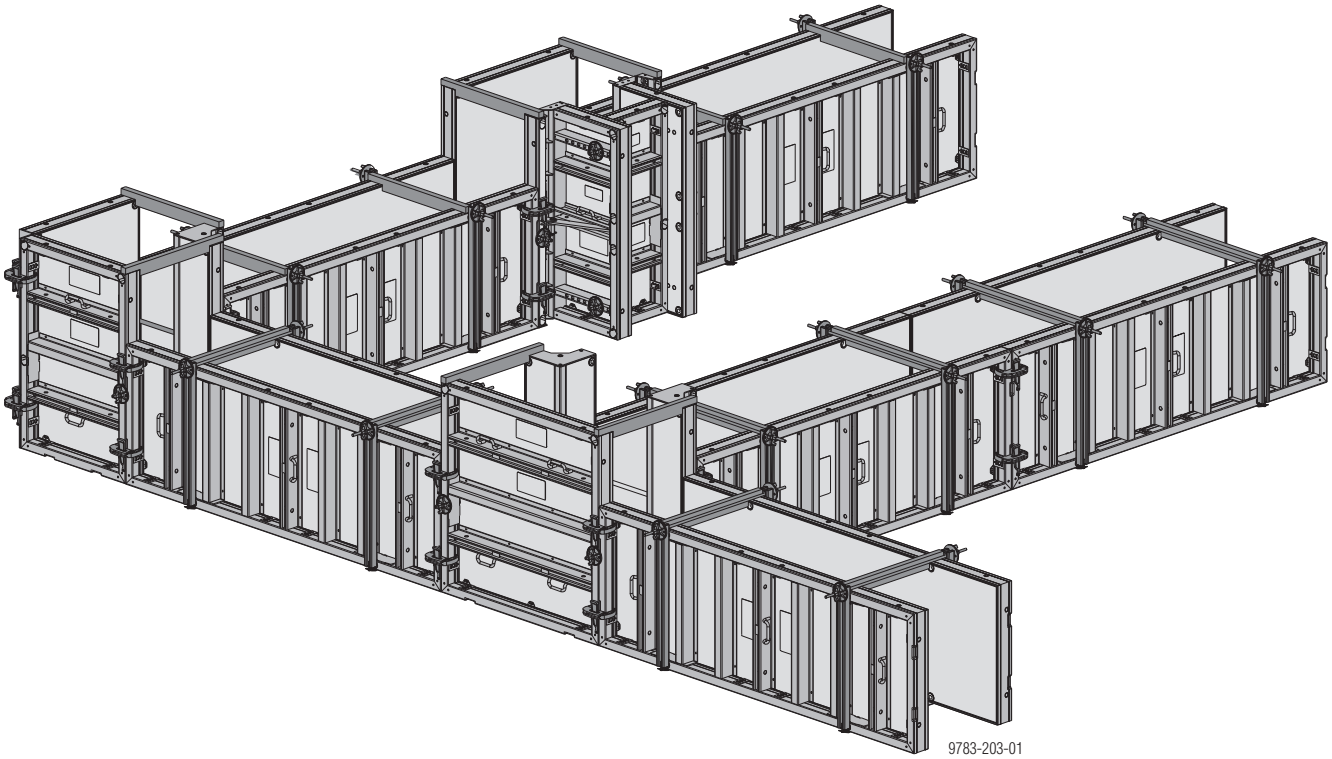
For more information, see the section headed 'Lifting by crane'.

Follow the directions in the Operating Instructions!

Footing and grade beam formwork

The Framax Xlife panels can also be used for footings and grade beams.

This is particularly advantageous where it is intended to continue forming (i.e. the walls) using the same panels. Footings can quickly be formed with any of the panels, with the panels either upright or horizontal. Quick-acting clamps and a blow with the hammer are all it takes to join the panels. Fillers and corners are solved just as simply as in "normal" walls. A range of practical accessories makes the work very much easier.



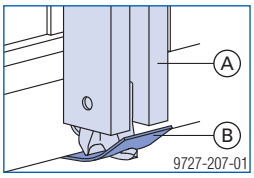
Design of the footing and grade beam formwork

Horizontal panels

Tying the panels

- **at top:**
  - with Tie-rod 15.0mm and Super-plate 15.0
  - or Coil rod 3/4" with Anchor plate 3/4" and Wing nut 3/4"
- **at bottom:** with Framax foundation clamp and Doka perforated tape

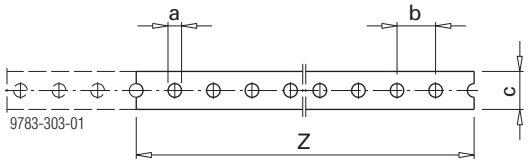
In this way, all wall thicknesses can be formed, in a 2" or 5 cm grid.



A Framax foundation clamp
B Doka perforated tape (expendable)

The **permitted load** for a wall-tie using a Framax foundation clamp and Doka perforated tape is **2,700 lbs (12 kN)**.

Doka perforated tape



Z ... Length of tape cut off roll: Wall thickness + 15 3/4" (40 cm)

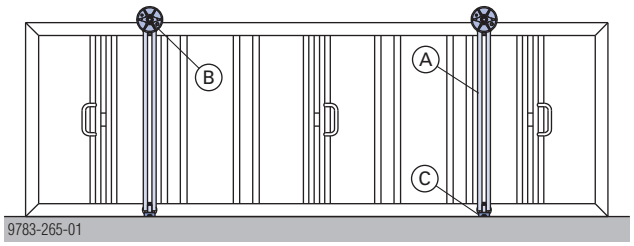
	a	b	c
Doka perforated tape S 2" 25m	3/4"	2"	2"
Doka perforated tape 50x2.0mm 25m	18 mm	5 cm	5 cm

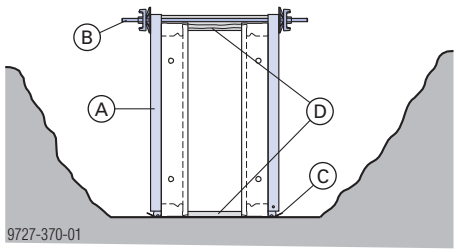
For pour heights of up to 0.90 m (2'-11 3/8")

With panels of up to 0.90 m in width, the foundation clamp allows you to tie the panels above the concrete.

Foundation clamps
2 per panel

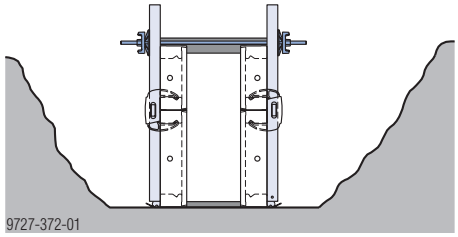
0.90x2.70m panel





A Framax foundation clamp
B Form-tie system 15.0mm or Coil rod system 3/4"
C Doka perforated tape
D Wooden spacer

0.45x2.70m panel + 0.30x2.70m panel

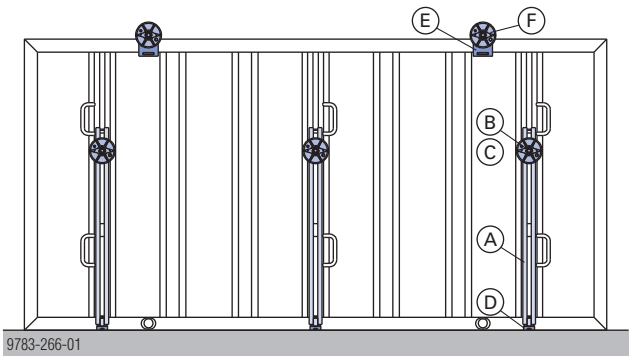


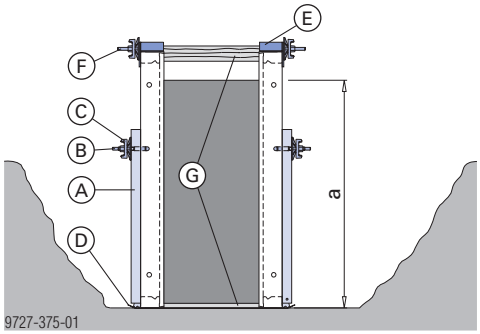
Max. pour height 1.20 m (3'-11 1/4")

The foundation clamps are fixed in the continuous hardware slot in the waling profiles of the 1.35x2.70 m panels, using **Framax clamping bolts 4-8cm**.
The panels are anchored across the top by the **Framax tie-holder bracket**.

	Foundation clamps	Tie-holder brackets
2.70m panel	3	2

Panel 1.35x2.70m





a ... max. 120 cm (3'-11 1/4")

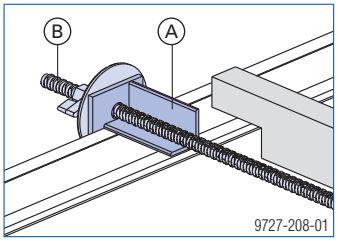
A Framax foundation clamp
B Framax clamping bolt 4-8cm
C Super plate 15.0
D Doka perforated tape
E Framax S tie-holder bracket
F Tie rod system 15.0mm or Coil rod system 3/4"
G Wooden spacer

Horizontal panels in narrow trench situations

The use of the **Framax tie-holder bracket** for the **top tie** has the following effects:

- Tie rod is held above panel (not in the concrete)
- Any tie spacing can be selected

Framax tie-holder bracket

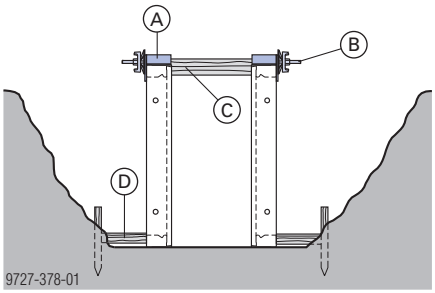


A Framax S tie-holder bracket
B Tie rod system 15.0mm or Coil rod system 3/4"

Tie-holder brackets
2 per panel

Framax S tie-holder bracket:
Permitted capacity: 3300 lbs (15 kN)

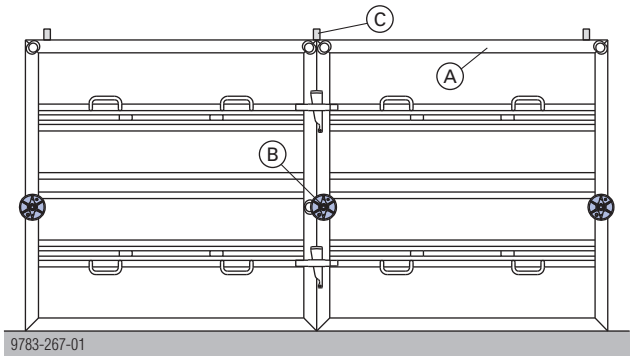
In very narrow trenches, the bottom tie can be replaced by horizontal bracing.

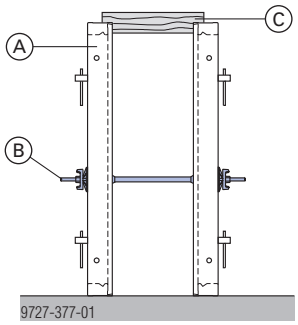


A Framax S tie-holder bracket
B Tie rod system 15.0mm or Coil rod system 3/4"
C Wooden spacer
D Horizontal bracing

Upright 1.35 m high panels

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





A Framax S Xlife panel 1.35x1.35m
B Form-tie system 15.0mm or Coil rod system 3/4"
C Wooden spacer

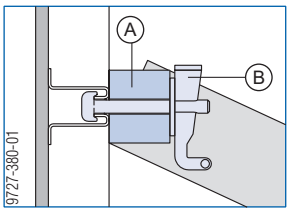
NOTICE

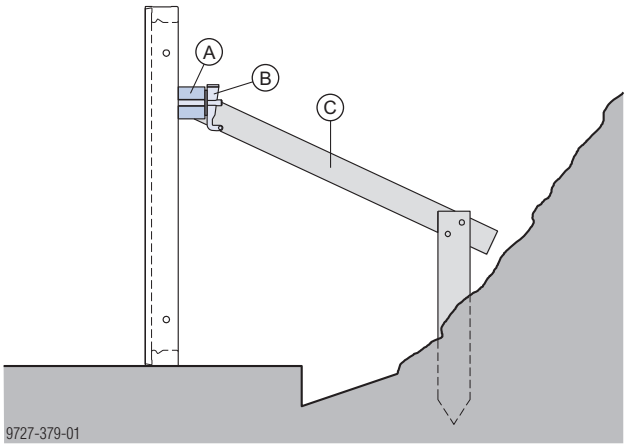
Be sure to fit the wooden spacers exactly as shown!

Bracing the panels

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

Connecting timber





A Connecting timber
B Framax wedge clamp
C Timber brace

General remarks

Using as downturned-beam formwork

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

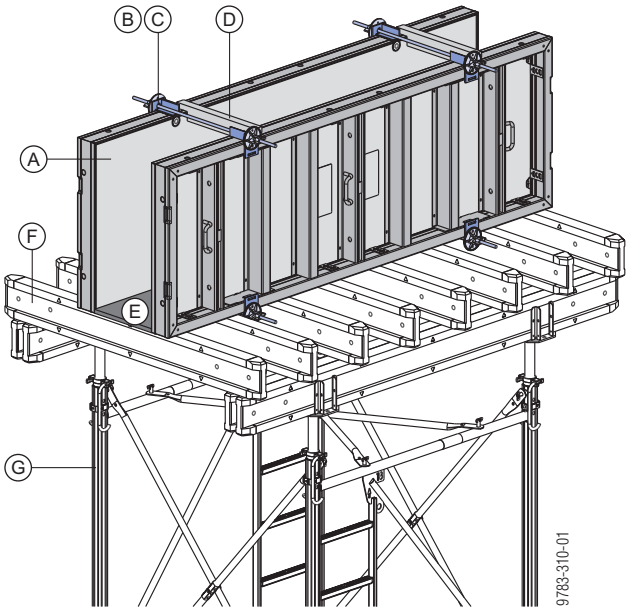
- Form tie above or below the panel – no tie rods in concrete
- Any tie spacing can be selected

Number of anchoring brackets per 2.70m length of panel:

	Downturned beam height	
	up to 3'-0" (90 cm)	up to 4'-5" (135 cm)
Top anchoring brackets	2	2
Bottom anchoring brackets	2	3

Framax S tie-holder bracket:
Permitted capacity: 3300 lbs (15 kN)

Example with 0.90x2.70m panel

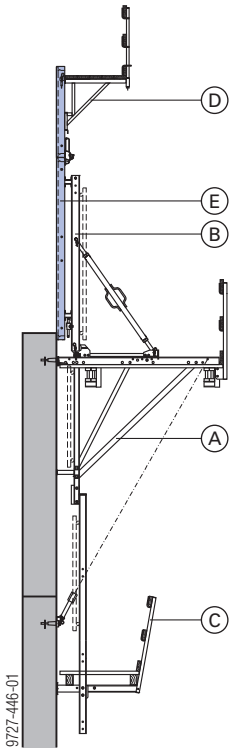


A	Framax S Xlife panel 0.90x2.70m
B	Framax S tie-holder bracket
C	Tie rod system 15.0mm or Coil rod system $^3/_4$"
D	Wooden spacer
E	Formwork sheet
F	Doka beam H20
G	Shoring tower (e.g. Staxo 100)

Framax Xlife in conjunction with . . .

Doka climbing formwork MF240

The Climbing formwork MF240 proves its versatility on all tall structures. The formwork and climbing scaffold are linked together as a single unit which can be repositioned in one single crane cycle.



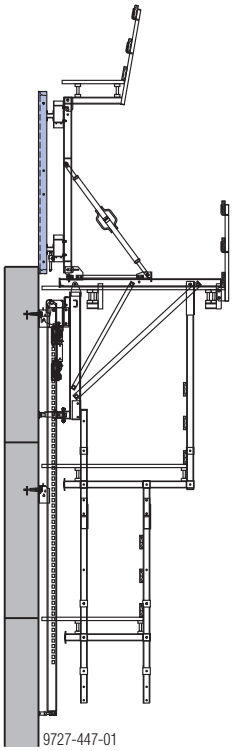
A	Climbing bracket MF240
B	Traveling unit MF
C	Suspended platform MF75 5.00m
D	Framax bracket 90
E	Framax Xlife panel

Follow the directions in the 'Climbing formwork MF' User Information booklet!

Doka automatic climbing formwork

With their modular design concept, these crane-independent automatic climbing formwork systems provide an efficient solution for every type of structure.

The formwork and climbing scaffold are linked together as a single unit which can be lifted and reset hydraulically.



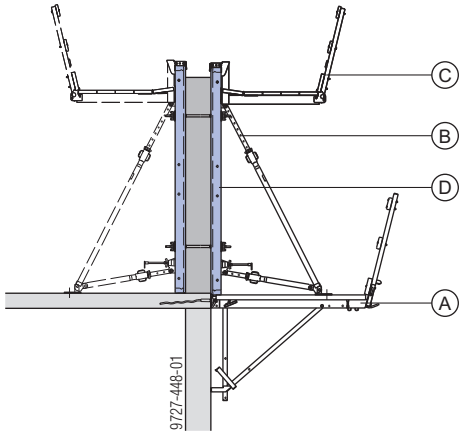
Follow the directions in the relevant User Information booklet!

Doka folding platforms

The high capacity of these work and safety scaffolds means that the formwork can safely be stood on the folding platforms.

Adding a few standard parts turns your work platform into a climbing formwork unit which can be shifted as a complete form and access-platform in one single operation.

This makes work at great heights faster and more efficient.



A Doka folding platform
B Pipe brace
C Framax pouring platform
D Framax Xlife panel

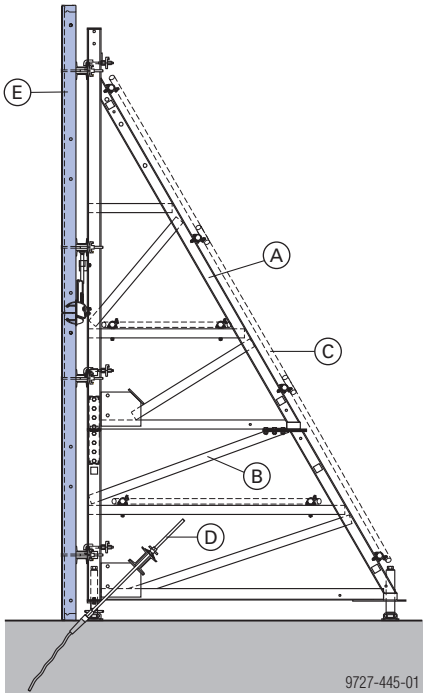
Follow the directions in the 'Folding platform K' and 'Climbing formwork K' User Information booklets!

Doka supporting construction frames

The **Doka supporting construction frame Universal F** or **Doka supporting construction frame "Variable"** also enable the sturdy Framax Xlife panels to be used as single-sided wall formwork.

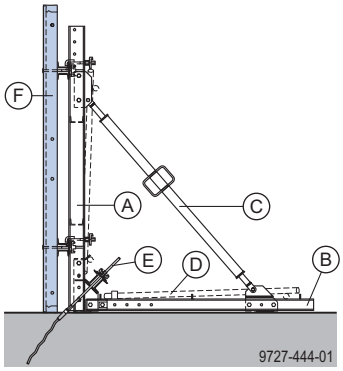
Follow the directions in the 'supporting construction frame "Variable"' and 'Supporting construction frame Universal' User Information!

Supporting construction frame Universal F



A Supporting construction frame Universal F 4.50m
B Attachable frame F 1.50m
C Bracing
D Tension anchoring
E Framax Xlife panel

Supporting construction frame "Variable"

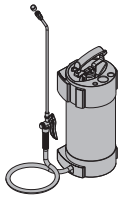


A Waling WU14 for supporting construction frame
B Multi-purpose walings WS10 Top50 2.00m
C Spindle strut 12 3.00m
D Bracing
E Tension anchoring
F Framax Xlife panel

Cleaning and care of your equipment

Concrete release agent

Doka-Trenn or Doka-OptiX is applied using the Doka sprayer for release agent.



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

NOTICE

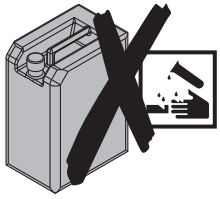
- Before every pour:
  - Apply release agent to the formwork sheet and the end faces **extremely thinly, evenly and in a continuous layer**.
- Make sure there are no drips of release agent running down the formwork sheet.
- Applying too much release agent will spoil the concrete finish.

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

Cleaning

NOTICE

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

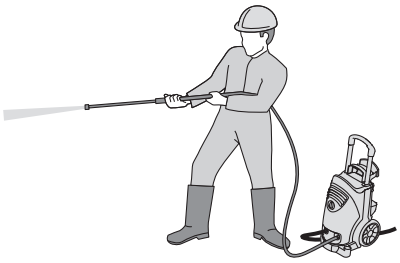


Cleaning high formwork:
Provide a service tower at a suitable cleaning location.

- Wheel-around scaffold DF (formwork height up to 3,90 m)
- Working scaffold Modul (formwork height up to 6,70 m)
- Load-bearing tower Staxo 40 (formwork height over 6,70 m)

Cleaning equipment

High-pressure washer

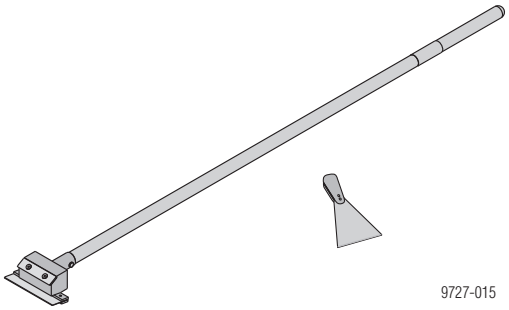


NOTICE

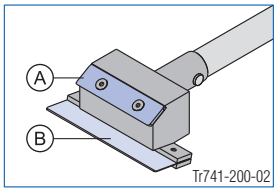
- Appliance pressure rating:
  3,000 psi (200 bar) to max. 4,500 psi (300 bar)
- Keep the water-jet the correct distance from the formwork, and move it at the right speed:
  - The higher the pressure, the further away from the formwork you must keep the jet and the faster you must move it across the 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.

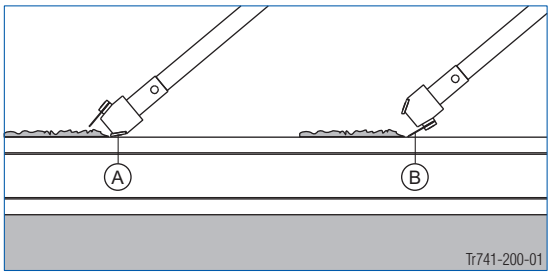
Concrete scraper

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



Functional description:

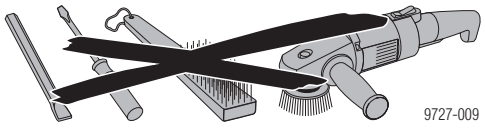




A Blade for dealing with heavy soiling
B Blade for dealing with slight soiling

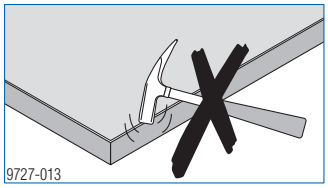
NOTICE

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

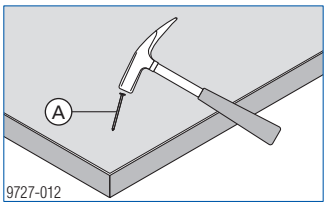


Care

- Never strike the frame profiles with a hammer

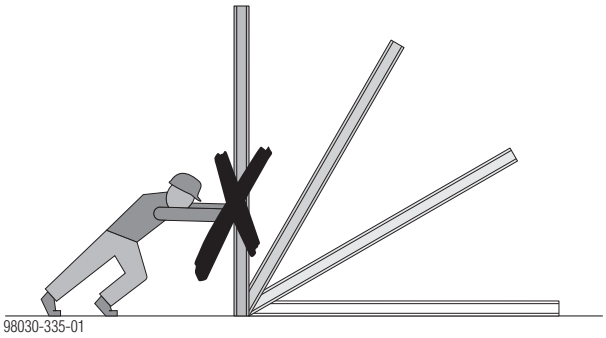


- Do not use nails longer than 2 1/4" (60 mm) on the formwork.

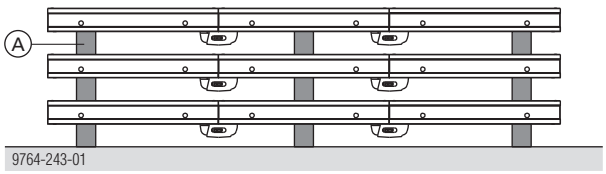


A max. l = 2 1/4" (60 mm)

- Do not throw panels down or allow them to drop.



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

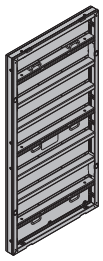


This prevents the formwork sheets from being damaged by the connector components.

	[lbs]	Article #
Framax S Xlife panel 1.35x2.70m	**484.0**	**588501500**
Framax S Xlife panel 1.05x2.70m	**386.0**	**588546500**
Framax S Xlife panel 0.90x2.70m	**302.0**	**588502500**
Framax S Xlife panel 0.75x2.70m	**258.0**	**588547500**
Framax S Xlife panel 0.60x2.70m	**222.0**	**588503500**
Framax S Xlife panel 0.45x2.70m	**182.0**	**588504500**
Framax S Xlife panel 0.30x2.70m	**149.0**	**588505500**
Framax S Xlife panel 1.35x1.35m	**224.0**	**588510500**
Framax S Xlife panel 1.05x1.35m	**180.0**	**588549500**
Framax S Xlife panel 0.90x1.35m	**164.0**	**588511500**
Framax S Xlife panel 0.75x1.35m	**138.0**	**588553500**
Framax S Xlife panel 0.60x1.35m	**114.0**	**588512500**
Framax S Xlife panel 0.45x1.35m	**92.8**	**588513500**
Framax S Xlife panel 0.30x1.35m	**77.2**	**588514500**

Framax S Xlife-Element

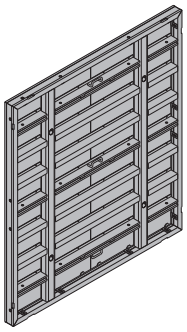
Galvanized, powder-coated



Framax S Xlife panel 2.40x2.70m	**837.0**	**588544500**

Framax S Xlife-Element 2,40x2,70m

Galvanized, powder-coated

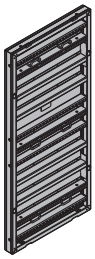


Framax S Xlife universal panel 1.22x2.70m	**525.0**	**588545500**
Framax S Xlife universal panel 1.22x1.35m	**274.0**	**588548500**
Framax S Xlife universal panel 1.22x0.90m	**131.0**	**588554500**
Framax S Xlife universal panel 0.90x2.70m	**351.0**	**588507500**
Framax S Xlife universal panel 0.90x1.35m	**185.0**	**588516500**
Framax S Xlife universal panel 0.90x0.90m	**139.0**	**588524500**

Framax S Xlife-Uni-Element

Galvanized, powder-coated

Corners marked in blue



Framax S Xlife inside corner 2.70m	**222.0**	**588506500**
Framax S Xlife inside corner 1.35m	**125.0**	**588515500**

Framax S Xlife-Innenecke

Galvanized, powder-coated

	[lbs]	Article #
Framax S Xlife pilaster panel 2.70m	**423.0**	**588563500**
Framax S Xlife pilaster panel 1.35m	**224.0**	**588564500**

Framax S Xlife-Stützenvorlageelement

Galvanized, powder-coated

Length: 2' (61 cm)

Width: 1' (30,5 cm)

Framax outside corner 2.70m	**104.0**	**588126000**
Framax outside corner 1.35m	**51.8**	**588128000**

Framax-Außenecke

Galvanized

Framax S hinged inside corner I galv. 2.70m	**241.0**	**588509500**
Framax S hinged inside corner I galv. 1.35m	**133.0**	**588518500**

Framax S-Scharnierecke I verzinkt

Galvanized

Framax S hinged inside corner I 2.70m	**226.0**	**588509000**
Framax S hinged inside corner I 1.35m	**127.0**	**588518000**

Framax S Scharnierecke I

Powder-coated, blue

Framax hinged outside corner A galv. 2.70m	**116.0**	**588942000**
Framax hinged outside corner A galv. 1.35m	**60.6**	**588943000**

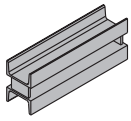
Framax-Scharnierecke A verzinkt

Galvanized, powder-coated

	[lbs]	Article #
Framax hinged outside corner A 2.70m	**116.0**	**588134000**
Framax hinged outside corner A 1.35m	**60.4**	**588135000**
Framax-Scharnierecke A		
Powder-coated, blue		

Framax S circular forming plate 0.20x2.70m	**130.0**	**588588000**
Framax S circular forming plate 0.25x2.70m	**134.0**	**588589000**
Framax S circular forming plate 0.30x2.70m	**146.0**	**588590000**
Framax S circular forming plate 0.20x1.35m	**67.2**	**588591000**
Framax S circular forming plate 0.25x1.35m	**72.8**	**588592000**
Framax S circular forming plate 0.30x1.35m	**77.2**	**588593000**
Framax S-Bogenblech		
Galvanized, powder-coated		

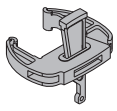
Framax S steel waling RD 0.40m	**19.4**	**588594000**
Framax S-Stahlwandriegel RD 0,40m		
Painted blue		



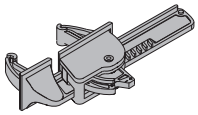
Framax S bias cut corner I 2.70m	**388.0**	**588527000**
Framax S bias cut corner I 1.35m	**207.0**	**588528000**
Framax S Ausschalecke I		
Galvanized, powder-coated		

Framax stripping spindle I with ratchet	**12.1**	**588653000**
Framax-Ausschalspindel I mit Ratsche		
Galvanized		
Height: 10" (24,8 cm)		

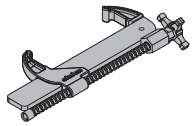
Framax quick acting clamp RU	**7.3**	**588153400**
Framax-Schnellspanner RU		
Galvanized		
Length: 8" (20 cm)		



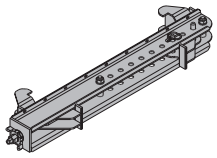
	[lbs]	Article #
Framax multi function clamp	**12.8**	**588169000**
Framax-Uni-Spanner		
Galvanized		
Length: 1'-4" (40 cm)		



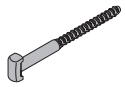
Framax adjustable clamp	**11.7**	**588168000**
Framax-Ausgleichsspanner		
Galvanized		
Length: 1'-7" (48 cm)		



Framax stop-end waler tie 15-45cm	**33.1**	**588940000**
Framax stop-end waler tie 15-75cm	**45.4**	**588941000**
Framax-Stirnabschalzwinge		
Galvanized		

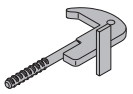


Framax universal fixing bolt 10-16cm	**1.3**	**588158000**
Framax-Universalverbinder 10-16cm		
Galvanized		
Length: 10" (26 cm)		

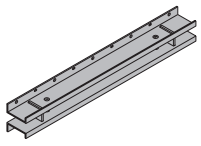


Framax universal fixing bolt 10-25cm	**1.5**	**583002000**
Framax-Universalverbinder 10-25cm		
Galvanized		
Length: 1'-2" (36 cm)		

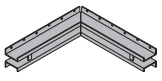
Framax stop-end tie	**3.3**	**588143000**
Framax-Stirnanker		
Galvanized		
Length: 11" (29 cm)		



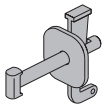
Framax S universal waling 0.90m	**23.6**	**588519000**
Framax S universal waling 1.50m	**39.2**	**588520000**
Framax S Klemmschiene		
Painted blue		



Framax S universal corner waling	**28.9**	**588521000**
Framax S-Eckklemmschiene		
Painted blue		
Leg length: 2' (60 cm)		



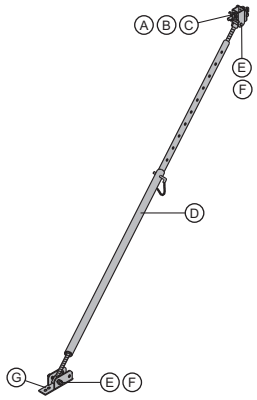
Framax wedge clamp	**3.3**	**588152000**
Framax-Spannklemme		
Galvanized		
Length: 8" (21 cm)		



	[lbs]	Article #
Framax tensioning wedge R Framax-Spannkeil R Galvanized Height: 4 1/2" (11 cm)	**0.44**	**588155000**
Framax wedge bolt RA 7.5 Framax-Keilbolzen RA 7,5 Galvanized Length: 6" (15 cm)	**0.75**	**588159000**
Framax S corner clamp Framax S-Eckspannwinkel Galvanized	**7.7**	**588596000**
Panel strut 340 IB Elementstütze 340 IB consisting of:	**53.6**	**580365000**
(A) **Plumbing strut 340 IB** Galvanized Length: 6'-3" - 11'-3" (190,8 - 341,8 cm)	**36.8**	**588696000**
(B) **Adjusting strut 120 IB** Galvanized Length: 2'-8" - 4'-3" (81,5 - 130,6 cm)	**16.8**	**588248500**
Galvanized Delivery condition: folded closed		
Panel strut 540 IB Elementstütze 540 IB consisting of:	**91.3**	**580366000**
(A) **Plumbing strut 540 IB** Galvanized Length: 10'-2" - 18' (310,5 - 549,2 cm)	**67.7**	**588697000**
(B) **Adjusting strut 220 IB** Galvanized Length: 5'-8" - 7'-3" (172,5 - 221,1 cm)	**24.0**	**588251500**
Galvanized Delivery condition: folded closed		

	[lbs]	Article #
Prop head EB Stützenkopf EB Galvanized Length: 1'-4" (40,8 cm) Width: 4 1/2" (11,8 cm) Height: 7" (17,6 cm)	**6.8**	**588244500**
Pipe brace 12'-0"-21'-0" Rohrstütze 12'-0"-21'-0" consisting of:		
(A) **Pipe brace head Framax S**	**5.3**	**585089000**
(B) **Framax universal fixing bolt 10-25cm** Galvanized Length: 1'-2" (36 cm)	**1.5**	**583002000**
(C) **Star grip nut 15.0 G** Galvanized Width: 4" (10 cm) Height: 2" (5 cm) Width-across: 26 mm	**0.95**	**587544000**
(D) **Pipe brace 12'-0"-21'-0"**	**160.0**	**585091000**
(E) **Speed bolt 3/4"x4"** 2 pcs.	**0.64**	**585650000**
(F) **Speed nut 3/4"** 2 pcs.	**0.2**	**585652000**
(G) **Pipe brace shoe S** Painted yellow	**6.4**	**585088500**
Galvanized Delivery condition: separate parts		

	[lbs]	Article #
Pipe brace 22'-0"-40'-0" Rohrstütze 22'-0"-40'-0" consisting of:		
(A) **Pipe brace head Framax S**	**5.3**	**585089000**
(B) **Framax universal fixing bolt 10-25cm** Galvanized Length: 1'-2" (36 cm)	**1.5**	**583002000**
(C) **Star grip nut 15.0 G** Galvanized Width: 4" (10 cm) Height: 2" (5 cm) Width-across: 26 mm	**0.95**	**587544000**
(D) **Pipe brace 22'-0"-40'-0"**	**410.0**	**585092000**
(E) **Speed bolt 3/4"x4"** 2 pcs.	**0.64**	**585650000**
(F) **Speed nut 3/4"** 2 pcs.	**0.2**	**585652000**
(G) **Pipe brace shoe S** Painted yellow	**6.4**	**585088500**

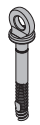


Galvanized
Delivery condition: separate parts

Bracing clip Framax S **2.6** **585090000**
Haltewinkel Framax S

Length: 6" (15,87 cm)
Width: 4" (10,16 cm)
Height: 3" (7,62 cm)

Doka express anchor 16x125mm **0.68** **588631000**
Doka-Expressanker 16x125mm

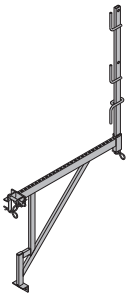


Galvanized
Length: 7" (18 cm)
Follow fitting instructions!

Doka coil 16mm **0.02** **588633000**
Doka-Coil 16mm

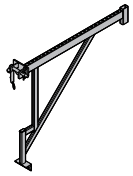
Galvanized
Diameter: 5/8" (1,6 cm)

Framax bracket 90 **27.6** **588167000**
Framax-Konsole 90



Galvanized
Length: 3'-5" (103 cm)
Height: 6'-1" (185 cm)
Delivery condition: railing included

	[lbs]	Article #
Framax bracket 90 EP Framax-Konsole 90 EP	**19.8**	**588979000**

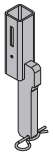


Galvanized
Length: 3'-5" (103 cm)
Height: 2'-9" (84 cm)

Handrail post 1.00m **8.4** **584335000**
Geländer 1,00m

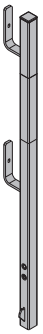
Galvanized
Length: 4'-1" (124 cm)

Bracket adapter XP FRR 50/30 **5.3** **586486000**
Konsolenadapter XP FRR 50/30



Galvanized
Height: 1'-1" (32 cm)

Handrail post XP 1.20m **9.0** **586460000**
Geländersteher XP 1,20m



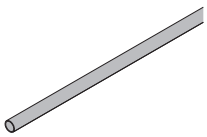
Galvanized
Height: 3'-10" (118 cm)

Scaffold tube connection **0.6** **584375000**
Gerüstrohranschluss

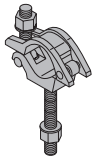
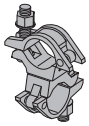
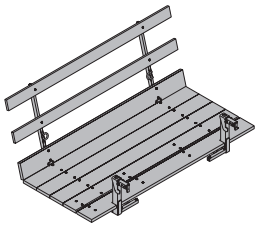
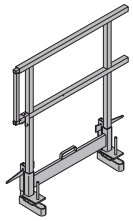
Galvanized
Height: 2 3/4" (7 cm)
Special order only!

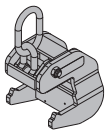
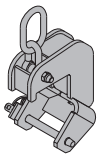
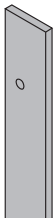
Scaffolding tube 1 1/2"x6'-0"	**16.3**	**585070000**
Scaffolding tube 1 1/2"x8'-0"	**21.8**	**585071000**
Scaffolding tube 1 1/2"x10'-6"	**28.7**	**585072000**
Scaffolding tube 1 1/2"x13'-0"	**35.3**	**585073000**
Scaffolding tube 1 1/2"x15'-0"	**40.8**	**585074000**
Scaffolding tube 1 1/2"x21'-0"	**57.1**	**585075000**

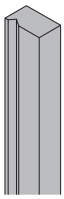
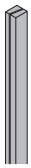
Gerüstrohr 1 1/2"

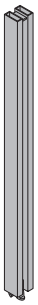
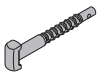
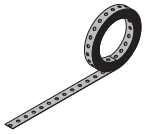
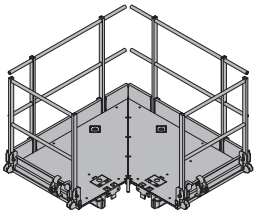


Galvanized

	[lbs]	Article #
Screw-on coupler 48mm 50	**1.9**	**682002000**
Screw-on coupler 48mm 95	**1.9**	**586013000**
Anschraubkupplung		
Galvanized Width-across: 22 mm Follow fitting instructions!		
		
Swivel coupler 48mm	**3.3**	**582560000**
Drehkupplung 48mm		
Galvanized Width-across: 22 mm Follow fitting instructions!		
		
Framax pouring platform U 1.25/2.70m	**281.0**	**588377000**
Framax-Betonierbühne U 1,25/2,70m		
Steel parts galvanized Timber parts varnished yellow Delivery condition: folded closed		
		
Handrail clamp S	**25.4**	**580470000**
Schutzgeländerzwinge S		
Galvanized Height: 4' - 5'-7" (123 - 171 cm)		
		
Handrail post 1.10m	**12.1**	**584384000**
Schutzgeländer 1,10m		
Galvanized Height: 4'-5" (134 cm)		
		
Side handrail clamping unit T	**64.2**	**580488000**
Seitenschutzgeländer T		
Galvanized Length: 3'-9" - 5'-9" (115 - 175 cm) Height: 3'-8" (112 cm) Special order only!		
		

	[lbs]	Article #
Doka 4-part chain 3.20m	**33.1**	**588620000**
Doka-Vierstrangkette 3,20m		
Follow the directions in the "Operating Instructions"!		
		
Framax transport bolt	**4.2**	**588621000**
Framax-Transportbolzen		
Follow the directions in the "Operating Instructions"!		
		
Framax transport gear	**29.3**	**588232000**
Framax-Transportgehänge		
Galvanized Follow the directions in the "Operating Instructions"!		
		
Dokamatic lifting strap 13.00m	**23.1**	**586231000**
Dokamatic-Umsetzgurt 13,00m		
Green Follow the directions in the "Operating Instructions"!		
		
Framax lifting hook	**23.4**	**588149000**
Framax-Umsetzbügel		
Galvanized Height: 9" (22 cm) Follow the directions in the "Operating Instructions"!		
		
Framax lifting hook 20kN	**28.2**	**588526000**
Framax-Umsetzbügel 20kN		
Galvanized Height: 1' (30 cm) Follow the directions in the "Operating Instructions"!		
		
Framax fitting timber 2x12cm 2.70m	**6.8**	**176020000**
Framax fitting timber 3x12cm 2.70m	**10.4**	**176022000**
Framax fitting timber 5x12cm 2.70m	**17.2**	**176024000**
Framax fitting timber 10x12cm 2.70m	**34.2**	**176026000**
Framax-Passholz 2,70m		
Varnished yellow		
		

	[lbs]	Article #
Framax molded timber 27mm 2.70m	**16.8**	**176012000**
Framax molded timber 21mm 2.70m	**17.6**	**176010000**
Framax molded timber 18mm 2.70m	**18.5**	**176119000**
Framax-Profilholz		
Varnished yellow		
		
Framax formwork stripping timb. 10x12cm 2.85m	**36.2**	**176008000**
Framax-Ausschalholz 10x12cm 2,85m		
Varnished yellow		
		
Framax S steel filler 6cm 2.70m	**35.7**	**588561000**
Framax S steel filler 6cm 1.35m	**20.3**	**588562000**
Framax S Stahlausgleich		
Powder-coated, blue		
		
Connecting timber	**1.5**	**176030000**
Anklemmholz		
Varnished yellow		
Width: 4" (10 cm)		
		
Framax triangular ledge 2.70m	**0.84**	**588170000**
Framax-Dreikantleiste 2,70m		
		
Framax frontal triangular ledge 2.70m	**3.7**	**588129000**
Framax-Stirndreikantleiste 2,70m		
Gray		
		
Framax S tie-holder bracket	**2.9**	**588523000**
Framax S-Ankerhaltewinkel		
Painted blue		
Width: 2" (5 cm)		
Height: 5" (13 cm)		
		

	[lbs]	Article #
Framax foundation clamp 0.90m	**10.8**	**588141000**
Framax-Fundamentspanner 0,90m		
Galvanized		
		
Framax clamping bolt 4-8cm	**0.86**	**588107000**
Framax-Klemmschraube 4-8cm		
Galvanized		
Length: 7 1/2" (19 cm)		
		
Doka perforated tape S 2" 25m	**37.5**	**588841000**
Doka-Lochband S 2" 25m		
		
Doka perforated tape 50x2.0mm 25m	**37.5**	**588206000**
Doka-Lochband 50x2,0mm 25m		
		
Framax universal panel plug R24.5	**0.007**	**588181000**
Framax-Abdeckstopfen R24,5		
Yellow		
Diameter: 3/4" (2 cm)		
		
Framax S frame hole plug 44	**0.015**	**588522000**
Framax S-Ankerstopfen 44		
Black		
Diameter: 1 7/8" (4,8 cm)		
		
Framax S stacking cone	**0.088**	**588543000**
Framax S-Stapelkonus		
Blue		
Diameter: 2" (5 cm)		
		
Doka column formwork platform 150/90cm	**467.0**	**588382000**
Doka-Stützenbühne 150/90cm		
Galvanized		
Length: 5'-8" (173 cm)		
Width: 5'-8" (173 cm)		
Height: 4'-3" (130 cm)		
Delivery condition: folded closed		
		

	[lbs]	Article #
Lifting ring Umsetzring Galvanized Height: 8" (20 cm)	3.1	580340000
Framax assembling tool Framax-Montagestange Galvanized Length: 6'-4" (193 cm)	9.3	588678000
Double scraper Xlife 100/150mm 1.40m Doppelschaber Xlife 100/150mm 1,40m	6.2	588674000

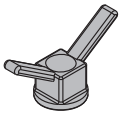
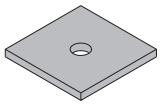
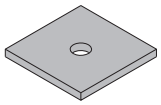
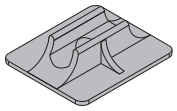
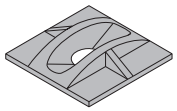
Tie rod system 7/8" [20.0mm]

Tie rod 20.0mm galvanized 0.50m	2.9	581411000
Tie rod 20.0mm galvanized 0.75m	4.2	581417000
Tie rod 20.0mm galvanized 1.00m	5.5	581412000
Tie rod 20.0mm galvanized 1.25m	7.1	581418000
Tie rod 20.0mm galvanized 1.50m	8.4	581413000
Tie rod 20.0mm galvanized 2.00m	11.0	581414000
Tie rod 20.0mm galvanized 2.50m	13.9	581430000
Tie rod 20.0mm galvanized .....m	5.5	581410000
Tie rod 20.0mm non-treated 0.50m	2.9	581405000
Tie rod 20.0mm non-treated 0.75m	4.2	581416000
Tie rod 20.0mm non-treated 1.00m	5.5	581406000
Tie rod 20.0mm non-treated 1.50m	8.4	581407000
Tie rod 20.0mm non-treated 2.00m	11.0	581408000
Tie rod 20.0mm non-treated .....m	5.5	581403000
Ankerstab 20,0mm Special order only!		DIN 18216
Tie rod 20.0mm galvanized 12'-0"	20.5	585517000
Tie rod 20.0mm galvanized 25'-0"	42.1	585606000
Ankerstab 7/8" [20,0mm]		DIN 18216
Super plate 20.0 B Superplatte 20,0 B Galvanized Height: 2 3/4" (7 cm) Diameter: 5 1/2" (14 cm) Width-across: 34 mm	4.4	581424000 DIN 18216

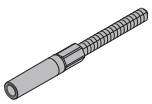
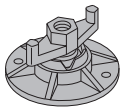
	[lbs]	Article #
Wing nut 20.0mm Flügelmutter 20,0mm	0.79	585507000
Hexagon nut 20.0 Sechskantmutter 20,0 Galvanized Length: 2 3/4" (7 cm) Width-across: 41 mm	0.88	581420000 DIN 18216
Battered washer 20.0mm Winkelplatte 20,0mm	4.0	585506000
Round coupler 20.0mm (DSI Thread) Verbindungsmuffe 20,0mm (DSI Thread)	2.4	585514000
Plastic tube 26mm 2.00m Kunststoffrohr 26mm 2,00m PVC Gray Diameter: 1 1/4" (3,1 cm)	1.3	581463000
Framax S universal cone 1" Framax S Universalkonus 1" Gray Diameter: 2 3/4" (7,2 cm)	0.022	588530000
Plug 26mm Verschlussstopfen 26mm PE Gray	0.013	581465000
Tie-rod wrench 15.0/20.0 Ankerstabschlüssel 15,0/20,0 Galvanized	4.0	580594000

Taper tie system 1 1/2" to 1 1/4"

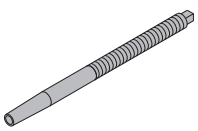
Taper tie 1 1/2" to 1 1/4"x36"	13.2	585642000
Taper tie 1 1/2" to 1 1/4"x42"	15.4	585643000
Taper tie 1 1/2" to 1 1/4"x48"	18.1	585644000
Taper tie 1 1/2" to 1 1/4"x54"	20.1	585645000
Taper tie 1 1/2" to 1 1/4"x60"	22.3	585646000
Taper tie 1 1/2" to 1 1/4"x66"	24.0	585647000
Taper tie 1 1/2" to 1 1/4"x72"	26.0	585648000
Taper tie 1 1/2" to 1 1/4"x78"	36.8	585552000
Konischer Ankerstab 1 1/2" auf 1 1/4"		
Wing nut 1 1/4" Flügelmutter 1 1/4"	1.2	585633000

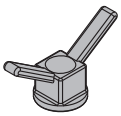
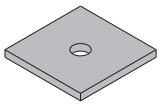
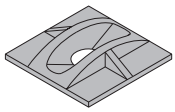
	[lbs]	Article #
Wing nut 1 1/2" Flügelmutter 1 1/2"	**2.9**	**585634000**
		
Flat washer 1 1/4" (5x5x3/4) Ankerplatte 1 1/4"	**5.3**	**585531000**
		
Flat washer 1 1/2" (5x5x3/4) Ankerplatte 1 1/2"	**5.3**	**585532000**
		
Battered washer 1 1/4" Winkelplatte 1 1/4"	**5.5**	**585635000**
		
Battered washer 1 1/2" Winkelplatte 1 1/2"	**5.5**	**585636000**
		

She-bolt system 7/8" [20.0mm]

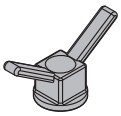
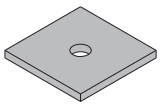
She-bolt 20.0mm x 13" **She-bolt 20.0mm x 20"** **She-bolt 20.0mm x 24"** Ankerkopf 20.0mm Galvanized	**2.6** **3.7** **4.2**	**588555000** **588556000** **588557000**
		
Super plate 20.0 B Superplatte 20,0 B Galvanized Height: 2 3/4" (7 cm) Diameter: 5 1/2" (14 cm) Width-across: 34 mm	**4.4**	**581424000**
		

She-bolt system 1 1/2"

She-bolt 1 1/2"x14" **She-bolt 1 1/2"x20"** Ankerkopf 1 1/2"	**5.7** **8.4**	**585637000** **585638000**
		

	[lbs]	Article #
Coil rod 1"x12'-0" Rollgewindestab 1"x12'-0"	**24.5**	**585502000**
Wing nut 1 1/2" Flügelmutter 1 1/2"	**2.9**	**585634000**
		
Flat washer 1 1/2" (5x5x3/4) Ankerplatte 1 1/2"	**5.3**	**585532000**
		
Battered washer 1 1/2" Winkelplatte 1 1/2"	**5.5**	**585636000**
		

Coil rod system 1"

Coil rod 1"x12'-0" Rollgewindestab 1"x12'-0"	**24.5**	**585502000**
Wing nut 1" Flügelmutter 1"	**1.1**	**585632000**
		
Flat washer 1" (5x5x3/4) Ankerplatte 1"	**5.3**	**585530000**
		
Battered washer 1" Winkelplatte 1"	**4.0**	**585540000**

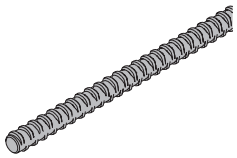
Coil rod system 3/4"

Coil rod 3/4"x12'-0" Rollgewindestab 3/4"x12'-0"	**13.9**	**585501000**
Wing nut 3/4" Flügelmutter 3/4"	**2.0**	**585853000**
Flat washer 3/4" (5x5x3/8) Ankerplatte 3/4"	**3.5**	**585529000**

Tie rod system 5/8" [15.0mm]

	[lbs]	Article #
Tie rod 15.0mm galvanized 0.50m	**1.6**	**581821000**
Tie rod 15.0mm galvanized 0.75m	**2.4**	**581822000**
Tie rod 15.0mm galvanized 1.00m	**3.1**	**581823000**
Tie rod 15.0mm galvanized 1.25m	**4.0**	**581826000**
Tie rod 15.0mm galvanized 1.50m	**4.9**	**581827000**
Tie rod 15.0mm galvanized 1.75m	**5.5**	**581828000**
Tie rod 15.0mm galvanized 2.00m	**6.4**	**581829000**
Tie rod 15.0mm galvanized 2.50m	**7.9**	**581852000**
Tie rod 15.0mm galvanized .....m	**3.1**	**581824000**
Tie rod 15.0mm non-treated 0.50m	**1.6**	**581870000**
Tie rod 15.0mm non-treated 0.75m	**2.4**	**581871000**
Tie rod 15.0mm non-treated 1.00m	**3.1**	**581874000**
Tie rod 15.0mm non-treated 1.25m	**4.0**	**581886000**
Tie rod 15.0mm non-treated 1.50m	**4.6**	**581876000**
Tie rod 15.0mm non-treated 1.75m	**5.5**	**581887000**
Tie rod 15.0mm non-treated 2.00m	**6.4**	**581875000**
Tie rod 15.0mm non-treated 2.50m	**7.9**	**581877000**
Tie rod 15.0mm non-treated 3.00m	**9.5**	**581878000**
Tie rod 15.0mm non-treated 3.50m	**11.0**	**581888000**
Tie rod 15.0mm non-treated 4.00m	**12.6**	**581879000**
Tie rod 15.0mm non-treated 5.00m	**15.9**	**581880000**
Tie rod 15.0mm non-treated 6.00m	**19.0**	**581881000**
Tie rod 15.0mm non-treated 7.50m	**23.6**	**581882000**
Tie rod 15.0mm non-treated .....m	**3.1**	**581873000**

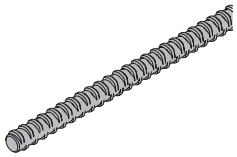
Ankerstab 15,0mm



DIN 18216

Tie rod 15.0mm galvanized 12'-0"	**11.9**	**585520000**
Tie rod 15.0mm non-treated 12'-0"	**11.9**	**585520010**

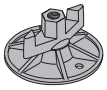
Ankerstab 5/8" [15,0mm] 12'-0"



DIN 18216

Super plate 15.0 — **2.4** — **581966000**

Superplatte 15,0



Galvanized
Height: 2 1/4" (6 cm)
Diameter: 4 1/2" (12 cm)
Width-across: 27 mm

DIN 18216

Wing nut 15.0 — **0.68** — **581961000**

Flügelmutter 15,0

Galvanized
Length: 4" (10 cm)
Height: 2" (5 cm)
Width-across: 27 mm

DIN 18216

Hexagon nut 15.0 — **0.51** — **581964000**

Sechskantmutter 15,0

Galvanized
Length: 2" (5 cm)
Width-across: 30 mm

DIN 18216

Framax pressure plate 6/15 — **1.8** — **588183000**

Framax-Druckplatte 6/15

Galvanized

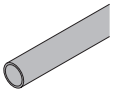
Star grip nut 15.0 G — **0.95** — **587544000**

Sternmutter 15,0 G

Galvanized
Width: 4" (10 cm)
Height: 2" (5 cm)
Width-across: 26 mm

Plastic tube 22mm 2.50m — **0.99** — **581951000**

Kunststoffrohr 22mm 2,50m



PVC
Gray
Diameter: 1" (2,6 cm)

Universal cone 22mm — **0.011** — **581995000**

Universal-Konus 22mm

Gray
Diameter: 1 5/8" (4 cm)

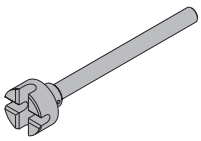
Plug 22mm — **0.007** — **581953000**

Verschlussstopfen 22mm

PE
Gray

Tie-rod wrench 15.0/20.0 — **4.0** — **580594000**

Ankerstabschlüssel 15,0/20,0

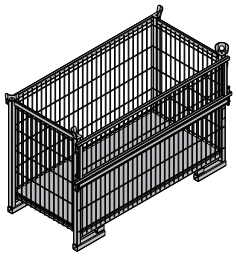


Galvanized

Multi-trip packaging

Doka skeleton transport box 1.70x0.80m — **192.0** — **583012000**

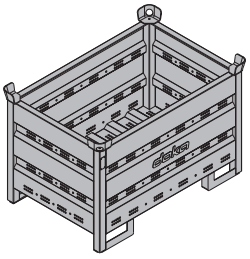
Doka-Gitterbox 1,70x0,80m



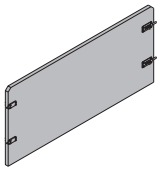
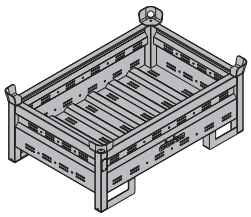
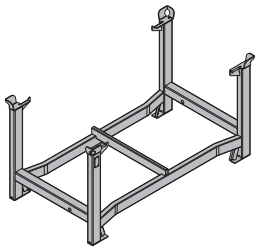
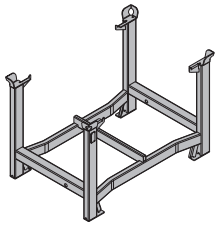
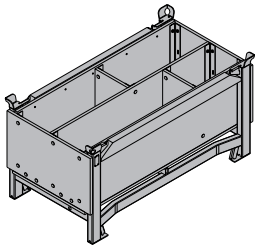
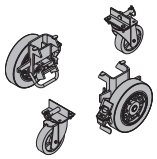
Galvanized
Height: 3'-8" (113 cm)

Doka multi-trip transport box 1.20x0.80m — **154.0** — **583011000**

Doka-Mehrwegcontainer 1,20x0,80m

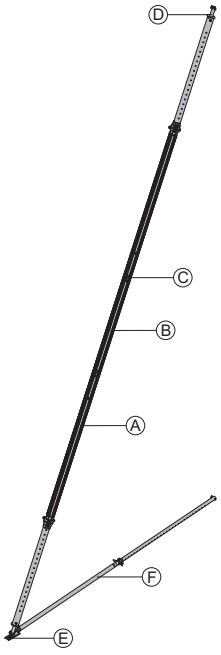


Galvanized
Height: 2'-7" (78 cm)

	[lbs]	Article #
Multi-trip transport box partition 0.80m	8.2	583018000
Multi-trip transport box partition 1.20m	12.1	583017000
Mehrwegcontainer Unterteilung		
Steel parts galvanized Timber parts varnished yellow		
		
Doka multi-trip transport box 1.20x0.80x0.41m	93.7	583009000
Doka-Mehrwegcontainer 1,20x0,80x0,41m		
Galvanized		
		
Doka stacking pallet 1.55x0.85m	90.4	586151000
Doka-Stapelpalette 1,55x0,85m		
Galvanized Height: 2'-6" (77 cm)		
		
Doka stacking pallet 1.20x0.80m	83.8	583016000
Doka-Stapelpalette 1,20x0,80m		
Galvanized Height: 2'-6" (77 cm)		
		
Doka accessory box	235.0	583010000
Doka-Kleinteilebox		
Timber parts varnished yellow Steel parts galvanized Length: 5'-1" (154 cm) Width: 2'-9" (83 cm) Height: 2'-6" (77 cm) Special order only!		
		
Bolt-on castor set B	74.1	586168000
Anklemm-Radsatz B		
Painted blue		
		

Specific parts for Canada

	[lbs]	Article #
Eurex 60 550		
Eurex 60 550		
depending on length, comprising:		
(A) **Plumbing strut Eurex 60 550**	93.7	582658000
Powder-coated, blue Aluminum Length: 11'-3" - 18'-2" (343 - 553 cm)		
(B) **Extension Eurex 60 2.00m**	47.0	582651000
Powder-coated, blue Aluminum Length: 8'-2" (250 cm)		
(C) **Coupler Eurex 60**	19.0	582652000
Aluminum Length: 3'-3" (100 cm) Diameter: 5" (12,8 cm)		
(D) **Connector Eurex 60 IB**	9.3	582657500
Galvanized Length: 6" (15 cm) Width: 6" (15 cm) Height: 1' (30 cm)		
(E) **Plumbing strut shoe Eurex 60 EB**	17.6	582660500
Galvanized Length: 1' (31 cm) Width: 4 $^1/_2$" (12 cm) Height: 1'-1" (33 cm)		
(F) **Adjusting strut 540 Eurex 60 IB**	61.3	582659500
Galvanized Length: 9'-11" - 17'-9" (303,5 - 542,2 cm)		
Delivery condition: separate parts		



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Doka is one of the world leaders in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector.

With more than 160 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network which ensures that equipment and technical support are provided swiftly and professionally.

An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 6000.